

Making the Right Connections: a conference on conservation in UK Overseas Territories, Crown Dependencies and other small island communities

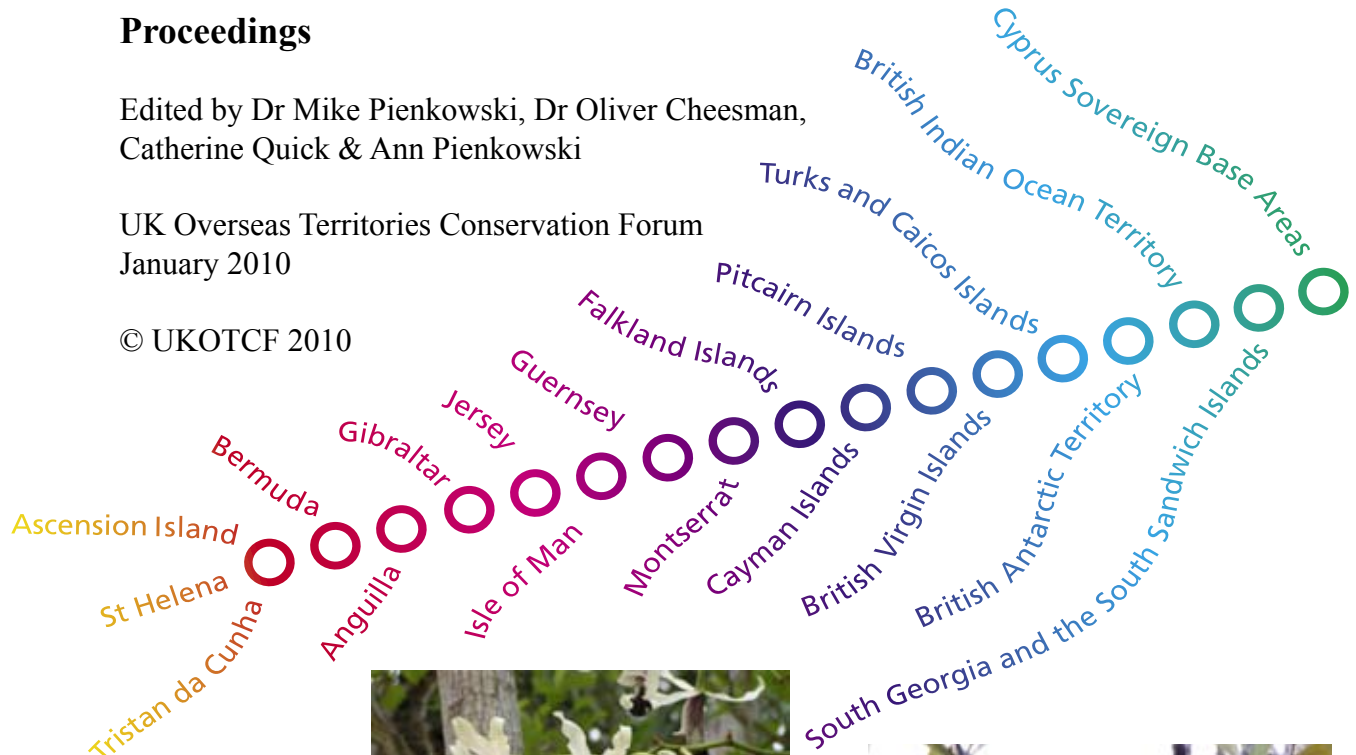
Grand Cayman 30th May to 5th June 2009

Proceedings

Edited by Dr Mike Pienkowski, Dr Oliver Cheesman,
Catherine Quick & Ann Pienkowski

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Organised by:

UK Overseas Territories Conservation Forum, with the support of the Overseas Territories Environment Programme, and hosted by the Cayman Islands conservation bodies



Making the Right Connections: a conference on conservation in UK Overseas Territories, Crown Dependencies and other small island communities, Grand Cayman 30th May to 5th June 2009 - Introduction

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Background

The Cayman Islands hosted an international environmental conference from 30th May to 5th June 2009, with a focus on UK Overseas Territories, Crown Dependencies and other small islands. The conference was organized by the UK Overseas Territories Conservation Forum in consultation with the Cayman Islands Department of Environment (DoE) and the National Trust for the Cayman Islands. It was supported by the Overseas Territories Environment Programme of the UK Foreign and Commonwealth Office and Department for International Development.

The conference provided a forum for government environmental bodies and NGOs to discuss key conservation issues, to highlight success stories, exchange ideas, and to forge partnerships – so that Overseas Territories, Crown Dependencies and other small island communities that share similar environmental problems could benefit from learning about one another's history and experience of planning and conservation initiatives. The overall aim was to draw on similarities and differences in

experience across the territories, to provide insights into common challenges, leaving participants better equipped to address local needs.

It was the fifth such conference, following the first held in London in 1999, the second in Gibraltar in 2000, the third in Bermuda in 2003 and the fourth in Jersey in 2006. The proceedings of the Gibraltar, Bermuda and Jersey conferences can be seen at www.ukotcf.org.

The main topics had been determined after wide consultations amongst conservationists working in the Overseas Territories and Crown Dependencies. Main sessions were:

- Climate Change - impacts and adaptation
- Spatial Planning, Protected Areas and International Standards - assesses or liabilities?
- Raising our Profile - engaging policy makers and the public
- Invasive Species
- Enhancing Capacity - how on earth are we going to cope with the workload?
- Joined-up Thinking - institutional arrangements for environmental management,



with shorter sessions on

- Progress on Environmental Charters Implementation; and
- Environmental Education.

The conference was held at the Westin Hotel, Seven Mile Beach, Grand Cayman. The final programme, incorporating published amendments, is at Appendix 1, but further modifications and refinements to this were made during the conference to meet needs and late constraints.

Acknowledgements

Organisers and participants are grateful to the following for the main resourcing of the conference: the UK Department for International Development (DFID) via the Overseas Territories Environment Programme (OTEP), its joint initiative with the UK Foreign & Commonwealth Office (FCO); the Cayman Islands Government, especially its Department of Environment; and the UK Overseas Territories Conservation Forum (UKOTCF) and its volunteers.

They would like to thank also the people of the Cayman Islands, who made us so welcome.

UKOTCF, as the main organisers, would like to express their pleasure at working with the local organising team from the Department of Environment, especially Director, Gina Ebanks-Petrie, for huge support and for arranging that her staff (and equipment) be made available, while maintaining the busy schedules of their main work. Many staff at the DoE helped, with lead roles played by Tim Austin, Mat Cottam and John Bothwell. Thanks to all these and their colleagues.

Other local organisers, to whom we are also grateful, are from UKOTCF's Associate organisation, the National Trust for the Cayman Islands, which provided the cultural break from formal proceedings at their Mission House historic site on the Tuesday evening. We thank particularly: Roger Corbin, Chairman; Denise Bodden, Historic Programs Manager; and Frank Balderamos, General Manager (who had to be off-island). We would like to thank also: Caybrew for donating the local beer; Jacques Scott Group for donating the wine; Welly's Cool Spot, Elrita Seymour and Zelmalee Ebanks for preparing and serving the local food – a very important part of culture. We are very grate-

ful also for music from the North Side Kitchen Band, piano in Mission House by Katie Moore (NT volunteer), Mission House Tours by Arthurlyn Pedley, Aida D'Angelo and others; and performers Denise Bodden, Pirate Darvin Ebanks, Rita Estavanovich, David Whitefield, Michael McLaughlin, Erica Daniel, Chris Bowring, Pastor Alson Ebanks, Carmen Comolly, Kem Jackson, Jerilo Rankine and Stuart Mailer.

The Governor, His Excellency Stuart Jack, gave us an excellent launch via the opening reception on Sunday evening – many thanks to him and all his staff, especially staff officer, Andy Holbrook, for much help throughout the planning. We are very grateful also to the Cayman Islands Leader of Government Business, The Hon. W. McKeever Bush, and the Minister of Environment, The Hon. Mark Scotland, for finding time just a few days after the General Election and their taking up of office to join us and formally to open the conference.

We were delighted to welcome Mr Huw Irranca-Davies MP, UK Minister for the Natural and Marine Environment, Wildlife and Rural Affairs, as the first UK environment Minister to participate for in one of our conferences. We are very grateful to Mr Irranca-Davies, and to his officials, especially Eric Blencowe, for making all this possible, and for the positive announcements made during the conference.

The conference centred on discussion and exchange of ideas and experience. However, it is difficult to generate this from nothing. Therefore, we are particularly appreciative of the speakers. It is a difficult task to select 15-minutes worth of relevant material from the riches of information that could be presented, and we are most grateful to those who achieved it without over-running and thereby reducing discussion time or slots available for later speakers. We want to link this to thanks also for the display exhibitors, who again have a challenge in getting so many key points into such a small space.

For both of those groups, we thank those who have supplied their texts and illustrations for the Proceedings. We are very grateful also to those who kept a note of the discussions, a difficult and usually thankless task.

We should not forget that the various presentations and other inputs to the conference are based on the work of many people, often volunteers, in the various organisations represented by those attend-

ing. These include UKOTCF Member and Associate organisations, UK Overseas Territory, Crown Dependency and UK official bodies, and other participating institutions. We are grateful to them all. We would like to thank especially the students and their lecturers – maintaining the fine tradition from the Jersey conference.

Lots of people are needed to make a conference go reasonably smoothly. These include: the session coordinators and chair-persons; the rapporteurs; those who have dashed around with the roving microphone; those collating presentations and operating computer projection; the photographers who volunteered to capture images of the event; those managing the wireless internet system (which proved extremely hard work); the volunteers who manned the conference office and conference registration desk - the tasks of which would fill much of the Proceedings, if listed. Many thanks to all.

We got off to an excellent start on Sunday, with the tours and initial discussions taking place in very pleasant surroundings. Thank you to the guides and drivers, caterers, tent company, the folk at Pedro St James and, of course, the Botanic Gardens, as well as Fred Burton and his Blue Iguana Team. We thank also those providing services for the closing event: the team from Red Sail looking after us on the catamarans and, at the closing dinner, Kaibo.

We are grateful to the Westin hotel staff, especially our primary contact, Amanda Jay (who was amazingly helpful in sorting out all our problems), the team from Banquets (the ones who looked after the meeting rooms and provided the lunches and break-time refreshments), and the house-keeping and other staff who showed remarkable fortitude in carefully handling the possessions of those few participants who failed to clear their rooms (which were needed for new bookings) by the specified time, and who failed to label the bags that they had packed.

UKOTCF's Council would like to thank the core organising team, Dr Mike Pienkowski, Catherine Quick, Dr Oliver Cheesman and Ann Pienkowski, for an immense amount of work spread over a long period and for extremely long hours worked each day immediately before and during the conference. Council are particularly grateful in that much of this work was conducted without payment, allowing the conference to stay within budget despite a huge impact caused by the 30% fall in the value of

the pound against the dollar after the budgets and main costs had been set.

We are pleased to note that 15 of the 16 UKOTs, and three Crown Dependencies, were represented, either by government or NGO organisations or, in most cases, by both. (The missing one was British Antarctic Territory.) All of these Territories played an active part in giving presentations, displaying posters or co-ordinating sessions. In fact, the majority of those involved in these roles was from the Territories.

The conference involved collaborations between the organising bodies, with the supporters, and between all the participants in this working conference. The UK Overseas Territories Conservation Forum itself is a partnership of many organisations and individuals, and this sort of activity constitutes an important part of UKOTCF in action.

Editors' Preface

In producing these Proceedings, the Editors have tried to stay as close as possible to the structure of the conference. Efforts have been made to secure texts from all speakers, and thanks are due to those who obliged for tolerating this irritation. Unless authors opted otherwise, the illustrations from their conference presentations have been used to illustrate their papers in these Proceedings. In those cases where texts were not supplied, papers have been constructed from PowerPoint presentations where practicable; the Editors regret that it has not always been possible to explain some abbreviations and references in these cases. In a few cases, where written versions were not supplied, it has proven impracticable to reconstruct the papers from the material available.

In editing the texts, insofar as was practicable in the transition from spoken to written formats, the original styles have been retained. The degree to which tenses etc have been adjusted in this context has been determined pragmatically in relation to content and clarity. As most UK Overseas Territories opt for UK English, this has been used except for proper names, but some other versions of English may have crept through under the Editors' radar.

Versions of poster papers have been included where authors supplied these. The format used for these has depended on practicability. Where linked

to the topic of a session, they have been placed there. Otherwise, they have been grouped in a Posters Section.

Authorship has been attributed as indicated by the texts or otherwise by the authors themselves, rather than relating simply to whoever actually presented the materials at the conference.

We have aimed to make these Proceedings available as rapidly as possible (although, for the reasons alluded to above, not as quickly as we would have liked), so that they can serve as an aide-memoires for participants as well as responding to the flow of requests already being received from those unable to attend. This has meant some compromising in that some aspects might have benefited from an alternative approach. Undoubtedly, there will be errors, for which the Editors apologise.

Given the widely dispersed nature of users (as well as economy), we decided again on publication on-line. Again, even despite using very efficient software, there are compromises between image quality and file size. The format used is intended for users to download before keeping on file and/or printing, rather than reading by internet access on each occasion of use.

The Editors would like to thank all those who have assisted, by supplying materials, answering que-

ries, finding or providing illustrations, etc..

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Front cover pictures are:

Endemic Grand Cayman Blue Iguana

Endemic Banana Orchid

Sting Ray

Endemic subspecies Grand Cayman Parrot

(Photos by, respectively, Frederick J Burton, Dr Oliver Cheesman, and (last two) Dr Mike Pienkowski).



Some of the conference participants

Contents

Making the Right Connections: a conference on conservation in UK Overseas Territories, Crown Dependencies and other small island communities, Grand Cayman 30th May to 5th June 2009 -

Introduction.....	2
Background.....	2
Acknowledgements.....	3
Editors' Preface.....	4
Contents	6
Conference Summary and Conclusions	11
Key points from each of the main sessions.....	11
Some Outcomes of Previous Conferences.....	20
Section 1: Opening and introduction to Cayman experience	23
Remarks from The Hon. W. McKeeva Bush, Leader of Government Business and Minister of Finance Services, Tourism & Development.....	24
Remarks from The Hon. Mark Scotland, Minister of Health, Environment, Youth, Sports & Culture.....	25
Thanks.....	26
Field Visits	27
Some Cayman conservation issues (part 1)	29
Gina Ebanks-Petrie (Director, Department of Environment, Cayman Islands Government)	
Discussion.....	30
Some Cayman conservation issues (part 2)	34
Frederic J. Burton (Director, Blue Iguana Reconvert Program, Grand Cayman)	
Discussion.....	36
National Trust for the Cayman Islands host UKOTCF Evening Event at Mission House, Bodden Town, Grand Cayman, Tuesday 2nd June 2009, 5:30pm-8:30pm.....	46
Section 2: Progress on Environment Charter implementation.....	53
Co-ordinator: Mike Pienkowski (Chairman, UKOTCF)	
Progress and Problems in Implementing an Environment Charter Strategy: an example from St Helena .	54
Isabel Peters (Environmental Coordinator, St Helena Government)	
Pitcairn Islands Environment Management Plan.....	58
Noeleen Smyth (National Botanic Gardens, Dublin, Ireland; for Pitcairn Islands Council)	
Framework Document: Measures of performance by 2009 of UK Overseas Territories (& Crown De- pendencies) and UK Government in implementing the 2001 Environment Charters or their equivalents	59
Mike Pienkowski (Chairman, UK Overseas Territories Conservation Forum)	
Catherine Quick (Co-ordinator, UK Overseas Territories Conservation Forum)	
Discussion.....	107
Section 3: Environmental Education	115
Co-ordinator: Ann Pienkowski (Environmental Education Co-ordinator, UKOTCF)	
Framework Document: To help structure the discussion on Environmental Education and to use those discussions to develop further these guidelines	117
Ann Pienkowski (Environmental Education Co-ordinator, UKOTCF) & Clive Baker (Head of Curricu- lum Services, Cayman Islands Department of Education)	
Marvellous Mangroves – A Curriculum-Based Teachers' Guide	121
Martin Keeley (Education Director, Mangrove Action Project; and University College of the Cayman Islands)	
A partnership for environmental education in Cyprus: the work of the Akrotiri Environmental Education and Information Centre (AEEIC) in the Sovereign Base Areas of Cyprus (SBAs)	128
Thomas Hadjikyriakou (Akrotiri Environmental Education and Information Centre Manager, Cyprus Sovereign Base Area)	
Student comments on experiences of environmental education.....	133
Piers Sangan	

Panel discussion: What is needed for the future?	135
Facilitators: Ann Pienkowski (Environmental Education Co-ordinator, UKOTCF), Clive Baker (Head of Curriculum Services, Cayman Islands Department of Education) & Edgar Howell (Deputy Director of Education, Turks & Caicos Islands)	
Section 4: Climate change – impacts and adaptation	137
Co-ordinators: Bruce Dinwiddy (UKOTCF Council) & Deborah Procter (Climate Change Advisor, JNCC)	
Framework Document: Climate change – impacts and adaptation	138
Co-ordinators: Bruce Dinwiddy (UKOTCF Council) & Deborah Procter (Climate Change Advisor, JNCC)	
Introduction	140
Bruce Dinwiddy (UKOTCF Council)	
Climate change and biodiversity conservation - impacts and adaptation	142
Deborah Procter (Climate Change Advisor, JNCC)	
South Georgia: Threats posed by climate change, and mitigations	145
Darren Christie (Environment Officer, Government of South Georgia and the South Sandwich Islands)	
Climate Change: A Case Study in Guernsey	151
Andrew Casebow (States of Guernsey)	
Climate Change: A Cayman Perspective	155
Lisa-Anne Hurlston-McKenzie (Cayman Islands Department of Environment)	
Discussion	157
Section 5: Posters not linked to other topics.....	159
Reviews of posters	160
Poster: The endemic plants of the Pitcairn Islands	162
Noeleen Smyth (National Botanic Gardens, Dublin, Ireland; for Pitcairn Islands Council)	
Poster: Jost van Dyke’s Community-based Programme Advancing Environmental Protection and Sustainable Development	163
Susan Zaluski (Jost van Dyke Preservation Society, British Virgin Islands)	
Plant Ecology on Ascension Island.....	164
Alan Gray (Centre for Ecology and Hydrology, UK) and Stedson Stroud (Ascension Island Government)	
Opportunities for collaborative projects: The Centre for Ecology and Hydrology	167
Alan Gray, Adam Vanbergen, Sarah Burthe, Juliette Young and Stephen Cavers	
INTO – The Future	171
Oliver Maurice (Hon Director, The International National Trusts Organisation (INTO))	
JNCC Overseas Territories and Crown Dependencies Programme.....	175
Tara Pelembe, Nikki Chapman, Deborah Procter, Deanna Donovan & Marcus Yeo (Joint Nature Conservation Committee)	
The UK Overseas Territories: the UK’s hidden natural treasures.....	176
Royal Society for the Protection of Birds	
Section 6: Spatial Planning, Protected Areas and International Standards – assets or liabilities?..	181
Co-ordinators: Colin Hindmarch (UKOTCF Council) & John Cooper (CORE Initiatives, Rondebosch, South Africa)	
Framework Document: Protected Areas: Developing Sustainable Policy Options	182
Colin Hindmarch (UKOTCF Council)	
Protected areas: a new economic context and a sustainable future	186
Colin Hindmarch (UKOTCF Council)	
The role of environmental democracy	195
Euwonka Selver (Turks & Caicos Islands)	
The Marine Perspective on Spatial Planning, Protected Areas and International Standards	200
Fiona Gell (Senior Wildlife and Conservation Officer – Marine, Wildlife and Conservation Division, Isle of Man)	
The Chagos Archipelago: Its Nature and Future.....	209
Dr John Turner (Chagos Conservation Trust & Bangor University)	

Discussion.....	211
Declaring international protected areas in UK Crown Dependencies and Overseas Territories: the role of the Ramsar and World Heritage Conventions	212
John Cooper (CORE Initiatives, South Africa)	
Montserrat Centre Hills Management Plan: an example of planning and implementing protected areas at a site scale	221
Stephen Mendes (Montserrat Department of Environment)	
Challenges for a small isolated island group - progress on the Pitcairn Islands environment management plan, designated protected areas and sustainable development	226
Noeleen Smyth (National Botanic Gardens, Dublin, Ireland; for Pitcairn Islands Council)	
BVI's System Plan : an example of planning and implementing protected areas at a national scale	229
Joseph Smith Abbott (Director, British Virgin Islands National Parks Trust)	
Discussion.....	234
Section 7: Raising our profile - engaging policy makers and the public	235
Co-ordinators: Bill Samuel (UKOTCF Council) & John Cortés (Gibraltar Ornithological & Natural History Society and UKOTCF Council)	
Framework Document: Engaging policy makers and the public.....	236
Bill Samuel (UKOTCF Council), John Cortés (Gibraltar Ornithological & Natural History Society; and UKOTCF Council) and Oliver Cheesman (Development Director, UKOTCF)	
Economic valuation as a tool for engaging policy makers: Total Economic Value of Bermuda's Coral Reefs	239
Samia Sarkis (Department of Conservation Services, Bermuda)	
E. McKenzie (World Wildlife Fund US, Washington, DC, USA)	
P. van Beukering (Van Beukering Consulting Ltd., The Netherlands)	
Raising the Profile of the UKOTs in the UK Parliament	246
Paul Keetch MP	
The Environment as an Election Issue: The Virgin Islands Experience	251
Bertrand Lettsome (Dept of Fisheries & Conservation, British Virgin Islands)	
Campaigning - Buy Back Bermuda	252
Jennifer Gray (Executive Durector, Bermuda National Trust; and Bermuda Audubon Society)	
How long a reprieve for the Grand Cayman Ironwood Forest?	258
Lilian Hayball (University College of the Cayman Islands)	
The Church as an Advocate for Conservation	261
Rev. M. Alson Ebanks, Cert. Hon. (Cayman Islands)	
Discussion.....	264
Section 8: Invasive species.....	265
Co-ordinators: Oliver Cheesman (Development Director, UKOTCF) & Karen Varnham (University of Bristol and UKOTCF Council)	
Framework Document:	266
Invasive Species - What is needed for the future?	266
Co-ordinators: Oliver Cheesman (Development Director, UKOTCF) and Karen Varnham (UKOTCF Council and University of Bristol)	
The South Atlantic Invasive Species (SAIS) Project.....	270
Andrew Darlow (St Helena SAIS Project Officer)	
Lessons from the Caicos Pine Scale	274
Bryan Naqqi Manco (Senior Conservation Officer, Turks & Caicos National Trust)	
Invasive species in the UKOTs and CDs – What's new?	279
Karen Varnham (University of Bristol) and Tara Pelembe (JNCC)	
Invasive species: awareness-raising and education – getting rid of stuff that people like, with little or no money.....	282
Mat DaCosta-Cottam (Cayman Islands Department of Environment)	
Poster: Planning to reduce rodent impacts on seabird colonies at Tristan da Cunha and Gough Island ...	285
Andrea Angel, Derek Brown, John Cooper, Richard J. Cuthbert, Trevor Glass, Geoff M. Hilton, John Parkes, Peter G. Ryan & Ross M. Wanless	

Poster: Invertebrate Conservation in the UKOTs: Tackling Invasives in South Georgia	287
Roger Key (independent consultant), Rosy Key (Natural England) & Jamie Roberts (Buglife)	
Poster: Action to reduce the impacts of invasive species on the South Atlantic UK Overseas Territories	289
Clare Stringer, Brian Summers & Andrew Darlow (RSPB)	
Guided discussion: What is needed for the future?	292
Section 9: Enhancing capacity - how on earth are we going to cope with the workload?.....	295
Co-ordinators: Dace Ground (Bermuda National Trust & UKOTCF Council) & Mat DaCosta-Cottam (Cayman Islands Department of Environment)	
Enhancing capacity: how on earth are we going to cope with the workload - Introduction.....	296
Frederic J. Burton MBE (Director, Blue Iguana Recovery Programme, Grand Cayman)	
Bottlenecks in implementing action plans	301
Colin Clubbe (Royal Botanic Gardens, Kew)	
Enhancing capacity - sponsorship.....	303
Mat DaCosta-Cottam	
JNCC Overseas Territories and Crown Dependencies Programme - Fundraising	312
Nikki Chapman (Joint Nature Conservation Committee)	
Mobilising local volunteers in support of environmental work: a Falklands Conservation Case Study ..	313
Pierre Pistorius (Conservation Officer, Falklands Conservation)	
Mobilising local volunteers in support of environmental work: Ascension	314
Stedson Stroud	
The role of UKOTCF in recruiting and coordinating volunteers for UK Overseas Territories and Crown Dependencies	315
Dace McCoy Ground (Bermuda National Trust; UKOTCF)	
Volunteering: a view from the bottom up by a non-traditional UKOTCF volunteer; or <i>Are volunteers an invasive alien species?</i>	317
Steve Cheeseman (UKOTCF volunteer)	
Discussion	323
Section 10: Joined-up thinking – institutional arrangements for environmental management	325
Co-ordinators: Liz Charter (Chief Wildlife & Conservation Officer, Isle of Man), and Farah Mukhida (Executive Director, Anguilla National Trust)	
Framework Document: Joined-up thinking	326
Oliver Cheesman (Development Director, UKOTCF), Liz Charter (Chief Wildlife & Conservation Officer, Isle of Man) & Farah Mukhida (Executive Director, Anguilla National Trust)	
Government/NGO partnerships - successes and failures in Cayman	330
Gina Ebanks-Petrie (Director, Department of Environment, Cayman Islands Government)	
Working together for biodiversity on the Isle of Man	333
Elizabeth Charter (Chief Wildlife & Conservation Officer, Isle of Man Government; and UKOTCF Council)	
A Governor's role in environmental issues in a UK Overseas Territory	343
Michael Gore (former UKOT Governor; former Council Member of UKOTCF & Chairman of the Wider Caribbean Working Group; Wildlife Photographer)	
Ascension Environmental Information Operations Utility (AEIOU): Integrated Information Management for Joined up Environmental Custodianship	346
Alan P. Mills & Edsel B. Daniel (consultants)	
Mechanisms for information/data sharing cross-Territory: UKOTCF database.....	355
Mike Pienkowski (UKOTCF Chairman).....	
Linking with other (non-UK) territories - Introduction	358
Colin Hindmarch (UKOTCF)	
Linking with other territories - NET-BIOME: Perspective from the Canary Islands	359
Marimar G. Villagarcia (Instituto Canario de Ciencias Marinas, Canary Islands, Spain)	
Discussion	365
Section 11: UK Minister's speech and Conference closing	367
Statement agreed by conference participants.....	368
Speech by Huw Irranca-Davies at the UKOTCF Conference on Biodiversity in the UK's Overseas Territo-	

ries and Crown Dependencies: Making the Right Connections: Thursday 4th June 2009.....	369
Discussion.....	374
Student views on conference topics.....	381
Tashara Lewis (University College of Cayman Islands, Brac Campus)	381
Dustin Bodden (University College of Cayman Islands, Brac Campus)	381
Jodiann Jackson (University College of Cayman Islands, Grand Cayman)	382
Jessica Ebanks (University College of Cayman Islands, Grand Cayman)	383
Conference Closing.....	384
Section 12: Appendices	387
Appendix 1. Final programme for the conference, with published amendments	388
Appendix 2. List of Posters and Displays.....	397
Appendix 3. Participants.....	400
Appendix 4. Feedback from participants.....	404
Appendix 5. Friends of the UK Overseas Territories.....	416



The conference in session (Photo: Thomas Hadjikyriakou)

Conference Summary and Conclusions

Preamble

This conference, like its predecessors, was designed to help address some of the priority issues identified by workers in conservation and related fields in small territories. The conference was deliberately participatory for all, rather than segregated into speakers and audience, because exchange of experience was a key. For this reason, the organisers wanted to capture rapidly some of the main conclusions arising from discussions. Throughout the meeting, a small team kept track of these. These note-takers then helped session co-ordinators to prepare a (nominally) 3-minute summary of some of the main points from each session. These were presented in the same session as the UK Minister's speech (see Section 11), and also included in the *First Report* of the conference, made available in June 2009. These summaries are given also below. Because of the way in which these were produced, they are in a variety of formats. These first summaries are not, of course, comprehensive, and further points can be found in the sections on each session and the appendices, in the other sections of these Proceedings.

UKOTCF is sometimes asked what the conferences on conservation in the UK Overseas Territories, Crown Dependencies and other small island communities achieve. Anyone who has tried to answer a question like this knows the difficulty. As participants know and say (see, for example Appendix 4), the benefit is largely the further progress that these conferences stimulate. This may be to inform or inspire work, to establish collaborative initiatives, or other activities, or some combination. The main outcomes of conferences tend (with a few exceptions) to become evident only some years later. However, in the final part of this introductory section of the Proceedings, we have attempted to put together a first list of the outcomes of this series of conferences. This is inevitably incomplete, both because many outcomes may not be evident yet and because we may not be aware of all that have occurred already.

Key points from each of the main sessions

Progress on Environment Charter Implementation

The Environment Charters were signed in September 2001 between UK Government and most of the UK Overseas Territories. This was to address the problem that UK Government answers for international commitments but Territory administrations deal with local legislation and implementation. These international commitments apply whether or not there is a Charter for a particular territory – and whether or not a Territory structures its actions using the Charters or according to some other format, such as a regional agreement. Therefore we include all UKOTs and Crown Dependencies in the UKOTCF collation of progress.

The summary (in the Conference Handbook) of progress, based on information received and collated thus far, highlighted both some successes and some setbacks. We thank those who supplied information. Updating is a work in progress (see Section 2).

The Turks & Caicos Islands were cited in the discussion as an example where poor implementation of Charter Commitments, and indeed major damage to extremely important natural areas, can be caused by a government about which serious questions of corruption and mis-management have been raised (by House of Commons Foreign Affairs Committee and independent Commission of Inquiry) – and which the UK Government is addressing under its responsibility for good governance. Clearly, the people and the hard-working conservationists of TCI are to be supported in their work in such awful circumstances.

As Isabel Peters outlined, St Helena made its Environment Charter a key document in its economic development plan. In a process facilitated by UKOTCF in some territories, St Helena stakeholders developed an environmental strategy by breaking down the commitments into specific actions. Some 40 bodies were identified as responsible for taking action (sometimes by the same person in different roles).

This process was found fundamentally useful – but needs resourcing to the next planned stages, to use the full document as a source from which to produce time-limited priority sections, and also popular reader-friendly versions, as well as other aspects needed to take matters forward effectively.

Coordinating monitoring of progress in all territories, as being done by UKOTCF's second review, is essential – but depends on local input. This needs human resources – as does encouraging all the responsible organisations actually to incorporate the agreed tasks into their programmes. Undoubtedly some work is being done on many aspects in many territories, but in most not coordinated to a strategy. A focal person is needed in each territory to promote implementation of the Charter Commitments (or the equivalent if using another coordinating structure). That needs resources.

There is some concern that UK and Territory Commitments are not being carried out in balance. One surprise was that Whitehall Departments have reduced staff resources to implement and monitor Charter Commitments. UK Government progress was reported very fully at our 2003 conference but HMG could not resource input on its own performance to UKOTCF's first review of progress in 2006/7, even though it reported to Parliament at the same time that it was depending on the review to answer questions Parliament had asked. The current effort of UK Government officials to try to start collating and supplying information to the review is greatly appreciated, but we can see that they are having great difficulties in resourcing this basic work

Environmental Education

What we wanted to do was to discuss ways of getting environmental education into schools curricula, how to effectively engage young people, and ways in which their involvement could be widened.

The draft paper in the Conference Handbook (and updated in Section 3) gave some background to this, and posed some questions to consider when thinking about developing curricula elements and resources.

The importance of environmental education, the need to get it embedded into the schools curricula, and some of the challenges of doing this, were

raised very early on, during discussions on Sunday at the Botanic Park, and continued to be raised throughout.

During the Environmental Education session on Monday, we heard some very positive examples of how this had been achieved in Cayman and in the Cyprus Sovereign Base Area.

Martin Keeley told us about the development of his *Marvellous Mangroves* programme, and how this had not only been fully incorporated into the revised National Curriculum for the Cayman Islands, but had been adapted for other countries, such as Brazil and Guatemala. His "recipe" for effective environmental education had been developed over many years, and had been widely used as a model by others.

Under the direction of Clive Baker, the Director of Curriculum Services here in the Cayman Islands, a thorough revision of the Cayman Curriculum involving many stakeholders had ensured that environmental education was firmly embedded into the curriculum here.

A very valid point was raised by both Martin and Clive that you cannot just put an environmental education resource into schools. It would just sit on the shelf unless it was curriculum-linked, and teachers had been trained to use it.

We learnt from Thomas Hadjikyriakou how the Akrotiri Environmental Education and Information Centre had developed its schools programme, through very clear planning and community involvement. This had been so successful that the Centre was incorporated into the Curriculum of the Republic of Cyprus, who funded a full-time teacher to work at the Centre.

We heard also from one of the founders of our student group, Piers Sangan, of his rather poor experiences of environmental education at school. At primary school, a topic on rainforests had been interesting - although of course this was not relevant to his local environment - but, at secondary school, environmental education was delivered through books and classroom teaching, rather than going outside and experiencing the environment. He had followed his natural interests in the environment through extra-curricular and volunteer work.

Dustin, also from our student group, stressed the importance of getting parents involved via their

children. This not only would inform parents, but there would be positive feedback in further encouraging the children to be enthused about the environment.

Edgar Howell echoed many people's concerns that the testing and assessment regime posed a great challenge in getting environmental education into the secondary schools. There was a need here for a "top-down" approach, where Education Departments needed to be encouraged to build environmental education into their testing and assessment process, to ensure that it was taught. We heard how, in many cases, this issue was addressed by using the post-exam period for field-based environmental education.

In further sessions we learnt of other positive initiatives and projects in getting environmental education into schools.

Stedson Stroud told us how Two Boats school on Ascension, with about 100 pupils, now undertook a great deal of environmental education work, including a lot of work in the field, outside of the classroom. This also got parents involved.

Pierre Pistorius reported how Ali Liddle, from Falklands Conservation, had produced resources on environmental aspects of the Falkland Islands, linked to the curriculum, which were widely used in local schools. There was also a Watch Club, which regularly undertook environmental activities outside, and had been very effective in involving parents.

In summary, the key points that emerged from the discussions which had occurred throughout the conference were:

- Environmental education resources produced for schools must be curriculum-linked.
- Teachers need to be trained to use the resources.
- The constraints of the examination system at secondary school needed to be addressed. A "top-down" approach from Departments of Education is needed to get environmental education into the examination system. Another very effective strategy which could be used at secondary school is to use the time after examinations for environmental projects, as long

as these involved getting the students outside.

- Getting the students outside must be a key element of all environmental education – it needs to be hands-on and fun. So teaching children about their local environment was a priority.
- Involving parents is very important – this has the benefit of educating parents as well as the children, and providing positive feedback in increasing the interest and enthusiasm of the children.

We want to thank again the discussion panel and speakers in the environmental education session, our students for clearly pointing out the gaps in environmental education in their own experiences, and making positive suggestions, and all of you for taking our discussions forward in a very positive way.

Climate Change – impacts and adaptation

The key messages derived from the presentations and discussions in the session were:

1. Act Now – don't wait for perfect knowledge

In broad brush terms, we already know enough about the impacts and potential impacts of climate change. That said, there is a need to gather more locally relevant information to help refine practical adaptation work in the UKOTs and CDs. For example, the presentation from Darren Christie (Environment Officer, Government of South Georgia and South Sandwich Islands) highlighted a particular issue facing South Georgia: previously isolated areas of land becoming accessible to, and threatened by, invasive alien species after glacial retreat.

2. Use all available tools and resources

Use rapid assessment tools such as those outlined as part of the DfID-funded project *Enhancing Capacity for Adaptation to Climate Change* which is currently underway in the Caribbean.

Engage all levels of government and civil society. Partnerships deliver a number of roles: education (climate change is real and the impacts on your area could be); co-operation (information exchange etc); and empowerment (many small voices). Such partnerships are key to successful implementation of projects. Andrew Casebow

gave an example of this from his experience of working with various groups of people to produce *Planet Guernsey*, a book that outlines the known and likely impacts of climate change on one of the Crown Dependencies.

Adopt an integrated approach, in particular through planning and policy-setting processes. Where integration is successful, multiple gains can be made (for people and for the natural environment). Lisa-Ann Hurlston-McKenzie showed how such integrated planning has been used to good effect in the Cayman Islands.

3. Biodiversity is part of the solution

Biodiversity will itself be impacted by climate change, but it is also part of the solution, e.g. through provision of physical defences along coastlines, watershed protection in uplands, carbon sequestration in organic soils and in the oceans. Healthy, functioning ecosystems provide services that help us adapt to climate change. There is more and more evidence showing that ecosystems which are high in biodiversity, and long established, are more resilient to ecological impacts.

Biodiversity needs to take its rightful place alongside social and economic factors when considering and planning responses to climate change.

Spatial Planning, Protected Areas and International Standards – assets or liabilities?

The session aimed to allow for the sharing of experiences and identification of opportunities and threats to the development of protected area networks within UK Overseas Territories and Crown Dependencies.

The following seven presentations were given in the session:

- Colin Hindmarch (UK): Protected areas: a new context and a sustainable future.
- Euwonka Selver (Turks & Caicos Islands): The role of environmental democracy.
- Fiona Gell (Isle of Man): The marine perspective on spatial planning, protected areas and international standards.
- John Cooper (South Africa): Declaring international protected areas in United Kingdom Crown Dependencies and Overseas Territories: the role of Ramsar and World Heritage Conven-

tions.

Stephen Mendes (Montserrat): Montserrat Centre Hills Plan: an example of planning and implementing protected areas at a site scale.

Noeleen Smyth (Ireland; and on behalf of Pitcairn Islands Council): Challenges for a small isolated island group – progress on the Pitcairn Islands Environment Management Plan, designated protected areas and sustainable development.

Joseph Smith-Abbott (British Virgin Islands): BVI's Systems Plan: an example of planning and implementing protected areas at a national scale.

The session co-ordinators (John Cooper and Colin Hindmarch) identified the following main “take-home” points and messages from the session:

1. The need for transparency, democratic procedures and involvement of community, civil society and non-governmental organizations within planning processes from the first stages and throughout the whole activity or development;
2. The need for improvements to within-territory integration and enforcement of policies and regulations between governmental departments and entities;
3. The value of developing links for information sharing, capacity building and staff training both regionally (e.g. within the wider Caribbean) and between territories (e.g. between UK Overseas Territories and Crown Dependencies and with UK);
4. The value in making and maintaining working links with European policies, programmes and budgets;
5. The identification and addressing of threats such as paucity of resources, finances, enforcement capacity and community and civil society engagement;
6. The desirability of more international protected areas, including Ramsar Wetlands of International Importance and World Heritage Natural Sites, within UK Overseas Territories and Crown Dependencies, with the initial aim that all such territories and dependencies should support at least one international site;

7. The welcome proposal for a large Marine Protected Area in the near-pristine waters of the Chagos Archipelago (British Indian Ocean Territory); and
8. The welcoming of the further improvements in functionality currently in progress for the on-line data bases for management and allied plans by UKOTCF.

Raising our Profile - engaging policy makers and the public

The six speakers in this session delivered their papers as outlined in the programme. The following is distillation of the presentations and the discussions that they gave rise to:

Challenges

- There is a common difficulty in identifying assets of ecosystems in a way that is accurate and acceptable to all.
- Funding through OTEP is grossly inadequate.
- Potential turnover in Parliament next year is an opportunity to engage with any new ministers/members at an early stage.
- Campaigns can compete with core fundraising.

Recommendations

- A dedicated junior ministerial post should be created which is solely responsible for UKOTs.
- The position of the UKOTs on the Foreign Affairs Committee agenda should be enhanced.
- A shift towards the French model – where there is a representation of overseas territories within the French Parliament – is recommended.
- The environment should be a taught element in seminaries.

Lessons

- The results of community-based valuation exercises for the environment are often surprising.
- Extended Cost Benefit Analysis = CBA+TEV is an effective tool.
- Trusts like to donate to partnerships of charities (as this “ticks more boxes”).
- Campaigning for fundraising works.
- People champions create and maintain a public face.

- Keep the message simple.
- Engaging and mobilizing the younger generation is a powerful tool.
- Biodiversity conservation can be achieved through good governance and transparency.
- Science and the church must respect and engage with each other.
- Science is in danger when devoid of ethics and morality.
- Isolation is insulation from influences that can allow us to change paradigms.
- Conservation is a religious duty.
- There is no mandate from God to destroy the natural world.

Invasive Species

Invasive species remain a very major environmental concern across the UKOTs – they are now widely recognised as the second greatest threat to global biodiversity, and the most significant threat on many islands.

The Invasive Species session heard four presentations, on various aspects of the challenges faced in the UKOTs, and work on-going to address these. The presentations were followed by a stimulating and wide-ranging discussion. This highlighted, in particular, the need for:

1. Resourcing

More funding was desperately required to tackle the invasive species threat. However, as important was the need for a more strategic approach to funding, enabling support of long-term programmes, not just “quick fix” projects – the battle against invasive species could not be won through a scattering of “quick fix” solutions. A more strategic approach to funding would allow for much-needed, integrated programmes to be developed and implemented. The control of invasive species, for example, needed to be seen as a component of wider habitat and ecosystem restoration initiatives.

Resourcing constraints were not exclusively financial, but related also to limited local capacity. A more strategic approach to funding, and the development of integrated programmes, must incorporate support for sustained capacity-building activities, not just “one off” projects. There was a need to develop a cadre of people in each Territory with the capacity to make informed decisions and implement the necessary actions.

2. Emphasis on biosecurity

The need for robust biosecurity measures has become increasingly prominent in recent years. In the battle against invasive species, prevention of the introduction of potentially damaging non-native species is always more cost-effective than control of those which have become established. Unfortunately, successful prevention measures do not produce visible results – you don't see the species that have been kept at bay. Promotion of biosecurity can consequently be a challenge in some quarters.

3. Awareness raising

i) Amongst high-level policy makers

In this area, the session concluded that it may be particularly useful to emphasise the economic costs of dealing with the impacts of invasive species, in order to promote greater appreciation of the need for control, and particularly prevention, measures.

ii) Amongst the public

Environmental education comes in many forms, but schools programmes were seen as particularly valuable – children can be very effective advocates, influencing their parents' thinking, and will be the policy makers and conservation practitioners of tomorrow. In a wider sense, it was felt particularly useful to emphasise the value of the native habitats and species that were threatened, as a means of educating the public about the threats posed by invasive species.

Enhancing Capacity - how on earth are we going to cope with the workload?

All UKOTs and Crown Dependencies face a serious challenge in handling the amount of work required due to severe constraints on resources, both human and financial. The purpose of this session was to share the experiences of others, in how they dealt with this, and discuss ideas for positive ways forward.

The topics covered during this session included:

- Barriers to achieving project goals
- Funding
- Volunteers and the role of the UK Overseas Territories Conservation Forum

Fred Burton, Director of the Blue Iguana Recovery Programme, spoke about how they tackled resource issues.

In Cayman, a comparatively well-resourced Department of Environment and the National Trust face 19 Habitat Action Plans and 43 Priority Species Action Plans: the maths works out at 0.07 trained biologists per Action Plan. There is a need to fill the gap between the need for human resources and the number of plans to be managed and implemented. *The Blue Iguana Recovery Programme* (BIRP) combines three approaches: maximising conservation work impact, extensive reliance on volunteer support, and partnership.

A flagship species (the critically endangered Grand Cayman Blue Iguana) enables preservation of the less charismatic, but vitally important, shrubland habitat and associated species. Establishment of a flagship species is a powerful way to engender public support.

Volunteers are core to the success of the programme. For BIRP in Cayman, suitable volunteers are recruited online, via a rigorous questionnaire and checking of references. Volunteers are given accommodation, but have to cover other costs. Training is provided. Volunteers need to be managed, so it is essential that there are enough permanent staff members to do this. Discrete work is given to different types of volunteers, local volunteers who take part regularly being particularly valuable.

Academic partnerships are harnessed to address target scientific needs, which must relate to detailed management and strategic plans.

Key points towards successful capacity building for BIRP were identified as:

1. Use flagship species if you have them.
2. Save many species by conservation of shared habitat.
3. Select, recruit and train your volunteers.
4. Look for postgraduates to produce conservation-relevant data.
5. Find and keep the right institutional partners.
6. Use Strategic Planning to hold it all together.

Colin Clubbe, Head of Conservation Team at Royal Botanic Gardens Kew, spoke about bottlenecks to implementing action plans

Colin reinforced the need for good actions plans, as a requirement to initiate activity and to keep conservation plans on course. Good plans resulted from the identification and inclusion of all stakeholders. Additionally, legislation, skills and

capacity, and funding sources need to be identified and clearly outlined within the plan, so that actions are sustainable. Determination of responsibility for funding and actions should be clearly outlined within the plan.

Successful action plans therefore are inclusive, agreed, owned, resourced, funded, implemented and result in action.

Nikki Chapman, of the Joint Nature Conservation Committee (JNCC) reported on the database of funding sources which she was producing.

Difficulties with obtaining funding for environmental work in the UKOTs is frequently a barrier to environmental work. Nikki's role within JNCC is to establish a database of funding sources for UKOTs, and to assist individuals who needed support in making grant applications. To-date, she had identified 1,000 funding sources which were collated into the database, specifically targeting environment, nature or biodiversity. The database is accessible through JNCC's website. Participants in the conference were encouraged to look at the database www.jncc.gov.uk/otfundingdatabase and contact Nikki if they needed support and advice on writing applications.

The database will be maintained by JNCC for six months after its set-up phase, and thereafter it was hoped that maintenance will be taken up by UKOTs. The importance of updating the database was discussed. Comment was also made that a lot of funding organisations were not aware of the UKOTs, and that UKOTCF, Royal Botanic Gardens Kew and JNCC could have an increased role in making funding bodies more aware of the UKOTs. The issue of funding organisations covering overheads, such as salaries and servicing costs, was also raised.

Pierre Pistorius, Conservation Officer with Falklands Conservation, reported on how they mobilised local volunteers in support of environmental projects.

Falklands Conservation supports five staff (three permanent and two part-time). International volunteers are used on a seasonal basis – both professional and amateur birders during the seabird seasons. There are 27 local volunteers, mostly contract workers, or their otherwise unemployed partners. Volunteering allows them a chance to explore the island. They assist with projects includ-

ing rat eradication, beach clean-ups, bird counts, oil-spill response, Tussac planting and seed collection. They also serve as important sources of information, e.g. reporting wildlife sightings. "Watch Groups" are established. These are clubs with a conservation focus, involving children and overseen by parents. Partitioning of the most suitable work between local and international volunteers is undertaken, with more "glamorous work" being given to locals, to keep them interested, while international volunteers are happy to visit the islands. A dedicated staff member is required to coordinate and recruit volunteers effectively. A planned list of work priorities is utilised to keep work on course. The military is also utilised as a source of volunteer support. Agencies must ensure that volunteers are good custodians and represent the umbrella organisation in a positive light.

Key points towards successful capacity building in the Falkland Islands were identified as:

1. Effective coordination
2. Having a prioritized list of work / projects
3. Engaging the military
4. Ensuring volunteers are good custodians
5. Networking with other organizations
6. Enabling locals to assist with passive surveillance.

Stedson Stroud, Conservation Officer with the Ascension Island Government Conservation Department, spoke about how they used volunteers in Ascension Island.

Stedson drew attention to the documentation and policy framework which exists to address Health and Safety issues associated with volunteers. Information packs produced by the Conservation Department are considered a model by other South Atlantic territories. These are available online: www.ascensionconservation.org.ac/volunteers.htm Volunteers are engaged in species monitoring and work on cetaceans, turtles, endemic plants, control of exotic species, beach clean-ups and path maintenance. He concluded that volunteering works well as part of an integrated work programme. Morale was maintained with a traditional Ascension fish-fry by way of a "thank you". It was agreed that thanking volunteers in some way was an essential element of a successful volunteer programme.

Dace Ground, from the Bermuda National Trust and UKOTCF Council, provided a summary of how UKOTCF had worked with partners in territories, and discussed future collaborations and the

role of UKOTCF

Dace reported that, initially, UKOTCF had worked mainly to co-ordinate the efforts of UK-based member organisations to help meet the needs of those in the Territories. Some of the many examples of successful UKOTCF activities which had depended, at least in part, on the co-ordination of volunteer input were listed. These included several major projects initiated by UKOTCF efforts, but which were now more associated with the UKOTCF member organisation that had subsequently taken on the lead role.

With the successful development of a number of Territory-based organisations over several years, UKOTCF had encouraged its member bodies to develop stronger links between each other, so that the UKOTCF secretariat needed to play less of a role as intermediary. The Forum re-directed effort to widen the involvement to include individual volunteer experts (mainly scientific) as well as member organisations in work to support local partners.

The work by UKOTCF with partners in the Turks and Caicos Islands provides an example of this, elements include (but are not limited to):

- Identification, with the local community and TC National Trust, of the potential and needs for conservation, interpretation and sustainable use of the areas adjacent to the North, Middle and East Caicos Ramsar site;
- Darwin Initiative project to investigate the natural and other interest of these areas;
- Work, supported by OTEP and many other bodies, to use the Darwin results to implement interpretive and conservation facilities;
- Facilitation, with TCI Government and stakeholders, of a strategy to implement the Environment Charter, a pilot for other territories also;
- Work on the TC National Trust Primary School Education programme, “Our Land, Our Sea, Our People.”

In recent years, UKOTCF has been investigating the potential for broadening its range of volunteer specialists, in addition to those in scientific, conservation and education areas, whose activities were well established. One such volunteer was Steve Cheeseman.

Steve Cheeseman, in *Notes from a “non-traditional” UKOTCF volunteer*, gave an insight into volunteering from a volunteer’s perspective. Life-

skills, time and the need to be challenged provided him with the impetus to participate with UKOTCF activities.

Steve outlined his work in the Turks and Caicos Islands – finishing the Middle Caicos Conservation Centre – and demonstrated that a skilled and motivated volunteer can be an invaluable asset to an organisation. Challenges which Steve overcame included transport, construction and finishing – in many cases the work was physically demanding and far from glamorous. The facility is now used by visiting scientists and others. As volunteers, they were also asked to respond to reports of illegal development next to the TCNT site at the Indian Caves, effectively representing an extra set of eyes and ears for local staff. Steve also suggested that there may be a need to develop a database of volunteers with their skills and availability for project based work. Steve emphasised that volunteers should be prepared to pass on skills and knowledge to local counterparts, and there was agreement that international volunteers should only be considered if capacity was not available locally.

Jennifer Gray, of the Bermuda National Trust, commented on the crucial role of 300 volunteers in the *Buy Back Bermuda* campaign. Linking up with existing well-established volunteer organizations, such as Earthwatch and Voluntary Services Overseas (VSO), was also discussed. VSO does not operate in UKOTs, but experiences of linking with Earthwatch had been positive.

The importance of having a reward or recognition scheme for volunteers was also widely agreed. Several partners in the territories had already indicated interest in UKOTCF developing the volunteer work. The Forum already receives offers of such help, and is working to develop a programme putting these together. Further discussion stressed that there should be a well-established volunteer scheme, with a structured application process, and contracts should be signed before the volunteers started work, setting out expectations and defining work. UKOTCF was encouraged by many to develop this coordinating scheme further, to marry up requirements with volunteer human resources.

Joined-up Thinking – institutional arrangements for environmental management

This session recognised that a joined-up approach

is essential for sustainable development generally and conservation management in particular. It is built into at least three articles of the Convention on Biological Diversity.

We are pleased to note that the UK Minister for Biodiversity, Mr Huw Irranca-Davies, was able to give his address (given in full in Section 11), which alludes also to joined-up work, within this session.

Conservation organisations operate through partnerships with other organisations which share the same aim. Gina Ebanks-Petrie described how the Department of the Environment, of which she is the Director, and the National Trust for the Cayman Islands work together.

Liz Charter (Chief Wildlife and Conservation Officer of the Isle of Man Government) identified significant legislation, government procedures, and policies in the Island development plan, and tools such as the Memorandum of Understanding, which have assisted in getting the Isle of Man Government to develop a more joined-up approach to the environment.

Michael Gore provided a valuable insight into the role of the Governor in environmental issues, recalling his experience in the Cayman Islands in the 1980s. He emphasised that how much a governor gets involved in conservation depends on the individual. The link between good governance and good environmental practice gives a governor a platform for involvement if he or she feels the situation warrants it.

Alan Mills, a consultant who has worked in the South Atlantic as well as in the Caribbean, illustrated the value of GIS in information sharing on

Ascension. GIS technology is adaptable, and enables a joined-up approach through multi-layered mapping. He emphasised the importance of maintaining up-to-date datasets and sharing benefits with other community partners, in his case (for example) mapping road traffic accidents for the local police.

Mike Pienkowski briefly explained the state of the UKOTCF web-database, which is being updated and further developed, but without removing accessibility to it by users during this work.

Colin Hindmarch introduced Marimar Villagarcia, from the Canary Islands Marine Science Institute, who is collaborating with other tropical and sub-tropical overseas entities of EU countries in the NET- BIOME project, along with UKOTCF and others. The first stage is information sharing, but this is expected to lead to further bids for funds for joint research projects.

The session Framework Document refers to the recently formed UK Government Inter-Departmental Ministerial Group on biodiversity who have been asked to “adopt a truly joined up approach to environmental protection in the UKOTs and Crown Dependencies , bringing together all relevant departments.....and the governments of the UKOTs and Crown Dependencies.....”. We note that JNCC is going to develop a government strategy which should assist with the joining-up both within the UK and with the UKOTs and CDs. UKOTCF is asking to have an input into this, to progress a joined-up approach, and were pleased that the Minister welcomed this.



The conference in session (Photo: Thomas Hadjikyriakou)

Some Outcomes of Previous Conferences

UKOTCF is sometimes asked what the conferences on conservation in the UK Overseas Territories, Crown Dependencies and other small island communities achieve. Anyone who has tried to answer a question like this knows the difficulty. As participants know and say (see, for example Appendix 4), the benefit is largely the further progress that these conferences stimulate. This may be to inform or inspire work, to establish collaborative initiatives, or other activities, or some combination. The main outcomes of conferences tend (with a few exceptions) to become evident only some years later.

However, we have attempted to put together a first list of the outcomes of this series of conferences. This is inevitably incomplete, both because many outcomes may not be evident yet and because we may not be aware of all that have occurred already.

First, we will outline the background and intended purpose of these conferences.

Background

There are very able and committed personnel working in the UKOTs. However, the numbers and range of skills available are naturally limited because of limited resources. This makes training and exchange of relevant experience vital. The conferences thus centre on capacity-building priorities as identified by government and civil society in the UKOTs, and seek to enhance the effectiveness of UKOT governments and civil society in contributing to environmental management in support of national sustainable development and international commitments.

The first conference was held in London in 1999, linked to the White Paper on UK and the UK Overseas Territories. It was initiated by FCO but, at their request, UKOTCF stepped in at a late stage to help organise. What became the second conference in Gibraltar in 2000 was already in planning at that time, by UKOTCF and the Gibraltar Government and NGOs. The third conference followed in Bermuda, in March 2003, the fourth in Jersey in October 2006 and the fifth in Grand Cayman in May/June 2009, all also UKOTCF-organised. The Proceedings of the Gibraltar, Bermuda and Jersey conferences can also be seen at www.ukotcf.org, alongside these proceedings for Grand Cayman.

The conferences have become recognised as a key element in the delivery of Environment Charter commitments, international commitments and local conservation needs.

Purpose

This has been most recently expressed as: Drawing on similarities and differences in experience, to provide insights into common challenges, leaving participants better equipped to address local needs, and to build a sense of collective identity and endeavour across the territories.

The conferences bring together governmental, NGO and other organisations in UK Overseas Territories and Crown Dependencies, and others who are stakeholders in conserving the environment in these and some similar small countries. The conferences are intended as working meetings to develop capacity, exchange information on best practices, take forward conservation issues that have already been identified and to plan positive actions, as well as integrating conservation into other sectors of the economy, especially in the context of sustainable development and international commitments.

Impact

The long-term impact of the conferences (in combination with complementary activities by UKOTCF and others) is to increase capacity for environmental work in the UKOTs, enabling implementation of the Environment Charters and MEAs, facilitating the exchange of expertise between UKOTs (and others), and providing the stimulus for a more sustainable approach to development.

Outputs/outcomes

The immediate output of each conference is the bringing together of participants for exchange of information and experience at the conference itself, and as a basis for future developments. A second main output, as a formal record of the meeting and to widen (to an international audience) access to some of the experience reported and ideas generated at the conference, is the editing and publication on the Forum's web-site of the Proceedings.

A strong record of accomplishments has now been achieved by UKOTCF and its partners in and through these conferences, which provides evidence of their efficacy. Some of the main outputs and outcomes of the previous conferences are listed below - the list is not exhaustive. It is a little early to recognise, in particular, all the outcomes of the 2009 conference. However, some of the comments on this aspect from the participants' feedback forms are addressed at Appendix 4. These

illustrate the difficulty in assessing the outcomes of such conference comprehensively. Many of the most important outcomes are intangible, or arise from contacts established by participants during formal sessions or in the margins of the meeting without necessarily being apparent to the conference organisers. This is epitomised by feedback on the Cayman conference received from Mat Cottam (Cayman Islands, Department of Environment):

“From this conference, I have: launched the OTEP invasives species databases and awareness project, received requests for copies of Cayman’s Biodiversity Action Plan from other OTs, received project suggestions towards reaching specific NBAP targets (for ghost orchid), seen the results of a cross-territories GSPC initiative in which we partnered with Kew, received the offer of expert assistance to establish a National Collection of insects, met with partners to advance the UKOT regional ENTRP EU bid and obtained exposure for my grant writing book which benefits myself (of course), but will, hopefully, benefit others. I would say that I don’t do things “differently” as a result of the conference – I do things which I could not do “at all” before – e.g. the cat control project. Before Jersey, I did not know how to do this; so I did not do it - at Jersey I networked to find someone who could help. With low capacity, things which I cannot do I tend not to do at all, rather than try to do them badly. As such the conference helps me do “more” rather than do “better”.

Outputs/outcomes/benefits of preceding conferences:

London 1999 (*A Breath of Fresh Air*):

- Demonstration to UKOTs of HMG commitment to them and protection of their environment
- Demonstration of cross-territory support for the concept of Environment Charters, and building momentum behind the Charter development process
- Award-winning awareness-raising/environmental education pack
- Clarification of UKOT-based conservation priorities
- Enhanced linkages among UKOT conservation workers.

Gibraltar 2000 (*Calpe 2000: Linking the Fragments of Paradise*):

- Stimulus to completion of the Environment Charters

- Initial demonstration of commonalities and potential for mutual support with respect to environmental issues in UKOTs and the Crown Dependencies (CDs)
- Practical field workshops leading to enhanced management planning recommendations for various Gibraltar sites of conservation significance and demonstrating the range of management planning approaches available for sites in small territories generally
- Genesis of formal linkages between umbrella NGOs concerned with conservation in the overseas entities of EU Member States (UK, France, Netherlands, initially), ultimately resulting in the formation of the Bioverseas partnership, Net-BIOME project and the European Commission’s BEST proposals to extend the Natura 2000 concept to Overseas Territories on a voluntary basis
- Clarification of UKOT-based conservation priorities
- Enhanced linkages among UKOT/CD conservation workers, and between these and workers in similar small island states
- UKOTCF, RSPB and other partners agree to collaborate on Important Bird Areas book.

Bermuda 2003 (*A Sense of Direction*):

- Demonstration of cross-territory desire and need for the restoration of FCO funding (recently cancelled despite HMG’s Commitment in the Environment Charters) to support environmental conservation projects in the UKOTs, leading to the establishment of OTEP
- Demonstration of continued HMG commitment to the Environment Charter process
- Demonstration of potential of different approaches to Environment Charter strategy development (TCI and Falklands) and implementation alongside St George’s Declaration (Montserrat)
- Stimulus to input to review of existing and potential Ramsar (wetland of international importance) sites across the UKOTs/CDs, eventually leading to further international designations
- Practical field workshops leading to enhanced management planning recommendations for six Bermuda sites of conservation significance (in the most important case, contributing towards the ultimately successful pressure to designate Cooper’s Island as a National Nature Reserve and National Park)
- Demonstration of value of UKOTCF’s pre-Environment Charter ‘checklist’ in reorganisation of Bermuda Environment Ministry

- Stimulus to joint working by UKOTCF, JNCC and FCO, leading to JNCC-commissioned report/database on non-native species in the UKOTs/CDs and support in other areas
- Clarification of UKOT-based conservation priorities
- Enhanced linkages among UKOT/CD conservation workers, and between these and workers in similar small island states
- Generation of projects for potential European Commission funding.

Jersey 2006 (*Biodiversity That Matters*):

- Announcement of continued HMG commitment to OTEP
- Announcement of greater commitment by JNCC to work in support of conservation in UKOTs, and stimulus to subsequent development of current JNCC programme
- Announcement of HMG intention to commission study on funding sources for UKOT environmental projects, to meet a commitment in the Environment Charters
- Stimulus to completion of data-gathering for UKOTCF first review of progress on Environment Charter implementation
- Demonstration of in-territory development of strategies for Environment Charter implementation (TCI and St Helena), facilitated by UKOTCF, and alternative approaches in other territories
- Demonstration of the value of MEAs in enhancing in-territory environmental awareness (Jersey) and the need for more guidance in this area across territories
- Enhanced awareness of the need (and limited resources) for protection of built as well as natural heritage across territories
- Recommendations to improve capacity and develop the tools needed to produce effective environmental impact assessments and strategic environmental assessments in UKOTs/CDs
- De facto launch of JNCC-commissioned report/database on non-native species in the UKOTs/CDs, and demonstration of the desire across territories for these tools to be maintained/updated (ultimately stimulating 2008/9 review)
- Initial demonstration of benefits/success of direct student participation in the conference
- Recommendations for environmental education, ultimately leading to the development and implementation of UKOTCF's cross-territory environmental education project
- Generation of RSPB Caribbean project pro-

posal

- Stimulus to the development of a UKOTCF volunteers programme
- Launch of Important Bird Areas in the UKOTs (RSPB)
- Clarification of UKOT-based conservation priorities
- Enhanced linkages among UKOT/CD conservation workers, and between these and workers in similar small island states
- French partners confirm wish to include UKOTs in the Net-BIOME project that they have been developing for some years and now consider may receive European Commission funding.

Grand Cayman 2009 (*Making the Right Connections*):

- Announcement of enhanced Defra involvement in UKOTs, and new Darwin Initiative funding support for them
- Announcement of Cayman Islands Government commitment to introduction of enhanced legislation for conservation and environmental protection
- Demonstration to UKOTs of increased HMG support for (and joined-up approach to) environmental protection in the territories
- Stimulus to completion of data-gathering for UKOTCF second review of progress on Environment Charter implementation
- Stimulus to the development of a range of territory-specific and cross-territory projects, including on ghost orchid (Cayman), conservation issues/environmental education (Pitcairn), practical conservation meeting (Ascension) and others.
- Formal statement from conference participants welcoming support from HMG and urging further progress
- Clarification of UKOT-based conservation priorities
- Enhanced linkages among UKOT/CD conservation workers, and between these and workers in similar small island states.
- JNCC had a stakeholder steering group meeting of their OT Research and Training Programme - which would not have been possible without the conference.
- Some project proposals to OTEP (and elsewhere) have already stemmed from the conference and the various discussions that took place there.

Section 1: Opening and introduction to Cayman experience

The morning of Sunday 30th May 2009 was taken up with a choice of three field-visits to a range of terrestrial features of conservation interest. An outline of these visits is included in this Section.

The three groups came together for lunch at the QE II Botanic Park, followed by introductions (in two parts) to Cayman conservation issues. These stimulated extremely interesting discussions on issues stretching much wider than Cayman, and focussing particularly on physical planning and influencing. We have included fairly full reports on these discussions in this Section, based as far as possible on verbatim records.

Following a return to the main conference venue (and a planning meeting for student participation and a discussion meeting on the Darwin Initiative), H.E. the Governor kindly hosted an opening reception at Government House. The speeches given then by the Cayman Islands Leader of Government Business and the Minister of Environment start this Section.

We returned to Cayman-centred matters on Tuesday 2nd June, when the National Trust for the Cayman Islands kindly hosted a historical and cultural evening at their Mission House site. We end this Section with information on that event.



Lunch and discussion at the Park (Photo: Dr Oliver Cheesman)

Remarks from The Hon.W. McKeever Bush, Leader of Government Business and Minister of Finance Services, Tourism & Development

for the Opening Reception of the UK Overseas Territories Conservation Forum conference “Making the Right Connections: A conference on conservation in the UKOTs, Crown Dependencies and other small island communities”

Your Excellency, Governor Jack, former Governors Gore and Dinwiddie, distinguished representatives from the UK Overseas Territories Conservation Forum and the Department of Environment, Food and Rural Affairs, other distinguished overseas and local guests, ladies and gentlemen:

It is indeed my pleasure to join His Excellency Governor Jack in extending a very warm Caymanian welcome to each of you and to say that I trust that you will all thoroughly enjoy your time with us.

As you may know, the Government which I lead was elected just over a week ago but I want to assure all those present that we are aware of the many challenges facing not only this country, but all of the countries and territories represented here, in protecting and managing our fragile environment and resources in the face of a growing list of impacts and threats. I would also like to say that our government is committed to taking the necessary steps to ensure that we have the legislative means and policy framework that will enable our environment and natural resources to be adequately protected and sustainably managed.

I have noted with interest that one of the conference sessions on Monday will be on “Climate Change – impacts and adaptation” as this is one of my main areas of concern. Specifically, I am concerned about the way in which climate change and climate variability are expected to profoundly impact small island developing states both regionally and worldwide. While there is still some uncertainty in the precise predictions, it is widely accepted that climate changes likely to occur in our region will include:

1. an increase in the intensity of rainfall but a decrease in total precipitation leading to increased risks of droughts;
2. higher sea surface temperatures and more acidic oceans, both with the potential to significant-

- ly impact coastal ecosystems and resources; and
3. increased storm intensity with higher risks of flooding and coastal erosion.

All of these impacts have the potential to severely disrupt life as we know it, including serious impacts to one of the mainstays of our economy - our tourism industry. I am therefore very keen to see that our country takes immediate and deliberate steps to plan ahead and develop appropriate responses and strategies for adapting to climate change. I have been advised that we have begun this process under the “Enhancing Capacity for Adaptation to Climate Change” project funded by the UK’s Department for International Development, and the establishment of our multidisciplinary National Climate Change Adaptation Working Group which is being chaired by our own Department of Environment. In the coming weeks I look forward to being further briefed on the work of this group and also to learning of the outcomes of your deliberations at this meeting.

I trust that over the next four days you will take this opportunity to exchange ideas and share experiences and that you will have fruitful discussions that will leave you all better equipped to address the needs and challenges in each of your countries and territories. I wish you every success with the conference and I hope that you will also find the time to avail yourselves of some of our warm Caymanian hospitality while you are here.

Thank you.



Remarks from The Hon. Mark Scotland, Minister of Health, Environment, Youth, Sports & Culture

for the Opening Reception of the UK Overseas Territories Conservation Forum conference “Making the Right Connections: A conference on conservation in the UK OTs, Crown Dependencies and other small island communities”

Your Excellency, Governor Jack, former Governors Gore and Dinwiddie, other distinguished overseas and local guests, ladies and gentlemen:

As the newly elected Minister of Environment, I wish to add some very brief remarks to those of the Leader of Government Business, the Honourable McKeeva Bush, firstly to join with him in extending a very warm Caymanian welcome to each of you and secondly to underscore this Government’s commitment to facilitating the conservation and sustainable management of our natural environment and resources.

I understand that today many of you had the opportunity to see and experience first hand some of our unique and beautiful terrestrial habitats and species on the Mastic Trail and in the Queen Elizabeth II Botanic Park – I trust that you found the fieldtrips both enjoyable and enlightening. A few minutes ago you heard the Leader of Government Business mention that our Government is committed to ensuring that we have the legislative tools to afford the proper level of protection to these resources. Specifically, the Government is committed to passing legislation that will provide a comprehensive framework for the conservation and management of our biological diversity – both in terms of species and habitats. Among other things, the legislation will allow us to acquire, through negotiated purchase, environmentally important areas in order to establish a national system of protected areas on

land that parallels our long-established and successful system of Marine Parks.

The Leader also mentioned this Government’s commitment to addressing the challenges posed by climate change. It is now well accepted that the loss of biodiversity destabilises ecosystems and weakens their ability to deal with natural disasters like hurricanes, as well as the impacts of climate change – another very good reason to ensure that we take the necessary steps to set aside areas that will serve as reservoirs of the diversity of species and habitats on our islands.

As previously mentioned, the list of impacts and threats to our natural environment is growing and the challenges of finding appropriate responses are many. It is therefore encouraging to see that persons such as yourselves continue to commit to finding solutions to these challenges through meetings such as this one.

I join His Excellency and the Leader of Government in wishing you an enjoyable and productive conference, and look forward to hearing of the results of your deliberations.

Thank you.



Thanks

In speaking at the opening session, following the Governor's generous welcome, Dr Mike Pienkowski, UKOTCF Chairman, said:

Your Excellency, Honourable Leader of Government Business, Honourable Minister of Environment, Honourable Members of the Legislative Assembly, Permanent Secretaries, Directors, distinguished guests, friends and colleagues from Cayman, many other UK Overseas Territories, UK and elsewhere:

I would like first, on behalf of UKOTCF and all participants, to thank the Governor, His Excellency Stuart Jack, for his hospitality in providing this excellent venue and reception for the opening of our conference. I would like to link to this many thanks to all his staff, especially Staff Officer, Andy Holbrook, for much help throughout the planning of the conference.

We are very grateful also to the Cayman Islands Leader of Government Business, The Hon. W. McKeeva Bush, and the Minister of Environment, The Hon. Mark Scotland, for finding time just a few days after the General Election and their taking up of office to join us, to address and formally to open the conference.

I would like to recognise also, the presence and participation of two former Governors of the Cayman Islands, Michael Gore and Bruce Dinwiddy.

Some people have asked what happens to retired Governors and their spouses. Some, at least, become volunteers and we are very grateful to both Michael Gore and Bruce Dinwiddy who have, in turn, joined UKOTCF's Council and served as Chairmen of UKOTCF's Wider Caribbean Working Group. Volunteer organisations generate a whole range of tasks: Bruce and Emma Dinwiddy could even be seen, yesterday in our conference office, re-starting their careers at the clerical level, by sharing the tasks of preparing conference packs. We thank them.

I will keep these comments brief, but I would like to note that this conference marks 10 years since the first conference on environment in the UK Overseas Territories to be held, in London in 1999. (I say "to be held" deliberately, because the first conference of the present type was already in planning for 2000 in Gibraltar.) The main organiser, with UKOTCF support, of the 1999 conference was Iain Orr, who is here tonight and for the conference. Iain was then with the Foreign & Commonwealth Office and was responsible for many of the initiatives and support from UK Government that we now treat as normal. He is now on UKOTCF Council, and we warmly recognise his contribution.

Thank you for your attention

Field Visits

Sunday 31st May

The morning and early afternoon of the day after arrival was devoted to field visits. These served the purposes of: getting a view of some aspects of the local environment and issues; recovering from travel; and providing the opportunity for informal discussions.

All tours met up at the QEII Botanic Park at 12 noon for lunch and lectures about Cayman environmental issues.



*Bruce Dinwiddy ensures an orderly departure.
(Photo: Dr Mike Pienkowski)*

Option 1 – Mastic Trail (3 hrs)

This tour left the hotel at 8am for the coach ride of about $\frac{3}{4}$ hour to the trail. Then about 3 hours were spent walking part way along the trail and returning, before the short transfer to the Botanic Park for noon. The walking was through woodland rich in various forms of wildlife, with good chances of seeing rare endemic flora. Participants



*Discussions between participants in the Botanic Park
(Photo: Dr Oliver Cheesman)*



On the Mastic Trail (Photo: Dr Colin Clubbe)

were advised: The track is likely to be muddy and possibly flooded. Participants should be keen on hiking, dressed and booted for such conditions, and reasonably fit. More information can be found at <http://www.nationaltrust.org.ky/info/mastic.html>.

Option 2 – Pedro (1 hr) & Botanic Park (2 hrs)

This tour also left the hotel at 8am for the coach ride of about 20 minutes to Pedro, where about 1 hour was spent. A coach-ride of about 25 minutes then took the party to the Botanic Park.

At Pedro the party toured the grounds, viewed a multimedia presentation and traced Cayman's history through that of the "Great House" (www.pedrostjames.ky/). At the Botanic Park, gentle walks allowed viewing of plants, a range of birdlife in the woodlands, flower gardens and pond, and the Blue Iguana rearing facility (www.botanic-park.ky/). Participants were advised: Walking is moderate, and no special clothing or footwear is required, but at this season it would be wise to be prepared for the possibility of rain.



*Some unusual road signs at the Botanic Park
(Photos: Dr Oliver Cheesman)*

Option 3 – Pedro, East End & North Side to Starfish Key (3 hrs)

This coach-based tour left the hotel at 9am. It was primarily a sightseeing trip around Cayman's coastal road with stops at selected beauty points, including:

- Pedro, Cayman's premier historical site;
- the Blowholes, a photographic opportunity of the artistic power of the sea;
- East End Lighthouse to reconnect with the "iron men, wooden ships" history of Cayman's settlers;
- Wreck of the 10 Sails, representing the shipwrecks which lay hidden below Cayman's azure waters;
- Starfish Key, looking back across the North Sound towards the conference hotel.



*Racer snakes on the Mastic Trail
(Photo: Catherine Quick)*

Thursday 4th June

In the late afternoon and early evening of the closing day, participants had a chance to see, from a boat, something of Cayman's marine ecosystems, including North Sound sand-banks and mangroves.



Grand Cayman's endemic subspecies of Parrot on the Mastic Trail (Photo: Dr Mike Pienkowski)



Views at Pedro St James (Photos: Dr Oliver Cheesman)

Some Cayman conservation issues (part 1)

Gina Ebanks-Petrie (Director, Department of Environment, Cayman Islands Government)

During our tour this morning, I was asked many questions centred around the issue of development control and planning. That will probably be my main focus in this talk, because that seemed to be the main area of interest. But, if anybody has a question, please just raise your hand; this is very informal. I realise that it's a very diverse group and I'll just try to answer your questions.

The Cayman Islands are really part of the Greater Antilles. So much of our local flora and fauna comes from Cuba and Jamaica and, to a lesser extent, the Central American mainland. Because we have been isolated for 2-3 million years, with no land-bridge connection to any other bits of land, there is actually quite a high degree of endemism on the islands, both for our plants and our animals.

Fred Burton is going to talk about the plants. In terms of our animals, to give you an idea: we have one endemic species of bat, we have 21 endemic species and subspecies of reptiles, lots of snails and other molluscs, five subspecies of butterfly and 17 endemic subspecies of birds. So, for a small island group, this is quite a high degree of endemism.

Obviously, we have our challenges in managing biodiversity in the Cayman Islands. While we do have a fairly good track record in the marine environment (with marine parks established for some 23 years), the situation on the land side is not nearly as progressive in terms of our conservation framework. And, in fact, even in the marine environment, we are struggling to keep up with the challenges.

For that reason, the Department of the Environment, which is the department I head up, has proposed a comprehensive national law (the Conservation Law) that would actually take care of marine and terrestrial issues under one umbrella piece of legislation. At the moment, for the terrestrial environment, we are operating under a piece of legislation that was passed in 1976. It is called the Animals Law, and that law is a mish-mash of numerous provisions for animal health and welfare. So, in terms of the conservation provisions, it protects all birds, except for domestic birds. It protects iguanas – and that includes, unfortunately,

the green iguana, as the law does not specifically say *Cyclura lewisi*. This is because, when the law was passed, the alien invasive green iguana *Iguana iguana* was not an issue here. So we actually have a piece of legislation which makes a legal problem for us, in that it protects all iguanas. We turn a blind eye to anyone wanting to do what they want with the green iguanas, as they are really out of control here now. They were introduced in about the late 1970s. They are so well adapted to this kind of environment that they do extremely well, and their population has just exploded.

The other thing the Animals Law does is to protect two ponds and two coastal lagoons, including Meagre Bay Pond and Colliers Pond, which some of you may have passed during the tour this morning. Those are essentially ponds that are protected because of their value for bird life. The problem is that the 300 feet of mangrove around the pond, while it has legal protection, is still in private ownership and that really causes us some concerns and problems in terms of protection and management of those areas.

Land ownership on Cayman is a very touchy and difficult issue, and we know that the only way that we are ever going to protect land here is to acquire it and preserve it. That's where the National Trust has come in. The Trust Law was passed in 1987. It set up a provision that any land acquired for conservation purposes by the Trust and declared inalienable by the Trust Council is basically locked away for that purpose, for conservation. Really, in perpetuity because, even if the Trust was somehow to fold, that land would revert to Government but it could only be used for the purpose for which it was protected in the first place.

So it is quite a powerful piece of legislation, and the Trust has done a really excellent job in protecting some parts of the Mastic Trail area, which some of you were on this morning. It owns land in the Central Mangrove Wetland as well, and it has protected forest on Cayman Brac, in the form of the Brac Parrot Reserve. The National Trust, with the help of the Department of the Environment, consolidated two fragments of the Brac Forest Reserve two years ago. The Trust obtained a grant,



*Gina Ebanks-Petrie talks in the Park.
(Photo: Dr Colin Clube)*

and matching funds from Government, and closed a gap in the Brac Parrot Reserve.

But – with all the land under protection, through the National Trust and with the small bits of land that the Government has protected - we are still only looking at about 7% of the total land area of the three Cayman Islands under any type of protection. This new legislation, that we have had drafted now for several years, has been waiting for two administrations to pass. The newly elected one will be the third. We have just had an election, on the 20th May, so we have a very new government, and we are waiting to see what their disposition will be towards the legislation and the things that we need

to advance from a national viewpoint.

So, going back to the legislation, if we get this new law passed, it will do a number of things. It will allow a framework for us to establish a system of protected areas on land that parallels the marine parks that we have. It will provide a mechanism for us to deal with the introduction of exotic species and genetically altered

species. It also establishes a schedule for protected species, which will all have to have conservation plans written for them.

We have actually gone a little bit down the road with that already, trying to pre-empt the legislation. The *Blue Iguana Recovery Programme* has a conservation plan, which is very well advanced. That has been in a collaborative form with the Trust, the DoE, partners from Durrell, the Iguana Specialist Group, San Diego Zoo, and RCF. We meet once every 5 years and go through that plan, update it and examine the goals.

I'll stop there, and ask if anyone has any questions.

Discussion

Q: What is the objection in Government to the Conservation Law?

A: The main objections that we had when we put it out for public comment were centred around ways of protecting land. We have had to make it very clear that the only way we will be able to protect land is to acquire it, through a negotiated process. There is no compulsory land purchase provision in the legislation. The other issue that we have had is that it will slow down development. You probably think that that would not be a bad thing. But, for some people in Cayman, that is a bad thing. Under our planning and development legislation, there is no requirement for

environmental impact assessment. Because we have put provisions in the law for environmental assessment, this raises other objections. While we have had environmental assessments carried out in Cayman, and we are working on one now for the new port, there is no process that's written, so that it is clear and unambiguous. Therefore, at present, a developer does not know the process. So we have put environmental impact assessment provisions in our draft legislation. It will require any agency who is basically making a decision or agreeing to a plan, or taking any action that has the ability to impact the environment, to consult with the National Conservation Council. So that's another reason why I think that the law is not really

embraced. The law also puts in place proper provisions for the Conservation Fund, which exists now as a nominal Environmental Protection Fund. This sits in the general treasury, and unfortunately, the National Trust, the Department of the Environment and other conservation organisations cannot readily access that money, because it is used to balance the books of the Government. In other words, it is used as a cash reserve. The Public Finance and Audit Law requires the government to have something like 90 days of operating capital. And so that fund, as far as I can understand, goes towards meeting those obligations. Thus, it is not available for the purpose that it was established for. So the draft Law actually establishes a Conservation Fund, and we are having discussions about how we transition from the Environmental Protection Fund to the Conservation Fund. The Conservation Fund would basically be managed by a board of directors that would include public and private representatives. I think that would be a far better and more workable situation, because we are going to need money to buy land if we are going to protect it.

Q: The Nature Conservancy has developed another mechanism of protecting land, through giving tax incentives. Has that been tried in Cayman?

A: The National Trust has actually made use of the Nature Conservancy in that way and the American citizens who donate land to the National Trust who live here, for example, can make a claim of some kind. I don't understand how the business part of it works, but the tax part of it gets reduced through the Nature Conservancy. So that has already been tried.

Q: How long has the Conservation Fund been in place, or is it the Environmental Fund?

A: It's the Environmental Protection Fund. The scheme was first put in place in the budget of 1997.

Q: Is that the Fund utilized normally to balance the Government's shortfalls? Is there a case where it has been used other than that, in the history of the Fund?

A: In the history of the Fund, yes. When it was first being collected, it was used for a variety of things that people thought were environmental. Some of that money was actually used to clean up after Hurricane Ivan. I think \$9 million in the Fund paid for the clean-up after Hurricane Ivan but, prior to that in the early days, it was used to clear a

channel in the reef, build a sports field, a variety of projects that really did not meet the criteria we had established for the Fund.

Q: Isn't the role of the Governor significant? Can't he just give the funds to the National Trust?

A: No, the way that the fund is set up was established by the Finance Committee. I don't know how it works in the Turks and Caicos Islands, but we have a committee of all of our elected officials in the Legislative Assembly that basically deals with the budget, and the appropriation of Government money. And so any funds that leave the Environmental Protection Fund have to be appropriated by the Finance Committee, which is a committee of all the elected officials

Q: When you say that it is used to balance the budget, you just mean it's held in reserve, not that it's spent?

A: No, not spent; it's held in reserve. So, last time we looked, there was \$21 million or something in the fund sitting there and we need it.

Q: In Montserrat, we have the same system of financial management. We don't have an environmental fund set up but, if we were to set it up at the moment, it would go into that consolidated fund. We are trying to get legislation now to make it separate. If not, the money is basically used by the Government to balance the books. So, if there is a shortfall, they use it to top it up and then they are supposed to re-imburse, but, once it happens... It would go to an appropriations committee as you said.

Q: Is there a lot of available land that could be set aside? I mean Crown Land that could be set aside for protection or is there none left?

A: There is not a lot of Crown Land left on this island. There is still a significant amount of Crown wetland on Little Cayman, but not on this island (Grand Cayman) and the Brac. If we want to protect dry forest or shrubland, which Fred will talk to you about, the dry forest and shrubland being the most biodiverse area we are looking at, we need to acquire it.

Q: Is it private or is it Crown Land?

A: It's mostly private. Having said that, the Crown has just given, or leased, to the National Trust,

196 acres of dry shrubland in the East End of the island, which will form the core of our Blue Iguana Reserve.

Q: What's been happening in Turks is, even though we have protected areas that are set aside as nature reserves, they have been damaged. These reserves are [in theory] totally off-limits unless you have a permit, just to preserve the species and habitats. I don't know why we don't pressure the Governor finally to transfer the rights and properties to the National Trust, so that the Government can't come in and steal a little piece for this development or sell a piece to that developer. That would actually force their hand to hold it for its intended purpose.

A: In Cayman (and possibly in other Territories), the Governor can't hand land over to anyone. That has to be done through either the cabinet or the Legislative Assembly.

Q: Even in Caribbean islands where there is a lot more protected land, that hasn't been terribly successful unless there is a process of engaging private landowners and people. I'm a bit sad to hear you say that the only way in Cayman is to acquire land. Are there no other strategies such as working with public and private landowners to have a more balanced, sustainable-use, conservation approach. I can't see that you are ever going to be able to protect everything.

A: Yes, you are right. The law does actually allow for conservation agreements that we can sign with individual landowners. It's just that the culture of landownership here is such that that certainly would not be the way that one would set out to protect land by choice. It's not saying that you wouldn't ever come across an individual landowner who may be willing to co-operate with you and manage their property for a particular purpose. So the law does allow those conservation agreements to be signed between the Crown and individual landowners where it does not have to involve complete purchase of the land.

Q What about a viable budget?

A: Well the budget would have to be through this Conservation Fund that we are proposing in the legislation, or some hybrid of that and the Environmental Protection Fund .

Q: You said that the Government recently leased 100 and something acres to the National Trust.

Why wasn't it transferred directly rather than having a lease?

A: I don't know the answer to that, but at least it's a 99-year lease. I think maybe it was just a political decision; they gave a 99-year lease and that is what we've got.

Q: On the question of conservation agreements, do they just last as long as the owner lasts, or do they stay with the land?

A: They do stay with the land. We have a provision in the legislation that actually makes the conservation agreement continue on with the land.

Q: We have heard some instances where the developer or government wanted to acquire certain parcels of property for different reasons, for example if they were expanding the airport or were building a road and they needed to get a piece of land. Where they would swap? Would they actually give the landowner sometimes a better piece of property somewhere else, in exchange for that piece? I don't know if there is even enough land here to juggle like that. For example, for the dry forest area that you really wanted to acquire that is privately owned, would they be willing to give you some of it or half of it for another piece of land that they might like.

A: That's actually not easy to arrange here. The Crown does not own that much land here anymore: that's the problem. Even the National Trust has looked at that particular formula for land in the Mastic Reserve that we want to acquire, swapping land for another piece of land that we purchase and give the landowner, and we have not been successful in that either.

Q: Would it be true that landowners are hoping for development value so the planning system could play a fundamental part in reducing those expectations? If you have a strong planning system that was invoked, which made areas out of bounds for development and available for other sustainable uses...

A: The other thing about a strong planning system is that it incorporates some type of conservation value within development projects themselves. That could be effective if we had the planning mechanisms to underpin that type of development ethic. The problem is that our planning legislation is very weak, and the development plan is



Green Iguana (Photo: Dr Oliver Cheesman)

inadequate. It's a highly political process to get the Development Plan revised, so I think we are working on the 1997 plan, I think that is the last time it was revised. The law says we have to revise that plan every 5 years, so we are 2 or 3 cycles out of that. It's just such a political hot potato that no-one really wants to take it up.

Q: What I really don't understand is that we are all British Overseas Territories, but we act so separately. We actually end up with different laws and different administrations that are beneficial in some areas but they are not in other territories. Why can't we all just come together and adopt the ones that are beneficial for us throughout, work together as a unit?

A: I can't answer that question; I'm just trying to deal with my little patch.

Comment from former Governor Dinwiddy: The answer is: it is just too late. Each territory has its own constitution, and the constitutions have developed in different circumstances in different territories through the decades and even longer. There is just no way now of getting together, or the territories getting together with London, and saying "let's all have the same constitution".

Comment from the floor: Ours is about to be dissolved, so we'll be at the bottom. We have to start over as well, so we can do it together this time.

A: We have just passed our new constitution. Does anyone else have any other questions? Is there anything else important that I should say before I turn over to Fred?

Q: What about mitigation and environmental impact? Has there ever been mitigation in place?



Grand Cayman Blue Iguana (Photo: Dr Colin Clubbe)

A: Yes, we did work with one developer. Mitigation is a strange thing, because the mitigation was actually for destroying seagrass, but we ended up getting mangrove in return. This was because the Crown owns all the seagrass, so we actually ended up with a type of a compensation. It was actually a 21-to-one ratio, which was very high. The Botanic Park is mitigation for a development project on the West Bay Peninsula in the 1980s, so this land was acquired by the developer and handed over to the Crown in compensation or in mitigation for the destruction their development caused....

Q: But these were one-off events?

A: Had to be done, correct.

Q: If you actually do manage to change the law or get something that is actually workable, I could imagine that a lot of private landowners are just going to start developing and the bulldozers are suddenly going to move in. Is that a problem you can foresee? I imagine a lot of private owners are going to do that, rather than allow their land to be protected or managed.

A: They would have to get planning permission to do that, because it does require planning permission to clear land with a bulldozer. Now that doesn't mean that we don't chase the bulldozers on a regular basis, because we do. However, would it be a widespread response? It is actually illegal to clear land with a bulldozer without planning permission, so hopefully that would not happen.

Some Cayman conservation issues (part 2)

Frederic J. Burton (Director, Blue Iguana Reconvert Program, Grand Cayman)

Many plants are absolutely endemic to the island. A couple of years ago, I did a Red List of the entire native flora funded by OTEP, through the Department of the Environment. It was a bit like writing some kind of a Doomsday Book, I think, because there was a horrible feeling of describing natural vegetation communities and all these wonderful plants on an island where they are disappearing right in front of our eyes.

The two really diverse environments that we are working with here for plants and animals (I'm just talking terrestrial, of course) are the dry forest system - this is like the Mastic reserve some of you walked through - and the dry shrub-land community, which we have a little bit of in the park here, where the giant agaves and blue iguanas are.

The forest has been a focus of protection. A lot of the Trust's protected areas are in dry forest areas. It is the easiest kind of habitat to raise money to buy land in, because people understand generally from mass media that the forests are important. People have even heard of dry forests - they have definitely heard of rain forest. But who has heard of a dry shrub-land? You know it's like the poor cousin. We have been using the blue iguana and this whole flagship species approach as a strategy to try and get shrub-land protected, because it is desperately under represented in our protected area system - up until the agreed land lease which we are hoping to sign in the next couple of weeks.

The Red List process was a desk exercise, because we had already done a lot of the basic research before. We did a big biodiversity mapping exercise in the early 1990s, and basically mapped the native vegetation communities over all three islands. We went to ground-truth them, and developed a comprehen-

sive database of species abundance throughout all of these different habitat areas in the islands. It was an enormous chunk of work and we were able to use those figures to estimate actual population sizes of the vast majority of the native plants.

That's the kind of starting point to be able to do a really proper Red Listing, because then you can look at deforestation rates historically. You can ask what this population is, and would have been if you had this much forest, and this much woodland left back then; you can look also at the development projectory, project forward a bit, and say where do we think we are going?

Well, where do we think we are going? Three generations ahead for an ironwood tree puts us past the hundred-year threshold for Red Listing. So, mostly we were looking at 100 years from now, and we were looking at what's happening in the islands, and we were making development-type scenarios and exercises. And it's just extraordinary: it doesn't matter who you talk to, whether its somebody at the Department of the Environment, somebody at the National Trust, somebody at the Finance Department, whoever it is, everybody really sees the same thing happening. By the end of this century, there will be no native vegetation communities on



Fred Burton talks in the Park. (Photo: Dr Colin Clubbe)



Grand Cayman Blue Iguana "Tootsie" distracts participants from the discussion. (Photos: Dr Colin Clubbe [above] & Dr Oliver Cheesman)

any of the three Cayman Islands, except whatever we have managed to set aside and protect through a protected areas system.

The human population is increasing, doubling every 10 to 12 years; we have got 60,000 people on this island now. Another 10 years and we are going to have 120,000 people; there is nothing to suggest that that is not going to carry on happening. Half of this island is completely consumed by human activities now: the other half will be gone within that 10-year period. On Little Cayman, land prices are higher than they have ever been before; the speculation has started. Cayman Brac's dry forest is just being bisected by roads. It's just not a cheerful future we are looking at. There is no real reason to think that the underlying causes for this are going to change at any time soon. So, the Red Listing stuff came out looking rather grim. It came out so grim that I looked at these statistics, and I sent them to Colin Clubbe, and said: "I've made a mistake, figure this out for me will you?" Colin wrote back to me saying: "I don't think so; it always comes out looking like this".

Forty-six percent of our native plants are threat-



ened, 20% are critical, 15% endangered, 11% vulnerable, 32% least concern, 21% data-deficient. So, the real endangered number is going to be a lot higher, because we are missing information on a lot of data-deficient species. It feeds very much into Mat DaCosta-Cottam's and the Department of the Environment's work on Biodiversity Action Plans for the Cayman Islands. Several of these endemics are having Action Plans written for them. One of the things I am going to be talking to you about on Wednesday is this thorny question of how on earth do we resource doing all of that. I am not going to go on much more. I do want to say that this book, which is the Red List, (and it's also got the habitat classification in the back) is available. A few people were asking me where they can buy it. Well you can buy it here, C\$20 cash sales; you can pick up a copy of the book, if you like.

Discussion

Q: Do people in Cayman know how many trees are in danger?

A: We did a lot of publicity about this. I don't know if you find the same thing in TCI, but what we tend to do here, we have a big splash. We put it out in the newspapers, we get on the television, we put it on the radio, we did all of that. Then we have a book launch, and we go to the bookstore, and we sign copies, etc. And we get about 20 or 30 people, and they are the same 20 or 30 people we see at every one of these functions, no matter what it's about. They are the people who come to the talks. It's not really reaching into the community, and I think we are struggling with that, more and more here, because we have got such a diverse community. This is an island where more than half the people living here don't come from here. And there are people from the Philippines, and people from Honduras, and people from just about anywhere you care to imagine. And then there's a couple of very different generations of Caymanians, the young Caymanians and the older Caymanians, and they've got a very different view of things, they get their information in different ways. We are not, I think, reaching a high percentage of the population here, with this message.

Q: If people would realise that the reason they are here or they come here is being destroyed... I mean, they came here because it is beautiful, but they are destroying the natural beauty, perhaps because people are selfish by nature. Can't you just lock the whole island down and not allow more development. If you tell them, the people that are here now, you don't want to allow any more development, that's it, that's how it is going to be. Do you think people that are here would then go for it? Maybe you could get enough signatures and stop it.

A: I think it's a discussion you need to have with our new Leader of Government Business - I'm sure that he would enjoy it.

Q: Let's think about it, this beautiful garden here. Fred, how much of this we are looking at is native?

A: From this viewpoint, with the tent cutting off the top canopy, I don't see anything native at all. But I think I should defend the Park a little bit. This is a very small percentage of the total area of the Park. Everything inside the woodland trail has

been left alone, and a good deal else besides. Here mostly, where these exotics have been planted, the native trees have been left as a top canopy, so there is still some wildlife habitat worth in it. I am not a great defender of pretty flower gardens in natural areas, but as those things go, this one has been done quite sensitively, and it's fairly local in its impact. The park is more than 70% retained in a natural state. And I think that is probably a very good compromise, given that we need to try and encourage people to come and see. And we could even use these flowers a little better as a sort of bait. We could certainly use the iguanas as bait and the parrots as bait to bring people in and talk to them about things that they wouldn't come looking at otherwise.

Q: That wasn't an attack on the Park, but it shows the problem of saving the Red Listed species for people. It's not really going to bother most of us if several of those species go extinct, because they are not in our gardens, they are not what the tourists come to see, they are not a problem, or they are a problem but they are not our problem. So, I think that is the human dimension and it is a very separate dimension from the biodiversity problem that we have.

A: It's also about what you see. I mean, if you go back to your hotel and look around, and you will not see a native plant in the landscaping – not even the grass. The weeds may be, if they are pan-tropical weeds. The trees come from everywhere except here. And it's that way, in almost every developed property on this island. The whole concept is of what does a yard look like: it's got to have hibiscus and bougainvilleas, and these things they call crotons that aren't crotons (they are *Codiaeum* or whatever it is). It's almost like it's been programmed into people's minds - this is what a yard should look like; these are the flowers we have around us. It's not to say that we can't change that. I really do believe we can change that. Tucked away in the back of the Park here is a native tree nursery. It's a joint programme with the Department of the Environment, the Botanic Park and several different community groups. We are trying to change that equation a little bit, so that people entertain the possibility that they might buy a native plant and put it in their garden – because some of them are really beautiful, some of them produce flowers, they grow a lot better, and they need a lot



Above & below: Endemic banana orchid, Botanic Park
(Photo: Dr Oliver Cheesman)



less maintenance. There is an interesting level of take-up on that from developers and architects. I don't know if Mat DaCosta-Cottam is going to be talking about this later on in the conference. (Mat: Maybe)

Q: Have you had a problem with any sort of invasive species, or plants dying because of the vegetation that was brought in, like maybe bugs or whatever.

A: Yes and yes. Actually most of the real invasive problems we are having that are affecting plants are other plants. So we've got huge stands of *Casuarina* growing along the coast and laying down these carpets of dead needles that inhibit germi-

nation of other species. We've got huge ranks of Pacific *Scaevola sericea* growing all over coastal beach ridges and sands, totally choking out any other sort of vegetation. We've got logwood running rampant. We've got *Leucaena leucocephala* running rampant. We've got a bunch of plants that just do this. They take over an area of land and stop anything else from growing. We also have all kinds of insect pests here. The Department of Agriculture is trying to do integrated pest studies; there are even some insects that have been brought in to control other insects – which makes me slightly concerned. So, all of that's going on, but there is basically not a lot of information about what was here before and what is here now, because that's been going on for a long, long time.

Q: There are two things. First of all your projections: there is an awful note of resignation in that, and I agree with that. It's the sort of thing that the Millennium Ecosystem Assessment says, as it's common for the world to have these problems. We have to tackle some core issues. You also mentioned two core issues. You mentioned over-use, and you mentioned population. And they are going to have a dire effect on this small island. But they are also having an effect on the world. Now, we also talked about rule changes. Bruce [Dinwiddy – in a response during the discussion following the previous presentation by Gina Ebanks-Petrie] mentioned that the scene had been set. And to a certain extent it has, but there is always an opportunity to change those rules and, in fact, if all of these islands have similar problems. However, you address them in different ways, with different legislation, with different mechanisms, and have different rates of success, and don't have the mass effect to make them work, by following through with proper controls, and enforcement, then you have to think up at a higher scale. Now it just so happens that the European Union has a new sustainable development strategy, which has 3 clauses in there which meet most of our needs. So the policies work systemically, through all layers of government policy. The third thing is to incorporate the value of ecosystem, ecosystem services, into the economic decision making. It's there, in principle, and it behoves a group of us here to say well, its not good enough just to accept the way things have been in the past, and just to accept the trends. We have to say what are we are, and that we need to do something different and ask how we use these high level policies: how do we link and push things forward? And you do it corporately. This is a big group. You get together and you connect; you operate in terms

of regions, for regional interest; you operate in terms of themes, to address particular issues; and you do it that way. Now is the time to be bold, and not to be dashing about doing a chaotic number of things, sometimes in opposition. For instance, do the groups of islands collaborate over issues that are common? That will build strength. Because, if you don't, if you operate as individuals, you are going to be prey to the big corporations, planning organisations, development enterprises, they are going to make you look silly. I know; I was a planner for years, and they can do that anyhow, even with powerful organisations. So my answer would be, don't forget about individual issues, continue with them, but address the big problems.

A: I certainly say continue with the individual issues as well, because who knows how effective or ineffective the top-level approach would be. But certainly those are interesting ideas. One thing I would add to that is that, certainly in a small Caribbean island political situation, the kinds of things you are talking about are quite sophisticated politically for what is in scale here, which is effectively a small town council. And there's a lot of resistance to pressure from outside. I'm not saying don't try anything like that, but sometimes these things backfire here when people think 'Big Brother' or whoever it is trying to tell them what to do.

Q: What have we got to lose? In a few years it's going to all be gone anyway. There are so many threat levels, they are so high and we are losing to them in the short run. I mean what have you got to lose? You are losing them already. It's a race against the clock.

Q (from previous but one questioner): Can I just clarify my point? I wasn't saying accept the notion of Big Brother. I was just saying you determine the rules. You fix the relationship, you determine the links, and you make the running.

A: Yes, but where's the power coming from? The thing that is missing here, and I think is missing quite widespread, is the kind of level of focal community support that you need to get the power base to make things like that happen. It's interesting here recently, that there's been some public agitation, which is very much not the culture here. This is a very non-confrontational society; people do not like saying "you are doing wrong", nor "I don't believe in what you are doing." It's more a matter of whispering behind someone else's back and all this sort of thing. But we had a situation where

government was about to put a road through the middle of a forest. I think actually Lilian Hayball is going to be talking to you all about that, so I don't want to take her territory. However, basically what happened was an anonymous website sprang up and it was very interesting, for all of us, to see the level of participation that suddenly appeared out of nowhere. We never thought so many people cared about one little environmental issue like that. And it was enough to make politicians back off and at least temporarily stay execution. It certainly made me think that there is an unexpressed potential for very powerful environmental advocacy coming out of the general community here. We just have to learn how to tap into that. Because people are afraid to speak, sometimes with justification, sometimes just because it's the culture. I don't know if we can find the keys to unlock that. If we could, then maybe some of these big ambitious policy ideas could gather some currency and some credibility. Because the forces lined against us are very organised and very well resourced.

Q: On that point, does the National Trust have a campaigning remit. There is fertile ground to work with?

A: Yes, and it does. I worked full-time with the National Trust as Environmental Programs Director for a number of years. We always struggled with balance. On one hand, we could be friendly and cosy with the government so that the government would do good things for us – they have the power to do a lot of good and they have the power to do us a lot of harm. We wanted them to give us money. We wanted them to give us land. We wanted them to back us up on all sorts of issues. And if we were nice to them, they helped. And then we discovered that the government were doing various bad things, so we decided to take them to court. And then we ended up in Grand Court; we won the fight and the Government changed the law so that the court ruling didn't apply any more. And then the Government cut off the Trust funding. So we are always playing this balancing game between being advocates or not. One thing really struck me when we met in Gibraltar a number of years ago, when John Cortes was talking to us: this incredibly mature relationship, in Gibraltar, between the NGO and the Government, where they could agree, and they could agree to disagree, they could challenge each other and still talk to each other. We are not there yet; the Trust has tried that game and it really did not work. I think it requires a kind of maturity of politics that hasn't really had time to develop in



Conference participants visit the native plant nursery at the Botanic Park (Photo: Dr Colin Clubbe)

some of these areas.

Q: So why not let the people decide on all issues, like where development is concerned? Why not ask the people for their consent or their vote? If they vote largely for it, let it go through; if they don't, then let the people speak. If you had enough signatures, that could make a difference, or, you could use the internet, start websites on all major developments that were threatening the environment, to get the people's feedback. Because government always does what the majority of people want.

A: I wish that was true.

Q: A lot of things happen and people don't know about it.

A: We did a national exercise here, we called it Mission 2008. Now we're in 2009. It was 10 years before 2008 that we sat down and said: let's have a national vision. Let's decide where we want this island to be in 10 years time. We had all these community subcommittees. Everybody who had anything to say contributed. We produced this document, and it had environment written all through it. And that was a very strong vote, if you like, from the people. I don't think that anything in Mission 2008 has been implemented.

Gina Ebanks-Petrie: I have to say, in terms of the national conservation legislation, the government itself did have focus groups on what the community thought, and at all levels and all ages. The community supports the legislation. The government failed to put it to the Legislative Assembly.

A: The government is responding to special interest groups.

Q: Does the government respond to the opposition over here? We don't have any opposition in Turks and Caicos Islands, so that doesn't count, but I mean over here. Does the government respond to the opposition?

Gina Ebanks Petrie: The government does respond to the opposition, but really the government and the opposition are not all that different. They are both looking at this issue from the political angle, and it's still a vested interest situation, whether it's the opposition in power or the government.

Comment from the floor: You need some green party leaders

Comment from the floor: Yes we do, I was just going to say that we have the wrong people in power.

Q: I wanted to ask you if there was anything in the international dimension. After all, the majority of the people are here from other territories, from the UK, from other European countries and so on. It has struck me over the years: can anybody remember British Ministers, when they are talking at meetings of the Convention on Biological Diversity, who have ever spoken powerfully and emotionally about successes and failures in biodiversity in relation to the UK Overseas Territories. I don't think they do. What you will find, and I don't want to queer Eric Blencowe's pitch with this evening's talk about the Darwin Initiative, but the Darwin Initiative is a marvellous one for the UK making a contribution to the protection of global biodiversity. But that is in a scenario where the UK seems to look at it from the viewpoint of: well, we've trashed an awful lot of our biodiversity; biodiversity is elsewhere; it is not in the UK; therefore we have a responsibility to help elsewhere. Well, part of the elsewhere is here, in Cayman, and in other UK Territories, and do you think that would have any effect in Cayman, and in other territories, if the good stories were told? And there are good stories, like the Blue Iguana, like the Bermuda Cahow, like

the Millennium Gumwood Forest in St Helena. There are very good stories to be told, but they can be told only honestly if you are also prepared to highlight the dangers, like the extent of native fauna and flora which is under threat. Do you think that would have any contribution to helping to affect public opinion and the behaviour of elected politicians in Cayman?

A: Yes, I think so. I think we need to work on the techniques of delivering that message. It's not my area of expertise, but I do feel that we are not getting this information out to people in the ways that are effective. We are not putting it on to their radar screens. People are getting information in so many different ways, and it is changing so fast. We tend to rely heavily on the mass media, and I think we are missing too many targets. I think we are not reaching the people we need to reach. We have got the messages; we think most people believe in what we believe in if we communicate with them. I don't think we are really communicating with them at the level and depth that we ultimately need to do. That's just a growing feeling I have and its getting more complicated on that side of it. I remember, many of you are familiar with Rare Centres campaigns in the Eastern Caribbean using flagship species, and very similar to what we are doing here with the Blue Iguana. In fact, I think that is probably what inspired us to do what we are doing with the Blue Iguana. The idea is you reach everyone; so, for example, all of St Lucia's folk, directly or indirectly, to every single human being. And that makes a difference. I don't think that happens here with anything. The closest I saw to it was somebody took a photograph of a snake eating a green iguana the other day and it went viral on the internet. Everybody I spoke to that day had seen that photograph and wanted to know how big was the snake and how big was the iguana. And I thought: WOW! If we could get messages out like that, that went viral like that, then yes, people would say "the national conservation law needs passing". How do we present that way? A snake eating a green iguana in a picture on the internet, that's the connection thing that we need. We need to find a way to do that better.

Comment from the floor: Good afternoon. I will tell you what we have done in the British Virgin Islands. We had a problem with one of our islands, Beef Island, where some development was approved by Government. So, to start with, the BVI Fishermen's Association got involved. We started crying out to the people because the environmen-

talists needed support. So we got out to the people, which was the lay people. We held meetings, we encouraged people, got on the radio, newspapers, we got all sorts of people getting involved, we got flyers, had rallies, all sorts of things. Sometimes, just a handful of people came out, but that handful meant an awful lot, because the word got out, people were on the outside listening. We started working, working and working. We got more and more people involved. Of course, a lot of people there worked for government and, once you're working in government, you are afraid to take a stand. Once you have large parcels of land you are afraid, once you have businesses you are afraid, because you figure they are not going to pass or approve whatever you are doing. I worked for government and I resigned. Not being afraid, you have to have, excuse me, you have to have some guts, or some people would say you have to have some balls. Just get out there take a stand and just don't be afraid. Pray to the Good Lord: let it be. What we did, once we got out there, we got various different people to act together from all over the world, assisting us once we were going. We went to court two times and this is the last time here at the court where the judge is going to make a decision on what the opinions are, what the judgement is regarding the issue. We got people from all over. We got 18,000 signatures I don't know maybe some of you folks are here.

(Other Questioner): Your population is 22,000?

Comment from the floor continues: This is what we got from all around the world, so this is something that all islands can do. People are afraid to take a stand, but you have to stop it because of the generations to come. If you don't protect what God has given you now, we are not going to have anything, because everybody wants to be like America, to develop and have this and have that. We have it all here. Well all the natural Earth, we have what God has given us for our environment. We must take a stand and protect it and stop being afraid. We are still working on it right now. The people must get together, swallow their pride, pray and the Good Lord, I guarantee, you will help. The politicians – we went to see the politicians – some were running behind that tree, some were running over there – while they were running we got together, you go that way, you go that way, you go that way - we cornered them. And that's what you got to do. Don't be afraid, that's all you got to do. Am I wrong or right? You got to get there, you got to take that stand, because if you don't you're

going to lose it, and God don't want us to lose. He put us as stewards of the land. We must protect what God's given to us. Right? People take a stand. Don't be afraid – there's nothing to be afraid of. Don't let Satan grab you, because that's what they are doing. Take a stand, I'm telling you. We fought, and we're still fighting right now, waiting for the judgement and we believe they are going to go in our favour because they did it twice. They stated we weren't in compliance with the law. All kinds of things came up. The gentleman who purchased Beef Island, he sold it to several different people because he did not have the funding. This is something we need to take a stand on. We love it more than them and they just want it for development to destroy it. The pond and fish are protected. I caught all species, seen all sorts of birds, everything in that area and that's the only place that our people have to go in to swim. And the soil is beautiful; we could grow our agriculture; we could do all sorts of development there. But take a stand and stop being afraid of your shadows – it's not going to get you anywhere. Just stand up; they can't kill all of us. I'm serious. We must take a stand. Thank you very much and I certainly hope that you would take that stand.

A: I don't think there's much to say after that.

Q: I've not heard such an impassioned speech for a long time and I think you could make a tremendous improvement. I would suggest you pay this lady to travel and go to speak to people. I've seen there are lots and lots of churches in these islands. I would pay her to come over here for a month or so and go to all the churches, and actually rally support. You might be able to get the people to stand up.

A: You've got one of our churchmen coming to talk to the conference about church and conservation on Wednesday.

Q: What about the schools system? Any environmental education on the curriculum in the schools here?

Comment from the floor: I wanted to comment on that. I was thinking about it earlier. The best way to get the message across is through the schools system. But the problem is that most schools around the Caribbean are locked into a system. They have a fixed curriculum, so we can't do it from an individual island level. This is going to have to be done, for example, from a Caricom level.



Discussions continue. (Photo: Dr Colin Clubbe)

A: Having said that, we been quite successful here in getting environmental stuff into the curriculum, certainly at the younger age schools. It's a lot more difficult as they get older. But we have done school resource packs on all the flagship species: the orchids, the national symbols as it were; and we have just released the Blue Iguana one into the school system. It's pegged, so you know this belongs to this curriculum item and this subject area. The teachers want that kind of stuff. There is scope certainly within the curriculum we are using here to substitute from the frog pond in Europe; you can actually put something in that has relevance to Cayman Islands. As long as it is teaching the same principles and you can use it in the same way, you can substitute. I think the teachers are really keen. At least we get a lot of good feedback on that. It's all about amplifying your capacity to deliver a message. One individual can visit only one school at a time, but if that person is distributing the message and all the teachers in all the schools have got the message, then away we go. We are putting a lot of effort into that here and I know several other territories are doing the same. I know TCI has been doing the same.

Q: I was wondering whether it was possible to switch the government into ecotourism, like the blue iguanas.

A: I don't think we would have got this far, at least without the ecotourism concept as a key part of it. They are so sold on ecotourism; they want us to put a clause into the lease [of the dry scrubland previously referred to] to share the revenue.

Q: When you come into the airport there is nothing, no iguana signs, so I think people barely know about it. When I was over at the dive shop, I was here asking them if they had ever been to the Mastic Trail, and their response was "What's that?". There's not a lot of signs or anything about the islands in George Town.

A: You will see a certain amount of it in the hotel, brochures and that kind of stuff. I don't doubt we need to do a lot more. Terrestrial ecotourism here is very undeveloped. It's all been about marine, it's been about diving, water-sports, all this kind of stuff. And the Mastic Trail does not have the potential to take a huge number of people. The Botanic Park here can handle more, but it's still not hopping, and certainly when we get into the new Blue Iguana Reserve at the east end of the island we are going to have to push to get people to come

out there in numbers. So it is relevant.

Q: It seems, with this being such a hot spot for diving, if they could combine the terrestrial part of the tour, this island would be very good for ecotourism specifically. I mean if they stopped focusing on just trying to make it a big cruise ship hot spot which will ultimately destroy the island anyway. If they focused on conservation and ecotourism, in the long run it would be a whole lot better off.

A: We have a national Tourism Management Plan that talks that language very loudly. But it's like so many of these plans: it reads well but, when it actually comes to implementation, it's being selective to cherry-pick the things that don't conflict with other people's interests.

Comments from Cayman participants: Yes, exactly.

Q: Is there any scope for planning legislation that means that, for new developments, there has to be some provision for the vegetation being native vegetation. One problem I heard about was that part of the planning and tendering process is that people have got to go out to tender. Now, if you are in BVI and you go out to tender for the vegetation for a new development and the only suppliers are in Florida, all that you can get in your tender are Florida plants - which seems crazy. Now, there is obviously going to be an economic cost if you demand that developers use native plants, because it's very easy to source grasses and ornamental shrubs from all round the place. I imagine, if people were told that they had to build native flora into development projects, they would turn round and say "Where could we get them?"

A: I think there is hope in this whole area. The answer to that right now is that the nursery is here. You can go up there and buy native plants and put them into your landscaping scheme. It needs to be bigger, but there are plans to do that. It's one of those little cycles. You have to have the demand, and you have to have the supply. You can't create the demand if you haven't got the supply. So you have got to create the supply first, and then create the demand. We are creating the supply. The Planning Department, the bureaucrats as opposed to the politicians, are very keen on this type of stuff. At the last development planning review meeting that I was involved in, which was, I think, the one before the last, we put a lot of effort into the proposed regulations for retaining native vegetation in pristine areas that were being developed

for housing. I'm talking about leaving corridors of native vegetation between adjacent lots, leaving public open space with native vegetation, all these sorts of things, requiring use of native vegetation, landscape, requiring footprint clearing if you are building your driveway, and leaving xx% of the lot native vegetation, all these sorts of things. The planning people are excited about that kind of thing. They see that as being a real way they can find a balance between people's need for somewhere to live, because the population is exploding, and yet not totally destroying everything that people move into. We got a long way ahead with that stuff - it got into the final proposals - then it was ditched by the politicians again. It sometimes comes down to an individual who looks at that and can say take all of that out of there. It's really at that kind of level. You've got this huge level of administrative and popular support for something, and it gets to a certain point, then somebody sees a red flag and it's going to affect their chances of re-election, and they put the red pen through it and it's gone.

Michael Gore (former Governor): Fred, when I was here, there was a requirement that in any development, I can't remember the percentage, but something like one in six plot areas had to be turned over to natural vegetation. Has that all gone?

A: It was never really finished. It's the land for public purposes thing, and that could be a playground. It tends to be a big plot with weeds growing on it that nobody wants to do anything about. There was a proposal about trying to pool them to let the developer have this, if he puts money into a fund for buying an area like this. Again, these are things we try to develop, for example, at the last but one Development Plan review. They are good ideas, and they could and should work, but we could not get it past the political stonewalling.

Q: You mentioned the development plan. Has the development plan got a strategic impact assessment as part of the package, and does that strategic impact assessment talk about the carrying capacity of the island? If it does, then it should circumvent some of the problems you have with political individuals.

A: I don't think you realise how limited and weak our planning legislation is here. Our development plan is a map, a land-use map. At the first development plan review meeting I went to, the first issue

I raised was: we are doing a development plan, so what population projections are we going to base this on? Are we talking about population growth of xx? The response was: Oh, you can't talk about that, no, that's not on the agenda.

Same questioner: That was a sort of rhetorical question. I kind of expected that you didn't have a strategic impact assessment that was meaningful. Even if you had one, it didn't take into account the carrying capacity. What I'm saying to you is that is fundamental to the whole business of strategic planning and if it's not there things are not being done right.

A: That's true. It's a screaming hole in our legislation. Development planning law is a joke.

Q: Fred, listening to this conversation, I'm thinking that the single most important thing is policy advocacy - and it's creating that resource with the UK's aid, or home grown, or collaborating around the Caribbean, or something else. Would you agree?

A: Policy advocacy: it is interesting because it appears in every one of our strategic plans.

Comment from Cayman participant: It can work that way and also with other policies that the government is trying to pass which have been very controversial. I draw a parallel here with the proposed tobacco legislation that was floated around for a long time. What happens sometimes is that there is a very big popular groundswell. Eventually what happened with the tobacco issue is that businesses around the island just started doing it. They just started saying "we're going tobacco-free", and then people started to write into the paper saying: "that's fantastic; we're going to start going to that restaurant". So, rather than supporting the policy, it came in from the business side. It was the corporate people who did it. For some reason here in Cayman, we all seem to live in dread of big corporations, terrified that the cruise ships are going to go somewhere else if we actually want to do something that's positive, if we try to do something that is pro-active. Whereas in fact, a lot of these big developers, the people from overseas who come to the island, are actually expecting some sort of structure to be in place, they are actually expecting an EIA, they are expecting some sort of list of laws and rules and regulations that they can follow, and then they are amazed when there is nothing here. And we all seem to think that's a good thing. Actually, it's not. Sometimes they get dealt

with on a very random basis, sometimes there are recommendations and sometimes they get off scot free and that's just no way to progress. When the government seeks public comment to support or not support the conservation view, there is an overwhelming groundswell of support from the community. Another example, in the case of non-native landscaping, rather than trying to get this through policies, try to get it through the public wanting to do it. Another example of problems with policy is protection of public open space. Public open space more often than not is protected now. But it's not always a natural habitat or a park, it's a road. Road is public open space, because everybody uses the road. So that's where you can take an idea of a policy and completely screw it up. I don't think that the Government will pick up the policy idea until everyone else is doing it. And, when it's safe to do, they'll pick it up and will make it happen.

Comment from the floor: So it's got to be a many-headed policy. It would be a mistake putting all your eggs into the government basket; you've got to leave some to work with those corporations. If they were asking the government for the same thing you might just crack it.

Gina Ebanks Petrie: That's what we've done. This week, we met with Deloitte to talk to them about helping us to advocate to the government, on a national sustainable development plan that we have had on ice for ages now. We are stuck in a political sandwich basically, but we know that corporations like Deloitte have this high level corporate responsibility policy, and we knew that they were interested in it. So we met with them and said "Here's what we want to get done, and what we are doing here, but can you help us as well, from your end."

Q: If you can create that capacity on a higher level then maybe all the Caribbean countries should be talking to Deloitte in the same way about the same things.

A: Many of these companies are in it for the long haul. It's in their interests that these islands don't overdevelop, for the good of their business. It's good corporate planning to take an interest in the environment

Q: I would just like to ask a question after listening to this conversation because I'm not totally familiar with the United Kingdom Overseas Territories. I should explain that I am Honorary Director of the International National Trust Organisation, which is

a very new organisation of National Trusts just set up a year and a half ago. It resulted from a declaration at the Edinburgh International Conference in 2003. It was decided at that conference that we should all act as advocates to our respective governments to try and persuade them that heritage is important, that they should not continue just to budget for roads, hospitals, buildings etc, but they should actually take note of the cultural heritage before it was destroyed. And that was a very powerful message coming out of the conference. It strikes me that, if the United Kingdom Overseas Territories act in some way like that, I mean about the things we have been discussing this afternoon, there could well be a declaration coming out of this conference that everyone could sign up to and take away. The UKOT Conservation Forum could then use that as a tool for going to the government and trying to persuade them. Everyone here from the United Kingdom Overseas Territories could do the same for their own governments and their countries and so on and so forth. People sometimes say "Oh, not another declaration", but in that particular case, out of that declaration, the International National Trust Organisation was formed in December 2007. We have, in the last month, taken on a third Honorary Director who is going to be in charge of policy and advocacy and he is preparing policy statements even as I speak on this particular topic, one of which will be climate change. And at our Dublin conference this September, the fourteenth International Conference of the National Trusts, we will be signing another declaration on climate change which will be presented to the governments for the Copenhagen summit in December. So I just urge you to think about the possibility of having a declaration out of this conference.

Comment from the floor: I think there have been a lot of interesting points and I don't want to be too sceptical about some of the suggestions that have been made. But I think that some of them are being made without really taking into account the special situation of government systems in very small islands, where you are dealing with very small numbers of people, where you pretty well never have an effective opposition and you have very little chance of having any opposition within the ruling party. If you come from larger countries like the UK, there are many more points of advocacy that you could make. I am all for advocacy. and I think the example of Beef Island is an excellent one, but I think there is something else that we need to look at and I see too rarely in conservation communications, which is other than demonising our politi-

cians. We have to accept that their job, whether we like it or not, is to get themselves elected again in 5 years time, and to please their electorate. I think that the big tension in conservation and politics is that they have a short-term agenda and we have a long-term agenda. I don't think we very often sell our messages to them in terms of what's in it for them now, or within the next 5 years, how it can benefit them, how their electorate will appreciate what they are doing. And I think that there is something that we can do in terms of thinking about how we communicate, as Fred was saying. The means by which you get the message out is one aspect - do you stop having print materials and have more audio visual? The example of Rare in the Eastern Caribbean is good, because they not only talked one-on-one with a lot of people, they did not demonise people as being the bad people. They invested a lot in a radio soap opera that brought out a lot of the points without people even knowing that they were being lectured to. And I think that one of the challenges, certainly in the Caribbean, is that people feel, a lot of the time, that they are being lectured to. Most of us, if we are told we are doing something wrong, act defensively rather than feeling that we are partnering with someone. So I really think that the whole area of communications, and what influences politicians, is very important. There is very little research. I can speak only for the Caribbean, because we work in the islands of the Caribbean, whether its the Overseas Territories or the non-Overseas Territories, but there is a small amount of research that we have done to look at why politicians change their minds. And very little of it is to do with things like our policy briefings, and so on. So, I think there's real scope for being a little more experimental, and of course, the other big point I would make is: they need to be in the room. We have specialist conferences where we don't have politicians and civil servants. If we want to be effective in the Overseas Territories with our planning, we need our planners in the room, we need our tourism people in the room, we need our politicians there from time to time, otherwise, to some extent, we are talking to ourselves. So I think, communication is an area where we perhaps need to invest a little more of our energy and particularly communication research to really establish what is it that's making people change their minds, because I don't think that we know yet.

Q: What about becoming politicians. No, seriously, I mean, lets take it out there. We campaign in a political general election, or we infiltrate one of the

major political parties. For the size of the populations in our territories there is a fairly good chance that one of us at least would get elected. Seriously, has nobody else thought about that? We certainly have. It takes one person to slash out one bit of legislation, it takes one person to put it in.

Comments from several persons on the floor:

We will try it next time.

But don't just infiltrate one party, infiltrate them all.

We have a number of ex-politicians, including one on our board. This is very helpful for understanding what motivates them, and for understanding a little better, the complexities of the situation that they're in.

Sadly the Greens haven't been very successful, have they?

Questioner: No, that's not what I mean. I mean, getting involved in political parties. It takes one person to slash out one bit of legislation, it takes one person to put it in. Can't we become politicians?

Mike Pienkowski: Thank you very much to Gina and to Fred for getting you all in the mood for the conference. In fact, I hope the rapporteurs have actually been recording those speaking as it should save a bit of work in some later discussions. I have often found in the past, that being in the right environment does move things along quite well. In just a few minutes we will need to make our way back coach-wards.

[Administrative announcements followed.]

So, thank you very much. Thank you to guides and drivers, caterers, tent company, the folk at Pedro St James and, of course, the Botanic Gardens, as well as Fred Burton and his Blue Iguana Team, and thank you to the Department for setting most of this up and putting it all together today.

National Trust for the Cayman Islands host UKOTCF Evening Event at Mission House, Bodden Town, Grand Cayman, Tuesday 2nd June 2009, 5:30pm-8:30pm



Order of Events

- 6:00 Arrival of His Excellency Governor Stuart Jack CVO, & Mr. Huw Irranca-Davies, UK Minister of the Department of Environment, Food and Rural Affairs
- 6:05 Welcome: Mr. Roger Corbin, Chairman, National Trust for the Cayman Islands
- 6:10 Thank you: Dr. M. W. Pienkowski, Chairman UKOTCF
- 6:20 Talk "History of the Mission House"
- 7:05 Bat Fly Out with Lois Blumenthal, Secretary, National Trust Council
- 7:15 Mission House Tours, Gift Shop Open

Over dinner: Costume re-enactment of key historical events of Mission House

Roles and Performers:

Narrator & Mrs Watler	Denise Bodden, NT Historic Programs Manager
Pirate	Darvin Ebanks, NT Board Member & Videographer
Wench, Mrs Redpath & Mrs Lions	Rita Estananovich
Rev. Elmslie & Rev. Redpath	David Whitefield
Rev. Niven & Custos Coe	Michael McLaughlin
Nettie Levy	Erica Daniel, NT Education Programs Coordinator
Mr. Lion	Chris Bowring
Mr Watler	Pastor Alson Ebanks
Extras	Carmen Conolly, Kem Jackson, Jerilo Rankine, Stuart Mailer, NT Field Officer

Dinner of traditional foods by Welly's Cool Spot, Elrita Seymour and Zelmalee Ebanks.

Beer donated by Caybrew and wine donated by Jacques Scott Group Ltd.

Music: North Side Kitchen Band

Piano: Katie Moore, NT Volunteer

Mission House Tours: Arthurlyn Pedley, NT Life Member, & Aida D'Angelo, NT Mission House Coordinator

Retail: Janice Brown, NT Office Manager

Photographer: Courtney Platt

NT General Manager: Frank Balderamos



*Mission House
(Photo: Dr Oliver Cheesman)*



Mrs Carmen Conolly demonstrates traditional basket making at the Mission House Event.

(Photos in the Mission House report by Thomas Hadjikyriakou unless otherwise stated)

Remarks and Thanks

Dr Mike Pienkowski, Chairman, UK Overseas Territories Conservation Forum

Let's be informal and not list everybody, if you will bear with me. I should say first of all that I am not Roger Corbin. We decided to change the order a bit. I am just going to say a few words before more interesting things happen.

For those who don't know me, I'm Mike Pienkowski, and I chair the UK Overseas Territories Conservation Forum – and I apologise for both long names. Before I do anything else, I really would like to take this opportunity to welcome Huw Irranca-Davies, who is the UK Minister for Natural and Marine Environment, Wildlife and Rural Affairs. We are really pleased to have him here. I think it is the first time that a UK Environmental Minister has attended one of our conferences, and we are really very pleased that you have come, Sir.

(Mr Irranca-Davies: I am very pleased to be here.)

We look forward very much to hearing your speech on Thursday, but actually this evening is a bit more relaxed – both for those participants who have had three hard days of working, and also for those who

have just arrived after a long flight. Even though, unlike the birds I used to research, they don't actually have to fly themselves, it's still extremely exhausting to do that. We are really delighted that the Forum's Associate for Cayman, the National Trust for the Cayman Islands, invited us here to spend the evening with them at their historic Mission House. And we are grateful to all their Council and Staff for the work put in. Denise Bodden, who looks after their cultural heritage aspects, expressed some concern to me that the evening would be cultural rather than natural. I assured her that we are actually not quite as narrow-minded as some people may think. In fact, most of our conferences do have an historical or cultural or built environment section. For some strange reason, we do not have that in the conference room this time: we have it even better in the session they have provided for us this evening. So, without more ado from me, I will now hand over to the real Roger Corbin, who is going to tell you what is going to happen and to introduce the evening.

Thank you very much to the Trust.



Participants listen to the Introductions. From left: Mary & Steve Cheeseman, Dace Ground, Colin Clubbe, Huw Irranca-Davies MP, Paul Keetch MP, Gina Ebanks-Petrie, Oliver Cheesman, HE Governor Stuart Jacks

Welcome

Mr Roger Corbin, Chairman, National Trust for the Cayman Islands

We are very pleased at the interest you have shown in our environment. The National Trust, like all organisations, relies very heavily on its volunteers – and it really is the staff and volunteers of the Trust who have put this evening on. You know I have been at the conference, and my earlier excuse was that I was planning for the conference, so I could not work on this evening's arrangements. So, whatever happens this evening, the Trust staff and volunteers are responsible for it. If it's good, tell me at the conference; if it's bad, just take it on!



Roger Corbin (right) speaks with (from right) Huw Irranca-Davies MP, Will Pryer, Mike Pienkowski, Tim Austin and Gina Ebanks-Petrie

I really hope also that, as part of the experience you are having in Cayman, you will get to meet the people. The people are our heritage; the people are our culture; and we can't rule them like we can plants and trees. We are very natural and very neighbourly, so please make a point when you see them to speak to them.

The National Trust for Cayman has many facets. We have a very interesting programme which has just started which is butterfly watching. This is in its infancy, and we hope to be able to tell you more about that in future conferences. You will have seen some of the ecological sites, and this evening

you will see the historic site of Mission House.

I don't know what is going to happen this evening, so I am going to let Denise come up and tell you what is going to happen. The one thing that I will ask you is: please try to follow the instructions that Denise is giving us, because we have two bat houses over here. The bats have a timetable that they follow, and we might miss the fly out if we are too late. So let's just get things moving this evening.

Thank you.



Conference participants entertained over dinner by the historical play

Introduction

Denise Bodden, Historic Programs Manager, National Trust for the Cayman Islands

Good evening, ladies and gentlemen. It's a pleasure to have you all here this evening.

I know that you are mostly conservation-minded, but conservation and culture and heritage are all very important and especially dear to my heart. As some of you may remember, I was on the bus with one of the tour options on Sunday. I think you will see that the Trust has many people involved in it, and we tend to spend most effort on the historical and environmental. I am trying to produce a little impromptu play. And when I say impromptu, I do so very mean impromptu! However, we have an excellent cast of characters; some of them have performed in events annually. One such is Darvin Ebanks, and we also have a gentleman that I worked for in the financial community before I became the Historic Programs Manager, David Whitefield – who is going to play several roles. We have Chris Bowering, who is going to be a teacher this evening and, of course, the lovely Rita – who is being very shy and hiding at the moment. We also have a very important gentleman, whom I believe you have all heard speak earlier today, Pastor Alson Ebanks. Again, he is a very dear person to the Trust, having been very involved many years ago with the Trust and its programmes.

So we do hope to keep you entertained and a bit informed about the history of the Mission House Historic Site. If you would all like to take your tables, or if you would like to go and actually start



Denise Bodden introduces the play, from the veranda of Mission House

browsing through the buffet, either one is fine but we will be beginning the performance soon.

At about seven o'clock, we are going to try to be done with our little performance and give you all an opportunity to actually go and watch the bat fly out with Lois Blumenthal. She is Secretary of the National Trust and a very conservation-minded

person whose accomplishments in the bat world have just skyrocketed from year to year. I think we have actually got more bat houses in Cayman than anywhere because of Lois' determination. So that's kind of an accomplishment for one lady, but I do tell you that, when she starts something, she does not let up until it's finished. So we are thankful to have people like her involved in the Trust.

So please feel free to stand up, take a seat, tables are over there, there's plenty of wine and food. If you would like to pick a table, then we can get our performance started.



North Side Kitchen Band

Bat House Project

The National Trust Wildlife Rescue Program has the largest and most successful bat house project in the tropics. Bats consume billions of insects yearly, including mosquitoes and crop pests. Due to loss of habitat, they roost in roofs where their survival is threatened. Bat houses provide alternative shelter for these ecologically valuable native animals. To download a PowerPoint presentation that can be modified to fit your conservation education needs, visit www.caymanwildlife.org or, for more information, email info@caymanwildlife.org.

Mission House – a National Trust Historic Site

The Mission House is located in Bodden Town, Cayman's first capital, and is approximately 20 minutes' drive from George Town.

It is owned and managed by the National Trust for the Cayman Islands, a non-profit statutory body with a mission: "To preserve natural environments and places of historic significance in the Cayman Islands for present and future generations."

History

Mission House was built in the mid-1800s in a unique setting of Cayman's dry- and wet-lands. Prior to its destruction by Hurricane Ivan in September 2004, the Mission House was one of Cayman's oldest known dwellings.

The property is closely linked to the early



Mission House
(Photo: Dr Mike Pienkowski)



Bat houses at Mission House
(photo: Dr Mike Pienkowski)

house and was used as a school for several children in the community. Mr Lyon also had an adjoining general store for some time.

In 1920 the house was sold to Mr Emile Watler, and it remained in the Watler family's possession until 1997 when Mr Watler donated the property to the National Trust.

Other interest at the site

In addition to the physical structure of Mission House, its grounds are also a site of historical, archaeological and environmental importance. The garden reflects that of a late 19th Century Caymanian garden, with various fruit trees that would have provided the resident families with a source of food. Walk around the garden and amongst the lime, avocado pear, guava and tamarind trees, and you will discover a seasonal natural pond that attracts a variety of different birds, such as the Common Moorhen, American Coot and West Indian Whistling Duck, in addition to the herons and egrets that regularly visit the watering hole. Also local to the pond is the Cayman hickatee, a type of freshwater turtle.

Special thanks to the families and friends of the National Trust for the Cayman Islands and also to the Cayman Islands Government, Cayman Islands National Recovery Fund, Mr Fenwick Wailer & family, the Historic Advisory Committee, Dr & Mrs Hartman-Koechlin, Maples Finance Ltd, Seth 'Boosie' Arch and the Webster family.

For more information about Membership of the National Trust for the Cayman Islands or to donate, please contact info@nationaltrust.org.ky Tel +1 (345) 949 0121.

Important Dates in the History of the Cayman Islands relating to the Mission house and before its construction

1503	On 10th May Christopher Columbus sighted Cayman Brac and Little Cayman.
1586	Sir Francis Drake's English fleet stopped at Grand Cayman for two days.
1592	Captain William King (an English Privateer) sailed across from Jamaica and landed at Grand Cayman.
1658	The first reputed settlers, Waller and Bowden, arrived in Little Cayman and Cayman Brac.
1666-1671	First recorded settlers arrived in Little Cayman and Cayman Brac.
1734	On September 7th, the first Crown Grant of Land was made in Grand Cayman.
1773	The first hydrographic survey was made by the British Navy of Grand Cayman. George Gauld estimated the population of Grand Cayman at 400.
1780	Pedro Castle built by William Eden.
1790	Fort George constructed at approximately this date.
1802	The first Census was carried out by Edward Corbet, member of Jamaica's Governor's staff. There were 933 residents on Grand Cayman, including 551 slaves. The Sister Islands were uninhabited.
1831	Election held at Pedro St James for first Legislative Assembly, on December 10. They met and passed a law on December 31st. The first Custos or Chief Magistrate was appointed. Anglican (1831-1837), Wesleyan/Methodist (1837-1844), and Mico Charity groups minister in Bodden Town.
1830-1835	The exact date of construction of Mission House is unknown. However, oral accounts suggest that the house was built by slave labour. Slavery was not abolished until 1835, which would suggest that Mission House was built before then.

1835 May 3rd	Full emancipation of slavery was proclaimed by the Governor of Jamaica in George Town, then Bodden Town on May 5th.
1846-1863	Rev. James Elmslie ministers throughout Grand Cayman.
1857	William Whitecross, first Presbyterian minister to work full-time in Bodden Town.
1862	Mr James Panton, first full-time Presbyterian teacher to work in Bodden Town.
1878-1901	Mission House is used as a Presbyterian mission.
1887	Public funds made available for education for West Bay and Bodden Town primary schools. Edmund Parsons was appointed as the last Custos.
Nov. 15th letter	Mr McMillan, the Island's sole missionary, with the help of a Mr McNeill, held revival/ evangelical meetings in Bodden Town. They report that, following services in the church, "after-meetings were held & personal dealings in the mission house by day". This report goes on to quote in detail from a letter dated 9th December 1887 written by a Mr Webster "one of the native elders". He writes at length about the work of the church at Bodden Town.
1897	Rev. Thomas Redpath and his family comes to reside and minister in Bodden Town.
1898	Frederick Shedden Sanguinetti, the first Commissioner, was appointed.
Circa 1900	Rev. Redpath brings Mr Lyons (from Cayman Brac) to teach in Bodden Town. Mr Lyons teaches and lives in the Mission House with his family.
1901	Rev. Redpath writes of new manse consecrated on January 25th. This probably not only replaced Mission House as Pastors' residence but was the first house on Manse Road). Redpath credits Mr Lyons as being the main driving force behind this project. Mrs Redpath responsible for bringing Christian Endeavour Youth Ministry to the Island.
1907	Mr George Stephenson Shirt Hirst appointed Commissioner.
1908 April 27th	Indenture records the sale of the Mission House property by Rev. Redpath to Anna Bernard Lyons.

1911	Census estimated the population at 5,564.
1914-1918	World War I
1917	Mr Lyons sells the Mission House to Mr Emil Watler and moves to George Town to teach with Mr Cochran. Mission House remains in the Watler family's possession until 1997.

1920	Education Law passed making education compulsory up to age 14.
1997	Mission House becomes the property of The National Trust for The Cayman Islands.
2004	Hurricane Ivan severely damages Cayman.
2007	Mission House is re-opened to the public.



The "Pirate" seems attracted by the ladies. However, conservation work is safe as we managed to recover UKOTCF Council Member Liz Charter, UKOTCF Co-ordinator Catherine Quick and Anguilla National Trust Executive Director Farah Mukhida.



Some rather more peaceful characters

Section 2: Progress on Environment Charter implementation

Co-ordinator: Mike Pienkowski (Chairman, UKOTCF)

Many conservation workers, both governmental and NGO, have stressed the importance of the Environment Charters to the UKOTs in providing a framework to encourage effective conservation measures, and stressed the need to assess progress against the Commitments made in these Charters (or international commitments more generally).

St Helena was one of the pioneers in making use of the Environment Charters, and UKOTCF is pleased to have been able to respond to their request to facilitate the development of their strategy for implementation. Isabel Peters, St Helena's Environmental Co-ordinator, outlines some lessons learnt in implementing a strategy for the Environment Charter.

This section includes also a poster on the more recent development of an environmental management strategy, the plan for the Pitcairn Islands, presented by Noeleen Smyth.

In the conference, the session was introduced by Catherine Quick outlining the process for updating of the UKOTCF-coordinated review of progress on implementing the Environment Charters. This included highlighting preliminary results of the review and encouraging further contributions. The preliminary results had been circulated in detail in the conference handbook. In these Proceedings, we combine the presentation with the review document, updated in the light of further information received.

Following this, main points from the resulting discussion are summarised. In order to follow up the points from the discussion, UKOTCF organised a further meeting later in 2009, and the report of this meeting is also included.



The panel for this session: From left:

Iain Orr (UKOTCF Council; formerly the FCO officer who drafted the environmental chapter of the 1999 White Paper on the relationship between UK and UKOTs and guided much of the work in setting up the Environment Charters and the the Environment Fund for the Overseas Territories, forerunner to OTEP);

Isabel Peters (Environmental Co-ordinator, St Helena Government)

Catherine Quick (UKOTCF Co-ordinator)

Mike Pienkowski (UKOTCF Chairman & Session Coordinator)

(Photo: Rob Thomas)

Progress and Problems in Implementing an Environment Charter Strategy: an example from St Helena

Isabel Peters (Environmental Coordinator, St Helena Government)



Isabel Peters
(Photo: Rob Thomas)

Peters, I. 2010. Progress and Problems in Implementing an Environment Charter Strategy: an example from St Helena. pp 54-57 in *Making the Right Connections: a conference on conservation in UK Overseas Territories, Crown Dependencies and other small island communities, Grand Cayman 30th May to 5th June 2009* (ed. by M. Pienkowski, O. Cheesman, C. Quick & A. Pienkowski). UK Overseas Territories Conservation Forum, www.ukotcf.org

The *Strategy for Action to Implement St Helena's Commitments under its Environment Charter* (hereafter referred to as the Strategy) was produced in 2004-5 through an active process of stakeholder involvement. The process was facilitated by Dr Mike Pienkowski and Mrs Ann Pienkowski (UKOTCF) and managed by the St Helena Government's Environmental Co-ordinator. The Strategy sets out elements of each Commitment of the Environment Charter, and lists 243 associated identified actual/ potential actions/ programmes with some 40 individuals/ Departments/ organisations responsible as lead bodies for taking these forward.

In the four years since the Strategy was formulated and endorsed, it is fair to say that we have made good progress in implementing the actions/ programmes listed in the Strategy with a fair number having been completed and many others in progress.

The Environment Charter itself and the Strategy are recognised as *the* strategic environmental documents, and reference is made to them in other key St Helena Government policy documents like the St Helena Sustainable Development Plan 2007/08 – 2009/10 (October 2007) and the Land Development Control Plan (December 2006). Broadly, aspects of the Environment Charter are included in Departmental and Organisational Business Plans, including (in some cases) specific actions from the Strategy.

However, there is no clear identified process for the implementation of the Strategy and much of it is done in an *ad hoc* manner. It was recognised fairly early after endorsement that the Strategy is a large document that in its current (original) format is rather unwieldy to use and hence implement. A review of the Strategy including its format and presentation is needed to ensure it is more accessible and user friendly, and this will be a key activity for this financial year. Alongside this, we also need to design and establish a robust monitoring system to ensure that we can quickly and easily ascertain our progress.

This paper provides an overview of how we formulated the Strategy; how we now use it; our progress in implementing the Environment Charter generally and the Strategy specifically. and the key problems we have faced and lessons learnt from this.

It is hoped that, through sharing our experiences, this will help (in some small way) others responsible for implementing Environment Charters and/or preparing Strategies for implementation. In turn, it is hoped that ensuing discussions will generate useful ideas that we can consider and apply when reviewing and revamping our Strategy on St Helena.

Isabel Peters, Environmental Coordinator, St Helena Government Development and Economic Planning Department, 1 Main Street, Jamestown, St Helena Island, STHL 1ZZ, Tel/Fax: + 290 2105 isabel@sainthelena.gov.sh

Formulating the Strategy

The *Strategy for Action to Implement St Helena's Commitments under its Environment Charter* (hereinafter referred to as the *Strategy*) was produced in 2004-5 through an active process of stakeholder involvement. The process was facilitated by Dr Mike Pienkowski and Mrs Ann Pienkowski (UKOTCF) and managed by the St Helena Government's Environmental Co-ordinator.

The *Strategy* breaks down each Commitment of the Environment Charter into elements, and lists 243 associated identified actual or potential actions or programmes with some 40 individuals, Departments or organisations responsible as lead bodies for taking these forward.

Reviewing Implementation

It has been recognised for some time that the *Strategy* is in need of a review. Unfortunately, other competing priorities and a lack of resources, including time, have meant that this has not yet happened. However, being asked to prepare this paper prompted myself and others to take a long, hard look at what was working and what wasn't in terms of implementing the *Strategy*.

In preparation for this paper, I did an exercise among all those listed in the *Strategy* as being lead bodies for implementing the actual or potential actions or programmes to ascertain: the general awareness of the *Strategy*; what elements of the *Strategy* were incorporated in Departments' or organisations' business plans; how much progress had been made in actively implementing the *Strategy*; how progress was monitored and whether the *Strategy* as a document was considered user-friendly. Responses to these questions are incorporated in this paper and will form a useful starting point when we begin our Review.

General Awareness of the Environment Charter and the Strategy

Generally, there is a broad awareness of needing to consider environmental issues at all levels, but there is not always a full understanding of what this all means or, indeed, the will to deliver in the light of other competing priorities. When it comes to the crunch, environmental issues often take second place to financial and economic constraints.

Although there is general awareness of the exist-

ence of the Environment Charter and the *Strategy*, those directly involved in environmental, conservation or natural resource issues are more aware than those not directly involved. Those who do not work in environment-related fields know very little about the Environment Charter beyond its existence. High staff-turnover in recent years has also meant that staff who took up post after the formulation of the *Strategy* and the initial active promotion of it are often not aware of it; this is particularly the case in government Sections where all staff members are new. Turnover has meant that some Sections have all new staff members when compared to the time of formulating the *Strategy* in 2004/5.

The success of the implementation of the *Strategy* is therefore dependent on, first and foremost, an awareness of it among all stakeholders. This can be achieved only through regular and ongoing promotion and awareness-raising, of its existence and key aims and objectives, to those responsible for implementing it and the St Helena community as a whole.

How the Environment Charter and Strategy fit into St Helena Government Policy and the Strategic Framework

The Environment Charter itself and the accompanying *Strategy* are recognised as *the* strategic environmental documents; reference is made to them in other key St Helena Government policy documents, like the *St Helena Sustainable Development Plan 2007/08 – 2009/10* (October 2007) and the *Land Development Control Plan* (December 2006).

However, although mentioned and referred to, it is not always evident that there is full understanding of what it all means and the implications of actually implementing the *Strategy* across the board in everyday business.

How the Environment Charter and Strategy are Implemented

Broadly, aspects of the Environment Charter are included in Departmental and organisational business plans, including (in some cases) specific actions from the *Strategy*, particularly for those Departments that are lead bodies for actions listed in the *Strategy*. However, there is no clearly identified process for the implementation of the *Strategy*, and much of it is done in an *ad hoc* manner. Indeed, in some cases, implementation is occurring

by default, as actions listed in the *Strategy* are being done as part of normal business, or have been identified by other needs or priorities. There has also been more progress in implementing activities that have a defined lead body or bodies than for the broader activities which are to be implemented by all. For the private sector, and potential investors or developers, a copy of the *Strategy* is available for all staff in the St Helena Development Agency (SHDA).

There is, however, a need for more integration into business planning and sector planning processes. A suggestion has been made to align the *Strategy* with the St Helena Government's rolling planning cycle to be adopted in 2010, ensuring therefore that the *Strategy* is integrated in policy frameworks. This suggestion has, however, not yet been explored.

There are also some concerns as to whether Departments or organisations are correctly interpreting the *Strategy* and, more generally, the Environment Charter - and implementing it fully, rather than just "ticking boxes". It is easy to say we are implementing the *Strategy* when not fully understanding the full implications of the guiding principles and the full breadth of each action or programme.

Progress in Implementing the Environment Charter generally and the *Strategy* specifically

In the four years since the *Strategy* was formulated and endorsed, it is fair to say that we have made good progress in implementing the actions and programmes listed in the *Strategy*, with a fair number having been completed and many others in progress.

Many of the actions relating to physical planning have or will be addressed through the new *Planning Legislation* and the *Land Development Control Plan*. Much has also been done in implementing Commitment 7: Review range, quality and availability of baseline data for natural resources and biodiversity. Much work on invasive species has been done through the EU-funded *South Atlantic Invasive Species Project*; and in the education sector, schools are integrating environmental education across the curriculum where possible. In addition, with the establishment of an Adult Vocational Education Service, training in local craft work and skills has been offered.

Format of the *Strategy*

It was recognised fairly early after endorsement (and, indeed, during development) that the *Strategy* is a large document that, in its current (original) format, is rather unwieldy to use and hence implement.

However, from those questioned in the aforementioned exercise, there were mixed feelings as to whether or not the *Strategy* document was indeed user-friendly. Generally, those responsible for actually implementing the *Strategy* felt it was less user-friendly than those that had no direct responsibility for implementing the actions.

Many useful comments were received as to improving the layout. These included the addition of a chart that shows, in order of Departments, the Commitments for which they are responsible, linked to a page detailing the Commitment(s). The establishment of a lead body for each activity, with an indication of supporting bodies or agencies (rather than a list of lead bodies), would give a clear definition of who should lead and be responsible for seeing that a particular action gets done.

The *Strategy*, in its current format, lacks any form of prioritisation of activities and time-bound targets for delivery. (This was recognised at the time of production, and a recommendation made that these be developed.) All actions need to be SMART and prioritised against an annual implementation date.

Monitoring of Implementation

We can assess our success in implementing the *Strategy* only if we have a robust monitoring system in place. Actions should be easily monitored and the layout of the *Strategy* document should be conducive to this; this could be done simply by adding a column for monitoring.

The *Strategy* needs to be a live document that is assessed regularly in light of changing island priorities. An interactive process whereby all stakeholders are brought together to assess if circumstances have changed relating to delivery of the actions, and if activities need to be deleted or added to reflect changing times, should be established as an annual event.

Activities incorporated in business plans are assessed annually as part of the Business Plan Review. For individual Departments, there are ad-

ditional monitoring mechanisms in place in some instances.

Summary of Main Lessons Learnt

St Helena has found it extremely useful to make its Environment Charter and the *Strategy for Implementation* (produced by an open inclusive stakeholder process facilitated by UKOTCF) key documents in its economic development plan.

During the production of this plan, it was recognised that further work would be needed, both on producing priorities and time-related or annual plans from the core document and popular reader-friendly versions. The facilitators recommended this, and experience has borne out the need for resourcing of these next planned stages.

It has been recognised that many of the activities put in the *Strategy* four years ago cannot be implemented in the short term due to the current resource constraints across the board and the exceptional demands on personnel linked to current development proposals. This has led to focus on delivery of secondary service and routine activities at the cost of deferring some aspects of the strategic approach. As part of the planned review, it may be possible to explore ways of adjusting this focus.

Conclusion

In conclusion, our *Strategy* is in need of a review, and this will be a key task for this financial year. We will be looking to overcome all or some of the problems highlighted here. The actual process for the Review has not yet been decided upon, and any suggestions would be most welcome. It is hoped that, by the next Conference, St Helena can report on how the Review was done and our further progress in implementing the *Strategy*.

I think also that we have learnt many valuable lessons in what works and what does not when formulating and implementing a strategy. I would hope that such lessons can be applied to any strategy or action plan which you may be formulating either right now or in the future.

Alongside the Review, we will also need to design and establish a robust monitoring system to ensure that we can quickly and easily ascertain our progress.

RELATED POSTER:

Pitcairn Islands Environment Management Plan

Noeleen Smyth (National Botanic Gardens, Dublin, Ireland; for Pitcairn Islands Council)



Noeleen Smyth

Photo: Thomas Hadjikyriakou

Smyth, N. 2010. Pitcairn Islands Environment Management Plan. p 58 in *Making the Right Connections: a conference on conservation in UK Overseas Territories, Crown Dependencies and other small island communities, Grand Cayman 30th May to 5th June 2009* (ed. by M. Pienkowski, O. Cheesman, C. Quick & A. Pienkowski). UK Overseas Territories Conservation Forum, www.ukotcf.org

Dr Noeleen Smyth, National Botanic Gardens, Dublin, Ireland

the environment while infrastructure development is underway. The actions and recommendations are further classified by how much positive impact they would have on the environment of the Pitcairn group, the resources needed for their implementation and the amount of time required to fulfil them.

This *Environment Management Plan* for the Pit-

cairn Island group (Figure 1) sets out ten key objectives based on the Environment Charter guiding principles for the Pitcairn Islands. The targets aim to implement the guiding principles of the Environment Charter and address the issues contained within these principles, which include ensuring that all stakeholders play a part in decisions affecting the environment; increasing environmental awareness; highlighting the need for documentation and protection of the existing biodiversity and aiding development of the island group while integrating environmental protection.

The Pitcairn Environment Management Plan has set out a series of actions and recommendations under four main headings: Environmental Development, Economic Development, Biodiversity and Supporting Measures. These will help the Pitcairn group protect and safeguard

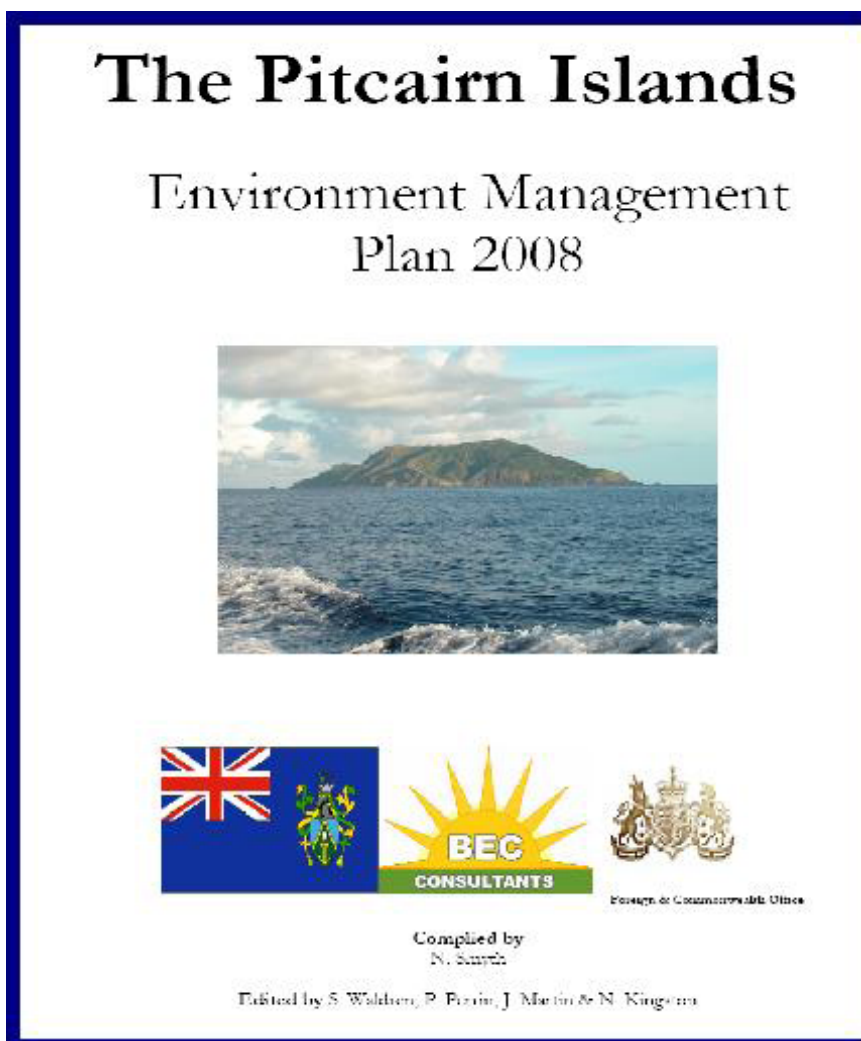


Figure 1. *The Pitcairn Islands Environment Management Plan*

Framework Document: Measures of performance by 2009 of UK Overseas Territories (& Crown Dependencies) and UK Government in implementing the 2001 Environment Charters or their equivalents

Mike Pienkowski (Chairman, UK Overseas Territories Conservation Forum)

Catherine Quick (Co-ordinator, UK Overseas Territories Conservation Forum)



Pienkowski, M.W. & Quick, C. 2010. Measures of performance by 2009 of UK Overseas Territories (& Crown Dependencies) and UK Government in implementing the 2001 Environment Charters or their equivalents. pp 59-114 in *Making the Right Connections: a conference on conservation in UK Overseas Territories, Crown Dependencies and other small island communities, Grand Cayman 30th May to 5th June 2009* (ed. by M. Pienkowski, O. Cheesman, C. Quick & A. Pienkowski). UK Overseas Territories Conservation Forum, www.ukotcf.org



(Photos: Rob Thomas)

The Environment Charters signed in September 2001 between the UK Government and the Governments of UK Overseas Territories (UKOTs) are important documents underlying the shared responsibility of the UK Government and the Government of each Territory for the conservation of the environment and the international commitments to this. This is particularly important, for example, for biodiversity as most of the global biodiversity for which the UK family of countries is responsible resides in the UKOTs, rather than in Great Britain and Northern Ireland. In the context of international commitments, it is UK which lodges – and is accountable for – these, but the legislature and executive of each territory which are responsible for the local implementing legislation and its enforcement. This latter point applies equally to the relationships between UK and those territories which do not have Environment Charters. Fundamental elements of the Charters are the sets of Commitments, on the one part by UK Government and on the other part by the Government of the UK Overseas Territories concerned. If these Commitments are to have real meaning, it is necessary to have some means of assessing progress in their implementation. UKOTCF met requests to develop, in wide consultation, a set of measures of progress, and collated information from the Territories and elsewhere to produce the first review of progress, in 2007. UKOTCF agreed to make the most of this work by all, and collate information to update periodically. This document presents the 2009 update.

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Background

The Environment Charters signed in September 2001 between the UK Government and the Governments of UK Overseas Territories (UKOTs) are important documents underlying the shared responsibility of the UK Government and the Government of each Territory for the conservation of the environment and the international commitments

to this. This is particularly important, for example, for biodiversity as most of the global biodiversity for which the UK family of countries is responsible resides in the UKOTs, rather than in Great Britain and Northern Ireland. In the context of international commitments, it is UK which lodges – and is accountable for – these, but the legislature and executive of each territory which are responsible for the local implementing legislation and its

enforcement. This latter point applies equally to the relationships between UK and those territories which do not have Environment Charters.

Fundamental elements of the Charters are the sets of Commitments, on the one part by UK Government and on the other part by the Government of the UK Overseas Territories concerned. If these Commitments are to have real meaning, it is necessary to have some means of assessing progress in their implementation. This need has been recognised by the UK Overseas Territories Conservation Forum (UKOTCF), which has been putting considerable effort into developing a set of measures to achieve this end. This need was recognised too by UK Government, which asked UKOTCF to make such a review. Some in UKOTs had expressed concern that a review undertaken by one party (UK Government) to the Charters would have been inappropriate, and suggested that a review by an independent body (UKOTCF) would be preferable. Accordingly, UKOTCF has retained editorial control over this exercise, and will continue to do so. Whilst it welcomed any input from both parties to each Charter, as well as others, UKOTCF will retain its independent oversight of the process. UKOTCF originally suggested the idea of Charters (then termed “checklists”) and was delighted when this evolved into the Charters. It has continued to support this process, but it is not a party to the Charters, nor either set of Commitments. This combination puts UKOTCF in an ideal position to provide assessments of progress in implementation.

UKOTCF had been asked by various people in the UK (including FCO and DFID) and the UKOTs to attempt to gather, collate and analyse information on progress being made in implementing the Environment Charters. However, developing a set of measures or indicators was not simple. This was challenging because UKOTCF had not drafted the Charters, and these are not structured in a way that made assessment of progress easy. The key was to find measures which related to real progress in meeting the Commitments but would not require too much effort to gather. UKOTCF put a great deal of work into consulting and working on this, and published its draft measures in Forum News 28 in February 2006, inviting further comments and contributions to help populate the tables. No adverse comments were received on these measures, and some favourable comments on them were received from JNCC, HMG’s statutory advisor on nature conservation. For elements of some Com-

mitments, it is relatively easy to find measures that meet these requirements; for others it is very difficult. UKOTCF does not want to generate unnecessary work, and recognises also that some information is already readily available annually for other purposes. For others, a cumulative measure, updated every few years might be more feasible. UKOTCF tried to allow for both sorts of measures, so as to minimise effort and be cost-effective.

The first UKOTCF review of progress was discussed in draft at the Jersey conference in 2006, and finalised in 2007. The Minister of the UK Foreign & Commonwealth Office with responsibility for this area reported to the House of Commons Environmental Audit Committee in early 2007 that UK Government would be using UKOTCF’s review to monitor progress and consider future work.

Introduction to the 2009 update

In preparing the first review, UKOTCF had committed to Territories and others that it would update every few years. As updating is less work than starting anew, this means that the significant efforts of those supplying information is made most use of – and future reviews take less of their time. The need for such a periodic review is underlined by the 2008 report of the House of Commons Environmental Audit Committee (*on Halting Biodiversity Loss*), which drew heavily on material submitted by UKOTCF and concluded that: *“One of the most important contributions that the [UK] Government could make to slowing the catastrophic global biodiversity loss currently occurring would be to accept its responsibilities and to provide more support for the UK Overseas Territories in this area”*.

Many partners also have stressed the importance of monitoring the implementation of the Environment Charters (or equivalents for those territories without Charters), if these are to fulfil their potential in supporting environmental conservation and sustainable use. Two years after its first exercise in collating information on this, UKOTCF started to gather information on further progress. A draft version of the results (updated later in this document) was included in the handbook for the Grand Cayman conference in May-June 2009. A summary of the results (on which the Overview below is based) was given at the conference, and discussion of this was included in the programme. Following the conference, UKOTCF contacted again many

of the participants and others in the Territories and elsewhere to fill out the information available.

We are grateful to the government departments, NGOs and other interested persons who have supplied information for most territories (Bermuda, Cayman Islands, Turks & Caicos Islands, British Virgin Islands, Anguilla, Montserrat, Ascension Island, St Helena, Tristan da Cunha, Falkland Islands, South Georgia & the South Sandwich Islands, British Indian Ocean Territory, Pitcairn Islands, Gibraltar, Cyprus Sovereign Base Areas, the Isle of Man, Jersey, Guernsey, Alderney and Sark). The amount of information from different territories varies, largely in relation to their available resources. We would welcome further information from these as well as from British Antarctic Territory.

The material collated is inevitably difficult to present and to absorb. In this section, we try to give an overview. Following this, is a section which details the changes reported, both by summary and by text. Finally, to provide context, the first report (of 2007) is repeated, with the changes added to the summary table of that. This third section is intended for reference, rather than for reading.

Overview of the 2009 update

Commitments (or equivalents) by UKOTs

Commitment 1: Bring together government departments, representatives of local industry and commerce, environment and heritage organisations, the Governor's office, individual environmental champions and other community representatives in a forum to formulate a detailed strategy for action.

Major progress:

Groups assembled in Isle of Man, Sark, Guernsey, Pitcairn and Cayman Islands to develop and manage strategy for action.

Cayman Islands have completed several action plans and Pitcairn have produced an Environment Management Plan.

Major Set-backs :

Grant funding system or local funding mechanism are not in place – or previous ones lost - in Bermuda, Cayman Islands, TCI, Anguilla, St Helena.

Commitment 2: Ensure the protection and restoration of key habitats, species and landscape features through legislation and appropriate management structures and mechanisms, including a protected areas policy, and attempt the control and eradication of invasive species.

Major Progress:

Bermuda and Isle of Man have designated new protected areas.

Falkland Islands have cleared 20 islands of rats improving the quality of their protected areas.

Bermuda, St Helena, Tristan da Cunha, Falkland Islands, South Georgia (and SSSI), Montserrat, Guernsey and Sark have all reported significant progress on key species with action plans developed, complete or being implemented.

Several territories have action plans to deal with invasive species.

Major Set-backs:

Loss of effective protected areas in TCI; dredging, development without EIAs

Damage to Ramsar Convention Wetlands of International Importance reported in TCI and Jersey

Arrival of alien fungal infection in Montserrat, severely threatening “mountain chicken” frog

Serious impacts on turtles and migrant song-birds in Cyprus Sovereign Base Areas

Commitment 3: Ensure that environmental considerations are integrated within social and economic planning processes, promote sustainable patterns of production and consumption within the Territory.

Major Progress:

Anguilla, St Helena, South Georgia, Isle of Man and Sark have all showed significant progress in fisheries management

Major set-backs:

Waste management is reported as a significant problem in Turks and Caicos, Anguilla and Tristan da Cunha.

Commitment 4. Ensure that environmental and environmental health impact assessments are undertaken before approving major projects and while developing our growth management strategy; and

Commitment 5. Commit to open and consultative decision-making on developments and plans which may affect the environment; ensure that environmental impact assessments include consultation with stakeholders.

Major progress:

EIAs are publicly available in Bermuda, Cayman Islands, St Helena and Guernsey

Major set-backs:

Developments in TCI and Anguilla have taken place without EIA s and if they are available they cannot be accessed by the public. Public are not fully consulted or inadequate notice given.

Commitment 6: Implement effectively Multilateral Environmental Agreements already extended to the Territory and work towards the extension of other relevant agreements.

Major Progress:

Tristan da Cunha have designated (2008) two sites as Ramsar Convention Wetlands of International Importance.
Isle of Man joined 2 CMS Agreements.

Major Set-backs:

Development on TCI's North, Middle and East Caicos Ramsar Site
Generally, rather little progress reported under this Commitment – there may be some under-reporting.

Commitment 7. Review the range, quality and availability of baseline data for natural resources and biodiversity.

Major Progress:

Monitoring programmes for many taxa and natural resources in Cayman Islands, Anguilla, Ascension, St Helena, Tristan da Cunha, Isle of Man, Falkland Islands and South Georgia (and SSI).

Major set-backs:

There remains a need to provide a collated and readily accessible overview of the status of wildlife across the Territories.

Commitment 8. Ensure that legislation and policies reflect the principle that the polluter should pay for prevention or remedies; establish effective

monitoring and enforcement mechanisms.

Major set-backs:

Locals in TCI and Anguilla doubt that pollution monitoring occurs or that it is enforced.

Commitment 9. Encourage teaching within schools to promote the value of our local environment (natural and built) and to explain its role within the regional and global environment.

Major Progress:

Most territories have environmental education initiatives.

Commitment 10. Promote publications that spread public awareness of the special features of the environment in the Territory; promote within the Territory the guiding principles set out above.

Major Progress:

Most territories have published material relevant to the Environment Charters since 2007.

Commitments by UK Government

Rather a full interim report was given to the 2003 Conference in Bermuda. However, resource problems prevented UK Government contributing to the first full review in 2007. We are grateful to UK Government officials in several departments for trying to input into this second review. Outline information was received a few days before the Cayman conference, so that it could not be included in the draft version in the conference document, which had to be edited a few weeks earlier to allow for printing. This outline information has been included in the updating results below, and we have attempted to relate the material sent by FCO and DFID to the Charter Commitments insofar as this was practicable.

General Picture

The results give a rather mixed picture, with perhaps rather less progress than most would hope for – with a few notable exceptions.

Someone looking at the draft summary in the Cayman conference handbook said that the first impressions were that it showed a lot more progress in talking (publications, education, plan

development, etc) than doing (open environmental assessment, site-safeguard, funding conservation work...), with some significant steps backwards in the last two. This is probably a gross – and somewhat unfair – generalisation. However the information does give some basis for the comment.

Clearly, conservation personnel (government and NGO) are not receiving the tools to do the job – and that includes UK Government personnel, whose resourcing to monitor and promote fulfilment of HMG’s commitments has reduced in the last 6 years.

In looking forward to the discussion at the conference and after, the editors suggested that it might be interesting to consider refining/replacing this simplistic analysis with a more subtle one – and raising the questions of what are the blockages in fulfilling Commitments and what can be done to address them. UKOTCF has since continued to facilitate such considerations.

We are grateful to the many persons and organisations who have supplied information, and to Dr Oliver Cheesman for additional checking.

We should note also that UKOTCF can use only the information supplied. Please contact cquick@ukotcf.org if you think that it is incomplete. UKOTCF plans to produce a further update after 2 or 3 years.

Summary of changes 2007-2009

These are tabulated on the following 5 pages. More detailed summaries of the information on which this is based is supplied below that.

Results of the 2009 update

Below, we try to summarise the information received in several ways. First, a colour-coded table is used to give a simple overview of progress, with a column for each territory. For each measure in each Territory, a colour is used to indicate the approximate level of progress. These are:

Major progress	Significant progress	Information supplied but not obviously positive or negative	Significant concerns	Set-backs
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Below that, the major reported elements are summarised, in text.

Finally, the rows of the first summary table are copied (in the rows marked “**UPDATE 2009**”) into the original 2007 report. This allows those addicted to reading complex summaries to place the new information in context. For example, it would be difficult to show marked improvement in cases where most requirements had already been met. The original report text is also given, for reference.

Commitment (The government of the Overseas Territory will:)	Bermuda	Cayman Islands	Turks & Caicos Islands	British Virgin Islands	Anguilla	Montserrat	Ascension Island	St Helena	Tristan da Cunha	Falkland Islands	S Georgia & S Sandwich Is	British Antarctic Territory	British Indian Ocean Territory	Pitcairn Islands	Gibraltar	Cyprus Sovereign Base Areas	Isle of Man	Jersey	Guernsey (& Sark) ¹	Alderney	Sark ¹
Measures																					
1. Bring together government departments, representatives of local industry and commerce, environment and heritage organisations, the Governor's office, individual environmental champions and other community representatives in a forum to formulate a detailed strategy for action.																					
Ia. Signed Environment Charter																					
Ib. Group assembled to develop and manage strategy for action																					
Ic. Strategy for action developed																					
Id. Named Minister or Councillor responsible for carrying the implementation forward and ensuring reporting on progress																					
Ie. Named officials designated and resourced to coordinate across departments and other partners, draft annual reports.																					
If. NGOs resourced by Government to provide an independent monitoring and reporting mechanism																					
Ig. Strategy implemented and monitored as ongoing process																					
Ih. Annual reports produced on progress achieved and plans for the forthcoming year																					
Ii. Funding for recurrent expenditure and projects to implement the Charter ³ strategy included in annual departmental budgets																					
Ij. Amount expended in year on Environment Charter implementation from Territory resources (£k)																					
Ik. Local funding mechanism in place in support of non-governmental projects implementing the Charter (e.g. earmarked visitor tax)																					
Il. Grant funding system in place for any such local funding mechanism, involving open processes and NGO involvement in decision process																					
Im. Amount collected in such fund																					
In. Amount expended on Environment Charter objectives by such fund																					
2. Ensure the protection and restoration of key habitats, species and landscape features through legislation and appropriate management structures and mechanisms, including a protected areas policy, and attempt the control and eradication of invasive species.																					
2a. Number of nature protected areas designated																					
2b. Area (km ²) identified as nationally or internationally important for nature																					
2c. Area (km ²) of nature protected areas designated nationally or internationally important for nature																					
2d. Area of nature protected areas as % of area identified as nationally or internationally important for nature																					
2e. Land area of territory (km ²)																					
2f. Area (km ²) of terrestrial nature protected areas																					
2g. Area of terrestrial nature protected areas as % of land area																					

Commitment (The government of the Overseas Territory will:)	Bermuda	Cayman Islands	Turks & Caicos Islands	British Virgin Islands	Anguilla	Montserrat	Ascension Island	St Helena	Tristan da Cunha	Falkland Islands	S Georgia & S Sandwich Is	British Antarctic Territory	British Indian Ocean Territory	Pitcairn Islands	Gibraltar	Cyprus Sovereign Base Areas	Isle of Man	Jersey	Guernsey (& Sark) ¹	Alderney	Sark ¹
Measures																					
Land and sea area of territory (km ²)																					
2h. Area of all nature protected areas as % of land and sea area																					
2i. Area (km ²) of designated nature protected areas subject to operating management plan ^y																					
2j. Change in area (km ²) of nature protected areas since Environment Charter signed (Sept 2001) (Positive except as indicated)																					
2k. Number of nature protected areas improving in nature quality since Sept 2001																					
2l. Number of nature protected areas maintaining nature quality since Sept 2001																					
2m. Number of nature protected areas with declining nature quality since Sept 2001																					
2n. Number of nature protected areas with no information on changes in quality since Sept 2001																					
2o. Government bodies (G) and/o NGOs (O) involved in managing protected areas																					
2p. Number of key species with conservation action plans developed and completed or being implemented																					
2q. Number of species with reduction in threatened status																					
2r. Number of species with increase in threatened status																					
2s. Review completed identifying gaps in legislation and needs to fulfil them to meet nature commitments																					
2t. Legislation updated to fill gaps in nature protection																					
2u. Review completed of invasive species problems																					
2v. Action plans completed or operating to deal with invasive species																					
2w. Review completed of threats posed by potentially invasive species																					
2x. Effective measures in place to prevent arrival of further invasives																					
3. Ensure that environmental considerations are integrated within social and economic planning processes, promote sustainable patterns of production and consumption within the Territory.																					
3a. All Country Plans and strategic plans refer to the Environment Charter and its Commitments																					
3b. Have environmental considerations been integrated into social and economic planning processes, and are activities undertaken in sustainable manner in the following sectors:																					
3c. Waste management																					
3d. Water resources management																					
3e. Tourism																					

Commitment (The government of the Overseas Territory will:)	Measures																Bermuda	Cayman Islands	Turks & Caicos Islands	British Virgin Islands	Anguilla	Montserrat	Ascension Island	St Helena	Tristan da Cunha	Falkland Islands	S Georgia & S Sandwich Is	British Antarctic Territory	British Indian Ocean Territory	Pitcairn Islands	Gibraltar	Cyprus Sovereign Base Areas	Isle of Man	Jersey	Guernsey (& Sark) ¹	Alderney	Sark ¹
	3f. Transport	3g. Public and private land use	3h. Taxation & Economic	3i. Fishing	3j. Farming & Forestry	3k. Mineral Extraction	3l. Power Generation	3m. Traditional Crafts	3n. Others																												
4. Ensure that environmental and environmental health impact assessments are undertaken before approving major projects and while developing our growth management strategy.	4a. EIAs required on development projects																																				
	4b. Number of proposed or active development projects																																				
	4c. Number of these with publicly available EIAs																																				
	4d. Has a list of major potential and actual threats to the environment, detailing threatened species, ecosystems and landscapes been developed (prior to proposed schemes, so that these can be considered in context)?																																				
5. Commit to open and consultative decision-making on developments and plans which may affect the environment; ensure that environmental impact assessments include consultation with stakeholders.	5a. EIAs publicly available to community and peer review with time for comment before decision.																																				
	5b. Public enquiry system and decision independent of parties and government available and used																																				
	5c. Decision process open with reasons given.																																				
	5d. Policy development open to public consultation																																				
6. Implement effectively Multilateral Environmental Agreements already extended to the Territory and work towards the extension of other relevant agreements.	6a. Ramsar Convention on Wetland extended to Territory																																				
	6b. Number of sites designated as Wetlands of International Importance																																				
	6c. Area (km ²) designated as Wetlands of International Importance																																				
	6d. Area (km ²) of sites identified as qualifying as Wetlands of International Importance but not yet designated																																				
	6e. Area (km ²) designated as Wetlands of International Importance but suffering damage																																				
	6f. Area (km ²) of wetland outside protected areas being managed sustainably																																				

Commitment (The government of the Overseas Territory will:)	Bermuda	Cayman Islands	Turks & Caicos Islands	British Virgin Islands	Anguilla	Montserrat	Ascension Island	St Helena	Tristan da Cunha	Falkland Islands	S Georgia & S Sandwich Is	British Antarctic Territory	British Indian Ocean Territory	Pitcairn Islands	Gibraltar	Cyprus Sovereign Base Areas	Isle of Man	Jersey	Guernsey (& Sark) ¹	Alderney	Sark ¹
Measures																					
6g. Area (km ²) of wetland outside protected areas for which there is no information on management																					
6h. Area (km ²) of wetland outside protected areas which has suffered damage																					
6i. CITES extended to Territory																					
6j. Convention on Biological Diversity extended to Territory																					
6k. Convention on Migratory Species extended to Territory																					
6. Agreements under CMS extended to Territory:																					
6l. Conservation of Albatrosses & Petrels (ACAP)																					
6m. Conservation of Cetaceans in the Black Sea, Mediterranean and Contiguous Atlantic Area (ACCOBAMS)																					
6n. Small Cetaceans of the Baltic and North Sea (ASCOBANS)																					
6o. Conservation of Migratory Species of Wild Animals (Eurobats)																					
6p. Conservation of Migratory Species of Wild Animals - Indian Ocean Turtle MOU																					
6q. World Heritage Convention extended to Territory																					
6r. Number of World Heritage sites (natural and cultural) designated																					
6s. Area (km ²) of World Heritage sites (natural and cultural) designated																					
6t. Number of domestically protected cultural heritage sites																					
6u. Area (km ²) of domestically protected cultural heritage sites																					
6v. Other Conventions extended to Territory																					
6w. Convention for the Protection of the Natural Resources and Environment of the South Pacific (SPREP) and Final Act of the High Level Conference on the Protection of the Natural Resources and Environment of the South Pacific Region (Noumea, New Caledonia, 17-25 November 1986)																					
6x. Convention for the Protection of the Marine Environment of the North-East Atlantic OSPAR																					
6y. Convention for the Protection and Development of the Marine Environment of the Wider Caribbean Region (Cartagena)																					
6z. Protocol concerning specially Protected Areas and Wildlife (SPA) to the Convention for the Protection and Development of the Marine Environment of the Wider Caribbean Region (Cartagena)																					
6zl. Convention on the Prevention of Marine Pollution by Dumping of Wastes and other Matter (London Convention)																					

Commitment (The government of the Overseas Territory will:)	Measures																				
	Bermuda	Cayman Islands	Turks & Caicos Islands	British Virgin Islands	Anguilla	Montserrat	Ascension Island	St Helena	Tristan da Cunha	Falkland Islands	S Georgia & S Sandwich Is	British Antarctic Territory	British Indian Ocean Territory	Pitcairn Islands	Gibraltar	Cyprus Sovereign Base Areas	Isle of Man	Jersey	Guernsey (& Sark) ¹	Alderney	Sark ¹
7. Review the range, quality and availability of baseline data for natural resources and biodiversity.																					
7a. Taxa and natural resources for which base-line data have been collected and made available, with extents of coverage for each.																					
7b. Taxa and natural resources for which there are monitoring programmes, with extents of coverage for each. ²¹																					
7c. Topics which are priorities for further information gathering.																					
8. Ensure that legislation and policies reflect the principle that the polluter should pay for prevention or remedies; establish effective monitoring and enforcement mechanisms.																					
8a. Are effective Ordinances in place to implement polluter-pays principle?																					
8b. Number of cases of polluter paying, and amounts involved.																					
8c. Monitoring of pollution and adherence to planning conditions in place																					
8d. Enforcement measures in place																					
8e. Number of enforcement cases brought.																					
9. Encourage teaching within schools to promote the value of our local environment (natural and built) and to explain its role within the regional and global environment.																					
9a. Environment Charter, strategy for implementation in schools curriculum																					
9b. Local environment, global context in schools curriculum																					
9c. Number of visits at all levels to local environmental sites																					
9d. Number of field classroom facilities																					
10. Promote publications that spread public awareness of the special features of the environment in the Territory; promote within the Territory the guiding principles set out above.																					
10a. Number of publications by Government in each year on local environmental topics																					
10b. Number of publications by NGOs in each year on local environmental topics																					
10c. Programme in place to promote Environment Charter and implementation strategy																					

1. Bring together government departments, representatives of local industry and commerce, environment and heritage organisations, the Governor's office, individual environmental champions and other community representatives in a forum to formulate a detailed strategy for action.

1a. Signed Environment Charter

Whilst the Isle of Man has not signed an Environment Charter, they are currently considering it.

1b. Group assembled to develop and manage strategy for action

Sark reports a group assembled to start work on a new wildlife law to make good a deficiency, Guernsey reports a group assembled to support the development of an Environmental Plan, and the Cayman Islands report several cross-sectoral working groups on various issues (e.g. climate change, sustainable tourism). However, reports from Anguilla are that few, if any, meetings take place, and those from TCI note that meetings have declined in inclusiveness and that virtually no progress has been made over recent years on previously agreed action points. St Helena notes that meetings have become irregular and poorly attended, partly related to poor resourcing. The BIOT Administration has a Scientific Advisory Group, but its role in 'managing a strategy for action' is very limited. In Pitcairn, a group has been formed, consisting of the Governor's Representative, Commissioner, Director of Biosecurity, Division Manager Natural Resources, Councillor with Natural Resources portfolio. In the Isle of Man, an NGO conservation forum has been established for consultation and communication, but not for Charter purposes specifically.

1c. Strategy for action developed

In Guernsey, the Government has committed to writing an Environmental Plan with a 25-year vision supported by annual action plans. The new group on Sark is to bring proposals on Wildlife Law to the new Chief Pleas Assembly. Cayman reports that several Biodiversity Action Plans have been completed. For the Isle of Man, an external contract to develop a conservation strategy was undertaken in 2008. An Environment Management Plan for the Pitcairn Islands was produced in 2008.

1d. Named Minister or Councillor responsible for carrying the implementation forward and ensuring reporting on progress; and

1e. Named officials designated and resourced to

coordinate across departments and other partners, draft annual reports.

Reports from TCI and Anguilla have alleged that politicians and/or officials with key roles in carrying the implementation forward have actually worked against the Charter objectives. Cayman reports lack of significance attached to the Environmental Charter due to changes in government and focusing on other key environmental issues (climate change, etc.). For BIOT, it is noted that there are various consultants and advisory groups, but their role in managing a strategy for action is very limited.

If. NGOs resourced by Government to provide an independent monitoring and reporting mechanism

Some contract monitoring work done by La Société Guernesiaise's company Environment Guernsey. In the Falklands, one NGO receives considerable resources for this role from the Government. This and another NGO also fund substantial monitoring from other (non-governmental) resources. For British Indian Ocean Territory (BIOT), although there is no major funding of this type, a conservation NGO receives occasional, modest support. For Anguilla, concerns have been expressed that the nature of Government support prevents local NGOs from doing effective independent monitoring and reporting. For TCI, reports indicate that earlier reports of funding of this nature may have been incorrect.

1g. Strategy implemented and monitored as ongoing process

Guernsey and Tristan da Cunha have plans to develop monitoring, the former via desired outcomes and performance indicators included in the developing Environmental Plan, and the latter by implementation of Biodiversity and Invasive Species Action Plans as part of the South Atlantic Invasive Species Project. In St Helena, the strategy for action is being implemented by Departments / organisations / persons listed within the Strategy, particular progress being made regarding those activities relative to the finalisation of the Land Development Control Plan and OTEP-funded projects. However, lack of resources and increased workloads has resulted in inadequate amounts of time and personnel to take other activities forward. Reports from Anguilla express concern at deficiencies in monitoring and implementation due to low priority being allocated, rather than an overall shortage of official personnel or funding. In TCI, doubts have been expressed, even by members of

the Environment Charter Working Group, that the Working Group is able to implement a strategy.

1h. Annual reports produced on progress achieved and plans for the forthcoming year

Reports on biodiversity monitoring for Falklands and sustainability for Guernsey produced. In St Helena, a review started in 2006 is incomplete due to other priorities; the process needs to be restarted, as majority of the information collected in 2006 is out of date, but this can be done only when time and resources allow. The reporting process appears to have wound down to a halt in TCI.

1i. Funding for recurrent expenditure and projects to implement the Charter strategy included in annual departmental budgets

In Guernsey, the Environmental Plan and its action plan when approved by the States will become part of the Government business plan against which resources are allocated. In Tristan da Cunha, the formation of a Conservation Department (TCD) is very recent and there is currently no allocated budget except to cover salaries. However, an Assistant Conservation Officer has been appointed, and other assistance secured. In St Helena, the Strategy for Action is a 'working document'. Most Departments / Sections / Organisations include 'issues to be addressed' within annual departmental Business Plans. Budget ceilings imposed during 2007/08 put downward pressure on recurrent expenditure across SHG, giving no scope for funding any project activities specifically linked to the Environment Charter, unless identified as core business. Funding from departmental budgets is insufficient, so donor funding needed, with some being secured. There could also be potential from funding from within SHG budget if there was better linking between departmental budgets and between the budget process and the Strategy for Action document. In TCI, resourcing is no longer linked to the Strategy, if it ever was, and there are reports of funding set-backs from Anguilla also. In the Isle of Man, £615,000 (of which £271,000 is agreements and payments to others for land management work) is available (2009-10) for all conservation work by IoM Government Wildlife and Conservation Division.

1k. Local funding mechanism in place in support of non-governmental projects implementing the Charter (e.g. earmarked visitor tax); and

1l. Grant funding system in place for any such local funding mechanism, involving open processes and NGO involvement in decision process

There are major set-backs reported from several territories. Bermuda has cancelled the \$100,000 pa Govt Environmental Grants Scheme. In Cayman, a Departure Tax (from all persons) is collected for an Environmental Fund, but this cannot currently be readily accessed for environmental funding purposes. In TCI, the Conservation Fund seems to have been depleted by the Government for other uses. The committee to manage this, composed of various stake-holders is not functioning, and officials have failed to pay grants approved by it. In Anguilla, there are reports that the Environmental Levy has been diverted to other uses. In St Helena, a local environmental funding mechanism was not established as it was felt by Legislative Council that it would be wrong to 'ring-fence' revenue money for environmental projects. In Tristan da Cunha, however, the Conservation levy has been raised to 8% and continues to be paid into the Environmental Fund, now controlled by the Head of Tristan's Conservation Department who makes recommendations to the Conservation Committee and Island Council on spending proposals. In the Isle of Man, partnership funding and small grants are available, but not specifically for Charter purposes.

2. Ensure the protection and restoration of key habitats, species and landscape features through legislation and appropriate management structures and mechanisms, including a protected areas policy, and attempt the control and eradication of invasive species.

2a. Number of nature protected areas designated

Bermuda has designated new nature reserves at Scroggins Hill and Cooper's Island.

In BVI, the Conservation & Fisheries Department is in the process of demarcating the 14 fisheries (marine) protected areas under the Virgin Islands Fisheries Regulations 2003.

In St Helena, although sites are proposed as Protected Areas within the Land Development Control Plan adopted 01.01.07, no formal management plans have been written for these areas, nor have they been formally/ legally designated.

In TCI, there has been severe damage to protected areas and other areas which should have been protected, with a small proportion of designated protected areas being formally (and many more effectively) de-designated. Losses of effective protected areas (some of which were summarised in *Forum News* 32: 3-5, but other sites were damaged after this) include: construction of roads within land area of parks and nature reserves without planning

permission; extensive sub-division within nature reserves and bulldozed boundaries to these plots; built development to a national park shore boundary without buffer or impact assessment; large area of rare tropical dry forest ecosystem within a national park bulldozed clear by TCI Government (TCIG) for agricultural use, later abandoned as unsuitable; bulldozing continued on the border of the national park, including in threatened Caicos Pine area; stone quarried from bulldozed area to complete work on North-Middle Caicos causeway, as estimates of material needed were inadequate - no consultation with land-managing body or others, nor EIAs; major, inappropriate developments proposed within national parks and nature reserves; major dredging without EIA in several protected areas; creation of artificial island for development, destroying coral reefs and sea-grass beds, within a national park and adjacent to nature reserve islands; extensive channel dredging through adjacent flats and reef, and development of major dock in nature reserve, partly to replace previous dock nearer to open sea, which has been transferred to marina and resort development; land within protected areas offered for sale for development, even though such development would be against regulations; approval for major resort development given without clear plan to overcome the impact on the threatened endemic and other sensitive species in a nature reserve; Crown land transferred by TCIG to developer despite objection of local residents, who have come under pressure to sell to the developer; historically important salt-pans and creeks, also internationally important for birds, to be converted to a marina; channel to be dredged through reef and land, separating the community into two (work to start at short notice without proper consultation or EIA); TCIG approved investigation for resort development on nature reserves without consulting the independent statutory body holding the lease; continued delay by TCIG in transferring land to National Trust continues to impede conservation management; some of land due to be transferred to National Trust transferred by TCIG instead to a developer, who has damaged the site; value of one of the two best salt-pans for birds destroyed by mis-use approved by TCIG; other salinas suffering from rapid piecemeal infilling by many individuals, contrary to planning regulations and without EIAs; proposed removal of one of two different types of pond from statutory Nature Reserve status, to develop marina. In the Isle of Man: Central Ayres was extended by 44.7ha in 2008, making the total area for that site 317.02ha, subject to an operating management plan; newly designated in 2008,

Glen Maye (44.83ha) is an Area of Special Scientific Interest, with the area of the site identified as nationally important (15.92ha) managed by DAFF and private partners; also designated in 2008, Greeba Mountain and Central Hills (15.92 ha) is an Area of Special Scientific Interest. Area identified as nationally important is 1080.05 ha, managed by DAFF with private tenants.

2b. Area (km²) identified as nationally or internationally important for nature

In Anguilla, the East End Pond is no longer listed as an Important Bird Area.

2c. Area (km²) of nature protected areas designated

2d. Area of nature protected areas as % of area identified as nationally or internationally important for nature

2f. Area (km²) of terrestrial nature protected areas

2g. Area of terrestrial nature protected areas as % of land area

2h. Area of all nature protected areas as % of land and sea area

2j. Change in area (km²) of nature protected areas since Environment Charter signed (Sept 2001) (Positive except as indicated)

2m. Number of nature protected areas with declining nature quality since Sept 2001

In TCI, many areas have again been reduced or damaged (see above) but precise areas are not available. In Jersey, damage and potential further threats are reported for the SE Jersey Ramsar Convention Wetland of International Importance. For Isle of Man, see comments under 2a.

2i. Area (km²) of designated nature protected areas subject to operating management plan

In the Central Peaks in St Helena, areas are being cleared of invasive species and endemics are being re-introduced. The Heart Shaped Waterfall is the subject of a project involving planning and developing the area to provide public access for amenity. A longer term management plan will need to be prepared by the NT; Legal Lands and Planning Department will address the polluted pond. In the absence of a substantive Marine Science Officer, no further progress has been possible in managing sites at Gill Point, George Island & Shore Island. It is hoped that a Marine Biologist can be recruited within the next financial year (2009/10) and that management plans / designation will be undertaken in line with the land development plan (LDGP). In Gibraltar, problems are reported in that Spain has listed as a European Union Natura2000 site a sea

area which overlaps Gibraltar's already listed site, causing confusion about management accountability. For Isle of Man, see comments under 2a.

2k. Number of nature protected areas improving in nature quality since Sept 2001

A further two sites have been cleared of rats in the Falkland Islands, making a total of 20 islands cleared.

2l. Number of nature protected areas maintaining nature quality since Sept 2001

2n. Number of nature protected areas with no information on changes in quality since Sept 2001

2o. Government bodies (G) and/o NGOs (O) involved in managing protected areas

Reports are generally lacking. In the Isle of Man, there is some wetland (mostly grassland) in management agreements, and some under agri-environment schemes, but most are outside protected areas; several areas have been damaged recently, but have not been quantified.

2p. Number of key species with conservation action plans developed and completed or being implemented

Action Plans for previously listed species in Bermuda have been completed and additional Action Plans prepared for land crabs, lionfish, groupers, lobsters, Red-Footed Booby *Sula sula*, whelks, and hermit crabs; Habitat Conservation Plans have been prepared for mangroves, coral reefs and sea grass (lagoons). In TCI, it is not clear whether Action Plans are still active. In St Helena, Recovery Plans have been prepared (with review, updating and implementation being supported under OTEP Critical Species Recovery Project) for She Cabbage *Lachanodes arborea*, False Gumwood *Commidendrum spurium*, St Helena Redwood *Trochetiopsis erythroxylon*, Large Bellflower *Wahlenbergia linifolia*, Small Bellflower *Wahlenbergia angustifolia*, and Dwarf Jellico *Sium burchellii*. In Tristan da Cunha, Gough and Inaccessible have Management Plans due to be reviewed in 2009. A review of the Tristan BAP and the production of management plans for Tristan and Nightingale will take place in 2009/ 2010, and a bird and seal monitoring manual for Tristan and Nightingale was completed at the end of 2008. Four of the 12 proposed Action Plans in the Falkland Islands have been prepared and adopted. A draft Action Plan for ACAP species in South Georgia and the South Sandwich Islands is currently undergoing a consultation process. In Guernsey, Habitat Action Plans rather than Species Action Plans are being applied.

Several new Action Plans are in preparation in Montserrat.

2q. Number of species with reduction in threatened status

In Tristan da Cunha, the Spectacled Petrel is now listed as Vulnerable due to increasing population (2008).

2r. Number of species with increase in threatened status

If no conservation action plan is put in place, then invasive plant impacts will have worsened on Sombrero Island (Anguilla), affecting species status there. Northern Rockhopper Penguin status in Tristan da Cunha has been confirmed as Endangered following publication of data identifying declines >90% (2008). Corncrake has a conservation action plan being implemented in the Isle of Man, but is thought to be in decline. Serious threats to turtles from fishing by-catch in Western SBA, and resurgence of illegal migrant songbird trapping in Eastern SBA, are reported from Cyprus. A recently arrived fungal pathogen poses a severe threat to the Mountain Chicken frog population in Montserrat.

2s. Review completed identifying gaps in legislation and needs to fulfil them to meet nature commitments

It is not clear to local stakeholders whether the OTEP-funded project reviewing gaps in TCI legislation has reported. With the exception of fisheries legislation, all South Georgia legislation is under review.

2t. Legislation updated to fill gaps in nature protection

The Environmental Health Department in TCI has formally enacted regulations for phytosanitary certification for importing of plants; legislation to enact CITES is in development. The anticipated legislative review for Anguilla has not yet been produced. In St Helena, the Land Planning & Development Control Ordinance 2008 includes a section on Environmental Impact Assessment (EIA), and specifies the types of development that should have an EIA report, who should prepare the report, what should be included, that the quality of the report must be reviewed, and who should review the report. This also provides for the preservation of the historical heritage of St Helena, specifying that the Planning Officer shall issue building preservation orders to owners of land / buildings having historical value. It gives the Governor in Council power to designate special protection (in relation to

any development) on account of the natural beauty of the area, the flora, fauna, ecological, geological, hydrogeological, or physiographical features of that area, or if it is desirable to provide special opportunities for the study or research into the terrestrial or marine environment by designating any of these areas as Conservation Areas. In Sark, work is currently being done on a Wildlife Law, needed to complete the island's Environment Charter. In the Isle of Man, the Agricultural Miscellaneous Provisions Act 2008 changed Wildlife Act offences from needing to prove intention to actions deemed intentional or reckless.

2u. Review completed of invasive species problems

An update of the earlier JNCC review of non-native species across all UKOTs and CDs has been completed by Karen Varnham, with input from many parties. In addition, the following specific points are reported for individual territories. TCNT and RBG Kew will collaborate on a study by an MSc student on two known and two potential invasive plant species in TCI; study and mapping of infestation extent of the pine tortoise scale insect will be completed by TCNT from March to October 2009. Updating of the St Helena component of the JNCC list suggests that vertebrate records are unchanged, whilst the invertebrate list has been updated to include the European Wasp *Vespula vulgaris*, not new to the island but now officially listed. The results of the six month botanical survey carried out by the South Atlantic Invasive Species Project are currently being analysed and outputs can be expected from March 2009. These will take the form principally of estimates of abundance and distribution of higher plants, ferns and two invasive mosses.

2v. Action plans completed or operating to deal with invasive species

In the Cayman Islands, Action Plans are in place, on-going, or successfully implemented for casuarinas, lionfish, Little Cayman cats and (through Agriculture Department) *Maconellicoccus hirsutus*. TCNT and RBG Kew have developed a ten-year species recovery proposal to protect the Caicos Pine *Pinus caribaea* var. *bahamensis* from an introduced scale insect in TCI. An Invasive Species Action Plan has been drafted by the Department of Environment in Anguilla. An Action Plan was formulated after a stakeholder workshop in St Helena in July 2007; many of the activities identified were focussed on developing the island's capacity to deal with invasive species. The following

key species were identified: gorse *Ulex europeaus*, whiteweed *Austroeupatorium inulaefolium*, bull-grass (various species), myna birds *Acridotheres tristis*, feral pigeons *Columba livia*, fruit fly *Ceratitis capitata*, rodents (*Rattus rattus*, *R. norvegicus*, *Mus musculus*). The project has established with stakeholders the scope of problems associated with each species. Practical measures are being trialled to assess and cost the control of the plant species impacting on pasture. Contracts are being let for expert assessment and pilot control activities on the myna bird and rodent species. A feasibility study on rabbit control and monitoring programme of the common wasp has been undertaken. See also 3d for other relevant activities in St Helena. In Tristan da Cunha, alien plant eradications began on the main island in 2007; an Invasive Species Action Plan was written in 2007, and an Invasive Species Project Officer arrived in December 2008. Action planning for invasive species in the Falkland Islands includes measures towards rat eradication and control of Calafate and Gorse. In South Georgia & the South Sandwich Islands, a feasibility study on rat eradication has been prepared and the South Georgia Heritage Trust (an NGO) has indicated an interest in taking this work forward. January 2009 *Chagos News* (p13) contains Objectives for Restoration of ecosystems and management improvements in BIOT; more work is needed on this. In Sark, work is in progress on Hottentot Fig and Japanese Knotweed. Policies on potentially invasive coarse fish being developed for the Isle of Man.

2w. Review completed of threats posed by potentially invasive species

Potential from MSc project (cf. 2u) in TCI. A list of the top twenty adventive plant species with potential to become invasive in St Helena was produced by Tom Belton; focus on potentially invasive species has not been a priority, but the project is seeking to address this with a review and recommendations for the region's biosecurity in combination with enhanced public awareness. Threats posed by mammals in South Georgia & the South Sandwich Islands are well documented, and a study of alien invasive flora and invertebrates is currently under way (field work completed and analysis in progress).

2x. Effective measures in place to prevent arrival of further invasives

Progress on effective control of animal and plant pests and on reviewing applications to import plants is reported in Bermuda. The TCI Environ-

mental Health Department has enacted phytosanitary certification requirement for plant importation. Anguillan authorities are reported as not very strict on phytosanitary requirements, especially with regard to plant species. Biosecurity measures in place in St Helena include the checking of imported fruit and vegetables by the Pest Control Section of the Agriculture & Natural Resources Department. Further recommendations will be made following a regional review of biosecurity measures. Additional activities are being undertaken to reduce the pressure to import further plant materials, enhance production of native species for gardens and landscaping, promote local compost production and enhance public awareness. In Tristan da Cunha, preparatory work for eradication of mice and *Sagina* on Gough Island is due to begin in September 2009. New funding is expected in 2009 for *Sagina* and mouse eradication work on Gough for a further two years. Trial quarantine officer and procedures are in place in Cape Town (from early 2009) to control rodents and invertebrates on supply ships to Tristan. Procedures for ships landing tourists on Tristan, Nightingale and Inaccessible are in place. Biosecurity documentation is close to completion for the Falkland Islands. Biosecurity measures have been introduced in South Georgia & the South Sandwich Islands to ensure that all landings are subject to specified procedures and a self-audit mechanism. A dedicated building is under construction to enable cleaning and storage of equipment between intra-island transfers. Additional legislation controlling coarse fish is proposed in the Isle of Man.

3. Ensure that environmental considerations are integrated within social and economic planning processes, promote sustainable patterns of production and consumption within the Territory.

3a. All Country Plans and strategic plans refer to the Environment Charter and its Commitments
Strategic planning exercises and yearly work plans by the Conservation & Fisheries Department, Ministry of Natural Resources and Labour, in BVI take into consideration the country's national, regional and international obligations, including the Environment Charter.

3b. Have environmental considerations been integrated into social and economic planning processes, and are activities undertaken in sustainable manner in the following sectors:

The draft Constitution of the Cayman Islands con-

tains aspirational rights for environmental protection. A consultant has been contracted for a habitat mapping project in TCI, focusing on endemic species and vulnerable habitats; this will provide information to feed into the National Physical Development Plan. In 2007, the BVI Government signed an agreement to participate in The Enhancing Capacity for Adaptation to Climate Change in the UK Caribbean Overseas Territories (ECACC) Project; this project is being used as a major driving force for integrating climate change adaptation strategies (essentially, environmental issues) into decision making at the highest levels. In February 2009, an economic development strategy was developed by the Tristan Council with assistance from a DFID appointed consultancy; this process has not yet been completed but environmental considerations are included. In Guernsey, the Environmental Plan, Social Plan and Fiscal/Economic Plan jointly form the island's Strategic Plan.

3c. Waste management

In April 2009, the online *TCI Journal* and *TC Weekly* reported major problems with waste management and health problems caused by the dump on Providenciales. Bottle collecting for future shipment for recycling has begun in BVI. A non-profit organisation "Green VI" was recently formed specifically to address waste management issues. One of their first major initiatives is to construct a furnace to recycle glass into usable household/decorative items. A new incinerator with larger capacity is to be installed soon on Tortola. In Anguilla, Environmental Health used to collect glass bottles, but this initiative was abandoned without explanation. For St Helena, informal workable arrangements are in place with the *RMS St Helena* to manage disposal of waste oil generated on the island; discussions with Andrew Weir Shipping also took place during the period under review on recycling issues. In 2007, a DFID Environmental Health report was produced for Tristan da Cunha. This focussed on waste management but included all issues and made a number of recommendations, however, resources have not been available for implementation. Relevant activities are dealt with through the planning system in the Isle of Man.

3d. Water resources management

The Water Corporation of Anguilla was established in 2008, with the Ministry of Health responsible for quality of water supplied. Some degree of water quality monitoring and testing was formerly undertaken by the Environmental Health Unit, but this appears to have declined, possibly as a conse-

quence of staff changes. The production capacity of the desalination plant at Crocus Bay was expanded by 50% in 2001. When the plant became operational in 1999, there was concern about the impact on the marine environment of the high salinity outflow and also some concern about the EIA. This should have been monitored.

In St Helena, a Water Catchment Management Study has informed the programme for invasive plant removal on the Peaks. A more phased approach to the clearance of flax *Phorium tenax* has resulted, reducing the annual removal of this invasive plant but maximising the interception of water from this area. The Drip Irrigation Project has provided for the establishment of infrastructure that allows for a more efficient use (versus overhead irrigation) of water resources for both agriculture and horticulture (see also 3j).

Tristan da Cunha: Water management issues were included in the 2007 report for Tristan da Cunha (cf. 3c). Relevant activities are dealt with through the planning system in the Isle of Man.

3e. Tourism

An Environmental Project for the Tourism Sector has been implemented and is on-going in the Cayman Islands. Recent large scale developments in BVI, such as those on Scrub Island and at Oil Nut Bay, Virgin Gorda, have been required to hire an environmental manager during the construction phase. This has helped with monitoring, as the environmental manager produces weekly reports. However, there is a need for a more structured format for, and consistency in, this reporting. Relevant activities are dealt with through the planning system in the Isle of Man.

3f. Transport

EIA reports on transport projects in TCI are not regularly circulated or made available. Public transportation to reduce congestion and improve air quality is being investigated in BVI, specifically for the Road Town area. Relevant activities are dealt with through the planning system in the Isle of Man.

3g. Public and private land use

In Anguilla, a draft Physical Planning Bill was withdrawn from consideration when serious faults were revealed, and was then abandoned, rather than improved; there are allegations of significant corruption in the granting of planning permits. The Land Planning & Development Control Ordinance (2008) is now in force in St Helena, providing for the planning and regulation of the development and

use of land, and for matters connected therewith or incidental thereto. Relevant activities are dealt with through the planning system in the Isle of Man.

3h. Taxation & Economic

The Environmental Fund in the Cayman Islands cannot currently be readily accessed for environmental funding purposes.

3i. Fishing

Excellent management is reported in Anguilla; a marine biologist recruited to the Fisheries Department has enhanced capacity. The Directorate of Fisheries in St Helena is responsible for the management and regulation of the fishery resource. Various Ordinances applicable to the management of the fishery regulate licensing, types of fish caught, types of gear used and numbers of fish taken. A quota system is currently in place on the grouper fishery. In South Georgia & the South Sandwich Islands, three Restricted Impact Areas, where long-line fishing is restricted to protect vulnerable marine ecosystems, have been established. Fisheries management for BIOT is currently provided by the company MRAG; there is poaching (levels of which are disputed). Restrictive fishing legislation in place in Sark may be extended to 12 miles. Relevant conservation matters are considered in the Isle of Man insofar as the Wildlife & Conservation Division has an input into fisheries policy development. Serious threats to turtles from fishing by-catch in Western SBA are reported from Cyprus.

3j. Farming & Forestry

Funding has been removed from most relevant activities in TCI. In St Helena, the Forestry Management Plan is still to be endorsed by the Agricultural & Natural Resources Committee, but is still very much a working document for Forestry. There is controversy over the impact of eucalyptus on local hydrology. There have been no new plantings since before 1992 and, since 2006/07, a number of areas of eucalyptus have been thinned. Whilst there have been no formal investigations carried out by the ANR Department, work has progressed in areas of eucalyptus being cleared. One of the areas cleared of eucalyptus (Warren's Gut) has seen a vast improvement to the water supply. This is monitored by the Water Division and flows that were virtually nil have now risen to over 300 cubic metres per day. The area earmarked for clear-felling has not been cleared, but this intention is still included within the Management Plan. Relevant conservation matters are considered in the Isle of

Man, insofar as the Wildlife & Conservation Division has an input into farming and forestry policy development.

3k. Mineral Extraction

Countless complaints to police in Anguilla about illegal sand-mining appear to have been ignored. Relevant activities are dealt with through the planning system in the Isle of Man.

3l. Power Generation

In the Cayman Islands, there is a stated aim of 10% renewable energy production; the power company is now ready to 'buy-back' user-generated electricity. Unfavourable customs regimes continue to discourage solar and wind energy in Anguilla. Under the Interim Wind Generation Project in St Helena, three more wind turbines have been procured. However, only one has been erected to date, and there are concerns over its environmental impacts at the site selected on Deadwood Plain. The Energy Division is currently erecting 50m masts to ascertain the suitability of three sites for future wind turbine development. An Environmental Assessment is also to be conducted at these sites, to ensure that future sitings of wind turbines take into account both technical feasibility and environmental impacts. In Tristan da Cunha, the hydro-electric project will open fully in 2009, following a delay to works. Relevant activities are dealt with through the planning system in the Isle of Man.

3m. Traditional Crafts

Concern continues over sale of land in coastal areas that support plant species used in traditional crafts in TCI, largely without public consultation or knowledge. In St Helena, the Adult Vocational Education Centre (AVEC) and St Helena's Active Participation in Enterprise (SHAPE) project have provided courses and facilities to support training in traditional crafts and related skills, and it is hoped that such provision will be extended.

3n. Others

Resurgence of illegal migrant songbird trapping in Eastern SBA is reported from Cyprus.

4. Ensure that environmental and environmental health impact assessments are undertaken before approving major projects and while developing our growth management strategy.

4a. EIAs required on development projects

In practice, no EIAs were required on many

projects in TCI, including those proposed by the Government (cf. evidence given to Commission of Enquiry); development proposals for land in Protected Areas and National Trust land holding continued to be submitted and in some cases promoted by TCIG. Local reports from Anguilla note that the exercise is often cosmetic in terms of the timing and decision making. It is reportedly commonplace for developments to proceed before EIAs are completed and reports reviewed. With weak monitoring, developers have continued to "do their own thing." In St Helena, the new Land Planning & Development Control Ordinance (2008) makes provision for mandatory Environmental Impact Assessment (EIA). Whether or not a development will require an EIA will be determined by the Planning Officer. For projects funded by external donors, St Helena must comply with donor requirements (e.g. Development Aid Projects must have an Environmental Scoping Note (ESN) completed before funding is approved). In most cases, a full EIA is not needed, however an ESN allows the Advisor to specify if further action, such as an EIA is required. Pressure from BIOT conservation consultant is being applied on this, in relation to Diego Garcia. In Guernsey, EIAs will be required for certain types of development under a new law to be introduced 6/4/09. In the Isle of Man, EIAs are required through the planning system for terrestrial developments.

4b. Number of proposed or active development projects

In Bermuda, the Southlands hotel proposal, which was subject to public criticism on environmental grounds, was cancelled; recently, concerns have been expressed over a proposed (seasonal) development on Warwick Long Bay beach. In the Cayman Islands, these are reported to be too numerous to list; amongst the largest is the George Town Port Redevelopment Proposal

4c. Number of these with publicly available EIAs

In Bermuda, EIAs are in preparation or prepared and publicly available for other major projects. Public EIAs are pending in the Cayman Islands. For TCI, see 4a above. In Anguilla, EIAs are secret documents considered in closed meetings; public input is limited. For the St Helena Development Aid Project (Accelerated Growth Phase), an ESN is written and available for public viewing; for the Interim Wind Generation Project, an initial ESN done by DFID is being further developed by EPD Section on island in consultation with stakeholders. This was never done formally as it was intended

to appraise all alternative sites but, in the absence of relevant technical data, there was a reluctance to consider sites other than Deadwood Plain. In Guernsey, Longue Hougue waste plant has a public EIA. In Alderney, 3 EIAs have been completed but none are available to the public.

4d. Has a list of major potential and actual threats to the environment, detailing threatened species, ecosystems and landscapes been developed (prior to proposed schemes, so that these can be considered in context)?

Isle of Man clarifies that no list of major potential and actual threats to the environment, detailing threatened species, ecosystems and landscapes has been developed.

5. Commit to open and consultative decision-making on developments and plans which may affect the environment; ensure that environmental impact assessments include consultation with stakeholders.

5a. EIAs publicly available to community and peer review with time for comment before decision.

Procedural problems impede EIAs being made publicly available at the Planning Department in TCI; local people do not think that the decision-making process is open or that policy development is open to public consultation. In Anguilla, adequate time is not always given for peer review, and community interest is still too low to factor this into the sustainability of development outcomes. There has been improvement in this area in the last two years, although some EIAs have been described by experts as mere “lobbying documents, insubstantial and shallow”, and some projects appear to have been approved in the face of all the evidence. The new Land Planning & Development Control Ordinance (2008) makes provisions for EIA’s to be undertaken in St Helena (if deemed necessary by the Planning Officer) and included with any plans submitted for development permission. The public are given 28 days to view any documentation, including any EIAs that are produced, relating to any requests for development permission.

In the Isle of Man, EIAs are publicly available to community and peer review, with time for comment before decision.

5b. Public enquiry system and decision independent of parties and government available and used

This is reported to be the case in the Isle of Man.

5c. Decision process open with reasons given.

In Anguilla, the public reportedly find it difficult to find out about biodiversity and heritage conservation; it is noted that they do not have a Freedom of Information Act, Parliamentary Committees or Commissions of Inquiry in support of scrutiny, as in UK. In the Isle of Man, the decision process is reported to be open with reasons given. In Guernsey the decision process is reported to be open, with reasons given.

5d. Policy development open to public consultation

In the Isle of Man, in some cases, the consultation process is being more formalised and government guidelines published.

6. Implement effectively Multilateral Environmental Agreements already extended to the Territory and work towards the extension of other relevant agreements.

6a. Ramsar Convention on Wetland extended to Territory

6b. Number of sites designated as Wetlands of International Importance

Inaccessible and Gough Islands (in the Tristan da Cunha group), and their 12-nm territorial waters, have been both designated (2008) as separate Ramsar Wetland Sites of International Importance.

6c. Area (km²) designated as Wetlands of International Importance

For Tristan da Cunha, see 6b above.

6d. Area (km²) of sites identified as qualifying as Wetlands of International Importance but not yet designated

6e. Area (km²) designated as Wetlands of International Importance but suffering damage

In the (TCI) North, Middle and East Caicos Ramsar Site, building and other proposed developments are reported within the northern part of the nature reserve in North Caicos, and extension of the North Caicos runway into the nature reserve, apparently without an open EIA. Also, construction of a causeway linking North and Middle Caicos, near to the nature reserve boundary, without apparent EIA on the effects on the nature reserve. An invitation has appeared in the TCI press for bids to construct

a causeway between Joe Grant's Cay and East Caicos. There is no way that such a causeway could not pass through the North, Middle and East Caicos Ramsar Site. However, no EIA has been mentioned and no consultation has taken place. This potentially puts HMG in breach of the terms of the Convention, which require: that the Secretariat is advised of expected impacts on the site; avoidance of these if possible; and that a comprehensive EIA is carried out before any construction work begins (with examination of alternatives, plan for minimising impacts and compensatory measures if the national interest requires the work to go ahead). In Jersey, damage and potential further threats are reported for the SE Jersey Ramsar Site.

6f. Area (km²) of wetland outside protected areas being managed sustainably

6g. Area (km²) of wetland outside protected areas for which there is no information on management

6h. Area (km²) of wetland outside protected areas which has suffered damage
For TCI, see 2a above.

6i. CITES extended to Territory

6j. Convention on Biological Diversity extended to Territory

6k. Convention on Migratory Species extended to Territory

Isle of Man has become a Party to the Convention on Migratory Species Raptor Memorandum of Understanding.

6. Agreements under CMS extended to Territory:
6l. Conservation of Albatrosses & Petrels (ACAP)

6m. Conservation of Cetaceans in the Black Sea, Mediterranean and Contiguous Atlantic Area (ACCOBAMS)

6n. Small Cetaceans of the Baltic and North Sea (ASCOBANS)

Isle of Man is now a signatory to the Agreement on the Conservation of Small Cetaceans of the Baltic and North Seas (ASCOBANS).

6o. Conservation of Migratory Species of Wild Animals (Eurobats)

6p. Conservation of Migratory Species of Wild Animals - Indian Ocean Turtle MOU

6q. World Heritage Convention extended to Territory

6r. Number of World Heritage sites (natural and cultural) designated

Although it has been suggested that the whole of St Helena be designated as a World Heritage Site, this has yet to be discussed further with all stakeholders and the process and ramifications of designation also needs to be fully explored.

6s. Area (km²) of World Heritage sites (natural and cultural) designated

6t. Number of domestically protected cultural heritage sites

6u. Area (km²) of domestically protected cultural heritage sites

6v. Other Conventions extended to Territory

6w. Convention for the Protection of the Natural Resources and Environment of the South Pacific (SPREP) and Final Act of the High Level Conference on the Protection of the Natural Resources and Environment of the South Pacific Region (Noumea, New Calendonia, 17-25 November 1986)

6x. Convention for the Protection of the Marine Environment of the North-East Atlantic OSPAR

6y. Convention for the Protection and Development of the Marine Environment of the Wider Caribbean Region (Cartagena)

6z. Protocol concerning specially Protected Areas and Wildlife (SPAW) to the Convention for the Protection and Development of the Marine Environment of the Wider Caribbean Region (Cartagena)

6z1. Convention on the Prevention of Marine Pollution by Dumping of Wastes and other Matter (London Convention)

7. Review the range, quality and availability of baseline data for natural resources and biodiversity.

7a. Taxa and natural resources for which baseline data have been collected and made available, with extents of coverage for each.

There are a large number of taxa for which baseline data have been collected and reported on all islands in the Tristan da Cunha group. In the Falkland Islands, distribution data have been collected for penguins (four species), black-browed albatross, seals, land birds and ACAP species [Procellariiformes] (white-chinned petrels, northern and southern giant petrels); baseline data on flora and invertebrates has been collected but is not yet available. Baseline data have been collected for Procellariiformes in South Georgia & the South Sandwich Islands (all island breeding sites); the South Georgia GIS is now available publicly online (www.sggis.gov.gs) and contains baseline data, with the intention to increase the amount of historical data stored in the system and to ensure that all new data collected are also included. In Alderney, the seaweed survey has been extended. A new flora catalogue/guide is being written for the Isle of Man, where butterfly and moth surveys are on-going also, with baseline data available for the whole island on road verges and intertidal, coastal and sub-tidal areas; data are also available on marine mammals and basking sharks.

7b. Taxa and natural resources for which there are monitoring programmes, with extents of coverage for each.

In the Cayman Islands, there is a national programme for Grouper (including monitoring) as part of the related Species Action Plan; DoE have also established a long-term monitoring programme. The bird monitoring programme in Anguilla was extended to terrestrial sites in July 2008. In Ascension, land crabs are subject to monitoring. Weekly monitoring of cetaceans around St Helena includes two land surveys and once per month on the seaward side of the island; an island-wide wirebird census is carried out annually at 31 different sites, and wirebird monitoring of 5 key sites is carried out weekly. There is monitoring of important sea and land birds, as well as seals and the invasive *Sagina procumbens* where it occurs, across the islands of the Tristan da Cunha group. In the Falkland Islands, there is monitoring of seabirds (penguins, black-browed albatross, southern giant petrel), seals, Cobb's Wren, and distribution of invasive plants. In South Georgia & the South Sandwich Islands, monitoring of wandering albatross, black-browed albatross, grey-headed albatross, fur seals, macaroni penguins and gentoo penguins involves various extents of coverage. A monitoring programme for invertebrates in rivers has started in the Isle of Man.

7c. Topics which are priorities for further information gathering.

In the Cayman Islands, priorities are reported as including the updating of habitat maps, continuation of current mapping (nearshore / offshore), and issues related to sea-level rise (and climate change). In Ascension, priorities include biocontrol agents on plants, development of protocols for endemic plants, and issues related to illegal fishing. The anticipated recruitment of a Marine Scientific Officer in St Helena will assist in the clarification and pursuit of priorities there. In Tristan da Cunha, priorities include establishment of reasons for the recently documented declines in Northern Rockhopper Penguin, and clarification of the status of winter breeding seabirds (Atlantic Petrel, Great-winged Petrel and Grey Petrel) on Inaccessible and Nightingale Islands. In the Falkland Islands, reported priorities include clarification of the biology of Cobb's Wren, and work on seal and cetacean species (see National Biodiversity Strategy document on www.epd.gov.fk). In South Georgia & the South Sandwich Islands, continued monitoring of ACAP species is considered a priority; a further survey of South Sandwich Islands is required but costs are currently prohibitive. Invertebrates, the island flora (especially lower plants) and marine life are reported priorities for survey and monitoring in the Isle of Man.

8. Ensure that legislation and policies reflect the principle that the polluter should pay for prevention or remedies; establish effective monitoring and enforcement mechanisms.

8a. Are effective Ordinances in place to implement polluter-pays principle?

In the Cayman Islands, anti-litter legislation is in place, although weakly enforced. In St Helena, there is no effective Ordinance in place to implement the polluter-pays principle. Such issues can be addressed only in part, using the Public Health Ordinance, the Health and Safety Ordinance and also the Litter Ordinance. A review of relevant legislation will be done under the Solid Waste Project Phase II.

8b. Number of cases of polluter paying, and amounts involved.

8c. Monitoring of pollution and adherence to planning conditions in place

Doubts have been expressed locally in TCI about the existence of reports monitoring pollution. In

the Isle of Man, some monitoring is reported, but this appears to be under-resourced.

8d. Enforcement measures in place

Doubts have been expressed locally in TCI over enforcement by conservation officers and the pollution task force. In Anguilla, reports indicate no enforcement, and no compliance.

8e. Number of enforcement cases brought.

9. Encourage teaching within schools to promote the value of our local environment (natural and built) and to explain its role within the regional and global environment.

9a. Environment Charter strategy for implementation in schools curriculum

Several environmental education initiatives exist in the Cayman Islands on a variety of issues, though none directly reference the Charter.

9b. Local environment, global context in schools curriculum

Several environmental education initiatives exist in the Cayman Islands on a variety of issues. In Tristan da Cunha, all classes have *Tristan Studies*, primarily aimed at environmental and wildlife topics, and input from visiting specialists (ecologists, the vet, etc., are encouraged to give a class on their subject during their stay). The local environment in a global context is considered at most levels in the Falkland Islands, including in relation to the impacts of invasive species. For South Georgia & the South Sandwich Islands, there is engagement with Falkland schools when appropriate.

9c. Number of visits at all levels to local environmental sites

In TCI, the TCNT facilitates numerous field trips to Protected Areas and National Trust managed areas, environmental education classroom visits, and a summer camp programme. In Anguilla, the ANT has conducted at least ten visits in 2008.

9d. Number of field classroom facilities

Facilities in Bermuda include the *Spirit of Bermuda* sloop, providing for education on a sailboat, including on marine environmental issues. In TCI, the National Trust's Middle Caicos Conservation Centre features environmental exhibits and is increasingly visited by schools. In Ascension, all Primary Schools (KS1 & KS2) have science laboratories. Other Primary level field work,

follow-up displays, etc., are done in ordinary classroom facilities or Hall and Library display areas, and schools support displays set up for Marine Awareness Week and Environment Week and make visits. At Secondary level, there are six science laboratories in school, which includes a lab at Harpers Field Centre (Harpers is used for those children interested in doing horticultural science). In 2009, a school vegetable garden was established in Tristan da Cunha, with all classes involved (3-15 years), older children on a weekly basis. The New Island Interpretive Centre (Barnard Building) has been established in the Falkland Islands, but not yet used as a classroom facility due to transport & logistical problems. In Alderney, development of a field classroom at the Alderney Wildlife Trust's Essex Farm site is on-going, with more than 2000 resident and visitor users. The Akrotiri Environmental Education & Information Centre (Cyprus SBA) hosts 5000 school children per year.

10. Promote publications that spread public awareness of the special features of the environment in the Territory; promote within the Territory the guiding principles set out above.

10a. Number of publications by Government in each year on local environmental topics

10b. Number of publications by NGOs in each year on local environmental topics

Reported publications include:

TCI: *A History of the Turks & Caicos Islands*

[2008, Macmillan-Caribbean, commissioned by TCIG Education Department] includes chapters on native flora and fauna of TCI authored by TCNT staff.

BVI: *Marine Awareness - A BVI Guide* (First Edition) [2008, BVI Government] includes coverage of marine habitats and species, marine laws, conservation practices, potentially dangerous marine organisms, storm preparation and safety; *Reef Critters of the Virgin Islands* [Conservation & Fisheries Department 2009 Calendar, BVI Government] features pictures of reef critters with fun facts; *Beach Safety* (Brochure) [2008, BVI Government] information on beach safety rules, safety flags, lifeguards; *Climate Change – What does it mean for tourism? Impacts of Climate Change on Tourism in the BVI*. [2008, BVI Government]; *International Year of the Reef 2008 Article Series in the BVI Yacht Guide* [March-December 2008, A Looking Glass (private company)] featuring various aspects of reef biology and conservation.

Ascension: *Climate Change – it will affect you!* [2007 EPD Section, Ascension Government] brief on climate change, the consequences of climate change and what can be done on island to assist with slowing down the impacts of climate change.

Tristan da Cunha: *Tristan and Nightingale Islands - Wildlife Monitoring Manual* [2008, RSPB research report (NGO)]; The biology and conservation status of Gough Bunting *Rowettia goughensis*, Ryan, P.G. and Cuthbert, R. J. [2008, *Bulletin of the B.O.C.*, 128(4)]; Population trends and conservation status of the Northern Rockhopper Penguin *Eudyptes moseleyi* at Tristan da Cunha and Gough Island, Cuthbert, R.J. et. al. [2009, *Bird Conservation International* 19: 109–120, BirdLife International].

Falkland Islands: *Falkland Islands State of the Environment Report* (and references within) [2008, www.epd.goc.fk]; *Biodiversity Strategy* (draft) [2008, www.epd.goc.fk]. *Plants of the Falkland Islands*, Ali Liddle [2008, NGO]; *New Island, Falkland Islands - A South Atlantic Wildlife Sanctuary for Conservation Management* [2007, published by Design In Nature for the NICT], informative, highly illustrated work, outlining a management plan and charting the history and development of one island as a reserve, designed to be used as an example to other landowners..

South Georgia & the South Sandwich Islands: *South Georgia Land and Visitor Management Report* [(2002) South Georgia Surveys (NGO)], comprehensive review of land and visitor management policies, legislation, guidelines and practices.

BIOT: BIOT environmental awareness leaflet [2008, Chagos Conservation Trust (NGO)], advice handed to all personnel on Diego Garcia about ‘how to protect the beauty and wildlife’ of BIOT; Chagos Factsheets miniCD [2008, Chagos Conservation Trust (NGO)], illustrated factsheets about aspects of BIOT (mainly environmental).

Guernsey: Sustainability Report [2007]. (Once the Environmental Plan is agreed, a strategy for its promotion and implementation will be developed.)

Isle of Man: *Making a Manx home for wildlife - Things you can do to help wildlife in your garden* (leaflet) [2008, NGO partnership with Government support]; *Guidelines for the selection of Biological Areas of Special Scientific Interest (ASSIs) on the Isle of Man* (Basis of statutory designation) [2008, Government]; *Manx hedge-*

row management - code of best practice (leaflet) [2007, Government]; *Manx watercourse management code* [2006, Government partnership]; several other leaflets.

10c. Programme in place to promote Environment Charter and implementation strategy

Measures of performance of UK Government in implementing its Commitments in the Environment Charters (or equivalent environmental progress for territories without charters)

As noted earlier, UK Government has drastically reduced its resources in this area since signing the Environment Charters in late 2001, and contributing very full interim reports to the Bermuda conference in early 2003. In late May 2009 (just before the Cayman conference), FCO and Defra supplied summary statements on their fulfilment of the Commitments under the Charters. These statements are given below, reordered slightly to relate to the Commitments themselves insofar as this was practicable.

General: HMG Commitments under the Environment Charters

Responsibility for environmental protection is devolved to the Territories. However HMG acknowledges that they need help to address environmental issues. In doing this, three departments (Defra, DFID and FCO) work together alongside JNCC, and involving NGOs, with a view to providing encouragement, support, dialogue, expertise and any other assistance to the UKOTs. This joint effort ensures a coherent and structured approach, which seeks to focus on the areas that UKOT Governments are less able to address themselves.

Defra co-ordinates nature conservation and biodiversity across UK Government, including reporting under multilateral agreements (MEAs), including CBD, CITES, ACAP and Ramsar. It includes UKOTs in its reporting for the UK as applicable, and liaises with them when negotiating. It also helps UKOTs adapt their domestic legislation. Defra is responsible for the Darwin Initiative which supports commitments under the MEAs, and nearly £2m has been spent in the UKOTs to this end. Defra accords or facilitates other sources of funding as well, including the Flagship Species Fund, the

International Sustainable Development Fund, and a variety of research funding (see note from Defra incorporated below).

DfID provides development assistance to UKOTs in need of budgetary support, as well as technical and financial support on cross-cutting issues - all of which can be used in support of environmental protection as appropriate. DfID also jointly funds and manages OTEP with FCO, to the tune of £500,000 per annum.

FCO co-ordinates overall policy on the UKOTs, with other Whitehall Departments leading in their area of expertise. FCO was responsible for the initial creation of the Environment Charters. FCO seeks to assist the UKOTs to use the Charters as the UKOTs see fit, whether as a tool from which they can draw up specific objectives in conservation issues, or to give more general direction to their conservation efforts. OTEP was set up to facilitate the implementation of the Charters, and FCO contributes £500,000 per annum to this and manages it jointly with DfID. Additional, larger projects can be considered under the wider OTPF budget. FCO staff in Governors' Offices assist the UKOTs in the management and implementation of these projects in the territories themselves, and act as a liaison between UKOT Governments and HMG.

The Charters provide a general framework to drive environmental efforts in the UKOTs. However, HMG recognise that they need to be updated and tailored to specific UKOT requirements.

1. Help build capacity to support and implement integrated environmental management which is consistent with the Territory's own plans for sustainable development.

Since the Charters were signed, HMG has helped build capacity for environmental management, through various initiatives including the Overseas Territories Project Fund, which includes OTEP. Each Governor has a small devolved budget which is used to support the UKOTs.

2. Assist the Territories in initiating, reviewing and updating environmental legislation

Since the Charters were signed, HMG has assisted the UKOTs with environmental legislative issues, such as providing funding through

OTEP for TCI, Montserrat and Anguilla to recruit a consultant to update environmental legislation. OTPF has also provided funds for legislation updates within the UKOTs, to help with sustainable development.

3. Facilitate the extension of the UK's ratification of Multilateral Environmental Agreements of benefit to each of the Territories and which each Territory has the capacity to implement (and a desire to adopt.)

Since the Charters were signed, HMG has assisted the UKOTs by facilitating the extension of MEAs to them, working closely to identify MEAs of interest to them, and providing legal advice.

4. Keep the Territories informed regarding new developments in relevant Multilateral Environmental Agreements and invite the Territories to participate where appropriate in the UK's delegation to international environmental negotiations and conferences

Since the Charters were signed, HMG has kept the UKOTs informed of new developments in MEAs by copying correspondence to the relevant authorities in the UKOTs. HMG has also invited UKOTs to be members of a number of delegations, including occasionally funding UKOT representation at meetings.

5. Help each Territory to ensure it has the legislation, institutional capacity (technology, equipment, procedures) and mechanisms it needs to meet international obligations

Since the Charters were signed, HMG has helped the UKOTs meet their international commitments, by providing legal advice and support for legislative issues. Funding has been provided to recruit specialist consultants, and FCO Legal Advisers have provided advice to a number of UKOTs on legislation under consideration.

6. Promote better cooperation and the sharing of experience between and among the Overseas Territories and with other states and communities which face similar environmental problems

Since the Charters were signed, HMG has promoted co-operation and sharing of expertise between UKOTs and other small island developing states, by funding a number of regional

projects through OTEP, including educational projects and the Economic Valuation toolkit. OTEP funds have also been used to pay for a large proportion of the costs of UKOTCF conferences.

7. Use the UK, regional and local expertise to give advice and improve knowledge of technical and scientific issues. This includes regular consultation with interested non-governmental organisations and networks.

Since the Charters were signed, HMG has provided technical assistance and specialised knowledge using UK, regional and local expertise, by providing funding for officials to visit UKOTs, for example for Defra and JNCC officials to offer advice on CITES requirements. Officials also provide advice and assistance to UKOTs preparing project submissions to OTEP, or when drafting legislation.

8. Use the existing Environment Fund for the Overseas Territories, and promote access to other sources of public funding, for projects of lasting benefit to the Territory's environment.

Since the Charters were signed, HMG has commissioned JNCC to work currently on a survey of possible funding sources for UKOTs, and investigating the best means to help the UKOTs access this funding. Defra is providing improved access to Darwin funds for the UKOTs, and DfID and FCO fund £1m per year of projects through OTEP. FCO's OTPF (Overseas Territories Programme Fund) can be used to fund environmental projects.

In this context, Defra has supplied the following note:

1. Defra supports biodiversity conservation in the UKOTs in a number of ways, including to help UKOTs deliver their obligations under the biodiversity conventions and to implement the Environment Charters.
2. Several MEAs have been extended to the Overseas Territories. Within Defra, the Darwin Initiative is the main vehicle for supporting commitments under the MEAs - since Darwin began in 1992, nearly £2m has been awarded to biodiversity projects in UKOTs to support implementation of CBD, and latterly CMS and CITES. In the most recent round (R16) Defra extended a special

welcome to projects in the UKOTs. Annex 1 provides more details of individual projects.

3. As member of MEAs, Defra has to report on the implementation of these Conventions and has sought input from UKOTs where relevant, for instance on the recent Fourth National Report to CBD.

4. Defra has provided information to UKOTs on key developments in MEAs, for instance prior to meetings under the Conventions. Defra has also welcomed the participation of stakeholders in negotiations on multilateral environmental agreements (MEAs) where relevant, and delegations have included participants from devolved administrations and the UKOTs.

The Convention on Biological Diversity

5. The UN Convention on Biological Diversity (CBD) holds a biennial Conference of the Parties (COP) and a range of intersessional meetings. In 2004, Defra paid for two participants from Turks and Caicos Islands to engage in negotiations at COP7. In 2005, Defra and FCO cosponsored a participant from Ascension Island to attend a subsidiary scientific meeting (SBSTTA10) which negotiated a draft work programme on Island Biodiversity. The same participant attended COP8 in 2006, and Defra provided in kind logistic and policy support. Two additional participants from Turks and Caicos attended the meeting without financial support from HMG.

The Convention on International Trade in Endangered Species

6. Under CITES, Defra has supported a training visit to the Cayman Islands by the UK's CITES Licensing authority, Customs and JNCC to identify local CITES trade issues and share expertise in CITES processes and controls, with OTEP funding, in 2007 and a similar visit is planned for Montserrat, and possibly St Helena, later this year [2009]. Defra also works closely with all UKOTs, on an on-going basis, to advise them on domestic legislation which implements CITES controls giving them legal advice, and liaising with and reporting to the CITES Secretariat on their behalf.

CMS agreements – ACAP & IOSEA

7. The UK has signed up to several CMS agreements because the UKOTs are range

states. The UK is a key Party to the Agreement on the Conservation of Albatrosses and Petrels (ACAP) and have made voluntary contributions, including towards the costs of an officer who will co-ordinate ACAP activities in the South Atlantic territories from a base in the Falkland Islands. Representatives from SGSSI and BAS formed part of the UK delegation to ACAP MoP1, and a representative from FIG attended AC2. In addition, the UKOT governments have engaged in discussions to inform UK positions at international meetings.

8. Defra support also another CMS daughter agreement, the Indian Ocean-South East Asian (IOSEA) Marine Turtle MoU which covers the British Indian Ocean Territory (BIOT), part of the Chagos Islands archipelago which is an important habitat for marine turtles. The UK helps fund the work of the IOSEA MoU Secretariat coordinating the work of the signatories to protect the turtles.

The Ramsar Convention on Wetlands

9. A review of existing and potential Ramsar sites in the UKOTs and Crown Dependencies was commissioned by Defra, from UKOTCF, to identify potential sites featuring interests that were under-represented in the List of Wetlands of International Importance. Defra and UKOTCF have since worked with UKOTs, most recently Tristan da Cunha, to designate Ramsar Sites.

Research funding

10. In autumn 2008, Defra contributed an extra £150k research funding to assist projects in UKOTs, including support of the TCI government's habitat mapping, and a contribution to the Tristan da Cunha government's monitoring of seabird populations. Defra has also allocated funding from its International Biodiversity research programme for research in future years.

FSF Flagship Species Fund

11. The FSF is a joint initiative between Defra and Flora & Fauna International (FFI) which supports conservation projects in developing countries and also attracts additional funding from the corporate sector. FSF has supported several projects in UKOTs, including on Turtles in the Chagos Islands and the Caribbean.

International Sustainable Development Fund

12. Defra has supported several projects under the WSSD Implementation Fund (WIF) fund, now known as the International Sustainable Development Fund, established to accelerate implementation of commitments made at the World Summit on Sustainable Development (WSSD). Several projects were taken forward in UKOTs including a capacity building workshop on the Global Strategy for Plant Conservation (GSPC) which was held in early 2006 in Montserrat. Kew Gardens and JNCC were the key partners.

Annex 1 – Darwin Initiative projects in OTs

3-032 Various UKOTs - Core Development of the Forum and Support for NGOs in UK Dependent Territories, UK Dependent Territories Forum
Round 1 started 1993 £25,000

4-148 Various UKOTs - Cultivation and Conservation of Threatened Plant Species for UK Overseas Territories, Royal Botanic Gardens Kew
Round 3 started 1995 £102,454

7/006 Ascension Island - Assessing the status of Ascension Island green turtles, University of Wales Swansea
Round 6 started 1998 £133,873

7/115 St Helena - Ecology and conservation of the endemic St Helena wirebird, University of Reading
Round 6 started 1998 £88,968

7/163 British Virgin Islands - Integrating national parks, education and community development, British Virgin Islands National Parks Trust
Round 6 started 1998 £116,550

8/024 Falkland Islands - Status and distribution of the flora of The Falkland Islands, Queens University Belfast
Round 7 started 1999 £33,330

8/114 Anguilla - Capacity building for biodiversity conservation in Anguilla, World Wide Fund for Nature - UK
Round 7 started 1999 £82,507

8/164 Turks & Caicos Isles - Developing biodiversity management capacity around the Ramsar site in Turks and Caicos Islands,

CABI Bioscience
Round 7 started 1999 £124,100

9/009 Bermuda - Development of a Biodiversity Strategy and Action Plan for Bermuda, Bermuda Zoological Society (BZS)
Round 8 started 2000 £98,528

12/010 Tristan da Cunha - Empowering the people of Tristan to implement the CBD, The Royal Society for the Protection of Birds
Round 11 start 2003 £154,117

12/023 British Virgin Islands - Biodiversity Action Plan for Anegada, BVI University of Wales
Round 11 start 2003 £164,205

13/022 Falkland Islands - Falkland Islands Invertebrate Project
Round 12 priority reserve- start September 2004 £118,488

14/027 Montserrat - Enabling the People of Montserrat to Conserve the Centre Hills, RSPB
Round 13 start 2005 £160,900

14/051 Cayman Islands - In Ivan's wake: Darwin Initiative BAP for the Cayman Islands, University of Exeter in Cornwall
Round 13 start 2005 £179,325

17/004 Cross Caribbean UKOTs - Building civil society capacity for conservation in the Caribbean UKOTs, Commonwealth Foundation
Round 16 start 2009 £262,755

14/ Pacific Island States - Conservation Extension Through Distance Learning for the small Island States of the Pacific, International Centre for Protected Landscapes
Pre-project Round 13 £2,292

EIDPO023 Tristan da Cunha - Enabling the people of Tristan to implement the CBD in the marine environment, RSPB
Post-Project start 2007

EIDPO027 Montserrat - Reducing the impact of feral livestock in and around the Centre Hills
Post-Project start 2009 £144,236

EIDPR078 Falkland Islands - Conservation strategies for Falkland Islands freshwater fish biodiversity
Scoping Award start 2007

9. Help each of the Territories identify further funding partners for environmental projects, such as donors, the private sector or nongovernmental organisations.

Since the Charters were signed, HMG has helped the UKOTs identify further funding partners for environmental projects, through the initiatives described above.

10. Recognise the diversity of the challenges facing the Overseas Territories in very different socio-economic and geographical situations.

Since the Charters were signed, HMG has recognised the diversity of challenges faced by the UKOTs in very difficult socio-economic and geographical situations, by providing funding from FCO through OTPF for projects such as economic diversification, immigration, security and health, depending upon the issues facing the individual UKOT. DfID funding is used to provide budgetary support to those UKOTs in most need.

11. Abide by the principles set out in the Rio Declaration on Environment and Development and work towards meeting International Development Targets on the environment.

Since the Charters were signed, HMG has abided by the principles set out in the Rio Declaration and working towards meeting the Millennium Development Goals on the environment, by using OTPF to promote sustainable development, and DfID funding to assist development.

First Review in 2007 (with additional rows for changes)

Background

The Environment Charters signed in September 2001 between the UK Government and the Governments of UK Overseas Territories (UKOTs) are important documents underlying the shared responsibility of the UK Government and the Government of each Territory for the conservation of the environment and the international commitments to this. This is particularly important, for example, for biodiversity as most of the global biodiversity for which the UK family of countries is responsible resides in the UKOTs, rather than in Great Britain and Northern Ireland. In the context of international commitments, it is UK which lodges – and is accountable for – the international commitment, but the legislature and executive of each territory which are responsible for the local implementing legislation and its implementation. This latter point applies equally to the relationships between UK and those territories which do not have Environment Charters.

Fundamental elements of the Charters are the sets of Commitments, on the one part by UK Government and on the other part by the Government of the UK Overseas Territories concerned. If these Commitments are to have real meaning, it is necessary to have some means of assessing progress in their implementation. This need has been recognised by the UK Overseas Territories Conservation Forum (UKOTCF), which has been putting considerable effort into developing a set of measures to achieve this end.

This need was recognised too by the OTEP management team. One of UK Government's Commitments in the Charters concerns providing some funding to help benefit the environments of the Territories. Initially this was met by the Foreign & Commonwealth Office (FCO) Environment Fund for the Overseas Territories (EFOT), and currently by FCO's & the Department for International Development's (DFID) joint Overseas Territories Environment Programme (OTEP). Accordingly, part of this work was supported by funding from OTEP. Some in UKOTs have expressed some concern that this might mean that one party (UK Government) to the Charters might have special access to the assessment process. However, it is important to note that this is not the case. UKOTCF has retained editorial control over this exercise, and will continue

to do so. Whilst it welcomed the part-funding from OTEP, and any input from both parties to each Charter, as well as others, UKOTCF will retain its independent oversight of the process. UKOTCF originally suggested the idea of Charters (then termed "checklists") and was delighted when this evolved into the Charters. It has continued to support this process, but it is not a party to the Charters, nor either set of Commitments. This combination puts UKOTCF in an ideal position to provide assessments of progress in implementation.

UKOTCF has been asked by various people in the UK and the UKOTs, including FCO and DFID, to attempt to gather, collate and analyse information on progress being made in implementing the Environment Charters. However, developing a set of measures or indicators is not simple. This was challenging because UKOTCF had not drafted the Charters, and these are not structured in a way that made assessment of progress easy. The key was to find measures which related to real progress in meeting the commitments but would not require too much effort to gather. UKOTCF put a great deal of work into consulting and working on this, and published its draft measures in Forum News in early 2006, inviting further comments and contributions to help populate the tables. No adverse comments were received on these measures, and some favourable comments on them were received from JNCC, HMG's statutory advisor on nature conservation. For elements of some Commitments, it is relatively easy to find measures that meet these requirements; for others it is very difficult. UKOTCF does not want to generate unnecessary work, and recognises also that some information is already readily available annually for other purposes. For others, a cumulative measure, updated every few years might be more feasible. UKOTCF has tried to allow for both sorts of measures, so as to minimise effort and be cost-effective.

Recognising that it is much easier to comment on a draft than to start from a blank sheet of paper, UKOTCF presented the version of data collated by then in the papers for the *Biodiversity That Matters* conference in Jersey in October 2006, organised by UKOTCF and supported by OTEP. UKOTCF took the opportunity to invite further contributions and enquired whether there were blockages which could be addressed. There was a general agreement from UKOTs that it is important that the Territories and other parties supply information to update these. There were also requests to provide in addition forms designed more for the supply of

information than for summarising the results. This was done by UKOTCF early in 2007.

The important function of collating this information was made even more urgent by the investigation in early 2007 on *Trade, Development and Environment: the role of the FCO* by the House of Commons Select Committee on Environmental Audit (Report 23 May 2007). When preparing supplementary evidence to address questions put to their Minister by the Committee, FCO officials asked of progress on UKOTCF's review on implementation of the Charters. Subsequently, the FCO Minister's supplementary memorandum to the House of Commons EAC stated (with a slightly optimistic interpretation of UKOTCF's estimate of the timescale): "Your Committee also asked about an assessment of the Overseas Territories Environment Charters. The UKOTCF is currently gathering information on the progress in implementing the Environment Charter Commitments for each Territory (or the equivalent for those Territories without Charters). The Forum intends to publish a progress report towards the middle of this year. The FCO will use that information, in consultation with Whitehall colleagues and the governments of the Overseas Territories, to carry out a review of the Environment Charters which have now been in place for five years."

In this context, UKOTCF put a great deal of further effort into helping and encouraging UKOTs to provide information, stressing that it was not necessary for each to answer all the questions. However, it was difficult to cut out some areas of the form, because of the structure of the Charters and the fact that different territories had made most progress in different areas. For efficiency of collation and reporting, those territories without Charters were also invited to include themselves in the exercise. The information gathering forms have been designed so that, after the initial hard work in this first cycle of reporting, any subsequent updating report will not require much effort.

Acknowledgements

UKOTCF is grateful to all those who helped develop and commented on the development of the indicators and OTEP for part support for some of the earlier stages of the work. The contributions of those who then supplied information on progress was, of course, essential and UKOTCF gratefully acknowledges this. These thanks are the more so

because some of the bodies which had originally asked UKOTCF to undertake this review circulated to UKOTs, as it was moving towards completion, other questionnaires. This was confusing to the UKOTs and generated extra work. UKOTCF regrets this but has to note that it was not consulted about these circulations from other organisations.

UKOTCF is very pleased to note that, of the 21 entities that constitute the UKOTs and Crown Dependencies, responses have been received from or on behalf of 19. In line with the Environment Charters themselves, responses were welcomed from both governmental and non-governmental bodies, and in several cases, the responses were integrated. We are grateful to the governmental departments and/or the statutory bodies of the following for their responses: Bermuda, the Cayman Islands, the Turks & Caicos Islands, the British Virgin Islands, Anguilla, Montserrat, Ascension Island, St Helena, Tristan da Cunha, the Falkland Islands, South Georgia and the South Sandwich Islands, and the Pitcairn Islands, as well as from the governmental departments from the following Crown Dependencies which do not have Environment Charters: the Isle of Man and Jersey. We are grateful too for contributions from non-governmental bodies in some of these as well as for: British Indian Ocean Territory, Gibraltar (which has its own Environment Charter, rather than one with HMG), Guernsey, Alderney and Sark.

UKOTCF has not received information from HMG in respect of the UK Commitments in the Environment Charters, nor from those UKOTs which are directly administered by UK Government: British Indian Ocean Territory, British Antarctic Territory, and the Cyprus Sovereign Base Areas. The first of these has an Environment Charter (and UKOTCF is grateful to the NGO Chagos Conservation Trust for supplying some relevant information), and the other two do not. Officials at the Cyprus SBAs indicated that they hoped to find time to supply information but were not able to treat it as a priority; UKOTCF hopes that they may still be able to undertake this exercise, in which case UKOTCF will add information to the report. The lack of information from HMG on its own Commitments means that the second half of the report below is extremely incomplete, relying on information supplied by the territories or otherwise gleaned. HMG did not identify any problems when the draft indicators were published in early 2006. Early in 2007, HMG indicated initially that there would be a delay in its response. A few months later, FCO reported that,

although it had no problem in principle with the indicators, HMG did not have the resources to report on the implementation of its own Commitments. UKOTCF was surprised by this, because HMG had drafted the Environment Charters, had been one of those originally asking UKOTCF to develop a report on their implementation, had reported nothing wrong with the draft indicators, and had (around the same time as indicating that it could not find the time to respond) reported to Parliament that it was awaiting UKOTCF's report. UKOTCF hopes that HMG will identify the resources to report on its Commitments in the future. In the interim, UKOTCF (despite its much smaller resources) will continue to try to collate any available information on this.

Report on progress in implementing the Environment Charters or the equivalent activities

The following table is structured according to the numbered Commitments by HMG and by most of the UKOTs in the Environment Charters

that these have signed. (There are slight differences in the wording of some Commitments in different Charters; here generalised wording is used.) The inclusion of a territory in this table does not imply that it has signed an Environment Charter with the UK. In particular, the Crown Dependencies, the Cyprus Sovereign Bases Areas, and the British Antarctic Territory do not have Environment Charters, and Gibraltar has one of a different type, being a statement by Gibraltar rather than an agreement with HMG. However, the progress report has wider purposes. UKOTCF, at the request of various UK Government Departments and others, often needs to collate information on the UKOTs and Crown Dependencies (CDs). All UKOTs and CDs are included in the tables, for this reason and efficiency of data-handling.

Because of the major collation exercise involved, the different ways different territories operate, and the problems noted above, this report will inevitably include some errors. UKOTCF welcomes information to correct errors or fill gaps. This should be sent to the email address below. In addition, particularly for those Commitments for which indicators are particularly difficult to develop, some measures include an element of interpreta-

tion, and there is a risk that these have been interpreted differently in different territories. Wherever possible, it has been attempted to move towards a more shared standard for all on the basis of more detailed information, but some inconsistencies in individual indicators probably remain.

Notes on the tables:
For those Territories without an Environment Charter, references to the Charter in certain measures are taken as referring to equivalent provisions.
Y = yes; B = yes, for biodiversity aspects only; P = partly; D= apparently in place but some problems identified in practice; Rev = under active review; N = no; ? = unknown; n/a = not applicable
£k = thousands of GB pounds; £m = millions of GB pounds

UKOTCF recognises that this document is not exactly a “good read”, but the information it contains is important. To try to ease its inspection, a colour code is used for those rows which relate to extent of environmental performance.
For example, using the abbreviations indicated above, this might appear as:

Y	B	P	D	Rev	N	?
---	---	---	---	-----	---	---

The colouring is applied similarly for other types of answers. Rows which relate to information not directly reflecting performance (for example, those needed to help calculate or interpret other rows) are not coloured. Also not coloured are rows where the information is inadequate to allow an assessment.

Footnotes are used for further explanation.

Measures of performance of UKOTs in implementing their Commitments in the Environment Charters (or equivalent environmental progress for territories without charters)

These follow on the next 11 pages, with the updating lines as explained above. This is followed by the 2007 report on UK Government commitments.

Measures of performance of UKOTs in implementing their Commitments in the Environment Charters (or equivalent environmental progress for territories without charters)

Commitment (The government of the Overseas Territory will:)	Bermuda	Cayman Islands	Turks & Caicos Islands	British Virgin Islands	Anguilla	Montserrat	Ascension Island	St Helena	Tristan da Cunha	Falkland Islands	S Georgia & S Sandwich Is	British Antarctic Territory	British Indian Ocean Territory	Pitcairn Islands	Gibraltar	Cyprus Sovereign Base Areas	Isle of Man	Jersey	Guernsey (& Sark) ¹	Alderney	Sark ¹
Measures																					
1. Bring together government departments, representatives of local industry and commerce, environment and heritage organisations, the Governor's office, individual environmental champions and other community representatives in a forum to formulate a detailed strategy for action.	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	N	Y	Y	Y ³	N	N	N	N	Rev ³	N
UPDATE 2009																					
1a. Signed Environment Charter	2 ²	N	Y	N	Y	Y	Y	Y	Y	Y	Y	N	Y	Rev	n/a	n/a	n/a	n/a	n/a	Y	n/a
1b. Group assembled to develop and manage strategy for action														Y							
UPDATE 2009														Y							
1c. Strategy for action developed	2 ²	B rev	Y	N	Y	Y	P	Y	B	Draft	Y	N	Y	Y	N	?	Rev	B	P		
UPDATE 2009																					
1d. Named Minister or Councillor responsible for carrying the implementation forward and ensuring reporting on progress	2	N	Y	Y	Y	Y	Y	N	Y	Y	n/a	N	N	Rev	Y	N	n/a	n/a	n/a	Y	n/a
UPDATE 2009																					
1e. Named officials designated and resourced to coordinate across departments and other partners, draft annual reports.	2	N	Y	Y	Y	Y	Y	N	Y	N	n/a	N	N	N	?	Y	n/a	n/a	n/a	n/a	n/a
UPDATE 2009																					
1f. NGOs resourced by Government to provide an independent monitoring and reporting mechanism	N	N	N	N	Y	N	n/a	N	n/a	Y	N	N	N	Rev	N	N	?	?	P	n/a	
UPDATE 2009																					
1g. Strategy implemented and monitored as ongoing process	P	N	Y	N	Y	P	Y	Y	P	N	Y	N	N	Not yet	N	N	?	?	Y	n/a	
UPDATE 2009																					
1h. Annual reports produced on progress achieved and plans for the forthcoming year	2	N	Y	N	Y	Rev	N	N	N	P	N	N	N	Not yet	?	N	?	?	Y	n/a	
UPDATE 2009																					
1i. Funding for recurrent expenditure and projects to implement the Charter ³ strategy included in annual departmental budgets	P	N	P	N	P	P	Y	P	P	Y	Y	N	?	Not yet	n/a	N	n/a	n/a	N	n/a	
UPDATE 2009																					
1j. Amount expended in year on Environment Charter implementation from Territory resources (£k)	\$15 m pa on incident al supp ort	?																			
2002-3										164				0			Y		n/a	n/a	
2003-4								4	98	232				0			Y				
2004-5							72.3	10	84	190				0			Y				
2005-6							65.6	13	107	177				0			Y				
2006-7									125								567				
UPDATE 2009										193											
1k. Local funding mechanism in place in support of non-	Y	P	Y	N	P	Rev	N	N	Y	Y	N	N	N	N	N	N	N	N	N	n/a	

Commitment (The government of the Overseas Territory will:)	Measures	Bermuda	Cayman Islands	Turks & Caicos Islands	British Virgin Islands	Anguilla	Montserrat	Ascension Island	St Helena	Tristan da Cunha	Falkland Islands	S Georgia & S Sandwich Is	British Antarctic Territory	British Indian Ocean Territory	Pitcairn Islands	Gibraltar	Cyprus Sovereign Base Areas	Isle of Man	Jersey	Guernsey (& Sark) ¹	Alderney	Sark ¹
governmental projects implementing the Charter (e.g. earmarked visitor tax)						rev ⁴																
UPDATE 2009																						
11. Grant funding system in place for any such local funding mechanism, involving open processes and NGO involvement in decision process		N	N	D	N	N ⁵	Rev	N	N	P	Y	N	N	N	N	N	N	N	N	N	n/a	
UPDATE 2009																						
1m. Amount collected in such fund			n/a	?	n/a	0	0	0	0	Curr hold £6k	134 117 90 87	n/a			n/a	0		0			n/a	
2002-3																						
2003-4																						
2004-5																						
2005-6																						
2006-7																						
UPDATE 2009																						
1n. Amount expended on Environment Charter objectives by such fund			n/a	?	n/a	0	0	0	0	n/ avail	134 117 90 87	n/a			n/a	0		0			n/a	
2002-3																						
2003-4																						
2004-5																						
2005-6																						
2006-7																						
UPDATE 2009																						
2. Ensure the protection and restoration of key habitats, species and landscape features through legislation and appropriate management structures and mechanisms, including a protected areas policy, and attempt the control and eradication of invasive species.																						
2a. Number of nature protected areas designated		?	4	24	20	6 ⁶	4	1	(15) ⁷	3	?	1	6	0	2	1	12	10	?	?	?	?
UPDATE 2009																						
2b. Area (km ²) identified as nationally or internationally important for nature		95	97	870	318	81	63	108	36.0 7	179	1726	4033	4050 0	87	?	24	36	204	11.1 2	157	1	
UPDATE 2009																						
2c. Area (km ²) of nature protected areas designated		5.07	1.32	773	7.48	0	12	9	0	93	180	3755 8	ca 400	37	?	22	9.43	191	11.1 2	157	0.01	
UPDATE 2009																						
2d. Area of nature protected areas as % of area identified as nationally or internationally important for nature		5.3	1.4	88	2.4	0	17	8.3	0	52	10	93 ⁸	1	43	?	90	26	94	100	100	100	
UPDATE 2009																						
2e. Land area of territory (km ²)		53	260	430	153	90	102	90	122	181	1217 3	4033	170 940 0	44	6.5	254	872	117	62	8	5	

Commitment (The government of the Overseas Territory will:) Measures	Territories																					
	Bermuda	Cayman Islands	Turks & Caicos Islands	British Virgin Islands	Anguilla	Montserrat	Ascension Island	St Helena	Tristan da Cunha	Falkland Islands	S Georgia & S Sandwich Is	British Antarctic Territory	British Indian Ocean Territory	Pitcairn Islands	Gibraltar	Cyprus Sovereign Base Areas	Isle of Man	Jersey	Guernsey (& Sark) ¹	Alderney	Sark ¹	
UPDATE 2009 2f. Area (km ²) of terrestrial nature protected areas	5.07	1.32	35	4.38	0	12	9	0	93	180	3755		?	37		22	572	4	ca 10	?	0.01	
UPDATE 2009 2g. Area of terrestrial nature protected areas as % of land area	9.6	0.5	8.1	2.9	0	11.8	10	0	51	1.5	93 ⁸		?	84		8.7	10.4 9	3.4	16	?	0.2	
UPDATE 2009 Land and sea area of territory (km ²)										3436 93			5440 0				1.8					
UPDATE 2009 2h. Area of all nature protected areas as % of land and sea area										0.05			0.08				0.02					
UPDATE 2009 2i. Area (km ²) of designated nature protected areas subject to operating management plan ⁹		?	?	?	0	0	0	0	79	27	3755		?	37	0	0			191	11	157	0
UPDATE 2009 2j. Change in area (km ²) of nature protected areas since Environment Charter signed (Sept 2001) (Positive except as indicated)	0.5 ¹⁰	0	-0.5 ¹¹	0.14	0.5	0	9	0	14	0	0		0	0	?	22	3.61	157	3.9	157	0.01	
UPDATE 2009 2k. Number of nature protected areas improving in nature quality since Sept 2001				1				1	3	18 ¹²				n/a								
UPDATE 2009 2l. Number of nature protected areas maintaining nature quality since Sept 2001				18		2				All				n/a								
UPDATE 2009 2m. Number of nature protected areas with declining nature quality since Sept 2001						2 ²³				0				n/a								
UPDATE 2009 2n. Number of nature protected areas with no information on changes in quality since Sept 2001										0	1			n/a				10				
UPDATE 2009 2o. Government bodies (G) and/o NGOs (O) involved in managing protected areas	GO	GO	GO	GO	GO	GO	G	GO	GO	GO	G		G	n/a	GO	G	GO	G	GO	GO		
UPDATE 2009 2p. Number of key species with conservation action plans developed and completed or being implemented	68	39	5	1	?	1	1	6 draft	?	12 draft	?		0	3	0	?	3	50	0	Rev		
UPDATE 2009 2q. Number of species with reduction in threatened status	1	1	1	0	0	0	0	0	1	?	0	0	0	0	0	0	0	0	0			
UPDATE 2009 2r. Number of species with increase in threatened status			1														1					
UPDATE 2009 2s. Review completed identifying gaps in legislation and	Y	Y	Y	N	Y	P	P	N	N	Y	?	?	N	Y	N	?	Y	Y	Y	N	N	

Commitment (The government of the Overseas Territory will:)	Measures	Bermuda	Cayman Islands	Turks & Caicos Islands	British Virgin Islands	Anguilla	Montserrat	Ascension Island	St Helena	Tristan da Cunha	Falkland Islands	S Georgia & S Sandwich Is	British Antarctic Territory	British Indian Ocean Territory	Pitcairn Islands	Gibraltar	Cyprus Sovereign Base Areas	Isle of Man	Jersey	Guernsey (& Sark) ¹	Alderney	Sark ¹
Commitment (The government of the Overseas Territory will:)	needs to fulfil them to meet nature commitments																					
	UPDATE 2009																					
	2t. Legislation updated to fill gaps in nature protection	P	N	Rev	Y	N	Rev	Y	N	Y	Y	?	?	?	N	Y	?	Y	n/a	N	N	
	UPDATE 2009																					
	2u. Review completed of invasive species problems	Y	P	N	P	Rev	N	Y	P	P	Pending	?	?	N	N	Y	?	N	N (not prio)	N	Rev	
	UPDATE 2009																					
	2v. Action plans completed or operating to deal with invasive species	P	5	?	N	?	N	4	Rev	3	Y	?	?	?	1	N	?	Rev	N	N	n/a	
	UPDATE 2009																					
	2w. Review completed of threats posed by potentially invasive species	P	P	?	N	?	N	Y	N	P	Y	?	?	N	Y	?	?	N	N	N	N	
	UPDATE 2009																					
	2x. Effective measures in place to prevent arrival of further invasives	P	N	D	N	Rev	D	N	P	Rev	Y	?	?	N	Rev	N	?	P	N	P	?	
	UPDATE 2009																					
3. Ensure that environmental considerations are integrated within social and economic planning processes, promote sustainable patterns of production and consumption within the Territory.																						
Commitment (The government of the Overseas Territory will:)	3a. All Country Plans and strategic plans refer to the Environment Charter and its Commitments	P	N	P	P	Rev	Y	N	Y	Y	Y	Y		N	Rev	N		n/a	n/a	n/a	Rev	
	UPDATE 2009																					
	3b. Have environmental considerations been integrated into social and economic planning processes, and are activities undertaken in sustainable manner in the following sectors:	P	N	D	P	N	Rev	N		P	Y	Y		P	Rev	Y ¹³					N	
	UPDATE 2009																					
	3c. Waste management	P	N	Rev	P	N	D	?	Rev	?	Y	Y		Y	Rev	?	?	?	?	P	N	
	UPDATE 2009																					
	3d. Water resources management	Y	P	D	?	N	P	?	Rev	?	Y	?		Y	Rev	?	?	?	?	Y	N	
	UPDATE 2009																					
	3e. Tourism	N	N	D	N	N	P	?	Rev	?	Y	?		n/a	Rev	?	?	?	?	N	N	
	UPDATE 2009																					
	3f. Transport	N	N	D	N	N	N	?	Rev	?	Y	n/a		?	Rev	?	?	?	?	N	N	
	UPDATE 2009																					
	3g. Public and private land use	Y	P	D	?	N	P	?	Y	?	Y	n/a		?	Rev	?	?	?	?	P	N	
	UPDATE 2009																					
	3h. Taxation & Economic	N	P	D	?	N	P	?	Rev	?	Y	n/a		n/a	Rev	?	?	?	?	N	N	
	UPDATE 2009																					
	3i. Fishing	Y	Y	P	P	N	Rev	?	P	Y	Y	Y		P	Rev	?	?	?	?	N	N	
	UPDATE 2009																					

Commitment (The government of the Overseas Territory will:)	Bermuda	Cayman Islands	Turks & Caicos Islands	British Virgin Islands	Anguilla	Montserrat	Ascension Island	St Helena	Tristan da Cunha	Falkland Islands	S Georgia & S Sandwich Is	British Antarctic Territory	British Indian Ocean Territory	Pitcairn Islands	Gibraltar	Cyprus Sovereign Base Areas	Isle of Man	Jersey	Guernsey (& Sark) ¹	Sark ¹
Measures																				
3j. Farming & Forestry	Y	N	D	?	N	P	?	Rev	?	Y	n/a		n/a	Rev	?	?	?	?	P	N
UPDATE 2009																				
3k. Mineral Extraction	Y	Y	D	N	N	D	?	?	?	Y	none		n/a	Rev	?	?	?	?	P	N
UPDATE 2009																				
3l. Power Generation	P	P	?	N	Rev	Rev	?	Rev	?	Y	Y		Y	Rev	?	?	?	?	N	N
UPDATE 2009																				
3m. Traditional Crafts	N	rev	P	?	N	?	?	?	?	Y	none		n/a	Rev	?	?	?	?	N	N
UPDATE 2009																				
3n. Others																				
UPDATE 2009																				
4. Ensure that environmental and environmental health impact assessments are undertaken before approving major projects and while developing our growth management strategy.																				
4a. EIAs required on development projects	D ¹⁴	N	D ¹⁴	Y	N ¹⁵	D	N	P	Y	Y	Y		D ¹⁴	Y	Y	?	N ¹⁶	Y	Rev	infor mal
UPDATE 2009																				
4b. Number of proposed or active development projects	4	man y	Man y	6	10+	6	?	11	3	3	2		?	1	4	?	3	?	?	2
UPDATE 2009																				
4c. Number of these with publicly available EIAs	0	0	D ¹⁷	5	2	0	?	3	0	3	2		?	N	1	?	0	?	?	0
UPDATE 2009																				
4d. Has a list of major potential and actual threats to the environment, detailing threatened species, ecosystems and landscapes been developed (prior to proposed schemes, so that these can be considered in context)?	N	N	D	N	D	P	N	P	N	Y	N		?	Y	P	?	?	N	Rev	
UPDATE 2009																				
5. Commit to open and consultative decision-making on developments and plans which may affect the environment; ensure that environmental impact assessments include consultation with stakeholders.																				
5a. EIAs publicly available to community and peer review with time for comment before decision.	Oce asio nally	N	D ¹⁴	P	N	Usu ally	N	N	P	Y	Y		N	Rev	Y	?	?	Y	P	?
UPDATE 2009																				
5b. Public enquiry system and decision independent of parties and government available and used	Mos itly	N	N	N	N	Y	N	N	N	Y	N		N	Rev	N	?	?	Y	Y	Y
UPDATE 2009																				
5c. Decision process open with reasons given.	Mos itly	N	D ¹⁴	N	N	Y	N	Y	Y	Y	N		N	Rev	N	?	?	Y	P	Y
UPDATE 2009																				
5d. Policy development open to public consultation	Y	N	D	Y	N	Y	N	Y	Y	Y	Y		N	Rev	Y	?	?	Y	P	P
UPDATE 2009																				

Commitment (The government of the Overseas Territory will:-)	Bermuda	Cayman Islands	Turks & Caicos Islands	British Virgin Islands	Anguilla	Montserrat	Ascension Island	St Helena	Tristan da Cunha	Falkland Islands	S Georgia & S Sandwich Is	British Antarctic Territory	British Indian Ocean Territory	Pitcairn Islands	Gibraltar	Cyprus Sovereign Base Areas	Isle of Man	Jersey	Guernsey (& Sark) ¹	Alderney	Sark ¹
Measures																					
6. Implement effectively Multilateral Environmental Agreements already extended to the Territory and work towards the extension of other relevant agreements.																					
6a. Ramsar Convention on Wetland extended to Territory	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	N	Y	Y	Y	Y	Y	Y	Y	Y	Y
UPDATE 2009																					
6b. Number of sites designated as Wetlands of International Importance	7	1	1	1	0	0	0	0	0	2	0	0	1	0	0	1	1	4	1	1	1
UPDATE 2009																					
6c. Area (km ²) designated as Wetlands of International Importance	0.36	0.82	586	10.7	0	0	0	0	0	47.5	0	0	354	0	0	21.7	1.93	187	3.9	156.3	0.01
UPDATE 2009																					
6d. Area (km ²) of sites identified as qualifying as Wetlands of International Importance but not yet designated	90	97	82	300	50+	50	100	20	179	1315	4033	-	ca 40000	63	?	0	34.4	12.8	6.9	?	0
UPDATE 2009																					
6e. Area (km ²) designated as Wetlands of International Importance but suffering damage	5	71							0												
UPDATE 2009																					
6f. Area (km ²) of wetland outside protected areas being managed sustainably	0																				
UPDATE 2009																					
6g. Area (km ²) of wetland outside protected areas for which there is no information on management	All																				
UPDATE 2009																					
6h. Area (km ²) of wetland outside protected areas which has suffered damage	much	1+	1+	1+	1+				?												
UPDATE 2009																					
6i. CITES extended to Territory	Y	Y	N	Y	N	Y	Y	Y	Y	Y	Y	N	Y	Y	Y	N	Y	Y	Y	Y	Y
UPDATE 2009																					
6j. Convention on Biological Diversity extended to Territory	N	Y	N	Y	N	N	Y	Y	Y	N	N	N	N	N	Y	N	N	Y	N	N	N
UPDATE 2009																					
6k. Convention on Migratory Species extended to Territory	Y	Y	Y	Y	N	Y	Y	Y	Y	Y	Y	N	Y	Y	Y	Y	Y	Y	Y	Y	Y
UPDATE 2009																					
6. Agreements under CMS extended to Territory:																					
6i. Conservation of Albatrosses & Petrels (ACAP)	N	N	N	N	N	N	N	N	Y	Y	Y	Y	N	N	N	N	N	N	N	N	N
UPDATE 2009																					
6m. Conservation of Cetaceans in the Black Sea, Mediterranean and Contiguous Atlantic Area (ACCOBAMS)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	N	N	-	-	-	-	-
UPDATE 2009																					
6n. Small Cetaceans of the Baltic and North Sea	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	As	N	N	N	N

Commitment (The government of the Overseas Territory will:)	Bermuda	Cayman Islands	Turks & Caicos Islands	British Virgin Islands	Anguilla	Montserrat	Ascension Island	St Helena	Tristan da Cunha	Falkland Islands	S Georgia & S Sandwich Is	British Antarctic Territory	British Indian Ocean Territory	Pitcairn Islands	Gibraltar	Cyprus Sovereign Base Areas	Isle of Man	Jersey	Guernsey (& Sark) ¹	Alderney	Sark ¹
Measures																					
(ASCOBANS)																					
UPDATE 2009																					
6a. Conservation of Migratory Species of Wild Animals (Eurobats)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Y	N	N	N	N	N	N
UPDATE 2009																					
6b. Conservation of Migratory Species of Wild Animals - Indian Ocean Turtle MOU	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
UPDATE 2009																					
6c. World Heritage Convention extended to Territory	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	N	N	Y	Y	Y	Y	N	N	N	N
UPDATE 2009																					
6d. Number of World Heritage sites (natural and cultural) designated	1	0	0	0	0 ¹⁸	0	0	0	1	0	0	0	0	1	?	0	0	0	0	0	0
UPDATE 2009																					
6e. Area (km ²) of World Heritage sites (natural and cultural) designated	?	0	0	0	0	0	0	0	79	0	0	0	0	37	?	0	0	0	0	0	0
UPDATE 2009																					
6f. Number of domestically protected cultural heritage sites			7		2					55 ¹⁹			0								
UPDATE 2009																					
6g. Area (km ²) of domestically protected cultural heritage sites			2		?					?			0								
UPDATE 2009																					
6h. Other Conventions extended to Territory																					
UPDATE 2009																					
6i. Convention for the Protection of the Natural Resources and Environment of the South Pacific (SPREP) and Final Act of the High Level Conference on the Protection of the Natural Resources and Environment of the South Pacific Region (Noumea, New Caledonia, 17-25 November 1986)	-	-	-	-	-	-	-	-	-	-	-	-	-	N	-	-	-	-	-	-	-
UPDATE 2009																					
6j. Convention for the Protection of the Marine Environment of the North-East Atlantic OSPAR	-	-	-	-	-	-	-	-	-	-	-	-	-	-	N	-	Y	Y	N	N	N
UPDATE 2009																					
6k. Convention for the Protection and Development of the Marine Environment of the Wider Caribbean Region (Cartagena)	-	Y	Y	Y	N	N	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
UPDATE 2009																					
6l. Protocol concerning specially Protected Areas and	-	N	N	N	N	N	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Commitment (The government of the Overseas Territory will:)		Measures																				
		Bermuda	Cayman Islands	Turks & Caicos Islands	British Virgin Islands	Anguilla	Montserrat	Ascension Island	St Helena	Tristan da Cunha	Falkland Islands	S Georgia & S Sandwich Is	British Antarctic Territory	British Indian Ocean Territory	Pitcairn Islands	Gibraltar	Cyprus Sovereign Base Areas	Isle of Man	Jersey	Guernsey (& Sark) ¹	Alderney	Sark ¹
Wildlife (SPAW) to the Convention for the Protection and Development of the Marine Environment of the Wider Caribbean Region (Cartagena)																						
	UPDATE 2009																					
	6z1. Convention on the Prevention of Marine Pollution by Dumping of Wastes and other Matter (London Convention)	Y	Y	Y	Y	N	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
	UPDATE 2009																					
	[Other indicators to be investigated, possibly related to the compliance reports that are sent to the Convention Conferences/Meetings of the Parties]																					
7. Review the range, quality and availability of baseline data for natural resources and biodiversity.																						
7a. Taxa and natural resources for which base-line data have been collected and made available, with extents of coverage for each. ²⁰		Man y	Seve ral	Som e	Seve ral	Som e	Seve ral	Som e	Seve ral	?	?	?	?	?	Som e	Man y	?	Man y	?	?	Man y	Man y
UPDATE 2009																						
7b. Taxa and natural resources for which there are monitoring programmes, with extents of coverage for each. ²¹		Man y	Seve ral	0	0	Som e	Som e	Som e	Seve ral	?	?	?	?	?	N	Man y	?	Man y	Man y	?	Man y	Man y
UPDATE 2009																						
7c. Topics which are priorities for further information gathering. ²²		See note 22	See note 22	See note 22	See note 22	See note 22	See note 22	See note 22	See note 22	?	?	?	?	?	See note 22	See note 22	?	?	?	?	See note 22	See note 22
UPDATE 2009																						
8. Ensure that legislation and policies reflect the principle that the polluter should pay for prevention or remedies; establish effective monitoring and enforcement mechanisms.																						
8a. Are effective Ordinances in place to implement polluter-pays principle?		Y	P	P	N	N	N	P	N	?	N	Rev	?	?	P	?	?	Y	?	N	N	N
UPDATE 2009																						
8b. Number of cases of polluter paying, and amounts involved.		24	?	Av 2-3 pa	n/a	0	0	0	0	P	0	2	?	n/a	0	?	?	?	?	N	n/a	n/a
UPDATE 2009																						
8c. Monitoring of pollution and adherence to planning conditions in place		P	Y	Y	N	N	D	N	P	P	Y	n/a	?	?	N	?	?	P	?	Y	N	N
UPDATE 2009																						
8d. Enforcement measures in place		Y	?	Y	N	D	Y	N	N	N	Y	n/a	?	?	Y	?	?	?	?	P	N	N
UPDATE 2009																						
8e. Number of enforcement cases brought.		Man y	?	av 1-3 pa	0	0	0	0	0	0	0	n/a	?	0 (ca 7 fishes)	0	?	?	?	?	?	n/a	n/a

Commitment (The government of the Overseas Territory will:)	Measures	Territory														Jersey	Guernsey (& Sark) ¹	Alderney	Sark ¹
		Bermuda	Cayman Islands	Turks & Caicos Islands	British Virgin Islands	Anguilla	Montserrat	Ascension Island	St Helena	Tristan da Cunha	Falkland Islands	S Georgia & S Sandwich Is	British Antarctic Territory	British Indian Ocean Territory	Pitcairn Islands	Gibraltar	Cyprus Sovereign Base Areas	Isle of Man	
	UPDATE 2009													pa					
9. Encourage teaching within schools to promote the value of our local environment (natural and built) and to explain its role within the regional and global environment.																			
9a. Environment Charter, strategy for implementation in schools curriculum		N	N	N	N	N	Rev	N	Y	P	Y	n/a	n/a	n/a	N	N	n/a	n/a?	n/a
UPDATE 2009																			
9b. Local environment, global context in schools curriculum		Y	?	Y	Y	Rev	P	Y	Y	?	Y	n/a	n/a	n/a	N	Y	?	Y	?
UPDATE 2009																			N
9c. Number of visits at all levels to local environmental sites		3 for all 1400 children	?	2-3	variable	Av 3	regular	4 (6-11)	6-10 +	?	200	n/a	n/a	n/a	Y	2-3 inf & mid 1 com p	?	Ca 200	?
UPDATE 2009																			
9d. Number of field classroom facilities		12	?	0	0	0	0	0	0	?	0	n/a	n/a	n/a	?	1	?	2	0
UPDATE 2009																			Rev
10. Promote publications that spread public awareness of the special features of the environment in the Territory; promote within the Territory the guiding principles set out above.																			
10a. Number of publications by Government in each year on local environmental topics		1	0	1	1	0	+	1	1	1	0	1	0	0	0				1
2002-3		0	0	1	1	0	repts	1	1	0	1	0	1	1	1				1
2003-4		0	1	1	1	0	2	1	1	0	1	1	1	1	1				1
2004-5		0	1	1	1	0	0	0	0	0	0	0	0	0	0				1
2005-6		0	1	0	0	0	0	0	3	1	1	1			0				1
2006-7		3	1	0	1	0	2	1		1					1				1
2007-8						3	2	1											1
UPDATE 2009																			
10b. Number of publications by NGOs in each year on local environmental topics		2	4																
2002-3		7	3	3		2				1				7	1	3			4
2003-4		2	3			0				2					4	3			4
2004-5		1	10					1							2	3	1		5
2005-6		1	7			1		2		4					1	5			8
2006-7		0	8			1		1		1					2	6			6
2007-8			1			3													
UPDATE 2009																			

Commitment (The government of the Overseas Territory will:)	Bermuda	Cayman Islands	Turks & Caicos Islands	British Virgin Islands	Anguilla	Montserrat	Ascension Island	St Helena	Tristan da Cunha	Falkland Islands	S Georgia & S Sandwich Is	British Antarctic Territory	British Indian Ocean Territory	Pitcairn Islands	Gibraltar	Cyprus Sovereign Base Areas	Isle of Man	Jersey	Guernsey (& Sark) ¹	Alderney	Sark ¹
Measures																					
10c. Programme in place to promote Environment Charter and implementation strategy	N	N	?	N	N	?	N	Y	N	N	N	n/a	P	Rev	?	n/a	n/a	n/a	n/a	n/a	
UPDATE 2009																					
11. Abide by the principles set out in the Rio Declaration on Environment and Development and work towards meeting International Development Targets on the environment.																					
[Measures largely included in the 10 above.]																					

Notes to 2007 lines:

1. Although having their own administrations, Alderney, Sark and Guernsey are part of the Bailiwick of Guernsey and some aspects are dealt with at Bailiwick level. The general information in the Guernsey column tends to relate also to Sark.
2. Bermuda has two separate relevant processes, one for a Biodiversity Strategy and the other for a Sustainable Development strategy.
3. Gibraltar's Environment Charter is of a different type to the others, and is not an agreement with HMG. The Environment Charter being considered by Alderney is based on the UKOT one, but would be a unilateral adoption by Alderney.
4. Anguilla fund not yet ear-marked for the environment, but this is being explored.
5. Anguilla does have a non-governmental Anguilla Community Fund from non-governmental sources.
6. Anguilla lacks legislation to designate terrestrial protected areas, but such legislation has been drafted and awaits being put before the Legislative Assembly.
7. St Helena awaits new legislation for protected areas and the 15 sites are proposed in the strategy, noted in planning matters but not yet designated.
8. The Government of South Georgia & the South Sandwich Islands considers that the whole of South Georgia is effectively a protected area, but notes that a more specific review of areas and appropriate levels of protection is under review.
9. Information on the extent of active management of protected areas is incomplete partly because of a missing section of the questionnaire.
10. Change in protected areas in Bermuda estimated because of incomplete information received.
11. Change in protected areas in Turks & Caicos Islands incomplete because TCI has been unable to supply figures.
12. In the Falkland Islands, 18 islands cleared of rats.
13. For Gibraltar, in practice rather than as formal policy.
14. For these territories, EIAs are required, but there are problems in that developments may be effectively approved at an earlier stage and/or EIAs are inadequate.
15. Not required, but undertaken in practice, although may be subject to similar problems to those noted at 14.
16. Not required, but usual.
17. Although TCI EIAs are publicly available, in practice they are difficult to access and not available in time to consult before decisions.
18. Anguilla has put forward a proposal for a World Heritage Site, but HMG has not yet put this forward to the Convention.
19. 55 buildings in the Falkland Islands
20. Coverage reported for baseline data:
Bermuda: marine reptiles, birds, skinks, coral reefs, terrestrial & marine plants, marine molluscs, marine polychaetes, commercial fisheries, coastal erosion, freshwater, amphibians – island-wide

- Cayman Islands: national: Red-list flora, queen conch, marine turtles, parrots (GC & CB), blue iguana (GC). GC: bats
 Turks & Caicos: iguana, grouper, snapper, conch, lobster nationally. Biodiversity survey of North, Middle & East Caicos
 British Virgin Islands: samples: in-shore; seabirds, all near-shore; Rock iguana, Anegada; Forest, Anegada & Gorda Peak
 Anguilla: reptiles (Only snakes, iguana and Ameiva species, some work also done on geckos and anoles); invertebrates (Only some beetle work, spider work and butterflies, moths, wasps); coastal resources (Reefs, sea grass beds, coastal mangroves; however marine commercial reef fish data is still lacking.)
 Montserrat: forest birds, bats, herptiles, plants, fisheries and catch effort, agricultural production
 Ascension Island: endemic plants, seabirds, green turtles
 St Helena: seabirds, cetaceans, invertebrates on Prosperous Bay Plain, lower plants there & NE, marine fish
 Pitcairn: plants, all; various, Henderson
 Gibraltar: herptiles, mammals, birds, higher plants complete; terrestrial & marine invertebrates & marine vertebrates
 Isle of Man: birds, land-use, main rivers all island, ponds half; plants on all protected sites & invertebrates on some
 Alderney: Breeding birds island-wide; storm petrels and puffins on Isle of Burhou; gannets at 2 breeding colonies; seaweeds in Clonque Bay; butterflies and moths at sample sites
 Bermuda: coral reefs & sea-grass, turtles, cahow, longtail, bluebird, skinks, ground water, commercial fisheries, water quality on marine platform – island-wide
 Cayman Islands: As in note 20
 Anguilla: Birds of wetlands and sea
 Montserrat: Impact of rats on fauna and flora at test sites
 Ascension Island: green turtles, seabirds, endemic plants
 St Helena: seabirds, cetaceans, grouper, fish catch, vegetation, wirebirds, fish
 Gibraltar: herptiles, mammals, birds, higher plants, terrestrial invert
 Isle of Man: birds, river water quality
 Jersey: all 50 Biodiversity Action Plan species
 Alderney: as for survey in note 20, with breeding success as well as numbers for some birds
 Topics which are priorities for further information gathering:
 Bermuda: All endemic & native species, coastal erosion, sea-level rise, ground water quality, coral reef & seagrass, cave habitat, IAS
 Cayman Islands: Update habitat map since Hurricane Ivan; insects & fungi are very data-deficient
 Turks & Caicos: Turks Head cactus
 British Virgin Islands: Fish; beach profile monitoring; nesting seabirds; insects; herptiles; flora
 Anguilla: Vegetation mapping; invertebrates
 Montserrat: Mountain chicken (frog), galliwasp (lizard), endemic plant species, invasive species, restricted range bird species, turtles, terrestrial and marine habitats
 Ascension Island: Fish
 St Helena: Marine plants & invertebrates
 Pitcairn Islands: Invasives, Endemics
 Gibraltar: Marine, terrestrial invertebrates, bryophyte, fungi
 Alderney: marine bird survey; marine diversity survey
 One case of decline due to volcanic ash.
- 21.
- 22.
- 23.

Measures of performance of UK Government in implementing its Commitments in the Environment Charters (or equivalent environmental progress for territories without charters)

As noted in the introduction, this section of the collation is much less complete than the first part, because UKOTCF has not received information from HMG in respect of the UK Commitments in the Environment Charters. UKOTCF hopes that HMG will identify the resources to report on its Commitments in the future, and UKOTCF remains ready to collate any such information with the material received from elsewhere.

Please note that, whilst UK Government shares responsibility for international environmental commitments with territorial governments in all UK Overseas Territories and Crown Dependencies, it is not party to an Environment Charter with the British Antarctic Territory, the Cyprus Sovereign Base Areas (which are both directly governed by UK Government Departments), Gibraltar or the Crown Dependencies (Isle of Man, Jersey, Guernsey, Alderney & Sark).

Commitment (The government of the UK will:)	General	Bermuda	Cayman Islands	Turks & Caicos Islands	British Virgin Islands	Anguilla	Montserrat	Ascension Island	St Helena	Tristan da Cunha	Falkland Islands	S Georgia & S Sandwich Is	British Antarctic Territory	British Indian Ocean Territory	Pitcairn Islands	Gibraltar	Cyprus Sovereign Base Areas	Isle of Man	Jersey	Guernsey	Alderney	Sark
1. Help build capacity to support and implement integrated environmental management which is consistent with the Territory's own plans for sustainable development.																						
Number of capacity building projects resourced by HMG in each UKOT:																						
2002-3							1		0		0											
2003-4			1		0		0		0		1											
2004-5			1		2		1		0		1											
2005-6			4		0		2		0		0											
2006-7									0													
Help provided to develop strategy for action		Y	B	Y	Y	Y	N	Y	Y	Y	Y		N		Y	n/a			N	N	N	N
Help provided to implement strategy for action process		N	N (in prep)	N	N		N		Y		N					n/a			N	N	N	N
HMG has indicated named officer or body for monitoring and reporting on the development and implementation of Environment Charters in general and in each Territory			?		?		N				Y		n/a		N	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Has HMG included in the Governor's letter of appointment any specific responsibility in respect of the Environment Charter?			?		?		?		?		N		n/a			n/a	n/a	n/a	n/a	n/a	n/a	n/a
Is there any reference to reporting on and progressing the Environment Charters in the standing agenda items for the annual Overseas Territories Consultative Council?	No												n/a			n/a	n/a	n/a	n/a	n/a	n/a	n/a
When did the Inter-Departmental Ministerial Group most recently consider Environment Charters and their progress?	Never																					

Commitment (The government of the UK will:) Measures	General	Bermuda	Cayman Islands	Turks & Caicos Islands	British Virgin Islands	Anguilla	Montserrat	Ascension Island	St Helena	Tristan da Cunha	Falkland Islands	S Georgia & S Sandwich Is	British Antarctic Territory	British Indian Ocean Territory	Pitcairn Islands	Gibraltar	Cyprus Sovereign Base Areas	Isle of Man	Jersey	Guernsey	Alderney	Sark
2. Assist the Territories in initiating, reviewing and updating environmental legislation.																						
Help provided by HMG to review environmental legislation			N	Y	Y	Y	Y		P	N	N	Y			P	N	N	N	N	N		
Help provided by NGOs to review environmental legislation			N	Y	Y		Y		N	Y	Y				N	Y	N	N	N	Y		
Number of new/revised Ordinances support provided for drafting			0	1	1				0		0						0	0	1			
3. Facilitate the extension of the UK's ratification of Multilateral Environmental Agreements of benefit to each of the Territories and which each Territory has the capacity to implement (and a desire to adopt.)																						
Number of additional MEAs support provided to join.			?				0		0		2			0						0		
Number of projects supported to help implementation.			1		1	0	0		1		0									0		
2002-3					1																	
2003-4					1	0	0		3		0											
2004-5			1		1	0	0		1		1											
2005-6					1	0	0		1		1											
2006-7			1		1	0	0		3		1											
Number of requests made by Territory which HMG was unable to meet			?			Some														0		
2002-3					1						0											
2003-4											0											
2004-5											0											
2005-6											0											
2006-7											0											
4. Keep the Territories informed regarding new developments in relevant Multilateral Environmental Agreements and invite the Territories to participate where appropriate in the UK's delegation to international environmental negotiations and conferences.																						
Number of information items provided on MEAs each year.					?		0		1			0								0		
2002-3							0															
2003-4							0		3		1											
2004-5							0		0		0											
2005-6							0		4		1											
2006-7																						
Number of participants from UKOTs and UKOT-centred bodies in UK delegations to CoPs etc					?		0		1		0							1		0		
2002-3							0															
2003-4							0		1		1							1				
2004-5							0			1	0							1				
2005-6							0		2		1											
2006-7																						

Commitment (The government of the UK will:) Measures	General	Bermuda	Cayman Islands	Turks & Caicos Islands	British Virgin Islands	Anguilla	Montserrat	Ascension Island	St Helena	Tristan da Cunha	Falkland Islands	S Georgia & S Sandwich Is	British Antarctic Territory	British Indian Ocean Territory	Pitcairn Islands	Gibraltar	Cyprus Sovereign Base Areas	Isle of Man	Jersey	Guernsey	Alderney	Sark
Number of UKOT government/NGO personnel supported in attending MEA meetings					2				1									0		0		
2002-3							0				0											
2003-4							0				0											
2004-5							0				0											
2005-6							0				0											
2006-7																						
5. Help each Territory to ensure it has the legislation, institutional capacity (technology, equipment, procedures) and mechanisms it needs to meet international obligations.																						
Technical help resourced by HMG for UKOTs to implement international commitments					1		0		0		0							0				
2002-3					0		1		0													
2003-4					3		0		0		0											
2004-5					1		0		0		0									1		
2005-6									0		0				Y							
2006-7		1													Y			0		0		
Equipment resourced by HMG for UKOTs to implement international commitments							0		0		0											
2002-3							0		0		0											
2003-4							0		0		0											
2004-5				1			0		0		0											
2005-6				1			0		0		0											
2006-7																						
6. Promote better cooperation and the sharing of experience between and among the Overseas Territories and with other states and communities which face similar environmental problems.																						
Number of conferences supported					1		1		1		0											
2002-3																						
2003-4							0		0		0											
2004-5							0		0		0											
2005-6							0		0		0											
2006-7		1			1		2		1		1								1			
Number of UKOT conference participants supported					2		2		2		2								0			
2002-3							0		0		0											
2003-4							0		0		0											
2004-5							0		0		0											
2005-6							0		0		0											
2006-7		3			2		4	1	4	1	3				1	1						

Commitment (The government of the UK will:)	General	Bermuda	Cayman Islands	Turks & Caicos Islands	British Virgin Islands	Anguilla	Montserrat	Ascension Island	St Helena	Tristan da Cunha	Falkland Islands	S Georgia & S Sandwich Is	British Antarctic Territory	British Indian Ocean Territory	Pitcairn Islands	Gibraltar	Cyprus Sovereign Base Areas	Isle of Man	Jersey	Guernsey	Alderney	Sark
Measures																						
Number of visits/exchanges between UKOTs and with UK or regional partners supported							0		0		0								0	0		
2002-3							0		0		0											
2003-4							0		0		0											
2004-5							0		0		0											
2005-6							0		0		0											
2006-7							0		0		0											
Support provided for establishment and use of websites/ databases									0		0								0	0		
2002-3									0		0											
2003-4									0		0											
2004-5									0		0											
2005-6							1	1	1		0											
2006-7			1																			
2006-7																						
7. Use the UK, regional and local expertise to give advice and improve knowledge of technical and scientific issues. This includes regular consultation with interested nongovernmental organisations and networks.																						
Number of cases of expert visits from UK supported									+		0								1			
2002-3									0		0									0		
2003-4									0		0											
2004-5									0		1											
2005-6							4		1		0											
2006-7			1				4		1													
2007-8							5											1				
Number of cases of visits from UKOTs to UK experts supported											0									0		
2002-3											0											
2003-4											0											
2004-5											0											
2005-6											0											
2006-7											0											
Number of other cases of advice supported									++		0									?		
2002-3											0											
2003-4											0											
2004-5											0											
2005-6											0											
2006-7											1							1				
Number of liaison meetings between HMG and NGOs and coordinating bodies																						
2002-3	2										0											
2003-4	2										0											
2004-5	2										0											

Commitment (The government of the UK will:)	General	Bermuda	Cayman Islands	Turks & Caicos Islands	British Virgin Islands	Anguilla	Montserrat	Ascension Island	St Helena	Tristan da Cunha	Falkland Islands	S Georgia & S Sandwich Is	British Antarctic Territory	British Indian Ocean Territory	Pitcairn Islands	Gibraltar	Cyprus Sovereign Base Areas	Isle of Man	Jersey	Guernsey	Alderney	Sark
Measures																						
2005-6	2										4											
2006-7	2																					
8. Use the existing Environment Fund for the Overseas Territories, and promote access to other sources of public funding, for projects of lasting benefit to the Territory's environment.																						
Number of projects approved for support each year by EFOT or its successors (OTEP)																						
2002-3	3	1	2	1	2	2	0	2	3	2	1	1	0	2	0	1	0	-	-	-	-	-
2003-4																						
2004-5	2	3	0	0	1	2	2	1	2	2	2	1	0	2	1	0	0	-	-	-	-	-
2005-6	0	2	1	2	0	0	2	1	1	2	0	1	0	1	0	0	0	-	-	-	-	-
2006-7	6	2	2 (1 defered)	0	0	3	3	0	1	2	2	0	0	1	1	0	0	-	-	-	-	-
Value of projects supported each year by EFOT or its successors (OTEP)																						
2002-3																						
Committed by OTEP in 2003-4 & 2004-5 (£k) [This line is included as information from HMG, pending accurate data for individual years.]	461	146	0	33	15	260	103	169	45	206	260	120	0	121	21	41	0	-	-	-	-	-
2003-4 (£k)			12		0		0		22													
2004-5 (£k)					85		22	61	206													
2005-6 (£k)			50		40			68	45		0											
2006-7 (£k)			54																			
Spend by Defra or its functional successors on UKOT environmental issues																				0		
2002-3								0	0		0			0								
2003-4					160				0		0			0								
2004-5			35						0		0			0								
2005-6			77				161		0		0			0								
2006-7			67								115											
Spend by DCMS or its functional successors on UKOT issues			0		0		0	0	0		0			0						0		
2002-3									0		0			0								
2003-4									0		0			0								
2004-5									0		0			0								
2005-6									0		0			0								
2006-7											0			0								

Commitment (The government of the UK will:)	Measures	General	Bermuda	Cayman Islands	Turks & Caicos Islands	British Virgin Islands	Anguilla	Montserrat	Ascension Island	St Helena	Tristan da Cunha	Falkland Islands	S Georgia & S Sandwich Is	British Antarctic Territory	British Indian Ocean Territory	Pitcairn Islands	Gibraltar	Cyprus Sovereign Base Areas	Isle of Man	Jersey	Guernsey	Alderney	Sark
	Spend per year by HMG on UKOT/CD environmental issues	£1m in total		0								?									0		
	2002-3			12		15		130				?											
	2003-4			35		160		0				?											
	2004-5			127		85		22	61			?											
	2005-6			121		40		161	89			115											
	2006-7							?															
	Spend per year by HMG on GB/NI environmental issues	£460 m																					
	2002-3																						
	2003-4																						
	2004-5																						
	2005-6																						
	Number of HMG funds accessed by UKOTs			2		2		3	1	1		2									0		
	[additional measures relating spend to importance/need/threat under review]																						
9. Help each of the Territories identify further funding partners for environmental projects, such as donors, the private sector or nongovernmental organisations.																							
	Number of other funders for each UKOT identified by HMG			0		0		0	1			0			0						0		
	Value of funding secured from these sources per year by HMG on UKOT environmental issues		0		0			0													0		
	2002-3											0			0								
	2003-4								9	0		0			0								
	2004-5							9	9	0		0			0								
	2005-6							11	11	0		0			0								
	2006-7																						
	Funding for the built environment supplied per year by HMG on UKOT environmental issues		0			0		0				0									0		
	2002-3									0		0											
	2003-4									0		0				1							
	2004-5									0		0											
	2005-6									0		0											
	2006-7									0		0											

Commitment (The government of the UK will:) Measures	General	Bermuda	Cayman Islands	Turks & Caicos Islands	British Virgin Islands	Anguilla	Montserrat	Ascension Island	St Helena	Tristan da Cunha	Falkland Islands	S Georgia & S Sandwich Is	British Antarctic Territory	British Indian Ocean Territory	Pitcairn Islands	Gibraltar	Cyprus Sovereign Base Areas	Isle of Man	Jersey	Guernsey	Alderney	Sark
10. Recognise the diversity of the challenges facing the Overseas Territories in very different socio-economic and geographical situations.																						
Recognition by key Departments within HMG e.g. DFID, Defra that the UKOTs are very different in terms of their socio- economic and geographical situations:																						
Ensuring access to email and www communication systems for government & NGOs in each UKOT/CD					Y			N	Y		N			n/a	Y							
Ensuring establishment and functioning of environmental NGO in each UKOT/CD:			N		Y		P	1	Y		N			Y								
[Other measures may be developed]																						
11. Abide by the principles set out in the Rio Declaration on Environment and Development and work towards meeting International Development Targets on the environment.																						
[Measures largely included in the 10 above.]																						

Discussion

The discussion recalled that the Environment Charters were signed in September and October 2001 between UK Government and most of the UK Overseas Territories. This was to address the problem that UK Government answers for international commitments but Territory administrations deal with local legislation and implementation. These international commitments apply whether or not there is a Charter for a particular territory – and whether or not a Territory structures its actions using the Charters or according to some other format, such as a regional agreement. Therefore, all UKOTs and Crown Dependencies are included in the collation of progress.

It was noted that the preliminary version (in the conference booklet) of progress in implementation of the Environment Charter Commitments highlight both some successes and some setbacks. Those present generally agreed on the importance of supplying further information so that the current review round can be completed as soon as possible after the conference.

Turks & Caicos Islands were cited in the discussion as an example where poor implementation of Charter Commitments, and indeed major damage to extremely important natural areas, can be caused by a government about which serious questions of corruption and mis-management had been raised (by House of Commons Foreign Affairs Committee and independent Commission of Inquiry) – and which UK Government was now addressing under its responsibility for good governance. There was general agreement that the people and the hard-working conservationists of TCI are to be supported in their work in such awful circumstances.

The meeting commended St Helena, as Isabel Peters' presentation had outlined, for its effective use of its Environment Charter and *Strategy* as key documents in its economic development plan. In a process facilitated by UKOTCF, St Helena stakeholders had developed an environmental *Strategy* by breaking down the commitments into specific actions. Some 40 bodies had been identified as responsible for taking action (sometimes the same person wearing different hats). This process was found fundamentally useful – but needs resourcing to the next planned stages (delayed by other commitments), to use the full document as a source from which to produce time-limited priority sections, and also popular reader-friendly versions,

as well as other aspects needed to take forward effectively.

It was concluded that the coordination of monitoring of progress in all territories, as being done by UKOTCF's current second review, is essential – but depends on local input. This needs human resources – as does encouraging all the responsible organisations actually to incorporate the agreed tasks into their programmes. Undoubtedly some work is being done on many aspects in many territories, but in most not coordinated to a strategy. A focal person is needed in each territory to promote implementation of the Charter Commitments (or the equivalent if using another coordinating structure). That needs resources.

There was some concern that UK and Territory Commitments are not being carried out in balance. One surprise was that Whitehall Departments have reduced staff resources to implement & monitor Environment Charter Commitments. UK Government progress was reported very fully at the 2003 conference, but HMG could not resource input on its own performance to UKOTCF's first review of progress in 2006/7, even though it reported to Parliament at the same time that it was depending on the review to answer questions Parliament had asked. The current effort of UK Government officials to try to start collating and supplying information to the review was greatly appreciated, but it was noted that they are having great difficulties in resourcing this basic work.

The need to explore, further than was possible within the time available within the conference, ways to overcome current bottlenecks in the fulfilling of Environment Charter Commitments was noted. Accordingly, UKOTCF arranged to continue discussions in an open meeting in September 2007. A report of that meeting follows, together with a report of further discussions linked to the Overseas Territories Consultative Council meeting of December 2009, to which was attached a workshop of progress in the 10 years since the UK Government 1999 White Paper on the Overseas Territories Partnership for Progress and Prosperity - Britain and the Overseas Territories.

Environment Charters – the way forward: Report of the UK Overseas Territories Conservation Forum meeting held in the Mappin Pavilion at ZSL (London Zoo), 2 September 2009, from 1330 (from *Forum News* 35: 2-3)

On 2nd September 2009, UKOTCF convened a meeting to address the theme of *Environment Charters – the way forward*. It was attended by representatives of a number of UKOTCF Member and Associate organisations, UK representatives of two UKOT governments, and officials from four UK Government (HMG) departments. The meeting was hosted by the Zoological Society of London, in the Mappin Pavilion at London Zoo.

As background, Oliver Cheesman (UKOTCF) gave an overview of the Environment Charter process to date. HMG had not originally planned to include significant coverage of the environment in the 1999 White Paper *Partnership for Progress & Prosperity – Britain and the Overseas Territories* but, with encouragement from the Forum, FCO and DFID officials of the time ensured that a relevant chapter was included. This outlined HMG's intention to develop jointly with UKOT governments a set of Environment Charters, based on the *Checklists* earlier proposed by UKOTCF (Pienkowski 1998). Although the Charters were based on the Forum's ideas, UKOTCF was not involved in HMG's subsequent drafting of the documents and their negotiation with UKOT governments.

The Charters summarise a set of Guiding Principles for environmental management and biodiversity protection, alongside more specific Commitments on the part of HMG (on one side) and each UKOT Government (on the other). There is some variation between Territories, but essentially the Principles and Commitments are consistent across the Charters, which were signed in September 2001. Although signed by governments, the Charter concept stressed the need for civil society (NGO) involvement alongside governments throughout. The only UKOTs without Charters (for various reasons) are British Antarctic Territory and the Sovereign Bases Areas in Cyprus; Gibraltar has a unilateral Environment Charter. The Crown Dependencies were not included in the Environment Charter process. However, some (e.g. Alderney, Sark, Isle of Man) have used, or are exploring, the Charters as a model for developing their own, broadly equivalent documents.

An initial set-back occurred within a year of the Charters being signed, when FCO cancelled the Environment Fund for Overseas Territories (EFOT), thereby failing HMG's Commitment

8 under the Charters. However, the UKOTCF-organised Bermuda conference in March 2003 made clear the problem that this had caused. FCO implemented interim arrangements, and then combined with DFID to establish the Overseas Territories Environment Programme (OTEP). Recognising the importance of measuring progress against the Charter Commitments, FCO made an excellent start with a report at the Bermuda conference by members of its Environment Policy and Overseas Territories Departments (Caton *et al.* 2003). Unfortunately, subsequent restructuring in FCO substantially reduced its capacity in relation to environmental matters, including monitoring of progress under the Charters. However, FCO, DFID and others (including some UKOTs and many NGOs) had already asked UKOTCF to develop a more systematic method for monitoring progress.

UKOTCF invested considerable effort between 2004 and 2007 in developing and consulting widely on measures to provide a 'review of progress' in Environment Charter implementation, in gathering information to complete the exercise, and producing the final report (Pienkowski 2007; see also summary of results in *Forum News* 31). Also late in 2007, FCO commissioned a report from the International Institute of Environment and Development (IIED), which concluded that the Charters were useful, particularly in providing a set of Guiding Principles, but that a forward process was required to enhance their value. In fact, progress had already been made in a number of the areas identified, including the linkage of Charter Principles to Territory-specific strategies or action plans, developed through a participatory approach to the identification of local priorities. This reflected Commitment 1 of UKOT governments under the Charters, to bring together all local stakeholders to formulate a detailed strategy for action.

Several UKOTs had recognised at an early stage that support was needed to address this Commitment, and under HMG's Commitment to help, it granted some of the required costs to UKOTCF to pilot the facilitation of strategy development. The TCI Government asked that TCI host the first exercise, which was undertaken in 2002-3, and stakeholders in St Helena then applied a similar Forum-facilitated approach in 2004-5. The strategy documentation and general material from both

these exercises are available on the UKOTCF website, as a basis for wider application, and the lessons learnt have been used by several other Territories. Other approaches have been used also to fulfil the same function, in some cases combining these with other regional or local initiatives, such as the development of National Biodiversity Strategies and Actions Plans (NBSAPs). A case study was presented at the Cayman conference by Isabel Peters (St Helena Environmental Co-ordinator), outlining how St Helena had used its Environment Charter as a key document in its economic development plan. In the process facilitated by UKOTCF in 2004-5, stakeholders had developed an environmental strategy, breaking down the Charter Commitments into specific actions. However, as recognised at the time, resourcing was required to move to the next stage, refining and implementing the strategy, as well as producing simpler extracts for wider consumption. This experience illustrates that (whilst invaluable in moving the process forward) the production of a strategy is not, in itself, sufficient to ensure implementation, and continual encouragement and support is needed.

In further exploring the way forward, the 2nd September meeting confirmed that, despite the various changes that had occurred within individual Departments in the years since the Environment Charters were signed, HMG remained very conscious of the Charters and their importance. Reference to the Charters provided a valuable means of assessing proposals for targeted work in the Territories (e.g. under OTEP); in this context, further facilitation work to develop local strategies for Charter implementation could be useful, including to help assess projects against a Territory's own priorities - the preferred approach of both HMG and UKOTCF. It was important for the Territories to lead the Charter process.

UKOTCF and its Member and Associate organisations were keen to promote Charter implementation broadly, and to help re-invigorate the process overall. There was a range of ways in which the Forum and its network could contribute, from continuation of earlier work of facilitating strategy development, to more focused projects (for example, to advance establishment of marine and terrestrial protected areas). Where local strategies existed, the next steps typically related (for example) to the development, integration and implementation of annual work programmes for local bodies to address the priority actions identified. It was essential that such programmes were "owned" and operated by local stakeholder (Government and

NGO) partnerships, but experience had shown that external support, including from HMG as well as from UKOTCF, was also vital. However, resources were limiting, despite the enthusiasm to pursue such activities.

In relation to funding opportunities, JNCC's exploration of this area was noted, related to HMG's Commitment 9 under the Charters. There clearly remained a need to identify new sources of funding, particularly for larger projects. The particular issue of Lottery funding was considered; it appeared that the Heritage Lottery Fund (HLF) Trustees' policy remained that UKOT-based projects (as opposed to Crown Dependency ones) were ineligible, a position that many felt should be challenged.

The issue of including further UKOTs/CDs in UK's ratification of the Convention on Biological Diversity (CBD) and other relevant Multilateral Environmental Agreements (MEAs) was also raised. HMG remained ready to advance this if approached by the Territories concerned. MEA 'sign up' could be valuable in keeping biodiversity on the local political agenda; for example, the joining of UK's ratification of the Ramsar Convention on Wetlands by all the remaining UKOTs/CDs had followed a voluntary programme of explanatory work to Territory decision makers by UKOTCF. The subsequent Defra-supported UKOTCF review of existing/potential Ramsar sites had resulted in significant progress, including (for example) in marine management in the Isle of Man. It was noted that exploration of the benefits of MEAs was another area where further facilitation exercises might be useful.

Feedback from both officials and NGOs in the Territories suggested that the Forum's 'review of progress' was useful in maintaining momentum; this was important, as UKOTCF was not interested in conducting this work purely as a 'box ticking' exercise. In December 2008, UKOTCF had begun collecting information for a second review of progress, based on the measures developed for the first - an effective way (at relatively small effort by the Territories) of building on their work for the initial review. Input had been received from most Territories, and a summary overview was presented at the Cayman conference in May/June 2009. Work continued to complete the exercise and to produce the final report.

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UK Government White Paper on Overseas Territories: 10 years on (from *Forum News* 35: 5-7)

Overseas Territories Consultative Council 2009

Ten years after the publication of the 1999 White Paper *Partnership for Progress and Prosperity – Britain and the Overseas Territories*, on the relationship between Britain and the UKOTs, and at the request of Overseas Territory leaders, a workshop was organised on 8th December 2009 to review progress. This involved outside participants in addition to the UK and UKOT Ministers (or equivalents) and officials who participate in the annual closed Overseas Territories Consultative Council (OTCC) meeting, held on the following days. The White Paper had established the principles that have guided the relationship between the UK and Territories since 1999. UK Government considers the workshop as the first stage of a consultation process on the future of the UK/OT relationship.

The OTCC was established in 1999, as a forum for discussion of key policy issues between British Ministers and elected leaders from the Overseas Territories. It meets once a year in London. An FCO Minister (currently Chris Bryant) has specific responsibilities for Overseas Territory issues. The Territories represented at this year's OTCC and the preceding workshop were: Anguilla, Ascension, Bermuda, British Virgin Islands, Cayman Islands, Falkland Islands, Montserrat, Pitcairn, St Helena, Tristan da Cunha and Turks & Caicos Islands.

The Defra Minister for Marine and Natural Environment, Huw Irranca-Davies, and several NGO participants joined the 1-hour workshop session on sustainable development and environmental conservation.

Huw Irranca-Davies recalled his attendance at the UKOTCF-organised Cayman conference, as the first UK environment minister to attend one of these meetings. He noted also his announcement then of Defra's involvement, alongside FCO and DFID, in UKOT environmental matters and the earmarking

for UKOTs of some of Defra's Darwin Initiative small projects fund. He remarked also on the need for better communications and announced a new enquiries email address: ukotenquiries@defra.gsi.gov.uk. He invited representatives of UKOTs to report on progress they had made against the Environment Charters.

The Falkland Islands representative reported on the highly sustainable fisheries that currently provide the basis of that territory's economy. Effective measures had been introduced to end almost totally by-catch of birds in the Falklands fisheries and by Falklands vessels operating in South Georgia & South Sandwich Islands waters. With respect to the White Paper and Environment Charter, he regretted the lack of engagement by FCO for the past few years. The Pitcairn Islands noted progress on physical planning matters and also plans for wardening of Henderson Island, as well as improving arrangements for visitors. Tristan da Cunha noted the economic importance of wildlife tourism, even with present infrastructural challenges. St Helena reported the importance of the strategy for implementing the Environment Charter (developed with facilitation from UKOTCF) in guiding much of the progress in recent years. The Premier of the Cayman Islands enquired as to whether guidance was available from UK Government on the development of eco-tourism, and also on what was being done to monitor progress in implementing the Environment Charters.

From the NGOs represented, Mike Pienkowski, Chairman UKOTCF, welcomed the presence of Mr Irranca-Davies, both at the Cayman conference and in this workshop, and the involvement of Defra that this represented. Whilst congratulating Defra on earmarking some Darwin Initiative funds for UKOT projects, thereby (with OTEP) doubling the resources for small projects, Dr Pienkowski underlined the remaining need for a larger fund to enable biodiversity recovery programmes and also to

facilitate the development of a cadre of local UKOT personnel to work alongside colleagues from UK and elsewhere, to provide the future local capacity to maintain this work, fundamental to the UKOTs' futures. He noted also that UKOTCF had accepted the task of collating information from the Territories (and UK Government) on their fulfilling of their respective Commitments under the Environment Charters. The first report on this had been published in 2007, and an update was nearing completion. He congratulated the UKOTs on the progress that had been made. He noted that, particularly at the recent Cayman conference, a concern expressed by many personnel from UKOTs was the loss of natural capital due to problems in strategic and physical planning processes. He wondered whether any UKOTs suffering from such problems might like to seek UK Government support in this area.

Clare Stringer, RSPB, underlined the need for a fund for larger recovery programmes, recalling estimates of at least £16m per year needed for conservation work in UKOTs, compared with the £2m available for the coming year. She noted also an obvious example of this need in the removal of introduced mice from Gough Island, to allow recovery of several species of breeding seabirds which occur nowhere else in the world. Alistair Gammell, Pew Environmental Trust, reiterated the need for funding from the National Lottery to be made available for conservation projects in UKOTs, as it is for domestic UK. Colin Clubbe, Royal Botanic Gardens Kew,

underlined the points made by UKOTCF and other colleagues, calling for support for UK and UKOT NGOs, as well as other UKOT bodies, to implement biodiversity recovery work and to facilitate the structured development of the next generation of local UKOT conservation workers.

From other academic institutions, the National Oceanographic Centre outlined deep-water research cruises off British Indian Ocean Territory and the Cayman Islands, although some concerns were noted by the UKOTs and the NGOs about whether local workers and administrations were adequately involved.

The Governor of Anguilla sought confirmation as to whether the UKOT natural environment remained a high priority for UK Government, in view of some signs that this might not be the case.

In responding to the points made, the UK Minister confirmed that protection of the UKOTs' natural environment did indeed remain a high priority for UK Government, noting the international commitments it had made on behalf of the UKOTs. He recognised the huge world importance of the wildlife of the UKOTs and the need for more resourcing. Whilst he could not, of course, commit further funds, he did note the high value for money that conservation work in the UKOTs represented, and looked forward to continued effective coordination both by governments and, for example, UKOTCF. He saw



The workshop in session in Great George Street, Westminster. Photo: FCO

the International Year of Biodiversity, just starting, as a good opportunity to deliver progress. He noted the opportunity to refresh the Environment Charters, the opportunities of post-2010 biodiversity targets, the importance of analysing and stressing the economics of ecosystem services, and the need to focus on best practice. He noted in particular the need to make people in Britain more aware of the uniquely high global importance of wildlife in UKOTs, a point echoed by Colin Roberts, FCO Director of Overseas Territories, in summing up the day's workshop.

In preparing for the workshop, FCO had asked UKOTCF to take a quick look at the way in which the environmental plans of the White Paper had been taken forward. The following is drawn from that analysis.

Background

Chapter 8 (*Sustainable development – the environment*) of the 1999 White Paper recognised that the natural capital of the UK Overseas Territories was globally much more important than that of the metropolitan UK, with the UKOTs supporting orders of magnitude more endemic species (i.e. those that occur nowhere else) than Great Britain & Northern Ireland. This point has since been forcibly re-emphasised by the House of Commons Environmental Audit Committee (in its 2008 report on *Halting Biodiversity Loss*), which concluded that “One of the most important contributions that the Government could make to slowing the catastrophic global biodiversity loss currently occurring would be to accept its responsibilities and to provide more support for the UK Overseas Territories in this area.” In addition, the natural environment is crucial for the economies, sustainable development and future well-being of UKOTs, including through the provision of ecosystem services such as marine fisheries, freshwater capture and storage, coastal protection and potential eco-tourism.

Recognising the importance but also the challenges, the 1999 White Paper said (paragraph 8.8):

We aim to integrate sustainable environmental management into the Government's decision-making. ... But in Overseas Territories as elsewhere, short-term economic pressures can be severe and can undermine the goal of sustainable development. That makes it all the more important for the Government to give guidance and support on how to develop policies and practices to ensure that practice in the Overseas Territories is consistent

with the objective of sustainable development.

The means to achieve these aims were set out in paragraphs 8.11 and 8.15, in bullet points that provide the italic headings below.

Review

Helping to make sure Overseas Territories have the legislation, institutional capacity and mechanisms they need to meet their international obligations

This has been addressed mainly by the reactive small grants programmes noted below, by support from NGO networks and by the assistance of some UK Government agencies. Some valuable progress has been made, but the process is far from complete. Workers from several UKOTs made clear at the UKOTCF-organised conference in Grand Cayman in June 2009 that appropriate planning laws, enforcement and monitoring are crucial to the success of any sustainable development process, but that there are particular problems in this area at present.

Using UK, regional and local expertise to give advice and improve knowledge of technical and scientific issues. This includes close and open consultation with interested Non-Governmental Organisation (NGO) groupings such as the UK Overseas Territories Conservation Forum

UKOTCF had a close working relationship with HMG at the time of the White Paper and for some years after, and still gives a great deal of support. There is a close working relationships between UKOTCF and its Member and Associate organisations based in the UK and UKOTs, helping to transfer skills and experience to and between Territories. UKOTCF has received part funding from HMG to undertake some of this work, including for communications via a well-regarded web-site and for organising highly valued 3-yearly conferences. However, UKOTCF is slightly concerned that the degree of consultation and collaboration has become less in the last 3-4 years, since FCO drastically reduced its environmental staffing. Whilst welcoming recent modest increases in total spending by HMG in support of environmental conservation in the UKOTs, UKOTCF is also concerned at the declining contributions from HMG in support of its largely voluntary work in this area.

Providing financial assistance to the Overseas Territories for integrated environmental management

UKOTs cannot access most global and international aid and environmental funding mechanisms (which regard UKOTs as British), nor many UK sources (such as the Heritage Lottery Fund, which conversely regard UKOTs as “foreign”). Support comes mainly from:

- UKOTs, drawing on their own resources
- NGOs, including through voluntary inputs, from UKOTCF, its network and others
- HMG, via a single dedicated small projects fund, FCO/DFID’s joint Overseas Territories Environment Programme (OTEP). However, the continuity of this is never guaranteed for more than a year or two, and its predecessor was actually lost for a time shortly after the signing of the Environment Charters. This programme has been highly effective in supporting small projects, most of which give excellent value for money, in many cases because of major donations of skilled voluntary time by implementing NGOs.
- HMG, via the Darwin Initiative, some funding from which has recently been earmarked for UKOT projects. This is greatly welcomed.

As the White Paper notes, under international conventions, UK Government shares responsibility for biodiversity conservation in the UKOTs with UKOT Governments. However, an analysis for a recent year based on UK Government figures showed that it spent about 500 times less on conservation in UKOTs (£1m per annum) than in Great Britain & Northern Ireland (>£460m per annum). The recent earmarking of Darwin Initiative funds approximately doubles the spend on UKOTs, but the scale of the funding gap is clearly still profound, despite the global importance of biodiversity in the Territories. Most significantly, no funding mechanism exists for projects larger than those supported by OTEP or the Darwin Initiative. At a stage when, in domestic UK, a project would (for example) develop into a species recovery programme, it stops in a UKOT for want of such a fund.

Promoting effective communication, exchange and dissemination of information with UK Overseas Territories

Addressed via links through UKOTCF (see above), with some further provision recently through increased activity in the UKOTs by the Joint Nature

Conservation Committee (JNCC).

Promoting sustainable development strategies, including commitments to clear environmental and sustainability targets

In the UKOTs, environmental sustainability is typically threatened by habitat destruction and degradation of ecosystems (generally due to built developments), invasive species, over-exploitation of natural resources and other factors. These threats, combined with the lack of resourcing noted above, mean that endemic species are still being lost, despite pilot work in small projects identifying potential solutions. For example, the St Helena Olive (an endemic genus) went extinct in 2003 – after UK agreed the target to reduce the rate of biodiversity loss by 2010. If the UK is to have any credibility in the face of this target, we cannot afford to permit further biodiversity loss from our Territories, yet at least 240 UKOT species are at high risk of global extinction, according to the IUCN.

Another related issue concerns the lack of effective and participatory planning systems in several UKOTs, noted earlier. The Environment Charters (see below) include commitments to: the protection of key habitats, species and landscape features; environmental impact assessments; and open and consultative decision-making. However, serious procedural flaws are often reported, especially in the UKOTs of the Wider Caribbean, leading to built developments that many consider inappropriate.

Development of Environment Charters to clarify roles and responsibilities, set out a shared vision, etc

Good progress was made after the White Paper, with most UKOTs signing an Environment Charter jointly with HMG in 2001. These included statements of Principles, and Commitments made by both parties, including to formulate a detailed strategy for action, with the goal of integrating environmental conservation into all sectors of policy planning and implementation. With support from HMG, and at the request of the Territories concerned, UKOTCF facilitated local stakeholders developing such strategies in some UKOTs. UKOTCF has also collated information on progress in Charter implementation, the first report being published in 2007, with an update currently in progress. (For more detail on Environment Charter matters, see article on pp 2-3.)

There are some suggestions that replacement Charters are now required to tailor these more to local requirements. However, this represents a fundamental misunderstanding of the Charters, which represent formal statements of intent that provide a framework for the development of more detailed, locally-focused strategies and plans. This has already been done in some UKOTs, either through the UKOTCF-facilitated exercises noted above, or through the production of a National Biodiversity Strategy and Action Plan (or similar strategic documents). To replace the Charters would be a retrograde move, rather than a step forward to build on what is already in place.

Conclusions

What are the main needs to stop the loss of biodiversity and enhance sustainable development in the UKOTs?

- A more open approach in UKOTs to decision making in planning, with greater involvement of civil society.
- Greater recognition in the UK (amongst public, officials and politicians) that the Territories are British, not foreign, and that the UK shares responsibility for the conservation of their natural resources.
- This means UK Government:
 - maintaining its one dedicated fund (OTEP) and other support for small projects (earmarked part of Darwin Initiative), but providing also a separate UK Government fund, at least an order of magnitude larger, for full-scale conservation programmes and support of sustainable use of natural resources in UKOTs, as well as capacity development
 - supporting the release of Heritage Lottery funding, etc, for UKOT projects
 - otherwise encouraging and assisting UKOTs in meeting their commitments.

Section 3: Environmental Education

Co-ordinator:

Ann Pienkowski (Environmental Education Co-ordinator, UKOTCF)

The main focus of this session was to discuss ways of getting environmental education into schools curricula, how effectively to engage young people, and to identify ways in which their involvement could be widened.

To support the discussion, a draft paper was published in the Conference Handbook, and this is now published here as the *Framework Document: To help structure the discussion on Environmental Education and to use those discussions to develop further these guidelines*. This document gave participants some background, and posed questions to consider when thinking about developing curricula elements and resources.

The importance of environmental education, the need to get it embedded into the schools curricula, and some of the challenges of doing this were raised very early on, during discussions on Sunday at the Botanic Park, and continued to be raised throughout.

The session presentations gave concrete examples of successful environmental education programmes which provide good models for others to consider. The contribution by Piers Sangan on a student perspective of environmental education raised many important issues which were subsequently taken up in the panel discussion. Extended versions of these papers are published in this section.

Martin Keeley spoke about the development of his *Marvellous Mangroves* programme, and how this had not only been fully incorporated into the revised National Curriculum for the Cayman Islands, but had



From left to right:

Clive Baker, Head of Curriculum Services, Cayman Islands Department of Education

Edgar Howell, Director of Education, Turks & Caicos Islands

Piers Sangan, Student, Crown Dependency of Jersey, and Plymouth University

Thomas Hadjikyriakou, Manager, Akrotiri Environmental Education and Information Centre

Martin Keeley, Education Director, Mangrove Action Project and Cayman Brac Campus Director, University College of the Cayman Islands

Ann Pienkowski, UKOTCF Environmental Education Co-ordinator

(Photos of participants in this session by Rob Thomas & Mike Pienkowski unless otherwise indicated)

been adapted for other countries, such as Brazil and Guatemala. His “recipe” for effective environmental education had been developed over many years, and had been widely used as a model by others.

Under the direction of Clive Baker, the director of curriculum services in the Cayman Islands, a thorough revision of the Cayman Curriculum involving many stakeholders had ensured that environmental education was firmly embedded into the national curriculum of the Cayman Islands.

Thomas Hadjikyriakou spoke about the development of the Akrotiri Environmental Education and Information Centre (in the Cyprus Sovereign Base Areas) and its schools programme. Clear planning and community involvement had been essential. The success and value of this programme had been recognised by the incorporation of the Centre into the Curriculum of the Republic of Cyprus, who funded a full-time teacher to work at the Centre.

Piers Sangan, who had attended the conference in Jersey 2006 (*Biodiversity that Matters*) as a high school student, spoke about his rather poor experiences of environmental education at school. At primary school, a topic on rainforests had been interesting, although of course was not relevant to his local environment, but at secondary school environmental education was delivered through books and classroom teaching, rather than going outside and experiencing the environment. He had followed his natural interests in the environment through extra-curricular and volunteer work.

The panel discussion is summarised at the end of this section, and produced further valuable contributions and insights.



Students Dustin Bodden, Jodiann Jackson, Piers Sangan and Tashara Lewis present their comments in the final session (see Section 11).

Framework Document: To help structure the discussion on Environmental Education and to use those discussions to develop further these guidelines

Ann Pienkowski (Environmental Education Co-ordinator, UKOTCF) & Clive Baker (Head of Curriculum Services, Cayman Islands Department of Education)



Ann Pienkowski



Clive Baker

Pienkowski, A. & Baker, C. 2010. Framework: To help structure the discussion on Environmental Education and to use those discussions to develop further these guidelines. pp 117-120 in *Making the Right Connections: a conference on conservation in UK Overseas Territories, Crown Dependencies and other small island communities, Grand Cayman 30th May to 5th June 2009* (ed. by M. Pienkowski, O. Cheesman, C. Quick & A. Pienkowski). UK Overseas Territories Conservation Forum, www.ukotcf.org

The challenge facing effective integration of environmental education into schools curricula (as part of the wider education for sustainable development process) is in identifying curricula that balance the meeting of educational objectives with available resources. In addition, materials and resources should be accessible to teachers who may not be familiar with the local environment, and should be capable of being adapted to meet pupil needs. If sustainable development (including environmental education) is going to be incorporated into schools curricula, and used by already overstretched teachers, then the resources must be developed within a local stakeholder partnership, and fit in with schools curriculum and assessment processes.

The presentations and discussions within this session, and subsequent discussions, are aimed to build on previous work at conferences and elsewhere to develop a set of guidelines to support the development of effective environmental education resources.

The objectives of these guidelines are to facilitate:

- Development of a relevant curriculum framework for environmental education, including assessment
- Cross-sectoral involvement of government departments and civil society organisations in curriculum production and review
- Inclusion of teachers and other educators in curriculum review and environmental resource development
- Production of locally-based, environmental education resources
- Promotion of integration of environmental education across the curriculum.
- Increased government commitment to the use of the local environment (including its importance in a world context) in schools' curricula.

Consideration of the following questions, when thinking about developing curricula elements and resources, may be useful:

- Why is the environmental education programme or development of a curriculum element needed?
- Can this element be fitted into an existing curriculum? If not, can it be a stand-alone entity, or is wider curriculum development required?
- Who needs to be involved in the development? The involvement of the education department is essential. Consider also other government departments and officials, educators, scientists, community and civil society, businesses, etc.
- Who is available to carry out the work?
- How much time and training do they need?
- What resources (financial and human) are needed?
- What resources (financial and human) are available?
- Where might additional funding and resources come from?

- What strategies will be most effective in delivering the objectives of the programme? (e.g. curriculum development including cross-curricular opportunities, teaching and assessment materials, practical hands-on activities, field trips, teacher training)
- How does this programme fit in with existing statutory assessments and examinations?
- Should the existing statutory assessments and examinations be reviewed to take account of the environmental education element of the curriculum? If so, how can this be achieved?

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Introduction

The current context of environmental education should be seen within the *United Nations Decade of Education for Sustainable Development* (DESD), 2005 – 2014.

Although there can be many interpretations and meanings of Education for Sustainable Development (ESD), there is a common understanding that education and learning in the context of sustainable development cannot ignore the interconnections between the environmental, social, economic and cultural aspects of sustainable development.

One of the broad aims of the DESD is to integrate the principles, values and practices of sustainable development into all aspects of education and learning, and thus help improve the quality of education and learning.

There are many different target audiences for education for sustainable development, for example: local communities who use natural resources, local leaders, community residents, government officials, private businesses and developers, land-owners, the general public, educators (teachers and teacher trainers), school children and students. There are also different strategies by which education for sustainable development can be delivered, for example: exhibits, mass media (TV, Radio, newspapers, internet), special events. As it is not possible to cover all of these, this session will focus on schools curricula and the environmental education element of Education for Sustainable Development. Some other elements are addressed in the Session on *Raising Our Profile*.

Focusing on what is being done - and can be done - in schools, many of the themes of sustainable development are already in schools' curricula under topics such as health, water, environmental protec-

tion, climate change and biodiversity. The main thrust of the *UN Decade of Education for Sustainable Development* is not to add sustainable development to an already overcrowded curriculum, where the basics of literacy and numeracy must still be taught, but to see it as an integrative, cross-curricular theme that can bring together many of the topics which schools are already expected to address.

The closing section of the UNESCO publication *Teachers' Guide for Education for Sustainable Development in the Caribbean* says:

"There is no 'right way' to do Education for Sustainable Development (ESD) – rather it is a process for everyone to learn, explore and innovate. The skills and values learnt along the way – to learn to know, to do, to live together, to be and to transform oneself and society – are themselves what turn a learning experience into ESD. At the same time, there are some common features found in ESD approaches. They are:

- Learning by doing
- Community involvement
- Reflection
- Real-life activities
- Problem solving
- Participation and collaboration

"Focus on what you can do.

"The key to successful ESD is for the teacher to be creative and innovative, think outside the box, collaborate with others, help students become caring and responsible citizens."

We could all be overwhelmed by the scope of this, but we should take advice from the authors and focus on what we can do. In addition, linking to the *UN Decade for Education for Sustainable Development* could provide a strong persuasive argument for the work we are trying to do in envi-

ronmental education.

Development of a Relevant Curriculum Framework (including assessment) and Resources

Clearly, curriculum development cannot take place without the active support and involvement of the education department of the local administration.

Many places, such as the Cayman Islands, have a modern, revised National Curriculum which was developed through an extremely thorough process of stakeholder consultation specifically for the Cayman Islands (for more information go to www.brighterfutures.gov.ky). Where such a curriculum exists, there is little difficulty in incorporating environmental education both as key elements of a science curriculum, and in a more integrated cross-curricular way.

Curriculum Development, such as that carried out in Cayman, or that advocated by the UN Decade for Education for Sustainable Development, is extremely time consuming, expensive, and very difficult in places with limited capacity. Although the process of designing a curriculum from scratch is as important as its eventual implementation, this may not be practicable in the first instance. If a territory's schools programme is to be based on a curriculum developed for somewhere else, then educators, ministry and government officials, and teachers, should be given an opportunity to review this first, and adapt the curriculum to the local situation. Whilst the objectives within such a framework are likely to be relevant, the examples and teaching activities may not be. Basing schools programmes on a modern curriculum from a similar locality could be the key here.

Furthermore, cultural diversity must be taken into account. Activities and programmes within the curriculum need to be as culturally sound as they are scientifically sound. At the same time, consideration needs to be given to the local realities in which teachers find themselves and the availability, or lack of, teaching resources. Linking with regional partners to share and develop effective programmes is one way of addressing lack of capacity and resources. The recently developed UKOTCF searchable database on environmental education resources (developed with support from OTEP) will become available around the time of the conference and will facilitate sharing of information about existing environmental education

resources. This will continue to be updated as new information is received.

If curriculum development is being undertaken, as opposed to locally-based materials being developed to support an existing curriculum, then the approach recommended by the UN Decade for Education for Sustainable Development should be followed as far as possible. Curriculum developers should be encouraged to think about an integrated cross-curricular approach.

Local and statutory assessment procedures need to take account of the local environmental education component of the curriculum. If the tests and examinations the students have to take do not include reference to this area of their education, then the students are unlikely to give the area as much consideration as those areas of the curriculum on which they are being tested.

Teacher Involvement and Training

Teachers need to be involved in all stages of the development of either curriculum or resources. However good a resource is, it will sit on the shelf un-used if teachers do not feel confident in using it, and such confidence comes from involvement and training.

Effective learning

The recent UNESCO *World Conference on Education for Sustainable Development* re-stated the widely accepted effectiveness of a cross-curricular, interdisciplinary approach which would incorporate learning by doing, real-life activities and problem solving, participation and collaboration, and time for reflection. They also stated that the most effective way of delivering sustainable development objectives within the schools curriculum is to have a whole school approach.

Evaluation

The key questions for evaluating a curriculum development or resource should be formulated before the programme is started, and addressed during and at the end of development - and, later, incorporated into programme revisions. The programme's intended objectives and intended outcomes can be clearly identified, and used as a checklist.

Some questions which can be used for evaluation are:

- Have students acquired knowledge? (They do have to apply knowledge for this to count, but they have to know before they can apply.)
- Have students' attitudes and behaviours changed?
- Have students acquired new skills? Do they have the opportunity to use them? What needs to be done to enable them to?
- How these are to be measured should be part of the evaluation development.

Summary of Desired Actions (based on a “formula” developed by Martin Keeley)

- Involve local education departments, teachers and scientists (and other relevant specialists) in the development and application of the content and all materials; and test the materials in schools.
- Ensure that all the materials are curriculum-based or linked
- Include lots of hands-on activities;
- Get the kids outdoors;
- Provide classroom follow-up materials and resources;
- Teach the teachers through lots of workshops; and related follow-up tasks.
- Make the learning processes simple and fun.
- Make use of modern technology

Final Word – Focus on what you can do.

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Marvellous Mangroves – A Curriculum-Based Teachers' Guide

Martin Keeley (Education Director, Mangrove Action Project; and University College of the Cayman Islands)



Keeley, M. 2010. Marvellous Mangroves – A Curriculum-Based Teachers' Guide. pp 121-127 in *Making the Right Connections: a conference on conservation in UK Overseas Territories, Crown Dependencies and other small island communities, Grand Cayman 30th May to 5th June 2009* (ed. by M. Pienkowski, O. Cheesman, C. Quick & A. Pienkowski). UK Overseas Territories Conservation Forum, www.ukotcf.org

(Abstract written by Session Co-ordinator:)

Martin Keeley is Brac Campus Director for the University College of the Cayman Islands and Education Director for the Mangrove Action Project (MAP- a non-profit organization). He has been teaching in Cayman since 1998. He researched, developed and produced *Marvellous Mangroves in the Cayman Islands - a teachers' curriculum-based resource guide*, in conjunction with the National Trust of the Cayman Islands, the Department of Educational Services and MAP. He has been responsible for its implementation in schools throughout Cayman and has also supervised the adaptation, translation and implementation of *Marvellous Mangroves* for the education systems in other countries including Colombia, Honduras, Guatemala, Sri Lanka, Indonesia and Brazil. There are also plans to adapt the programme for use in China. His paper describes the development of the *Travelling Wetlands Roadshow* in British Columbia and northern Washington State, and how this was built upon to develop the *Marvellous Mangroves* programme for Cayman. He describes the development process, and the steps which need to be taken to adapt the programme for use in other areas.

In developing environmental education materials and curricula, Martin stresses some key points: the need for the involvement of local teachers and linking the materials to the local curriculum; the importance of hands-on and outdoor activities, and students having fun; teacher training workshops; and materials which are easy to teach.

Martin Keeley received the National Marine Educators Association's *Outstanding Teacher Award* for 2008. The award honours effective and innovative marine science education in the classroom. Martin was recognised for his history of outstanding performance as a marine science educator in the Pacific Northwest and the Cayman Islands.

(Photos illustrating this article are by the author.)

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Origins

Before outlining the development and application of the curriculum-based Teachers' Guide, *Marvellous Mangroves*, it is necessary to examine the origins of the material used in the guide.

In the late 1980s a transboundary environmental organization called The Friends of Boundary Bay

(FOBB) was formed in the Fraser River Delta region of British Columbia, Canada. As the executive director of the group, it was my responsibility to not only work in advocacy to help protect this vital wetland area, but also find ways to educate the public on the importance of wetlands.

Initially, the form of education we adopted involved public education programmes using natural-

ist/interpreters to lead explorations of the different parts of the Boundary Bay ecosystem. However, after a year of this work, it soon became clear that we needed to do much more to lift the level of public knowledge about wetlands.

In 1991, 17 teachers from throughout the Boundary Bay ecosystem and from schools on both sides of the U.S./Canada border put together a working group to pool their knowledge. Using existing resources and data, and adding much of their own, the working group began work on the first Teachers' Resource Guide, *Discover Boundary Bay*. The following year, a Mobile Ecology Centre was completed to assist with field work. In 1993, the 300-page *Discover Boundary Bay* was published, after much revision and pilot projects. School programmes held with a naturalist/interpreter then began in schools around the Bay.

Building on these two resources, FOBB established the *Travelling Wetlands Roadshow* which travelled around to schools throughout British Columbia and northern Washington state. The Roadshow comprised the following:

- A 24-foot (7 m) mobile ecology centre and laboratory
- Hands-on science activities in the field
- Field exploration with a naturalist/interpreter
- Follow-up activities in the classroom
- Microscopic analysis of water
- Eco-theatre for younger students.



Mangrove bird-hunter kit

After a couple of years on the road and a major evaluation, the *Roadshow* added a supplement to the initial teachers' guide entitled *Exploring Estuaries and Wondrous Wetlands*. The teacher-and student-"friendly" guide featured a further 160 hands-on activities, useful background information about wetlands, and water quality tips and testing

ideas.

In addition, the *Roadshow* featured the following:

- A wetlands site exploration with a scientist naturalist/interpreter
- The teaching of observation skills
- Recognition of bird species and their characteristics
- Recognition of fish, mammals, reptiles and amphibians
- Awareness of habitat
- The study of aquatic invertebrates
- Collection of water samples for analysis.

For younger students, the *Roadshow* featured the Eco-theatre, designed and made by the famous festival artist Evelyn Roth. The Eco-theatre featured:

- More than 40 costumes designed to resemble wetland creatures
- A 40-foot (12 m) inflatable salmon
- Food-chain and food-web games
- Wetland storytelling inside the salmon.

The *Roadshow* was extremely successful and by 1998 had reached over 30,000 students in more than 300 schools in 45 communities throughout British Columbia and northern Washington State. The show had won many awards and had been incorporated into the British Columbia science curriculum.

The development and implementation of the *Roadshow* established what proved to be a highly adaptable formula which was then taken and developed for use in other countries. The formula can be broken down as follows:

- Full-time teachers should be involved in the research, development and application of materials
- All materials should be linked to the local and/or regional curriculum
- There should be lots of hands-on activities
- Get the kids outdoors!
- Classroom follow-up materials and resources should be provided
- Teachers should be taught through a series of teacher training workshops
- The product should be both simple and fun – and easy to teach.

Cayman and Mangroves

In 1998, my wife and I moved to Cayman Brac, one of the Cayman Islands, and I began to "Cay-



Kids with nets

manise” the formula. At the same time, I took the position as Education Director for the international NGO, The Mangrove Action Project (MAP). Obviously, the wetlands now would be in the tropics, the project would become international and the focus would be on education about mangroves.

Work began to adapt the materials developed for the Pacific Northwest for mangrove habitats. This required studying mangroves and learning how they function, testing the activities to see if they would work with local Caymanian students, carrying out *in-situ* explorations in lieu of a naturalist/interpreter (of whom there are very few in the wider Caribbean), and tying the product into the local Cayman curriculum.

Several local teachers on Cayman Brac were recruited to use the activities and other materials in their classrooms and the field to ensure that they “translated” to mangrove wetlands. In addition, local Caymanian materials were incorporated into



Oil-spill clean-up game

the materials being used – one example being the glass-bottomed view glass used by fishermen to detect fish.

An analysis of the Cayman Islands curriculum also took place to ensure that the materials produced covered the topic area objectives outlined in the curriculum. While the major focus was on the science curriculum, other areas such as social studies, art, maths and music were included. An outline of the curriculum links was developed and ultimately published in the final resource guide.

The *Mangrove Teachers Resource Guide*, finally published and launched in early 2000, contains a total of five interlinked units. Their titles are:

- All about mangroves
- Mangroves as habitat
- Human impacts on mangroves
- Exploring mangroves
- Making change.

Each individual unit contains the following:

- An introduction containing factual and detailed background information
- Fact-sheets and accompanying illustrations
- Several supporting hands-on activities with details instructions
- Illustrations to support the activities.



Tasting Black Mangrove

The essence of the activities is that the materials involved are simple and easily available locally (either cheap or used household products). They are carried out prior to a field-trip and follow-up classroom activities. Field-trips are essential to reinforce the knowledge learned in the classroom and, in the absence of a naturalist interpreter, the teacher can carry out this role with a little training and observational skills. The trips themselves can be carried out on-land in mangroves, or in a boat

traveling through them. Some teachers take their students mangrove snorkeling, which is possibly the best experience of all.

During the field-trip, students collect water samples. (If a plankton net is available, it can be very helpful gathering microscopic species of mangrove water life.) These samples, together with as much detritus as possible, are taken back to the classroom where they are examined under the microscope. Students identify and draw the different small invertebrates and other life-forms that they find. This examination reinforces lessons learned about food-chains and food-webs. If possible, a small camera can be mounted on a microscope and the images transmitted to a TV monitor for maximum impact.

The school's computer lab is also used for reinforcement of the data learned in the classroom and field, and students are able to conduct supplementary research and compose papers outlining their findings.

For younger students, festival artist Evelyn Roth provided a 40-foot (12 m) inflatable shark, and designed and built 34 costumes representing plants and critters that inhabit mangrove wetlands. Students learn animal movement, play food-chain games (i.e. chase and devour each other!), and finally go inside the shark for exploration and to hear a story about mangroves and wetlands.

Following the publication of *Marvellous Mangroves* in the Cayman Islands in 2000, several teachers workshops were carried out initially through the Education Department, and later through the Cayman Islands National Trust joining forces with the department. These workshops not only involved learning about how to use the



Project development field-trip, Old Providence, Colombia

resource guide, but the teachers also had to carry out several of the activities themselves to reinforce this level of learning, and show how easy it is!

Spreading to other countries in the region

In 2001, Fanny Howard, the Education Co-ordinator for CORALINA (The Corporation for the Sustainable Development of the Archipelago of San Andres, Old Providence and Catalina), based in the San Andres archipelago of Columbia, visited Cayman Brac. There she spent a week in a detailed review of *Marvellous Mangroves* with a view to a Spanish version being adapted for use in the archipelago. Areas where specific adaptations were needed were clearly defined, and staff in CORALINA began the translation and adaptation process.

The process involved what has become a standard formula for the introduction, development and implementation of the mangrove curriculum internationally. The following areas need to be reviewed and introduced into the localized version of *Marvellous Mangroves*:

- Research into the local resources
- New flora and fauna added and changed
- Localisation of mangroves – species, location etc.
- A review of the availability of materials for activities regarding their cost for teachers
- New illustrations
- A review by marine and, where possible, terrestrial scientists
- A review by local teachers
- Publication of the guide.

In January of the following year, a joint MAP/ CORALINA workshop was carried out for 34 teachers from Old Providence Island in the archipelago. The 3-day workshop became the blueprint for similar workshops held, and the translation and adaptation of *Marvellous Mangroves* continued throughout the world. The curriculum-based workshop involved a mixture of activities, as well as a field-trip on the morning of the final day. The afternoon was given over to teacher presentations of mangrove-related projects they worked on during the earlier part of the workshop – everything from poems to puppet shows.

The activities which were conducted were taken from each of the different units in *Marvellous Mangroves*. Interestingly, the activities most popular with students also proved to be most popular



Adapting the programme in Sri Lanka

among the teachers. They all use simple and very easy to obtain materials. These activities included:

- **Detritus Tag** which covers the food web, producers and consumers, predators and prey and bioaccumulation
- **Migration Headache** which involves learning about birds, their habitats, migrations and flyways
- You can tell what birds eat by their **Beaks and their Feet**
- **Food Webs** plant/animal relationships and human impacts
- **Oil Spill Clean-Up** human impacts on mangroves and the consequences of our dependence on oil.

The field-trip to nearby McBean lagoon involved boat-rides, hikes and species identification (plant and animal) as well as some “listen and learn” activities. On their return, the teachers gave presentations of the work they had developed during the workshop, including poetry, short stories, posters and a play. With these activities they were also able to develop resources they could use in their own classrooms.

Wider use of the programme

MAP's goal is to adapt and introduce the curriculum, in partnerships with local NGOs and Education & Environmental Ministries throughout tropical and sub-tropical coastal regions. To date, the mangrove curriculum/teachers' resource guide has been requested by teachers' groups and NGOs in more than 20 nations. The translation and adaptation process, however, is long and arduous, as it is necessary to assure that material in the guide relates specifically to the region where it will be used. For example, the Caribbean version could not simply be translated into a local language for use in African nations, as the curriculum covers not

only mangrove ecosystems, including topics such as migrating birds, shellfish and other related species, but also human impacts, and so each adaptation must be geared to a specific region.

Furthermore, cultural diversity must be taken into account so that activities and programmes within the curriculum are as culturally, as they are scientifically sound, while at the same time considering the local realities in which the teachers find themselves and the availability, or lack of, teaching resources. Following the well-established and extremely successful principles found in environmental education programmes such as Projects WET and WILD, MAP is working to spread the curriculum in concentric circles outside of the Caribbean in order to ensure that adaptations are logical and cumulative.

Since 2002, adaptations and introductions have taken place in seven countries. The blueprint or formula for the introduction of the curriculum into each country follows a standard pattern, with room for flexibility. I work in partnership with MAP's regional coordinator and local environmental NGOs to form a Working Group (WG) which includes local teachers, scientists and educators. It is MAP's experience that educators must be involved in adapting the materials to suit their own, local curriculum. By integrating it with existing local science, social studies, and/or language arts curricula, MAP is able to ensure that the materials and teaching techniques are used in the classroom on a regular basis. In Sri Lanka, for example, MAP's local partner, the Small Fisheries Federation (SFFL), brought in university biology professors who were able to work on getting local school-leaving examinations (GCE – the British system) to develop a section covering mangrove ecology in their science exams. This form of institutionalisation will outlive individual efforts as teachers recognise they must teach content related to mangroves as part of their jobs!



Teachers practice food-web exercise in Honduras



Guatemala teachers' field-trip in mangroves

MAP stresses the need for local NGO partners to hire or appoint an education coordinator who will be responsible for the overall co-ordination of the project in their respective country, and who will work closely with the MAP Regional coordinator. Initially, this means working with MAP to secure in-country matching funds and/or services. Once funding is secured and the WG is established, a workshop is scheduled to meet with me to determine the focus and basic content that will be required for the adaptation of the curriculum. The WG then coordinates the translation and adaptation process, culminating in the publication of the materials to be used in the education system.

In 2002 and 2003 the curriculum was adapted and translated for introduction into Honduran schools, in collaboration with MAP partner NGO COD-DEFAGOLF (Comite para la Defensa y Desarrollo de la Flora y Fauna del Golfo de Fonseca). Three workshops were carried out in San Lorenzo in western Honduras for some 77 teachers. Twenty-six schools have introduced the curriculum.

Concurrently, it was adapted for the Colombian-owned San Andres/Old Providence Archipelago in the southwestern Caribbean with partner CORALINA. Following the first workshop in 2002 (previously described) over 80 teachers attended subsequent workshops run by CORALINA, which has introduced the curriculum into 18 schools in the archipelago. The same year in Sri Lanka, MAP worked with local NGO partner SFFL to introduce the curriculum to that country. The Sri Lankan workshops attracted a cross-section of 40 teachers and other specialists, and some 30 schools have to date been recipients of the mangrove curriculum. In 2010, MAP will be returning to San Andres and its partner CORALINA for an evaluation and re-

introduction process of the curriculum to the Archipelago and also to the Caribbean coast of mainland Colombia.

In 2005, Guatemala became the fifth country in which MAP has worked on the curriculum adaptation, collaborating with local NGO Amigos Del Bosque. The curriculum has been introduced to some 90 teachers during three workshops held on the Pacific coast of Guatemala (April, June and September, 2006). The first workshop was carried out by myself, and the second two by Amigos del Bosque staff working with teachers who had been trained in the first workshop. The curriculum has been introduced to some 16 schools primarily in western Guatemala.

Plans are underway (and funding has been secured) for the curriculum to be introduced to eastern (Caribbean) Guatemala and Honduras in 2010. This will be carried out with the same local partners as previously, and will also incorporate a full evaluation (based on the classroom observation and teacher interviews) of how the curriculum is being implemented in the schools of both countries, seeking suggestions for changes and improvements.

Some very large countries

The sixth and largest country so far is Brazil, and, for three years, MAP has worked with its key partner, Instituto Bioma Brasil, to adapt the mangrove curriculum/teachers resource guide for use in Brazil, home to the second largest area of mangroves in the world. The project has received both regional and national support, and is being introduced in four states with the full participation of the Brazilian Ministry of the Environment. An on-going process has been established for the continued introduction to different educational



Honduras teachers' workshop

partners, with evaluation a continuing part of this process. To date, teacher workshops have been held primarily in Espirito Santo state for some 70 educators, and 26 schools have incorporated the curriculum in their programmes of study. A national workshop was conducted in June 2009, involving 27 specialists and teachers from nine states and Brasilia. To date (late 2009), more than four states and over a dozen cities have indicated that they will incorporate the mangrove curriculum into their programmes of study in 2010. Work is underway with the federal Ministry of Education formally to incorporate the programme into the national curriculum.

In early 2009, I was invited by the Director of the Zhanjiang Mangrove National Nature Reserve (ZMNNR), Mr. Lin Kangyin, to visit southern China to discuss the introduction of MAP's mangrove curriculum into China. In July 2009, I spent four days with Mr. Lin and his staff of the Reserve, visiting the mangrove and associated wetland areas under its control, outlining the methodology behind the curriculum, and conducting a mini-workshop for staff, and a dozen local school teachers and their children. At the end of the visit, an agreement was reached to work together to introduce the curriculum into Chinese schools. Work is already underway at the ZMNNR's Education Department to translate the English version into Mandarin.

Established in the mid-1990s by Zhanjiang Municipality, the Zhanjiang Mangrove National Nature Reserve covers some 20,000 ha in total, including all coastal mangroves in the region. In 2002, ZMNNR was listed, under the Ramsar Convention on Wetlands, as one of China's 21 Wetlands of International Importance. The Zhanjiang Government has taken steps on almost every level – including

regulations and frequent monitoring and enforcement procedures – to protect mangrove habitats and related wetland areas. Working in conjunction with the Dutch government for the past seven years, the mangrove directorate of the ZMNNR has become an established and successful institution, with extensive educational resources, visited by both public and school groups. However, they have not been able to incorporate an educational programme into the school system, and have requested MAP's assistance to translate and adapt its mangrove curriculum for use in regional schools.

The education system in China is far more formal than in western nations. Classroom structure is quite rigid, and hands-on learning is in its infancy. In addition, Chinese environmental NGOs are more than a rarity, so it makes more sense for MAP to work with a recognized and established government institution in that country. Working in conjunction with the ZMNNR, a core group of local teachers is prepared to pioneer this style of teaching in Guangdong Province, and showed great interest when I conducted a mini-demonstration workshop during this visit in summer 2009. It was also obvious from the reaction of the students (mostly children of the teachers) who attended the workshop that they both enjoy and want to participate in this form of education.

There is much demand for the mangrove curriculum world-wide. A programme is in place to implement it in Indonesia through MAP's regional Asian operation there. However, as always, funding is the main driving force. With consistent long-term funding, there is no reason why this education resource cannot be used in every country that boasts of having a mangrove ecological system.



Kids in mangrove critter costumes

A partnership for environmental education in Cyprus: the work of the Akrotiri Environmental Education and Information Centre (AEEIC) in the Sovereign Base Areas of Cyprus (SBAs)

Thomas Hadjikyriakou (Akrotiri Environmental Education and Information Centre Manager, Cyprus Sovereign Base Area)



Hadjikyriakou, T. 2010. A partnership for environmental education in Cyprus: the work of the Akrotiri Environmental Education and Information Centre (AEEIC) in the Sovereign Base Areas of Cyprus (SBAs). pp 128-133 in *Making the Right Connections: a conference on conservation in UK Overseas Territories, Crown Dependencies and other small island communities, Grand Cayman 30th May to 5th June 2009* (ed. by M. Pienkowski, O. Cheesman, C. Quick & A. Pienkowski). UK Overseas Territories Conservation Forum, www.ukotcf.org

The AEEIC was originally founded by the SBAA as a measure to help improve the awareness of the environmental importance of the Akrotiri Salt Lake Ramsar site, following the construction of the PLUTO military antennae site near the salt lake. Funded by the SBAA, the centre commenced its activities from 2004 and now forms an important component of the SBAA Environment Department's work to ensure the protection and sustainable management of the natural and cultural features within the SBAs.



From its humble beginnings as a stop-off for the visiting birdwatcher to get a better view of the flamingos on the salt lake, the AEEIC can now boast four full-time staff, and offers a range of educational programmes for a variety of audiences. Perhaps the greatest recent achievement of the centre was the decision by the Council of Ministers of the Republic of Cyprus who endorsed the membership of the AEEIC to the *Environmental Education Centres' Network of the Republic*. As a result, eleven environmental education programs are offered as part of the National Curriculum, and have now been delivered to over 20,000 school children in both Greek and English, and a Cypriot teacher has been seconded to work full time with the Centre's staff. In addition to this work, the centre is participating in several *European Educational Programmes for Lifelong Learning*, sending people abroad and organising programmes in Cyprus for environmental skills, culture and archaeology.

The establishment of the SBAs and the continued use of them as military areas following the independence of the Republic of Cyprus in 1960 is still a political issue for part of the local Cypriot community. However, the work of the AEEIC has successfully brought together the SBAA, local Akrotiri community and Republic of Cyprus Government to support positively environmental initiatives. A new larger centre, with the capacity to educate more school children and facilitate wider community involvement, is proposed for construction over the next few years.

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(Photos illustrating this article are by the author.)



Progressively larger scale images, showing (1) the position of the island of Cyprus (central), (2) the position of the Akrotiri peninsula at the southernmost point, and (3) the Akrotiri Peninsula, with the large salt lake, with the village and Centre to its southwest and the runway.

Education as a management option, maybe the most effective of all management techniques, particularly in natural areas, where it may well be the only option (Buckley and Pannell 1990)

The AEEIC was originally founded by the SBAA as a measure to help improve the awareness of the environmental importance of the Akrotiri wetlands Ramsar site, following the construction of the PLUTO military antennae site near the local salt lake. Originally it started as an Information Centre, receiving visitors to see the exhibits and to watch flamingos and other bird species in the salt lake from its observation kiosk. Funded by the SBAA, the centre commenced its activities in 2004 and now forms an important component of the SBAA Environment Department's work to ensure the protection and sustainable management of the natural and cultural features within the SBAs.



Some of the wetland types in Akrotiri Sovereign Base Area and Ramsar Site

Akrotiri Peninsula presents significant environmental importance and is characterized by diversity at all levels: life forms (flora-fauna), habitats, geology, hydrology, archaeology, history and culture. The wetland system evolving around the Salt Lake and the Phassouri Marsh has been declared as a wetland of international importance under the Ramsar Convention in 2003. It will soon be designated as a Special Protection Area under the legislation mirroring Directive 79/409/EEC and a big part of the Peninsula will be designated as a Special Area of Conservation under legislation mirroring Directive 92/43/EEC. (As policy, legislation in the SBAs generally follows that of the Republic.) Twenty-seven habitat types (twenty-two terrestrial and five marine) have been recorded in studies undertaken under the above Directives. Some are priority habitats and require immediate and strict protection and conservation.

Two hundred and sixty bird species have been recorded in the Peninsula, two hundred of which are migratory and use the area as a staging post, for wintering or breeding. Akrotiri beach is one of





Some of the diverse wildlife of the area. Left, from top: Greater Flamingo; Red Fox; Scarlet Darter dragonfly. Right, from top: Lesser Spotted Eagle; Agamid; Kotschy's Orchid



the few nesting areas in Cyprus for the Loggerhead and Green Turtles, which are endangered Mediterranean species. The flora of the area consists of hundreds of plant species, many of which are rare or endemic.

The hydrology and geology of the area is very sensitive and important. Over recent decades,



especially after the construction of the Kourris River Dam, the wetland system has been adversely affected, with serious risks to the various habitat types and coastal erosion problems. The geological history of the area presents exceptional interest. Thousands of years ago, Akrotiri used to be a separate island. With the passing centuries, the isle was connected to the rest of Cyprus through river sedimentation and tectonic activity. The southern coast of the Peninsula hosts the earliest known archaeological site in Cyprus, at a locality known as "Aetokremmos". It is a hunter-gatherer site dated to 12,000 years ago, with findings which include bones of pigmy hippos and pigmy elephants. The wider area hosts many archaeological and religious sites of later periods such as churches, rock-cut tombs (picture, left) and catacomb. The area is the

only region in Cyprus where soft basketry is practiced, a handicraft remaining almost unchanged throughout the centuries. The local people have been occupied with the traditional handicraft for centuries; basketry is one of the oldest forms of Cyprus handicraft (pictures, right).

All these features formed the basis for the creation of the Centre, and the exhibits, programs and activities are tailored around them. From its first year of operation, it attracted a lot of school groups, and at the second year, environmental education programmes were offered at the Centre and in the field. The development and improvement was very fast, and the programmes were improved and enriched each year, to cope with the increasing pressure mainly from schools, but also from tourist groups, families and individuals. The facilities of the Centre comprise the following areas: exhibition and laboratory; projection and presentation room; library and study room; and a wildlife observation kiosk. The exhibition room was renovated in 2007, after a generous donation by the Cultural Foundation of the Bank of Cyprus.

The Centre currently employs four full time staff, and offers a range of educational programmes for a variety of audiences. The greatest recent achievement of the Centre was the decision by the Council of Ministers of the Republic of Cyprus to include AEEIC in the network of environmental education centres of the Ministry of Education. The network will comprise 7 such Centres all over Cyprus, and actually AEEIC is the second Centre to be included in the network. The eleven currently offered educational programmes will soon form part of the National school curriculum. As a result of this cooperation with the Republic of Cyprus, a Cypriot teacher has been posted by the Ministry of Education to work full time at the Centre.

The Centre hosts about 10,000 visitors every year, and about half of them are organised school groups. The programmes offered last between 4 and 7 hours, and cover a variety of domains. Currently the groups can choose between the following eleven programs:

1. Flora and endangered plants at Akrotiri Peninsula
2. Bird migration at Akrotiri Peninsula
3. *Natura 2000* programme and the protection of natural habitats
4. Akrotiri wetlands and their importance
5. Water, the source of life
6. Basketry at Akrotiri Community



7. Akrotiri Peninsula formation
8. Plant production at Fasouri Forest Nursery
9. Food chains at Akrotiri Peninsula
10. Marine turtles nesting at Akrotiri beaches
11. The first humans at Akrotiri Peninsula and the Hippopotamus hunting

They are offered in Greek and English, and at various levels to cover different ages and backgrounds. All programmes include an introduction at the Centre, documentary and other presentations, as well as field work with worksheets and a variety of activities. Currently, the limiting factor is the size of the building, but a plot of land has been bought recently, and plans are prepared for the erection of a new purpose-built Centre.

In addition to this work the centre is participating in several *European Educational Programmes for Lifelong Learning*, sending people abroad and organising programmes in Cyprus for environmental skills, culture and archaeology.

The work of the Centre is based on a Resource Education Plan, which incorporates all the important aspects of its activities. The main aim is to match the internal resources with general opportunities and the market environment. The ultimate objective is the contribution to sustainable development - which, according to United Nations, is about "development that meets the needs of the present generation, without compromising the ability of future generations to meet their own needs". At the Rio Summit in 1992, environmental education was described as a critical factor for the improvement of people's ability to understand and face environmental and sustainability issues. The current plan covers the period 2008-2010. It sets the vision and mission of the Centre, and then several tools are used for the analysis of factors affecting the plan, including general, market and internal environ-



Akrotiri Environmental Education and Information Centre and some of its work

ment. These are followed by a SWOT analysis, which forms the basis for the strategic choices. Then all the tools and means for the achievement of the strategic choice are examined, with the assessment of the present and desirable condition. SMART objectives are set for closing the gap between present and desirable condition.

The relations of the Centre and SBAA with the local Akrotiri Community are of utmost importance, since Akrotiri is the only village entirely within the SBAs. The proximity of the village to sensitive facilities, such as the RAF base and communication antennae, creates from time to time many issues

between the Bases and the community. It is evident that the work of the Centre, which promotes employment of local people, basketry, ecotourism and other activities in the village, supports the relations of the Bases with local communities, and increases mutual understanding.

The Centre also promotes the relationships of the Bases with the rest of Cyprus, by successfully bringing together the SBAA, the local community of Akrotiri, the Government of the Republic of Cyprus and NGO's, to support positively environmental initiatives in the area.

Student comments on experiences of environmental education

Piers Sangan



Sangan, P. 2010. Student comments on experiences of environmental education. pp 133-134 in *Making the Right Connections: a conference on conservation in UK Overseas Territories, Crown Dependencies and other small island communities, Grand Cayman 30th May to 5th June 2009* (ed. by M. Pienkowski, O. Cheesman, C. Quick & A. Pienkowski). UK Overseas Territories Conservation Forum, www.ukotcf.org

(Abstract by Session Co-ordinator:)

This recount of personal experience of environmental education, from primary school through to high school raises issues which should be taken note of by people implementing environmental education within the school system. In particular, it stresses the need to have locally based environmental education experiences, from primary school onwards, and the importance of continuing practically-based environmental education at the secondary level.

Piers Sangan, prsangan@live.co.uk

I am one of the Jersey students, who originally came to the Jersey Conference, and I would like to say thank you for inviting me back here again. I am now studying wildlife conservation at Plymouth University. I have been asked to talk about my experiences with education and the environment. I suppose I could say that my natural interests in the environment started off when I was very young, considering that my first words were animal names, rather than anything else.

Primary school did something towards giving me an education in the environment. However, being in Jersey, the themes mainly focused around animals at the Durrell Wildlife Conservation Trust and not so much on the natural landscape in Jersey. One project I do remember from Primary School, which probably fuelled my interest in the environment more than anything else (and it was probably the only environmental project that we did at primary school) was actually on rain forests. So yet

again, nothing locally based.

All local interest came through things outside of the school system. For example, activities provided by the National Trust of Jersey, walks and events provided by the States of Jersey Environmental Department. I remember these activities as being great fun: going out, setting up moth traps, seeing what came, sitting out on the sand dunes. Great fun, great experience, and I learnt a lot.

Since ending primary school, I have had absolutely nothing within the school system about the environment, until I took environmental sciences as an A-level. The whole way through secondary school, absolutely nothing - which is, I think, quite a shame because there is potential there and we have missed out. It has been a huge gap. I have kept my interest fuelled by helping at Durrell as a volunteer so I have still managed to keep my interest going.

As I said, I then took A-level environmental science. Even then I felt it wasn't being taught properly. We sat inside most of the time reading out of a book, so even though the subject was there, the best way of teaching it was not used. Perhaps the teachers did not know how to teach it properly in a fun and educational way to get the most across. Perhaps it was the exam system that meant we sat inside learning from a book.

But, at that time, when I was just starting A-levels, that's when the 2006 Jersey conference happened. I was one of the students who managed to come to this, and things really opened up there for me, about what else is actually happening and what is going on.

For a student, that's absolutely fantastic because I knew nothing about the UK Overseas Territories. I didn't know any of them and that conference was just a complete eye-opener. And as has been said earlier, as students there we were really interested, we were trying to get connected with the other students in the other territories and that's actually gone forward. We have got the UKOTCF discussion forum now set up, so it's a matter of trying to get students from the other territories involved. Those of us from Jersey and St Helena have been the main ones involved so far. Cayman students are now interested, so the more students that we can get involved in the discussion forum the better.

I suppose, in summary, overall, my experience of education in the environment is, it started off weak, and got progressively weaker. I had to take my own stand and get involved myself which I don't think is quite right. I can see here in Cayman that the curriculum is being changed, but it doesn't seem so much that way in many other places, which is a great shame. I hope that something will be done and more environmental education, with more resources for environmental education, will be put into schools - and not just at the primary stage but throughout the school system. Young primary pupils can do only what they are told, whereas the secondary school pupils can make their own decisions in life and they are the next wave of conservationists; so it is important not to leave them out of environmental education.

Panel discussion: What is needed for the future?

Facilitators: Ann Pienkowski (Environmental Education Co-ordinator, UKOTCF), Clive Baker (Head of Curriculum Services, Cayman Islands Department of Education) & Edgar Howell (Deputy Director of Education, Turks & Caicos Islands)

Panel Members:

Clive Baker (Head of Curriculum Services, Cayman Islands Department of Education)

Edgar Howell (Director of Education, Turks & Caicos Islands),

Martin Keeley (Education Director, Mangrove Action Project and Cayman Brac Campus Director, University College of the Cayman Islands),

Thomas Hadjikyriakou (Manager, Akrotiri Environmental Education and Information Centre, Cyprus Sovereign Base Area),

Piers Sangan, (Student, Crown Dependency of Jersey and Plymouth University)

Ann Pienkowski (Environmental Education Co-ordinator, UKOTCF)

Summary of discussion points

The discussion focused on the seven areas listed below. The discussion material has been summarised under these seven areas.

1. Transition from Primary School to Secondary School, curriculum restrictions and fitting in with examinations and exam syllabus.

Environmental Education resources produced for schools must be curriculum-linked. A cross-curricular approach is effective in delivering environmental education in a practical and meaningful way.

Opportunities for environmental education within the curriculum need identifying. Where a course includes assessment of student project work, environmentally based projects should be encouraged.

Primary schools appear to deliver more environmental education than secondary schools (although there is clearly a need for a great deal more), but this is not followed through in secondary schools. The transition to secondary school is clearly a stage where more opportunities for environmental education need to be identified. The issue of examination constraints on the upper secondary school curriculum was also discussed.

The constraints of the examination system at secondary school need to be addressed. A “top-down” approach from Departments of Education is needed to get environmental education into the examina-

tion system.

A very effective strategy which could be used at secondary school is to use the time after examinations for environmental projects, as long as these involved getting the students outside.

2. Teacher Training and workshops, and issues raised by the use of contract teachers

Teachers need to be trained to use the resources. The training sessions should be mandatory, so that all teachers become more environmentally aware. In many places a large contingent of teachers are contract teachers - so, as well as being mandatory, environmental education training needs to be part of the initial induction programme for newly appointed teachers.

Teacher training colleges need to be made aware of the opportunities and facilities available for locally based environmental education. One way of doing this is to visit teacher training colleges. Schools similarly need to be made aware of local environmental education opportunities.

3. Parental involvement, and wider public involvement

Involving parents is very important – this has the benefit of educating parents as well as the children,

and providing positive feedback, increasing the interest and enthusiasm of the children.

Extra curricula clubs which involve parents are a good way of involving and educating parents.

Education centres which were planned primarily for students should be opened to all visitors. This can be seen to work when following a student visit to such centres, subsequent visits are made by family groups

4. First-hand outdoor practical experience, and Health and Safety issues

Getting the students outside must be a key element of all environmental education – it needs to be hands-on and fun. Teaching children about their local environment is a priority.

Signage is an important part of a meaningful outdoor experience (for students and others). For example, the Ramsar site at Akrotiri, Cyprus Sovereign Base Areas, needs signs to explain the meaning of Ramsar, its Wetlands of International Importance, and its Wise Use concept. This has been agreed, but is being held up by lack of funding.

Health and Safety is an important issue with outdoor activities. It needs to fit in with local requirements, and should include an approved emergency plan.

5. Student work-experience in environmental organisations and projects

Students benefit from opportunities to participate in environmental and conservation projects, and to talk with such project teams.

Work experience programmes to release upper secondary students for attachments to government environmental and conservation departments or environmental NGOs should be encouraged. Holiday placements could be arranged if term-time release is not practical. Opportunities for careers in environmental fields could be encouraged at career fairs, and by making presentations to secondary schools. The British Virgin Islands have a successful programme of work experience, particularly linked in with Environment Month.

6. Using international events such as environment week, Caribbean Endemic Bird Festival, International Migratory Bird Day

An example was given from St Helena where schools celebrate environment week and organise an entire week around that theme. One previous theme had been climate change – projections of parts of the island being under water had had a big effect, on students and parents.

The British Virgin Islands have an environment month, which includes a science fair and cultural exhibition. Environment month is also used as an opportunity for environmental work experience placements.

Other opportunities could be linked to science fairs and cultural events.

7. Using existing schemes and resources

With limited human and financial resources, existing materials should be used, adapted and built on, where possible. However, they should always be adapted to the local situation, and be introduced to teachers through training and workshops, as already discussed.

Opportunities provided by existing science-based franchises, or commercially available science programmes should be considered. An example given was the Mad Science Franchise (<http://www.madscience.org/>)

Section 4: Climate change – impacts and adaptation

Co-ordinators: Bruce Dinwiddy (UKOTCF Council) & Deborah Procter (Climate Change Advisor, JNCC)

Recent years have seen increasing attention paid to climate change issues, particularly at policy level. Some in the conservation community feel that this has distracted from the essential work required to reduce (and ultimately halt) biodiversity loss, whether the survival of species, the protection of habitats, or the maintenance of the integrity and function of ecosystems. Furthermore, particular attention seems to have been paid to climate change mitigation, and measures to reduce greenhouse gas emissions. Whilst hugely important at a global scale, local implementation of such measures seems rather less important for small island communities; whilst they may be disproportionately threatened by the impacts of climate change, the contribution that they make to emissions is (in a global context) very small.

The perceived distraction from biodiversity loss is particularly ironic, given that the environmental threat posed by climate change (and the required responses) are closely linked in many ways to the assets and services provided by biodiversity. The Climate Change session at the Making the Right Connections conference chose to focus, in particular, on the links between climate change and biodiversity. This included the impacts, for example, of rising temperatures and other phenomena on wildlife, and the role of species as indicators of climate change. It also included the role of biodiversity in adaptation to climate change, noting (for example) the need to maintain the important function of natural ecosystems in coastal protection against storm surges, and in other contexts.

The session was coordinated by Bruce Dinwiddy (UKOTCF Council, and Governor of the Cayman Islands when Hurricane Ivan struck in 2004, so well acquainted with the effects of severe climate events) who provided a brief introduction, and Deborah Procter (Climate Change Advisor, JNCC) who provided general background. There followed presentations relating experiences of climate change impacts, adaptation and some aspects of mitigation, in South Georgia and the South Sandwich Islands, Guernsey, and Cayman (linked to a regional initiative for all five Caribbean UKOTs). A lively, open discussion then took place, drawing together aspects of the experiences presented and challenges for the future.



Deborah Procter (L) and Bruce Dinwiddy chair discussions on Darren Christie's (R) presentation.

Photo: Mike Pienkowski/ Rob Thomas

(Photos of authors in this section by Rob Thomas & Mike Pienkowski, unless otherwise indicated)

Framework Document: Climate change – impacts and adaptation

Co-ordinators: Bruce Dinwiddy (UKOTCF Council) & Deborah Procter (Climate Change Advisor, JNCC)

Dinwiddy, B. & Procter, D. 2010. Framework: Climate change – impacts and adaptation. pp 138-139 in *Making the Right Connections: a conference on conservation in UK Overseas Territories, Crown Dependencies and other small island communities, Grand Cayman 30th May to 5th June 2009* (ed. by M. Pienkowski, O. Cheesman, C. Quick & A. Pienkowski). UK Overseas Territories Conservation Forum, www.ukotcf.org

This Framework Document sets the scene for the following individual contributions to, and discussion arising from, the Climate Change session. The importance of climate change as a driver of biodiversity loss is noted, as is the need for mitigation, adaptation and planning in response. The links between adaptation measures and the natural environment are emphasised, types of adaptation are summarised, and a few key information sources are listed.

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Climate change is one of the six main direct drivers of biodiversity loss identified in the *Millennium Ecosystem Assessment* (MA). The insidious effects of climate change range across the globe and have been documented at a variety of temporal and spatial scales. Changes in the timing of flowering of plants, emergence of insects and the migration routes of birds and mammals are all well documented and have been linked to changes of climate. The climate changes observed are extremely likely to have been, and continue to be, driven by anthropogenic inputs.

There are three top level responses to climate change needed to benefit the natural environment:

- urgent mitigation of climate change to minimise impacts on the natural environment;
- active adaptive conservation management to enhance the functional resilience of current and future ecosystems; and
- planning to cope with changes to ecosystems when major changes are unavoidable.

These mirror the universal needs of society and across sectors. The needs of and contribution from

biodiversity and geodiversity need to be recognised as part of that universal response.

Impacts

Alongside direct measurement of variables such as temperature and atmospheric composition, records of biological phenomena (like those noted above) have provided important evidence of the reality of recent, rapid climate change trends. Impacts on biodiversity provide some of the most potent tools for raising awareness (at all levels of society) of climate change, and on-going monitoring of such impacts yields important data for tracking its effects. Research leading to better understanding of biodiversity impacts allows for increasingly reliable predictions to be made, feeding into the development of appropriate adaptation measures, with socio-economic as well as environmental benefits.

Mitigation

Mitigation measures to reduce the effects of

key anthropogenic drivers of climate change are increasingly urgently needed. Actions taken at a local level in small island communities all have value, in demonstrating political will, encouraging the development of new technologies, and sending messages to other key actors. However, it will be measures taken by large nations and (in a concerted fashion) across regions that will have the greatest significance in reducing climate change impacts in small nations. In part, this is the rationale behind the focus of the discussion part of this session on adaptation rather than mitigation.

Adaptation

The natural environment has a role to play in climate change adaptation, i.e. there are positive links between biodiversity conservation action and mechanisms put in place to cope with climate change (e.g. coral reefs and coastal protection, forests and flood defence). Some adaptation strategies could have a negative effect on biodiversity (e.g. concrete structures at the coast). On top of all of this there are the direct effects of climate change on biodiversity (e.g. establishment of invasive aliens, changes in species migration routes).

Different Types of Adaptation (Source: IPCC 2001)

Anticipatory Adaptation - Adaptation that takes place before impacts of climate change are observed. This is also referred to as proactive adaptation.

Autonomous Adaptation - Adaptation that does not constitute a conscious response to climatic stimuli but is triggered by ecological changes in natural systems and by market or welfare changes in human systems. This is also referred to as spontaneous adaptation.

Planned Adaptation - Adaptation that is the result of a deliberate policy decision, based on an awareness that conditions have changed or are about to change and that action is required to return to, maintain, or achieve a desired state.

Reactive Adaptation - Adaptation that takes place after impacts of climate change have been observed.

Resources

The following are some useful information sources:

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IPCC [Intergovernmental Panel on Climate Change] website: <http://www.ipcc.ch/>

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Introduction

Bruce Dinwiddy (UKOTCF Council)



Dinwiddy, B. 2010. Introduction to Climate Change Session. pp 140-141 in *Making the Right Connections: a conference on conservation in UK Overseas Territories, Crown Dependencies and other small island communities, Grand Cayman 30th May to 5th June 2009* (ed. by M. Pienkowski, O. Cheesman, C. Quick & A. Pienkowski). UK Overseas Territories Conservation Forum, www.ukotcf.org

Bruce Dinwiddy, UKOTCF Council. bruce.dinwiddy@zen.co.uk

Good afternoon, everyone, and welcome to our first afternoon session.

Among those of you who attended the conference in Jersey, there may be one or two who recall that in the closing session one of the participants rose to his feet and commented that there was an important sleeping dog which had not barked during that conference, though it would undoubtedly bark a great deal more loudly in the future. The sleeping dog was global warming and its impact on climate change; and, yes, the person who made that brief intervention was me!

Little did I guess, nearly three years ago in Jersey, that I would be invited to be a coordinator of a session on climate change at this the next Forum conference. Even less, would I ever have guessed that we would be meeting here in the Westin Casuarina, where my wife and I lived for six weeks in September/October 2004 in the aftermath of Hurricane Ivan, the biggest storm to strike Grand Cayman in living memory, after which our house next door was temporarily uninhabitable. It's very good to be here again, hopefully early enough in the 2009 hurricane season to escape, this week, anything remotely resembling Ivan!

As most of you will be well aware, there's been a marked rise in tropical storm activity in the Caribbean during the past 40 years, with a 75% increase in the number of category 4 and 5 hurricanes. It's now generally accepted that this is at least partly related to rising temperatures during the same period.

But the effects of global warming are increasingly worrying in all the Overseas Territories and other entities represented at this conference. For my own part, I first became concerned about the impact of global warming in the UKOTs some 12 years ago, when I saw at first-hand the effect even at that time of slowly rising sea levels in the British Indian Ocean Territory (which is even lower and flatter than Grand Cayman!). Just a year or two later, the corals in BIOT were severely bleached by a sudden rise in sea surface temperatures, which destroyed some 80% of live coral to a depth of 30 metres.

Happily, after the sea temperatures dropped back to nearer their historic levels, most of the coral revived much more quickly than was initially feared. But this bleaching episode was a portent of the sort of thing we must expect to see much more widely, and often irreversibly, as sea and air temperatures continue to rise.

We must of course recognise that the peoples of the Overseas Territories collectively make a virtually negligible contribution to global warming, and their governments effectively have no voice in international efforts to address it. I would maintain that every one of us has a responsibility to reduce or mitigate as far as possible our individual carbon footprint. But that is not our topic this afternoon. Our key starting-point is that, whatever their peoples and governments do in mitigation, the OTs are extremely vulnerable to the effects of climate change generated by human profligacy elsewhere in the world.

Hence, we shall focus this afternoon essentially on impacts and on practical adaptation. I personally have no special expertise in these matters. But I'm fortunate to have as my fellow-coordinator Deborah Proctor, Climate Change Adviser to the Joint Nature Conservation Committee, which has already done some very valuable work in this field, with particular reference to the UK Overseas Territories. Deborah will set the scene for us, outlining the links between climate change and biodiversity conservation. We shall then hear presentations from Darren Christie, on the threats from climate change in South Georgia, and from Andrew Casebow, a study of experience in Jersey.

We were also looking forward to a presentation from Dr Neville Trotz of the Caribbean Community Climate Change Centre in Belize. Dr Trotz was going to tell us about the DFID-funded £300,000 programme, through CCCCC, for the development and implementation of climate change adaptation strategies in the five Caribbean Overseas Territories. Very disappointingly, he has been unable to attend the conference, and we shall therefore rely on representatives from the individual territories to relate their experiences of the '5Cs' project.

We hope that many of you, not just from the Caribbean, have useful experience that you can share with us this afternoon. There will be opportunity for a few questions after each presentation, which should take us to tea-time around 3 o'clock. We are aiming to break at that point for about 15 minutes, and then to return for a more general discussion which will allow us to frame some material for the conference conclusions.

So much for general Introduction. I thank you for your attention; and, rather than invite questions at this point, I would like now to give the floor to my colleague Deborah Procter.

Climate change and biodiversity conservation - impacts and adaptation

Deborah Procter (Climate Change Advisor, JNCC)



Procter, D. 2010. Climate change and biodiversity conservation - impacts and adaptation. pp 142-144 in *Making the Right Connections: a conference on conservation in UK Overseas Territories, Crown Dependencies and other small island communities, Grand Cayman 30th May to 5th June 2009* (ed. by M. Pienkowski, O. Cheesman, C. Quick & A. Pienkowski). UK Overseas Territories Conservation Forum, www.ukotcf.org

The natural environment is an integral part of the climate system; it is both affected by and affects climate globally and locally. A considerable body of theory on climate change adaptation has been and is being developed. The real challenge is to put into practice developing theories and concepts, and to build on lessons learnt from such action.

It is important to determine the risks and opportunities for biodiversity conservation from mechanisms put in place to address climate change over the short to medium term. This requires a balanced consideration of social, economic and environmental issues. Although biodiversity and climate change policy could result in win-win solutions, in some cases difficult trade-offs will be required. We need to determine what trade-offs we are prepared to accept for biodiversity. The ecosystem approach provides a sound mechanism to inform the development of climate change policies, thereby stressing the interactions between societal choice, economic valuation, incentives, ecosystem function and thresholds, and to strengthen the case for sustainable adaptation and mitigation measures.

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Introduction

Our understanding of recent and current trends in climate change, and predictions of likely future trends, are steadily improving. This enhanced understanding is exemplified by the work of the Intergovernmental Panel on Climate Change, and its recent Fourth Assessment Report (IPCC 2007). Amongst other trends, a pattern of increasing global average surface temperature has emerged. In its Third Assessment Report in 2001, the IPCC estimated that this represented a warming of around 0.6°C in the preceding 100 years. The Fourth Assessment Report revised this to 0.74°C in the preceding 100 years, and more recent estimates place the figure closer to 0.8°C. This trend in increasing global average surface temperature is predicted to continue. Depending on atmospheric

greenhouse gas concentrations, further warming of between 1.8°C and 4°C is anticipated by the end of the century.

Other phenomena related to climate change include sea-level rise and changes in ocean chemistry. Globally, the sea's level has risen by about 20cm since 1900. The rate of increase seems to be accelerating; it was of the order of 1.8 mm/year after 1961, but has risen to nearer 3.1 mm/year since 1993 (IPCC, 2007). Changes in atmospheric gases caused by human activities since 1750 have led to a general acidification of the oceans. The global average pH level has already fallen by 0.1 units, and models suggest a further decrease in global oceanic surface pH levels of between 0.14 and 0.35 units between now and the end of the century (IPCC 2007).

Adaptation

A considerable body of theory on climate change adaptation has been and is being developed. The real challenge is to put into practice developing theories and concepts, and to build on lessons learnt from such action. The natural environment is an integral part of the climate system; it is both affected by and affects climate globally and locally. As well as signalling the impacts of climate change, biodiversity needs to be factored into (and, importantly, can contribute to) adaptation.

A key international instrument in this area is the UN Framework Convention on Climate Change (UNFCCC). Much of this is concerned with mitigation, but adaptation and the role of the natural environment are also given consideration. For example, Article 2 states that the ultimate objective of the convention is to stabilize greenhouse gases *'at a level that would prevent dangerous anthropogenic interference in the climate system'*. It then asserts that *'Such a level should be achieved within a time-frame sufficient to allow ecosystems to adapt naturally to climate change'*. Article 4 includes as a commitment by all Parties that they shall: *'Cooperate in preparing for adaptation to the impacts of climate change; develop and elaborate appropriate and integrated plans for coastal zone management, water resources and agriculture, and for the protection and rehabilitation of areas, particularly in Africa, affected by drought and desertification, as well as floods.'* Clearly, consideration of the underlying ecosystems is crucial to successful adaptation in all these sectors.

Biodiversity

Biodiversity is intimately connected to climate change adaptation in at least three ways:

1. Components of biodiversity can play a significant role in strategies for societal adaptation to climate change, and are particularly important for reducing the vulnerability of the poor and disadvantaged. Examples include the role of biodiversity in coastal protection, e.g. by mangroves. This includes reducing the impacts of extreme events, and research suggests that older, more established mangroves are potentially most effective in this role. Fisheries, which mangroves also underpin in some situations, by providing important nursery grounds, provide another example of the value of biodiversity to human livelihoods. Further exam-

ples of important roles of biodiversity in human affairs, and significant to climate change adaptation, include aspects of watershed management and consolidation of soils, and the relationship between these and (for example) agriculture.

2. Many of the strategies adopted for societal adaptation, especially those dependent on engineering and technology, can have significant negative impacts on biodiversity, and these will differ between sectors. Examples include aspects of coastal flood risk management (e.g. by so-called hard defences) and the impact of activities such as dredging.

3. The components of biodiversity are themselves subject to considerable impacts from climate change. There is, therefore, a need for adaptation strategies within the conservation sector, both to conserve biodiversity for its own sake, and to maintain the role of biodiversity in societal adaptation. There is a wide range of relevant considerations in this area. These include the role of protected sites and other aspects of land management, both for maintaining biodiversity and enhancing the permeability of landscapes (i.e. facilitating changes in species distributions in response to climate change, preferably without enhancing the spread of damaging invasive species). Also, consideration is required of the appropriate form of intervention to maintain diversity at a range of biological scales (genetic, species, biotope, etc).

The Ecosystem Approach

There has been much discussion in recent years of the Ecosystem Approach, and this provides a useful tool to support the development of strategies to address the management and conservation of biodiversity in the context of climate change adaptation. One key principle of the Ecosystem Approach is the conservation of ecosystem structure and functioning in order to maintain ecosystem services, and this is clearly complementary to the aims of climate change adaptation.

Related concepts, including the principles of sustainable development, also emphasise the need for integrated solutions. This is complementary both to the Ecosystem Approach and to the aims of climate change adaptation, for example, in stressing the need to develop strategies that serve to support social, economic and environmental considerations.

Conclusion

Climate change is already having measurable impacts on ecosystems and on biodiversity more generally, and these are expected to grow. Adaptation in the biodiversity conservation sector is required, not just to achieve the conservation of biodiversity for its own sake, but to maintain the role of biodiversity in contributing to societal adaptation. Adaptation to climate change is a relatively new field, and the available literature is limited. Very few adaptation strategies have actually been implemented, but those that have tend to rely on technological and engineering measures. The limited evidence to date suggests that although technological and structural adaptation measures will be required, biodiversity will also play a vital role in adaptation to climate change.

It is important to determine the risks and opportunities for biodiversity conservation from mechanisms put in place to address climate change over the short to medium term. This requires a balanced consideration of social, economic and environmental issues. Although biodiversity and climate change policy could result in win-win solutions, in some cases difficult trade-offs will be required. We need to determine what trade-offs we are prepared to accept for biodiversity. The ecosystem approach provides a sound mechanism to inform the development of climate change policies, thereby stressing the interactions between societal choice, economic valuation, incentives, ecosystem function and thresholds, and to strengthen the case for sustainable adaptation and mitigation measures.

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 - The Synthesis Report: *Summary for Policymakers*
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South Georgia: Threats posed by climate change, and mitigations

Darren Christie (Environment Officer, Government of South Georgia and the South Sandwich Islands)



Christie, D. 2010. South Georgia: Threats posed by climate change, and mitigations. pp 145-150 in *Making the Right Connections: a conference on conservation in UK Overseas Territories, Crown Dependencies and other small island communities, Grand Cayman 30th May to 5th June 2009* (ed. by M. Pienkowski, O. Cheesman, C. Quick & A. Pienkowski). UK Overseas Territories Conservation Forum, www.ukotcf.org

South Georgia is dominated by huge glaciers, ice caps and snowfields, which cover about 75% of the island in the austral summer. In winter, the island is entirely covered in snow. Of the 25% of the island that is free of permanent ice, only 8% is vegetated. Nonetheless, the island supports important biodiversity, including 30 million pairs of seabirds. Three key climate change threats have been identified: glacial retreat, increased vulnerability to species invasions (in part, linked to glacial retreat) and oceanographic changes. The mainland is effectively subdivided into smaller “mainland islands” by glaciers. As well as providing South Georgia with much of its natural character, these act as barriers to species dispersal, protecting the south coast against the spread of invasive species (notably reindeer, Norway rats and house mice) present elsewhere on the island. However, glaciers are retreating at an increasing rate, potentially exposing new sites to species invasions. In combination with increasing temperatures that may independently render new sites favourable for alien species, this substantially increases the threat; South Georgia has recently been identified as the most vulnerable island in the sub-Antarctic to alien species invasions. In this context, biosecurity measures become increasingly important, and are being addressed at a number of levels. The precise effects of global warming on oceanographic processes are difficult to predict. However, sea temperatures, the presence or absence of sea ice, and ocean current dynamics can be linked (for example) to the abundance of krill, which has the potential to impact substantially on South Georgia penguin populations. It seems likely that, with globally increasing temperatures, important food chains could be disrupted.

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Location

The Sub-Antarctic island of South Georgia is a long and narrow crescent, some 170 kilometres long and varying from 2 to 40 kilometres wide. Two mountain ranges (Allardyce and Salvesen) provide its spine, rising to 2,934 metres at Mount Paget's peak. Huge glaciers, ice caps and snowfields cover about 75% of the island in the austral summer; in winter, the island is entirely covered in snow. Of the 25% of the island that is free of permanent ice, only 8% is vegetated. However, the island is home to an estimated 30 million pairs of seabirds, notably penguins, albatrosses and petrels, and over 6 million seals.

South Georgia lies from 35.47' to 38.01' west and 53.58' to 54.53' south within the Polar Front, being surrounded by the ice-cold waters that flow up from Antarctica. The tip of South America, Tierra





Satellite image of South Georgia (© SG GIS)

del Fuego is 2,150 kilometres to the west. The Falkland Islands are closer, but still 1,390 kilometres away to the west. The mountain ranges and the precipitous southern coast shield the northern facing bays from the fierce prevailing winds and depressions that roar in from the Drake Passage to the West, and Antarctica to the South.

Threats

Three key threats have been identified as being posed by climate change:

1. Glacial Retreat
2. Increased vulnerability to invasion
3. Oceanographic changes

1 - Glacial Retreat

Mainland South Georgia is effectively subdivided into numerous smaller “mainland islands” by glaciers, which act as natural barriers to the spread of seeds, animals and disease, both alien and native. At present, glaciers protect a safe haven along the south coast, free of the worst invasive species as described below. Glaciers are retreating at an increasing rate. Their effectiveness as a barrier is declining, and the safety of the south coast is under threat. Only 8% of South Georgia is vegetated, so those areas free of invasive species are vitally important.

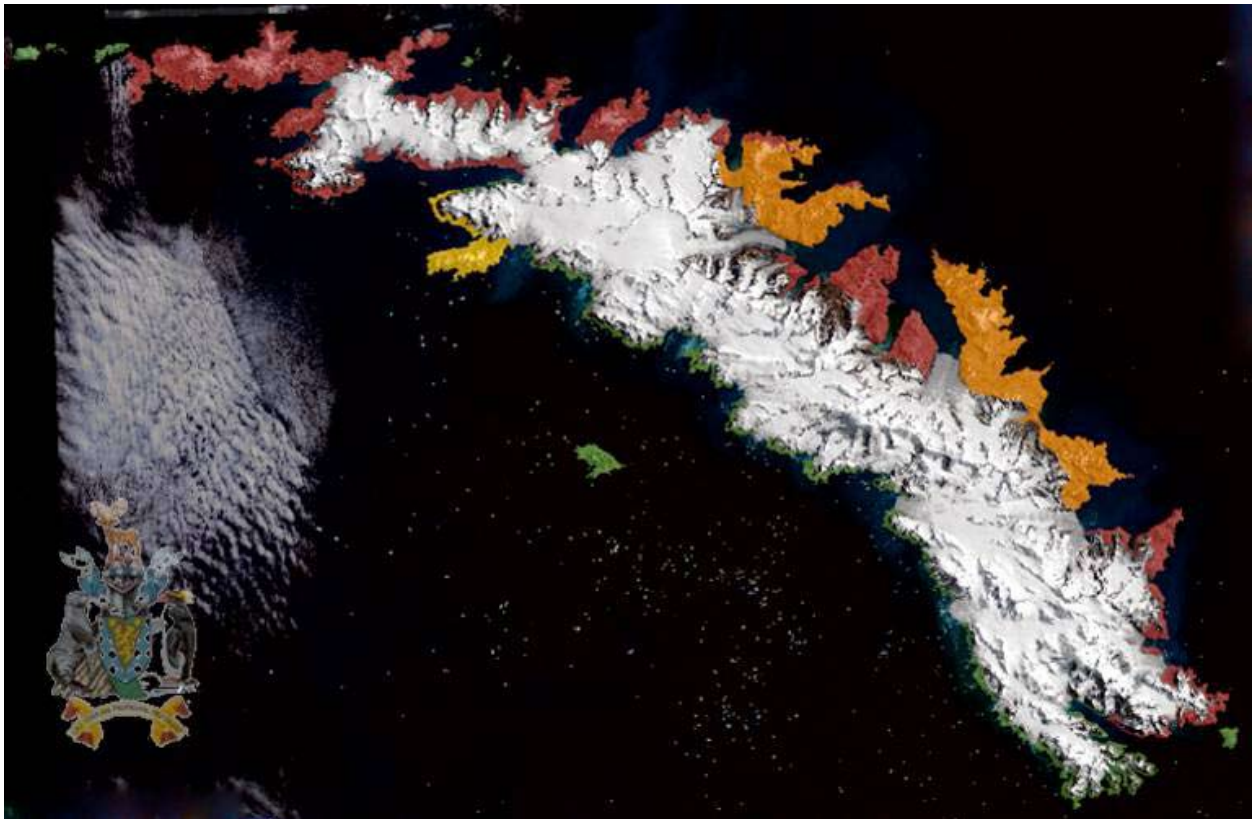
There are numerous introduced alien species on South Georgia, but three in particular are of particularly devastating consequence:

Reindeer *Rangifer tarandus*

There are two reindeer herds on South Georgia, introduced in the early 20th century for sport hunting and subsistence. The combined affected area of both herds is approx 313km², or 20% of the total snow free area of South Georgia. The Barff herd occupies all accessible areas, the Busen herd has recently expanded to graze 88% of the accessible terrain, with the herd likely to expand to fill 100% over the coming years. The reindeer occupy the most extensive and species rich vegetated areas of South Georgia.

Norway rats *Rattus norvegicus*

Rattus norvegicus is the only rat species on the island, and occupies the entire north coast of the island, and the top northwest part of the south coast. This represents 66% of the coastline, but somewhere in the order of 75% (possibly more) of the snow-free land area of the island. Rats have had a serious detrimental impact on the endemic South Georgia Pipit *Anthus antarcticus*, the world's only Antarctic songbird, which now only survives in rat-free areas. Diving petrel numbers are significantly reduced in rat-infested areas.



Distributions of alien, invasive species: red = rats; orange = rats+reindeer; yellow = mice; green= free (© SG GIS)

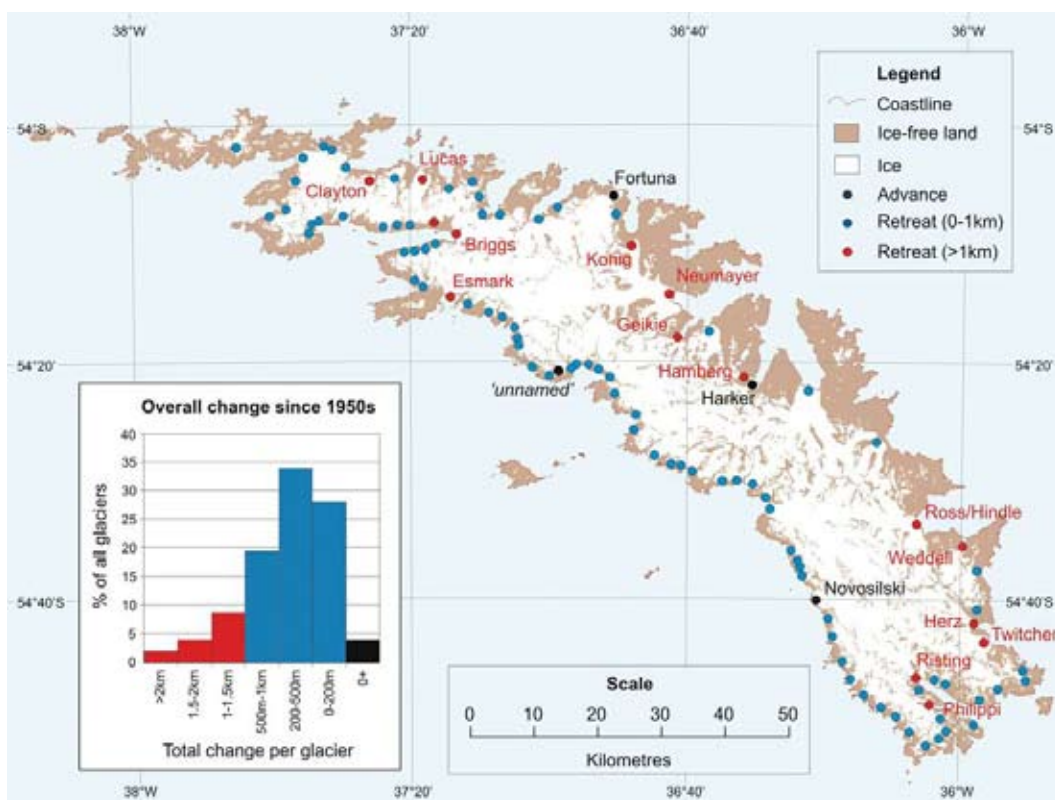
House mice *Mus musculus*

Mice occupy the area of Cape Rosa/North side of Queen Maud Bay. They exist here in the absence of rats. It is unknown if they are in rat-infested areas but suppressed to undetectable levels. The area occupied by mice is <60km². Their impact is

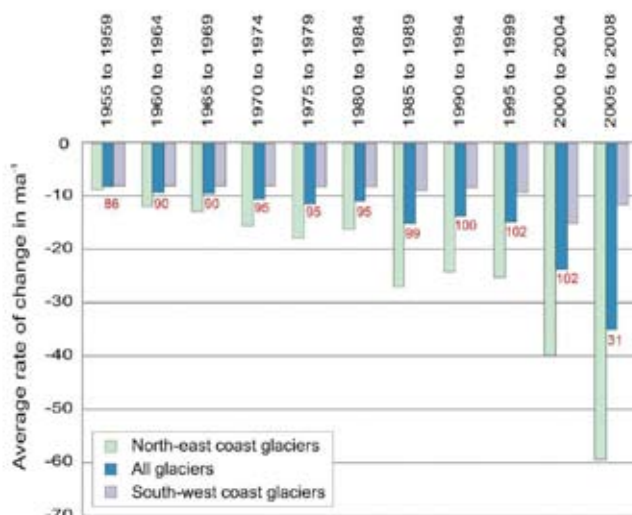
unknown, but is likely to be detrimental.

Current studies estimate that 97% of South Georgia's marine glaciers have retreated in the past 50 years. The majority have retreated by about 500m, but one notable glacier has retreated over 4km.

The rate of retreat is also increasing, with averages from <10m per year in the 1950s to almost 40m per year currently. If glaciers on the north east coast are considered separately, the rate of change is between 60m-400m per



Change in Glacier length since the 1950s. Names relate to significant glaciers which have retreated >1km since 1950 (Cook et al, submitted Oct 2008)



Mean rates of change across all glaciers since 1955. Number of glaciers contributing to average is shown in red. (Cook *et al*, submitted Oct 2008)

year. Those on the south coast are retreating at a rate of approx 10m per year.

Mitigation against the affects of glacial retreat

Cessation or reversal of retreat seems unlikely; indeed the rate of decline seems to be accelerating. There is limited time available before some previously safe areas are opened up to invasion by introduced species. Eradication of major invasive threats is being considered.

The Government of South Georgia (GSGSSI) produced a feasibility study for the eradication of rats in 2007. The South Georgia Heritage Trust are currently fundraising for an island-wide eradication of rodents, and are actively working towards the first stage of the project.

GSGSSI have stated their intent to remove one reindeer herd in their management plan, and options are currently being considered.

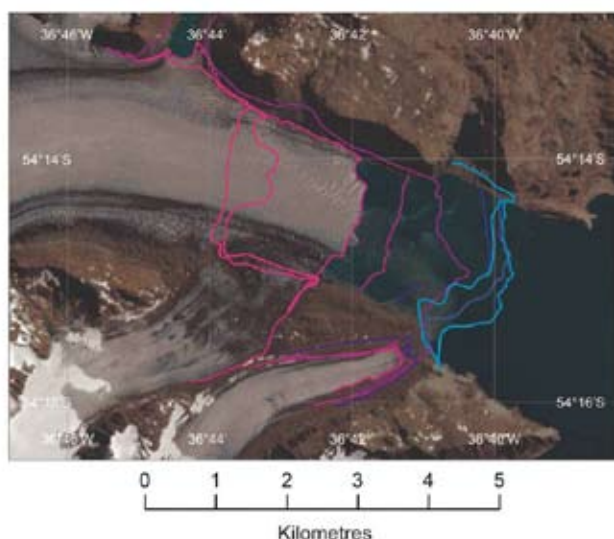


Image: Landsat ETM+ Path:206 Row:098, 7 February 2003

2 - Increased Invasiveness and vulnerability to Invasion

Globally, the presence of invasive introduced species is considered the single greatest threat to the biodiversity of island ecosystems (Wittenburg & Cock 2001). The presence of invasives on an island makes it more vulnerable to new invasions (e.g. high association between reindeer grazing and spread of introduced grass *Poa annua*). Consequently, South Georgia has recently been identified as the single most vulnerable island in the sub-Antarctic to alien invasion (Frenot *et al*. 2005).

The location of South Georgia below the Antarctic Convergence creates an extreme, cold environment that limits the establishment of aliens. As the climate warms up, the risk of a new establishment increases. Already present ("harmless") aliens may become invasive, as may native species.

Mitigation

Biosecurity - South Georgia has no airstrip, so all transport is by sea. Shipping data were analysed to identify main vector routes. Individual biosecurity plans were produced, and are now in place for all vector routes.

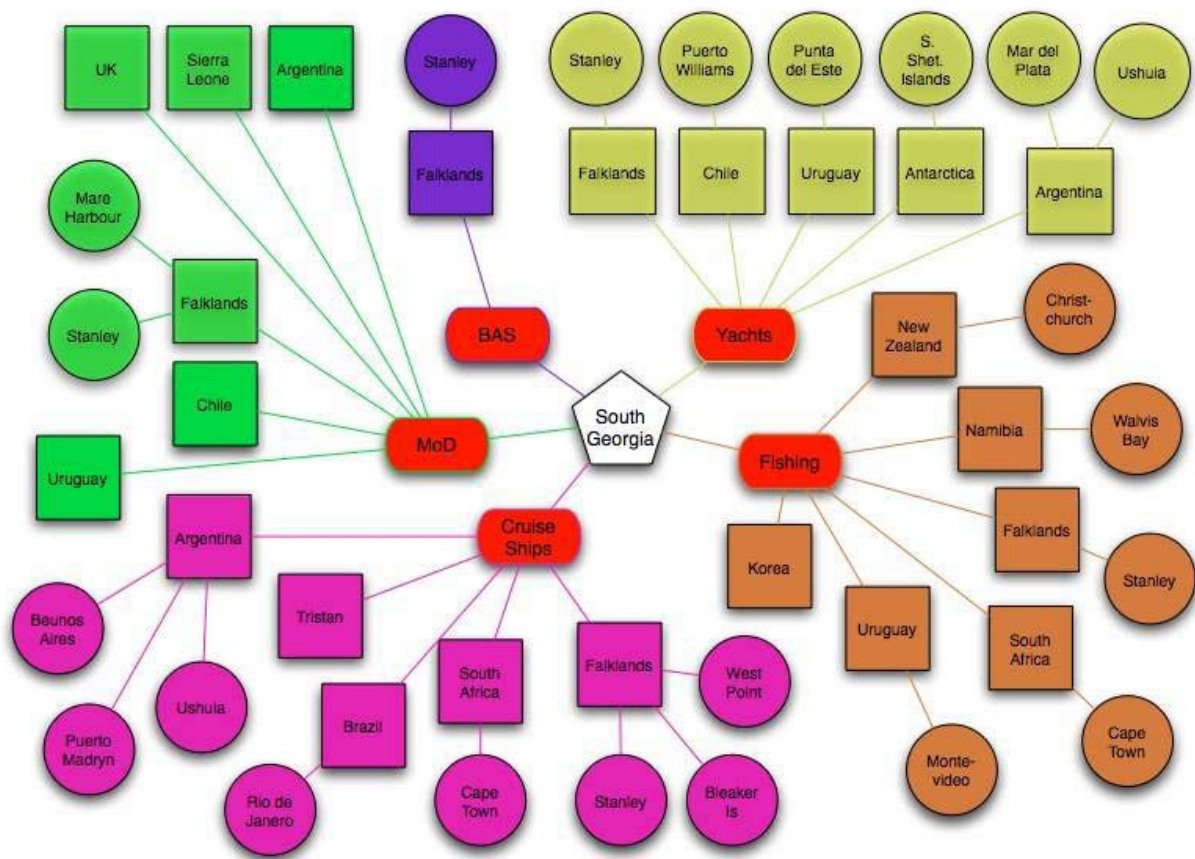
Any expeditions must produce their own biosecurity plans, in order to demonstrate awareness of the issues. A permit will not be awarded unless plans are approved.

Biosecurity is being incorporated into new South Georgia legislation, which is under review.

A dedicated biosecurity facility has been built at South Georgia (funded between OTEP, GSGSSI and the South Atlantic Invasive Species Programme (SAISP)), but puts emphasis on pre-border procedures due to lack of capability and manpower on the island.

Response plans and monitoring systems are under development, in order to efficiently respond to a new incursion or reinvansion. Bird Island, as a key site,

Neumayer Glacier front positions since 1955 (Cook *et al*, submitted Oct 2008)



Vector routes

already has plans in place.

Royal Botanic Gardens Kew and Buglife were commissioned to do a baseline survey of invasive species, in December 2008 to January 2009, paid for by South Atlantic Invasive Species Programme. This is a key project to the future management of the island.

3 - Oceanography: Sea Surface Temperature

January 2009 saw a near 100% Gentoo penguin chick mortality along the NE coast of South Georgia. This is not unprecedented; similar events have been recorded 4 times in the past 20 years and are associated with poor krill availability.

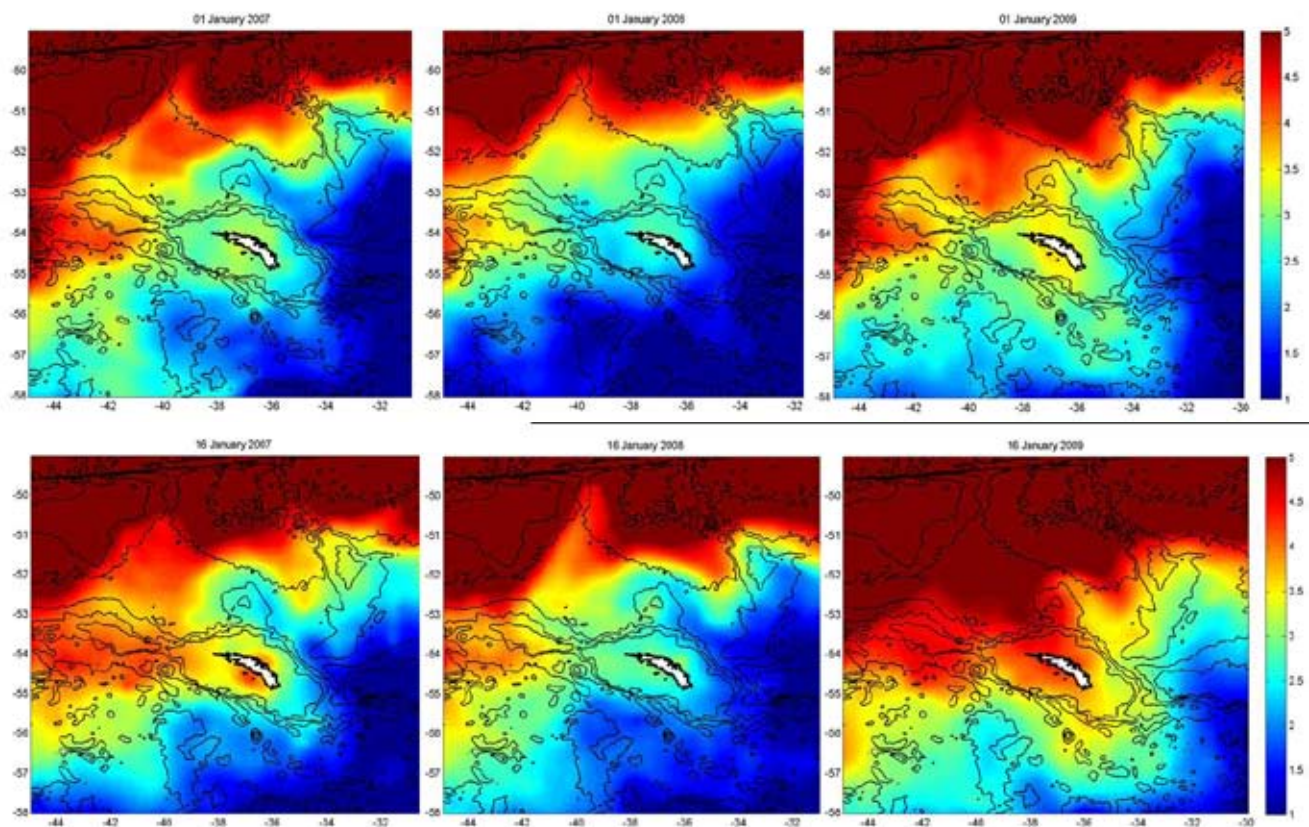
The abundance of krill around South Georgia varies between years. The variation in krill abundance is thought to be linked to fluctuations in average annual temperature, and the dynamics of the ocean currents in the Scotia Sea. Warmer winters result in less sea ice development, and this feature is linked to years with low krill abundance. The presence of sea ice is key to the volume of krill found around South Georgia, as South Georgia's stock of krill is not self-sustaining; krill may be

spawned much further south, possibly in the Bellingshausen Sea (Agnew 2004). Periods of poor krill abundance appear to correlate with fluctuations of Sea Surface Temperature (linked to El Nino events) (Trathan & Murphy 2002) and are on a 3-4 year cycle. Reduced levels of krill biomass are associated with periods of anomalously warm sea temperatures (Trathan *et al.* 2003). 2009 saw extremely high sea temperatures around South Georgia.

Whilst this appears to be a natural fluctuation, it seems likely that, with globally increasing temperature changes, events such as this may become more frequent. Any movement of Antarctic Circumpolar Current to the South would have devastating consequences for South Georgia. The effects of global warming on oceanographics are not well known.

Mitigation

Global warming is a phenomenon that is unlikely to be reversed in the foreseeable future. However, to be forewarned is to be forearmed; studying ecosystem interactions around South Georgia, and projecting forward any fluctuations in the system, may give an idea of what is to come. Where possible, lobbying for greenhouse gas emission



Plots of Sea Surface Temperature, 2007 - 2009

reductions would seem desirable, with potential for using South Georgia as an example of dramatic consequences.

South Georgia can also lead by example; in December 2008, the islands hydroelectric power scheme came online. The 200kw turbine output displaces 153m³ of fuel per year, representing a reduction of 410,040kg of carbon a year.

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South Georgia hydroelectric scheme, 200kw output displacing 250m³ of diesel a year - active since December 2008

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Climate Change: A Case Study in Guernsey

Andrew Casebow (States of Guernsey)



Casebow, A. 2010. Climate Change: A Case Study in Guernsey. pp 151-154 in *Making the Right Connections: a conference on conservation in UK Overseas Territories, Crown Dependencies and other small island communities, Grand Cayman 30th May to 5th June 2009* (ed. by M. Pienkowski, O. Cheesman, C. Quick & A. Pienkowski). UK Overseas Territories Conservation Forum, www.ukotcf.org

The UK Channel Island of Guernsey provides an excellent example of the impact of climate change on a small island community. Comprehensive meteorological records that have been kept in Guernsey for more than 150 years show that recent years have been the hottest in the entire instrumental record. Whilst the mean daily air temperature over the past 16 years has been, on average, 0.9°C hotter than a 30 year mean of the years 1961 – 1990, the maximum daily temperature has increased by twice that amount, or 1.8°C higher than the 30 year mean (1961 – 1990), and summers are becoming considerably drier.

The changes in temperature are having a significant impact on wildlife, be it on land or in the sea. One of the most eye-catching changes is the fact that spring flowers are now blooming much earlier. Some daffodil cultivars, which used to be exported and sold on the London market in time for Easter, are now in blossom in the island before Christmas. On average, spring flowering wild plants are blossoming some three weeks earlier than they did only 21 years ago. Changes caused by warming temperatures have been recorded in migrating and nesting birds, in the leafing of trees, the flight time of moths and insects, in over-wintering birds and insects, and in the movements of fish, plankton and intertidal species that live along the shoreline.

The book *Planet Guernsey* has detailed many of the changes that are taking place in Guernsey and is being used as a template for other similar books alerting local communities to the changes that are occurring in their own localities.

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Background

Aspects of climate change in Guernsey, including the historical context, evidence for and impacts of recent trends, and predictions for the future, were recently collated in the book *Plant Guernsey* (Casebow, 2007). This publication provides a model of the information that can be brought together for one small island, and is available on-line through the website of the Société Guernesiaise: www.societe.org.gg/planetguernsey/index.html. A few key aspects are summarised briefly below.

Introduction

Guernsey is an island in the English Channel between France and England, being situated in the

Bay of St Malo and with the Cotentin Peninsula of France clearly visible. It was joined to France until about 8,000 years ago but was cut off as the sea-levels rose following the end of the last glaciation.

The Channel Islands provide an excellent example of how the climate has changed over past millennia. The sea-level has risen and fallen on numerous occasions in the past as the Northern Hemisphere has undergone successive glaciations, with intervening interglacial periods. Wave-cut beaches and notches in the sea-cliffs, fossilised cliffs and ancient raised beaches dot the landscape. These are all visible remnants of past interglacial periods, while during the long intervening glacial periods the sea-level around the coast fell by up to 120 metres as water was locked into ice.

As temperatures warmed at the start of our present interglacial period, the natural vegetation of the islands changed from cold tundra to grass, and then pine and birch woodland. As the islands' climate warmed and stabilised, the dominant species of trees changed from pine and birch to hazel and oak. Gradually, flowering plants replaced plantains, which provided much of the pollen found in the peat deposits laid down some 10,000 years ago. Alderney and Guernsey, the northernmost Channel Islands, were cut off from France first, which is probably why there are no snakes, moles or squirrels in Guernsey. By the time that Jersey, further to the south, was cut off, these animals had moved north and colonised it. Hence, climate change and its influence on the natural history of the islands are not new phenomena.

Climate change in Guernsey

Climate change of the sort that we are now witnessing, caused by mankind's emissions of carbon dioxide and other 'greenhouse' gases, is a new phenomenon. Again, Guernsey can provide an excellent case study, showing the impact of global warming on the environment. Comprehensive air temperature and rainfall records have been kept in Guernsey since 1843. La Société Guernesiaise has wildlife records from the Victorian period. Whilst climate records tell their own story, it is difficult to differentiate between changes in wildlife that are caused by climate rather and those that arise from another factor, such as the intensification of agriculture. Unfortunately, phenological events such as first flowering dates or the date of arrival of migrant species, were not widely recorded; our knowledge is now largely due to the quite recent efforts of individual enthusiasts.

The hottest years in the entire instrumental record (of more than 150 years) were in 1998 and 2005. The years 2002, 2003 and 2004 were, respectively, the 3rd, 4th and 5th warmest in the record. Some 16 of the last 20 years have been the hottest on record. It is thought that, without the extra carbon dioxide and other greenhouse gases that have been released into the atmosphere, the earth's temperature would have actually have been cooling slightly in recent years.

If we look at long-term average temperatures in Guernsey, and compare the 30-year period 1961-1990 with 1971-2000, there have been very significant changes. The annual average temperature in

the 30 years 1961-1990 was 10.8°C, whilst the average for 1971-2000 was 11.1 °C. You might think that this is not a great change, but the base period (1961-1990) provides a 30 year average, and there is a 20 year overlap in the years, so the difference has occurred in only 10 years. The change in the temperature in the different seasons is also quite apparent.

The average daily temperature in Guernsey for the three winter months of December, January and February has increased from 6.5 °C to 6.9 °C (again the 30 year mean), and for the three spring months of March, April and May has increased from 8.9 °C to 9.3 °C. This represents an average increase of 0.4 °C in both the winter and the spring temperatures in Guernsey, in just 10 years. In the summer months, the mean temperature has increased by 0.3 °C, whilst in the autumn months it has increased only by an average of 0.1 °C.

At the same time, the maximum daily temperatures recorded have been 1.7 °C to 1.8 °C higher in the winter, spring and summer, but only 1.2 °C more in the autumn. Just as significant has been the change in minimum daily temperatures. Those recorded in the winter, spring and summer months were 0.3 °C - 0.4 °C higher in the 30-year period ending in 2000 than in the same period ending in 1990. Up until this year, when there was an unusually cold winter with two days of snow recorded, frost had become almost a thing of the past. The last significant snow fall was almost 20 years ago. These warmer winter temperatures have encouraged insects to remain active over winter and some migrant birds to stay and over-winter in the island.

These changes in temperature may seem marginal, but they are having a very significant effect on wildlife, be it on land or in the sea. These impacts are just the 'tip of the iceberg', as the real effects of climate change will undoubtedly become increasingly apparent over the coming years. Let us consider what effects even these small changes have been having already in Guernsey and its surrounding waters.

The effects of climate change in Guernsey

One of the most eye-catching changes is that spring flowers are now blooming much earlier than they did just a few years ago. Daffodils, which used to be exported to England to be sold on the London market in time for Easter, are now in blos-

som before Christmas. Indeed, many of the wild flowers that we normally associate with spring or early summer are in flower by late December. I counted over 20 species of wild flowers in blossom on the coastal footpaths around the southern cliffs of Guernsey last Christmas, and Nigel Jee (who has recorded the flowering dates of all flowers – wild or cultivated – in his extensive garden since 1985) counted many more species in flower in his garden on the west coast.

As the major changes in temperature in Guernsey have been in the winter and the spring, it is not surprising that most of the effects that we see on wildlife come at this time of the year. Wild plants tend to bloom earlier in years when the temperature is warmer during the month or so just before flowering, and we have seen this very clearly in recent years. For instance, the really early spring flowers have been opening further and further in advance of previous records, and many wild flowers now open more than three weeks earlier than they did only 20 years ago.

We walk the coastal footpath every day, and recording the first flowering of the different species of wild plants adds interest to our daily walks. We record the date when we see the first bluebell (in early March this year, some three weeks later than in 2008 due to the cold winter), the first flowering of blackthorn, the first flight of bumble bees, the first butterflies and moths, and the first migrant birds, such as martins and chiffchaffs. Each year, the dates seem to be getting earlier, apart from in 2005 and again in 2008 when the cooler winters set everything back again. Of course, the change in observation dates from one year to the next can be very misleading, and it is only by amalgamating all the information and looking at trends over many years that you can understand what is really happening.

It is tempting to believe that the birds come earlier because they realise that the temperature in Guernsey is higher in a particular year, but (of course) this is not the case. The arrival of many migrant birds, such as swallows, martins, swifts and chiffchaffs, is really dictated by the temperature that they experience in North Africa and Spain before they leave for their long flight to our shores and onwards to England.

The changes are also beginning to disrupt normal patterns of behaviour, where animals and plants normally rely on synchronising their activities.

For example, the hatching of young birds is often timed to coincide with periods when a plentiful supply of food is available. If insects are not flying when flowers come into blossom, then pollination is disrupted and the plants may be less successful in setting seed. Likewise, if food (such as moth larvae) is not available when young birds hatch, then the breeding season will be less successful and fewer chicks will be reared. Happily, the warmer winters and springs have favoured the breeding of some of our rarer birds, such as the Dartford warbler, and it has encouraged others such as the little egret to stay and breed in Guernsey. However, future changes in our climate will undoubtedly bring about even greater and probably less welcome changes to our wildlife.

The typical distribution patterns of various Guernsey species are also being affected by climate change. In the sea and on the foreshore, changes are occurring as the water gradually warms. Cold-water plankton are moving northwards and warm-water species are taking their place, but in far less abundance. Sand eels are moving northwards with the cooler water, particularly during the summer, which means that sea birds that rely on them for food must also move. Spider crabs are moving too, and are far less abundant around the island than they once were; instead, they are now found along the Welsh coast further north. Certain species of barnacles are also moving away from Guernsey, and are spreading north and east along the English Channel coast. Even the humble abalone – known as the ormer in the Channel Islands (e.g. see Syvret 2003) – has moved northwards, so that it is now found in Alderney (and in England, where it has been seeded). Fortunately, a viral disease of ormers that occurs in the warmer waters around Jersey has not yet reached Guernsey, just 20 miles to the north. Wading birds that feed along the west coast of Guernsey are becoming fewer in numbers, as they too gradually move northwards and to the east.

The wildlife of Guernsey is perhaps more typical of France than of England. As a consequence of its geographical position, a number of species are at the northernmost edge of their range in Guernsey, and few are at the southernmost extreme. This means that few species are likely to be lost with the types of changes in distribution reported above, and unless new species are brought to the island by human interaction or are able to swim or fly (or ride the wind), the species mix is unlikely to change significantly. Much will depend on the air

and sea temperatures that we can expect, on the increasing lack of rainfall during the late summer months, on rising sea levels and human intervention. All these factors will influence local habitats (and associated human activities) as well as species.

Key terrestrial habitats that are likely to change are coastal areas and heaths, wetlands, wet meadows, agricultural land and the walls and banks surrounding the traditional small Guernsey fields. The land to the south of the island is mainly a 100m high plateau, with free-draining, deep loamy soils that are ideal for agriculture, whilst the land to the north tends to be low-lying with impeded drainage. Streams course from the plateau down to the sea in steep-sided wooded valleys, whilst in the north they meander across the wet marshy land before again discharging into the sea. However, in many cases, land in the north is below sea level and flooding is only prevented by high sea walls and by pumped drainage. These areas are therefore very susceptible to rising sea levels and also to flooding from heavier rainfall, particularly during the winter months.

Farming in the island is mainly focused on dairy production – with the iconic Guernsey breed of dairy cow – and other cattle rearing. The increasing frequency of summer drought is changing farm practice, as conserved feed, such as hay and silage, has to be fed to cattle during the mid-summer period as well as during the winter. However, grass keeps growing throughout the winter, which means that, when soil conditions permit, animals are housed and fed on conserved feeds for a shorter period during the winter months. Heavier rainfall during the winter and a dramatic reduction in rainfall during the summer and early autumn (by a predicted 60%) will have a considerable effect on wetland and wet meadow habitats.

Guernsey fields are typically very small and divided by earth banks, covered in indigenous grass and wild flowers. These features, which are so characteristic of the island's landscape, have changed little over the past 100 years. The best of the field banks are probably typical of the dry meadows that might have existed in the south of the island prior to the intensification of agriculture. As such, they are a wonderful resource, although in recent years they have been increasingly invaded by bracken. To the north of the island, on the wetter land, dry granite walls are more typical. It is unclear how climate changes will affect these banks and walls.

Conclusion

Climate change is interesting at the present time, but it will be a much more serious matter as the consequences become increasingly apparent. We can make educated guesses at what changes will occur in the future, but there will no doubt be some nasty surprises along the way. Unfortunately, by the time that many changes occur, it will be too late to intervene. We are already seeing significant changes in wildlife, but these are as nothing compared with what might happen in the future. Climate change could bring catastrophic changes to wildlife in vulnerable parts of the world, and to our ability as a human race to grow sufficient food to feed the expanding world population will undoubtedly be challenged. Island communities are perhaps most vulnerable to climate change, as many are low-lying and reliant on importation of resources such as food and energy.

In the words of the Joni Mitchell song (for those who like me are old enough to remember it): “You don’t know what your got ‘til it’s gone!”

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Climate Change: A Cayman Perspective

Lisa-Anne Hurlston-McKenzie (Cayman Islands Department of Environment)



Hurlston-McKenzie, L.-A. 2010. Climate Change: A Cayman Perspective. pp 155-156 in *Making the Right Connections: a conference on conservation in UK Overseas Territories, Crown Dependencies and other small island communities, Grand Cayman 30th May to 5th June 2009* (ed. by M. Pienkowski, O. Cheesman, C. Quick & A. Pienkowski). UK Overseas Territories Conservation Forum, www.ukotcf.org

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In the Cayman Islands, as elsewhere, there is an increasing awareness of the threats posed by climate change. Storms (hurricanes) have been of greatest concern, requiring property and beach protection to be enhanced through the application of expert judgement and experience. This is of particular concern in the Cayman Islands, where 80-90% of the population live on or near the coast, alongside critical infrastructure. Measures previously taken for coastal defence are now questioned (including the placement of seawalls and the design of breakwaters). Alternative coastal protection measures are being implemented, such as mangrove restoration, but (initially) on a rather experimental basis. It is yet to be determined how successful these attempts will be, in terms of mangrove survivorship and development, and selection of appropriate sites.

Related concerns focus on storm water management and flood control. Changes in building practice are evident, notably through the raising of structures (perhaps reflected in the greater number of steps in front of modern public buildings, as well as by increasing prevalence of houses on stilts). These are underpinned by greater attention to climate change in the planning stage, including through risk assessments and hazard mapping, integration of climate change considerations into EIAs, and modification of building codes.

The tourism sector is increasingly considering the need for adaptation to climate change, in a range of ways. Much of the Seven Mile Beach tourism infrastructure is now being redeveloped, and is being set further back from the beach, behind a line of vegetation, and the turtle farm (closed by hur-



Mangrove restoration: Left: Post-Ivan, South Sound, with Corporate Social Project Teams, District MLAs and wider community using Hessian bags; Right: more recent, DOE's Mangrove Restoration Project utilizing the REEFBALL technology from the Reefball Foundation in conjunction with NMBCA (Neotropical Migratory Bird Conservation Act) enabled the successful re-planting of Red Mangrove saplings in the South Sound area and the Cayman Islands Sailing Cub shoreline. The programme was initialized in 2006 and is continuing. Out of around 800 reefballs containing up to four propagules each, an estimated 75 reefball pots were lost in subsequent storm seasons.

ricane impacts) has been relocated. Other climate change impacts, such as coral bleaching, threaten to affect tourism negatively. The introduction of aviation taxes and carbon levies related to climate change would also affect the economics of tourism. For such reasons, the tourism sector is investigating diversification of its activities and approach, including to reduce pressure on natural resources.

Various activities are underway that will contribute to a greater preparedness for climate change in the Cayman Islands, from public outreach and education to a review of Marine Protected Areas, geared towards ecosystem protection and enhancement. Research and monitoring programmes are contributing to a greater understanding of climate change and its impacts. The priority is to make the islands as resilient as possible. Relevant initiatives include the Grand Cayman Development Plan; Disaster Risk Management Framework; National Conservation Bill; Coastal Zone Management Plan and others. It is gratifying that improved early warning systems have reduced the loss of life during extreme storm events in recent years.

Despite the relevant progress, the Cayman Islands do not yet have a comprehensive national

climate change policy, but they are part of the Enhancing Capacity for Adaptation to Climate Change (ECACC) project. Funded by the UK Government's Department for International Development, this three-year project aims to assist the Caribbean UKOTs to build local capacity to plan and implement measures to adapt to climate change, in the context of their national development planning processes. It is expected that by the end of the project all participating UKOTs will have developed a National Climate Change Adaptation Strategy and initiated the implementation of this. The project will also enhance UKOTs' capacity to engage with regional and international climate change programmes, and to benefit from and contribute to the work of relevant regional institutions, including the Caribbean Community Climate Change Centre (CCCCC), through which the project is implemented. ECACC was officially launched at a workshop in November 2007, hosted by the Cayman Islands and attended by representatives from each of the other Caribbean UKOTs involved in the project (Anguilla, Montserrat, British Virgin Islands, Turks and Caicos Islands).



Flood control is ever-growing problem as low-lying areas continue to be converted/filled, often without adequate environmental scrutiny (EIAs). (Ramsar Convention Wise Use principles are not formally entrenched in local physical development planning). There is minimal use of EIAs and the challenge of integrating climate-change into EIA processes. Insurance is already a core ingredient of risk management and resiliency in the Cayman Islands. Modifications to building practices and regulations may be of some help.

Discussion

Discussion following Deborah Procter's presentation

Q: Does UK manage to obtain sufficient information from the Overseas Territories?

A: Information is patchy, being relatively good for the Caribbean, BIOT and BAT.

Sarah McIntosh (CANARI) stated that CANARI reports in 3 areas: trends & scenarios, terrestrial and marine. She felt that Caribbean UKOTs need to combine their voice with other SIDSs (Small Island Developing States).

A: The EU meeting in Réunion provided an opportunity for the EU to hear one voice from its Overseas Countries and Territories. Regional contexts are also important, where UKOTs work with neighbours, especially when responding at wider international venues eg on the Convention on Biological Diversity (CBD).

Discussion following Darren Christie's presentation

Q: What is known about the South Sandwich Islands?

A: Since they are 4-5 days away by boat, and there is only one Environment Officer on South Georgia, no work has been done on them recently. The last information dates back to the early 1990s.

Q: Why were reindeer herds not removed from South Georgia a long time ago?

A: This is basically because there have been only three Government officers, and an Environment Officer for only the last 3 years. £6m has been used to clean up whaling stations, and other priorities have been the hydro project and albatross protection. Basically, government is resource-limited. Data on reindeer are now being compiled in order to defend the position when culling starts.

Q: Is the large fur seal population a problem? This is estimated to have risen from a few hundred to as many as 6 million.

A: One difficulty is that no-one knows whether this increased population is high, as compared to previous (unexploited) levels, nor whether the seals are displacing the bird colonies.

Q: The example of South Georgia is interesting, in that UK Government funding for UKOTs is usually linked to local populations, and more widely to problems such as poverty alleviation. Where, therefore, can a budget be found for work on South Georgia? Who can make the necessary decisions? How can these islands best argue for funds, for example, to solve the reindeer problem?

A: The islands essentially pay for themselves through fisheries and tourism, and the FCO has met half the costs of the research station. Reserves are finite, and much money has been spent on asbestos removal. Not having a resident population is undoubtedly a disadvantage.

General discussion

Deborah Procter introduced the discussion, suggesting that it might initially focus on local knowledge, partner links, and actions, particularly in the Caribbean.

Sarah McIntosh (CANARI) provided an extensive list of Caribbean studies from modelling to communications research. However, studies are disaggregated and duplication stretches resources, especially when considering the economic impacts of climate change.

Deborah Procter highlighted the need for integration, especially with the social sciences (e.g. on how the Cayman Islands response to hurricanes is linked to the business sector).

Q: Are the effects of climate change on biodiversity well understood across all groups? Even if there is good knowledge on birds, are there gaps in groups such as microorganisms and fungi?

Deborah Procter highlighted the need for local knowledge, such that people can mitigate impacts, and suggested that it is not necessary to know every species in order to protect them.

Deborah Procter emphasised the need to work in partnerships, and asked what are the best ways to work together? Islands in the Caribbean have large populations and many are close together, while dependencies such as Guernsey are physically closer to the UK.

Andrew Casebow stated that, on Guernsey, groups of interested people make a difference, through constant letters to the media and local action.

Deborah Procter agreed that a strong base of local action can be very valuable.

Q: The local partnership approach used in England allows local government to work with other partners (including NGOs) to generate a structured response to climate change, through steps (e.g. level 1- contact meetings, level 2 - asking whether systems are fit for purpose? etc). Could similar approaches be followed in the UKOTs, to simplify activity and provide benchmarks for progress over time?

Steven Mendes (Department of Environment, Montserrat) commented that Montserrat lost its capital 'city' because of the volcanic eruption, and redevelopment involves major issues including water holding capacity. An advisory committee has not yet been mobilised, but stakeholder exercises and outreach strategies are underway and the possible need to occupy protected areas has to be considered.

Deborah Procter stressed the need to combine work in the territories with the project on Enhancing Capacity for Adaptation to Climate Change (ECACC) and to consider how to integrate climate change impacts with redevelopment.

Samia Sarkis (Department of Conservation Services, Bermuda) stated that Bermuda is not part of ECACC. Bermuda National Trust commissioned an impact report on the island which has been passed to the House of Assembly. A lot of information was put together, including a prospective national energy plan. The report came about because the Trust wanted money to counter invasive species and was concerned over airport expansion and power needs.

Chris Tydeman (Herpetological Conservation Trust) felt that the DEFRA Chief Scientist's reports to CBD have poor input from UKOTs, and that UKOT feedback to the EU delegation is not considered as part of the EU feedback. The International Panel on Climate Change (IPCC) data is dated because of peer review, and is anyway always conservative. He highlighted the need for rapid assessment and appropriate feedback.

Deborah Procter said it is true that adaptation to climate change is a low level element of the UN Framework Convention on Climate Change process. It is a work in progress. The IPCC peer review process creates a monolith organisation. A

technical ad hoc group has been funded by DEFRA in UNFCCC. Broader partnerships are required across the territories as a whole to ensure representation.

Anna Balance (DFID) said it would be helpful to know what sort of information and what sort of UKOT representation is needed..

Deborah Procter identified the following points to take forward from the Climate Change session:

1. There is a need for local knowledge in each territory (e.g. at Department of Environment level) which is fed back to the UK.
2. There is need for local partnerships, to apply pressure on territory governments, and to share experience and understanding regionally, in order to integrate climate change considerations into development policy.
3. There is a need for rapid assessment of impacts from climate change.

Section 5: Posters not linked to other topics

The list of posters displayed is at Appendix 2.

The following posters are included in the Sections listed, to which they relate:

Pitcairn Islands Environment Management Plan - Noeleen Smyth (National Botanic Gardens, Dublin, Ireland; for Pitcairn Islands Council)	Section 2
The Chagos Archipelago: Its Nature and Future - Dr John Turner, Chagos Conservation Trust & Bangor University, Wales, UK	Section 6
Invertebrate Conservation in the UKOTs: Tackling Invasives in South Georgia - Roger Key, Rosy Key & Jamie Roberts (Buglife)	Section 8
Action to reduce the impacts of invasive species on the South Atlantic United Kingdom Overseas Territories - Clare Miller, Brian Summers & Andrew Darlow (South Atlantic Invasives Project)	Section 8

In this section, we publish other posters for which papers or abstracts have been received.

Because discussion of poster session tends to be limited at most conferences, we asked two parties, one from a scientific viewpoint and the other from a non-scientific one, to give some impressions of the posters, and hence feedback to help future poster-presenters. These follow below, before the individual posters.



*Reception at the main poster session
(Photos of participants in this section by Dr Mike Pienkowski unless otherwise indicated)*

Reviews of posters

Posters - a scientist's point of view

From this point of view, the most interesting posters are those that tell a story, that give details of the biology of a species or the natural history of a locality, rather than those that just say what an institution does. In no particular order here are some of those that fitted these criteria and which I found memorable.

Fiona Gell's poster had a basking shark that was tracked from the waters off the Isle of Man all the way across the Atlantic with details of its behaviour. Previous data had shown wide movements by this species but on the eastern side of the Atlantic. This showed that gene-flow could occur between populations in the west and east of the Ocean. Similar data for turtles were on a poster from the Cayman Islands, giving details of diving depth and movements.

A poster on the Gough Island albatrosses by John Cooper and others gave details of the predation on the chicks of these birds by mice! This poster wins the prize for the most authors (9).

One of Alan Gray's posters was on the plant ecology of Acension Island. The other had a graph showing the relationships between species richness, herbivores and carnivores which led to an interesting discussion as to what it meant.

The poster on habitat mapping in the Cayman Islands was an example to many other Territories, and particularly to the Crown Dependencies, on how much can be achieved. I come from Guernsey (one of the Crown Dependencies), where we are mostly dealing with man-made habitats. The most important of these for their biodiversity are various sorts of grasslands. The detailed data from the Cayman Islands are better than anything we have in any of the Channel Islands, and have enabled the very scientific approach to the red data book, *Threatened Plants of the Cayman Islands*, by Fred Burton.

The set of posters by the students from the local University College showed example of the habitats and conservation in the Cayman Islands.

Charles David

Posters - a view by non-scientists

These comments are based on our impressions of the posters from a non-scientific viewpoint

Display Types

Firstly, we did not really know what to expect from a 'poster', so we were slightly surprised to see a wide variety of items shown as posters, from single and sets of A3-sized prints, to large professionally produced wall hangings as single units and groups which formed exhibition type displays. Some posters were booklets with the wall displays as just the page extracts.

Target Audience

It was difficult to tell who the target audiences were from the posters as they varied from ones that we could easily understand to ones that were more technical and which would interest scientists perhaps more than the casual observer.

Accompanying literature

Some of the 'posters' also had accompanying literature - the JNCC posters really were only part of a whole exhibit which had very easy-to-read wall-displays, together with a comprehensive collection of literature.

Production Quality

The quality of production of the posters varied from very high quality to amateur (from the students). Nonetheless, the clarity of the message conveyed did not necessarily depend entirely on this. The better produced posters were certainly easier on the eye, but some did not say as much as standalone items and only worked as part of a larger display, whereas some of the simpler posters had a very clear message.

Complexity

Some posters were quite complex in that they contained a lot of information. The Cayman Island ones were good examples of this; they were highly professional in production terms but perhaps a little too comprehensive and technical for public use. There was no natural flow through the poster - but maybe, for the scientist, they provided the type of detail needed in a visual summary form.



Visual Impact

Posters would naturally lend themselves to showing pictures to convey a message, together with suitable text. The posters that relied mainly on text alone with a colourful background seemed to work only as part of a larger display

Balance

The posters which achieved a good balance for us had a simple structure with some technical details - they had a natural flow to them. The Pitcairn and Isle of Man posters were typical of this, with

a simple flow with some technical details. The production quality was not up to the Cayman Island or JNCC standard, but the message was clear all the same. The St Helena National Trust poster was highly professional in production quality but seemed to be aimed entirely at the general public with very little technical detail.

Steve & Mary Cheeseman



Poster: The endemic plants of the Pitcairn Islands

Noeleen Smyth (National Botanic Gardens, Dublin, Ireland; for Pitcairn Islands Council)



Smyth, N. 2010. The endemic plants of the Pitcairn Islands. p 162 in *Making the Right Connections: a conference on conservation in UK Overseas Territories, Crown Dependencies and other small island communities, Grand Cayman 30th May to 5th June 2009* (ed. by M. Pienkowski, O. Cheesman, C. Quick & A. Pienkowski). UK Overseas Territories Conservation Forum, www.ukotcf.org

Noeleen Smyth (for Pitcairn Islands Council), National Botanic Gardens, Dublin, Ireland. noeleen.smyth@opw.ie

Local pockets of native vegetation occur on Pitcairn Island, while the vegetation of Henderson, Oeno and Ducie islands remains mostly intact. With regard to individual plant species, 60% of the flora of Pitcairn is threatened. Henderson and Pitcairn are the most floristically rich of all the islands in the group, and they support a number of endemic and endangered species, Pitcairn holds ten endemic plant species, and five are critically endangered; Henderson holds nine endemic species, of which two are threatened. Both Oeno and Ducie have depauperate floras, yet Oeno contains three threatened taxa, one of which may be extinct. Only two vascular plant species have been recorded from Ducie.

Population and genetic diversity studies have been carried out for some of the more threatened endemics on Pitcairn such as *Angiopteris chauliodonta* (Figure 1) and *Coprosma*

benefica. Results from these studies suggest that these endemics remain genetically diverse despite existing in extremely low numbers, suggesting that these Pitcairn endemics are genetically well adapted to existing in small populations. The main threats to the endemics on the island group are stochastic threats (e.g. extreme weather events such as high winds and human disturbance), because of the critically small population sizes and competition from invasive species such as *Lantana camara*.



Figure 1. Clearing *Lantana camara* an invasive species away from one of the main populations of *Angiopteris chauliodonta*. Left to right: Jay Warren, Conservation Officer; Betty Christian, islander; Tana Pritchard, Governor's representative wife; Leslie Jaques, Pitcairn Island Commissioner and Christine Johnston, tourist.

Poster: Jost van Dyke's Community-based Programme Advancing Environmental Protection and Sustainable Development

Susan Zaluski (Jost van Dyke Preservation Society, British Virgin Islands)



Zaluski, S. 2010. Jost van Dyke's Community-based Programme Advancing Environmental Protection and Sustainable Development. p 163 in *Making the Right Connections: a conference on conservation in UK Overseas Territories, Crown Dependencies and other small island communities, Grand Cayman 30th May to 5th June 2009* (ed. by M. Pienkowski, O. Cheesman, C. Quick & A. Pienkowski). UK Overseas Territories Conservation Forum, www.ukotcf.org

As our island community wrestles with development changes, there is little scientifically based information for the community to employ in evaluating the short and long-term impacts of development. The long term implications of economically-driven actions (e.g. the casual cutting of roads, the incremental filling of mangrove swamps and the inattention to solid waste disposal rules) are often not fully understood by the island's residents, and our current project was designed to provide community access to science-based environmental data, findings and recommendations to help provide a base for community decision-making to a wider base of stakeholders.

Major outputs include the publication of an *Environmental Profile*, a detailed characterization of the natural resource base of the island, based on primary research. While the initial draft of the publication is prepared by leading experts, the draft will be reviewed by an advisory group comprised of island residents, who will help guide the final product. The profile will form the basis of an extensive education and outreach programme, and will help the community to determine priority environmental issues to form the basis of a community-based environmental monitoring programme. Other outputs, such as a website and bimonthly newsletter will help to provide information to island residents, while an environmental resource centre will be developed for local students, community members and to visiting researchers.

Our OTEP project brings a new level of community involvement to natural resources management in the Territory, and is playing an active role in supporting the guiding principles outlined in the BVI's Environment Charter in building local capacity and environmental stewardship.

Susan Zaluski, Jost van Dykes Preservation Society, British Virgin Islands.
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Plant Ecology on Ascension Island

**Alan Gray (Centre for Ecology and Hydrology, UK) and
Stedson Stroud (Ascension Island Government)**



Alan Gray (above - Photo: Dr
Colin Clubbe) and Stedson
Stroud (below)



Gray, A. & Stroud, S. 2010. Plant Ecology on Ascension Island. pp 164-166 in *Making the Right Connections: a conference on conservation in UK Overseas Territories, Crown Dependencies and other small island communities, Grand Cayman 30th May to 5th June 2009* (ed. by M. Pienkowski, O. Cheesman, C. Quick & A. Pienkowski). UK Overseas Territories Conservation Forum, www.ukotcf.org

Predicted global climate change and the threat of invasive species are particular concerns for biodiversity conservation, particularly many islands. Ascension Island in the South Atlantic Ocean, a UK Overseas Territory, has suffered a long history of introduced species which have had a disastrous effect on the endemic and native species. Of the 10 endemic vascular plants on Ascension Island, 4 are now considered extinct.

Ascension Island is likely to experience increased temperatures and changes to precipitation through human-induced climate change. Ecological research to inform the conservation of biodiversity within the UK Overseas Territories is currently severely lacking. The identification of the responses of native and introduced species to climate change and the ecological traits and processes that are essential for establishment and survival are paramount.

Highlighted on this poster is some of the ongoing research on Ascension Island to address plant biodiversity loss. This project has particular emphasis on the ecological characteristics of both native and introduced species, with climate change as an overarching theme.

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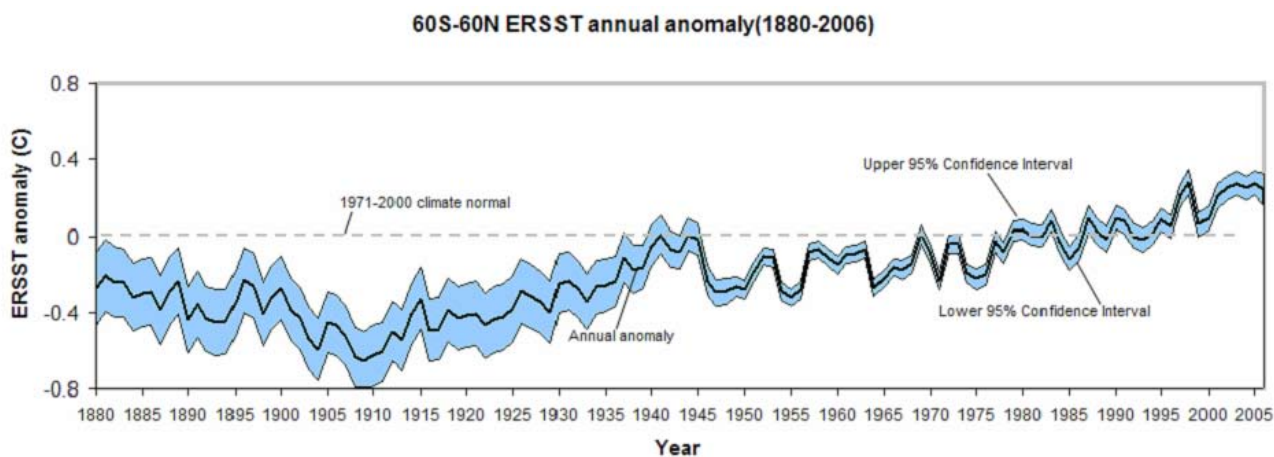


Figure 1. Annual variations in sea surface temperatures

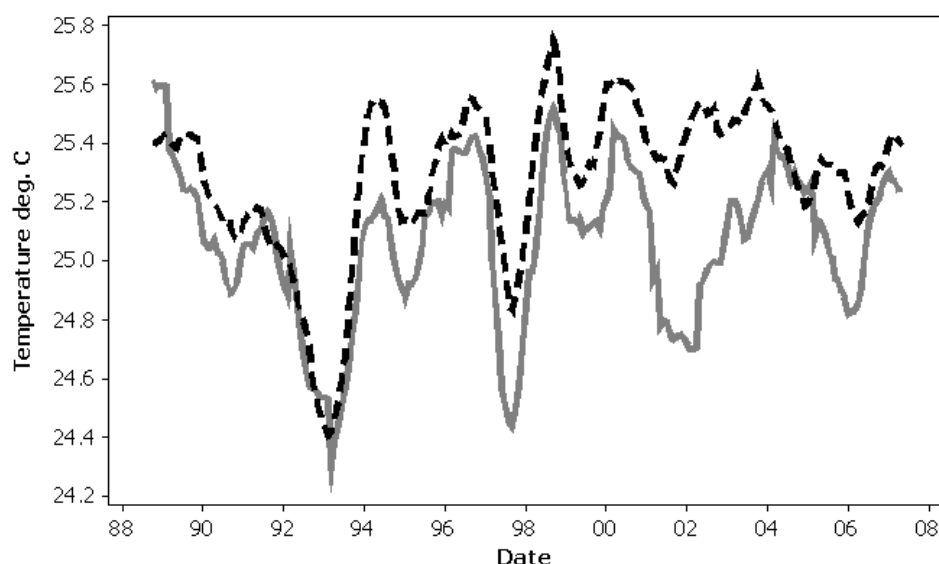


Figure 2. Correlation between mean sea surface temperature and mean land temperature between 1988 and 2007. Ascension Island is likely to experience increased temperatures but also changes to precipitation through human induced climate change.

1. Climate Change

Predicted global climate change and the threat of invasive species are particular concerns for biodiversity conservation, particularly on many islands. Ecological research to inform on the conservation of biodiversity in relation to climate change within the Overseas Territories is currently severely lacking. The data we are currently collecting on Ascension will be used to apply an adaptive management approach to the conservation of biodiversity.

Of the 10 endemic vascular plants on Ascension, 4 are now considered extinct (Fig. 4 and below). Of the remaining 6, only the ecology of *Euphorbia organoides* L. is known (ref 1) (Fig. 5 and 6).

2. Endemic Flora

Of the 10 endemic vascular plants on Ascension, 4 are now considered extinct (Fig. 4 and below). Of the remaining 6, only the ecology of *Euphorbia organoides* L. is known (ref 1) (Fig. 5 and 6).



Figure 3. Weather station on Sisters Peak Ascension Island. We have also collated Global Circulation Model predictions and historical climate data to characterise past, present and future climate on Ascension.



Figure 4. Since the mid 1800's, introduced species have had a disastrous effect on the endemic and native species of Ascension. Shown here are the extinct plant species, clockwise from top left: *Oldenlandia adscensionis*, *Sporobolus durus*, *Dryopteris ascensionis* and *Anogramma ascensionis*.

Species	IUCN Status
<i>Anogramma ascensionis</i> (Hook.) Diels	Extinct
<i>Dryopteris ascensionis</i> (Hook.) O.Kuntze	Extinct
<i>Oldenlandia adscensionis</i> (D.C.) Cronk	Extinct
<i>Sporobolus durus</i> Brogn.	Extinct
<i>Euphorbia organoides</i> L.	Critically Endangered
<i>Pteris adscensionis</i> Sw.	Critically Endangered
<i>Sporobolus caespitosus</i> Kunth	Vulnerable
<i>Asplenium ascensionis</i> S.Watson	Near Threatened
<i>Marattia purpurascens</i> de Vriese	Near Threatened
<i>Xiphopteris ascensionense</i> (Hieron.) Cronk	Near Threatened



Figure 5. *Euphorbia organoides* L.: (a) general habit; (b) flowers, fruits and likely pollinators including members of Hemiptera and Diptera; (c) close up of inflorescence; and (d) grazed stem from the Hummock Point site. Scale bars are approximate. From Gray et al. (in press). Several studies have now been conducted on this species (refs 1, 2, 3, 4, and 5).



Figure 7. In situ and ex situ conservation; *E. organoides* plants in the nursery on Ascension (inset left) population restoration at Mars Bay (inset right) and the first plant to flower in CEH glasshouses in Edinburgh 2008. Ex situ measures are currently only in place for *E. organoides* but there are plans to extend this to other species in the near future.

3. The Future

The next phase of the continuing research on Ascension will address:

- The conservation genetics of endemic vascular species.
- Experimental re-introduction trials to investigate, for example, responses to nutrients, competitive effects and mycorrhizal relationships.
- Compilation of a Biological Flora for each of the other 5 extant endemic vascular species.
- The ecology of Ascensions' overlooked groups such as bryophytes and lichens.

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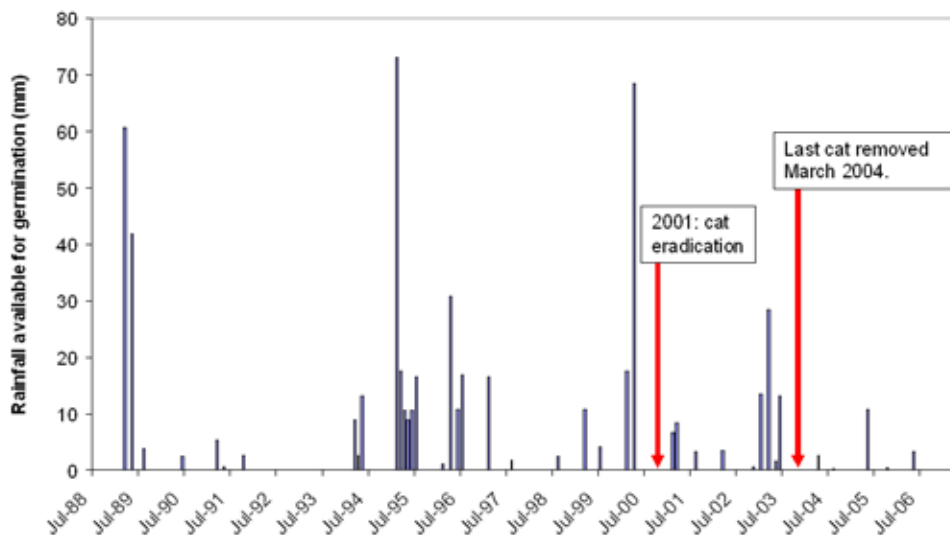


Figure 6. Monthly rainfall minus potential evapotranspiration from July 1988 until November 2007. Recently, *E. organoides* has suffered a decline due to increasing herbivory and low population recruitment due to less available rainfall to stimulate germination (Fig. 8). Increased herbivory is an unfortunate by product of the success of the cat eradication programme ultimately releasing herbivores from predation pressure.

Opportunities for collaborative projects: The Centre for Ecology and Hydrology

Alan Gray, Adam Vanbergen, Sarah Burthe, Juliette Young and Stephen Cavers



Alan Gray

(Photo: Dr Colin Clubbe)

Gray, A., Vanbergen, A., Burthe, S., Young, J. & Cavers, S. 2010. Opportunities for collaborative projects: The Centre for Ecology and Hydrology. pp 167-170 in *Making the Right Connections: a conference on conservation in UK Overseas Territories, Crown Dependencies and other small island communities, Grand Cayman 30th May to 5th June 2009* (ed. by M. Pienkowski, O. Cheesman, C. Quick & A. Pienkowski). UK Overseas Territories Conservation Forum, www.ukotcf.org

The Centre for Ecology & Hydrology undertakes integrated research in terrestrial and freshwater ecosystems and their interaction with the atmosphere. As part of the Natural Environment Research Council (NERC), we conduct innovative, independent and interdisciplinary science and long-term environmental monitoring. Working in partnership with the research community, policymakers, industry and society, we seek to deliver solutions to the most complex environmental challenges facing humankind.

This poster demonstrates some case studies of our research to indicate possible areas of collaboration with UK Overseas Territory partners

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The Centre for Ecology and Hydrology undertakes integrated research in terrestrial and freshwater ecosystems, working in partnership with the research community, policymakers, industry and society.

CEH analytical services are available to external organisations and researchers. These include: genetic analyses, soil and water chemistry, stable isotopic analyses, and radiochemical analysis. CEH is a major custodian of environmental data, with expertise in data collection, collation and management supporting large-scale, long-term research. Major datasets include: Biological Records Centre, Countryside Survey, National River Flow Archive, National Water Archive, Predatory Bird Monitoring Scheme, Butterfly Monitoring Scheme, Phenology Network and the Environmental Change Network.

Four case studies are highlighted here to show the potential for collaboration with UK Overseas Territory partners.

Case Study 1: Genetic diversity in plants & animals

CEH have experience in assessment of genetic diversity in temperate and tropical ecosystems. These types of data can be used for:

- Range-wide mapping and testing of genetic resources
- Assessing genetic responses to change (habitat and climate)
- Modelling stand and landscape level population genetics

And contribute to:

- International policy on trade and practice (e.g. CITES)
- Practical guidelines for management
- Scientific knowledge on population genetics and ecology



Figure 1: *Cedrela odorata* L., a globally important timber species, is severely exploited throughout its range. Data from chloroplast DNA was sampled across Mesoamerica. Distinct lineages were detected, occupying different habitats and probably reflecting historical colonisation processes. Above left, map showing the distribution of genetic variation in *C. odorata* (Meliaceae) in Central America. Middle, logging of Mahogany forest (*C. odorata*, *Swietenia macrophylla* King) in Belize. Right: *S. macrophylla* in Costa Rica.

Case Study 2: Assessing public attitudes to biodiversity

Human involvement in the conservation of biodiversity is fundamental to its success but globally, conflicts between conservation and stakeholder

livelihoods are increasing.

The identification of the drivers of conflict can aid resolution. One of the first steps can be to assess public attitudes to biodiversity in order to identify potential conflict areas.

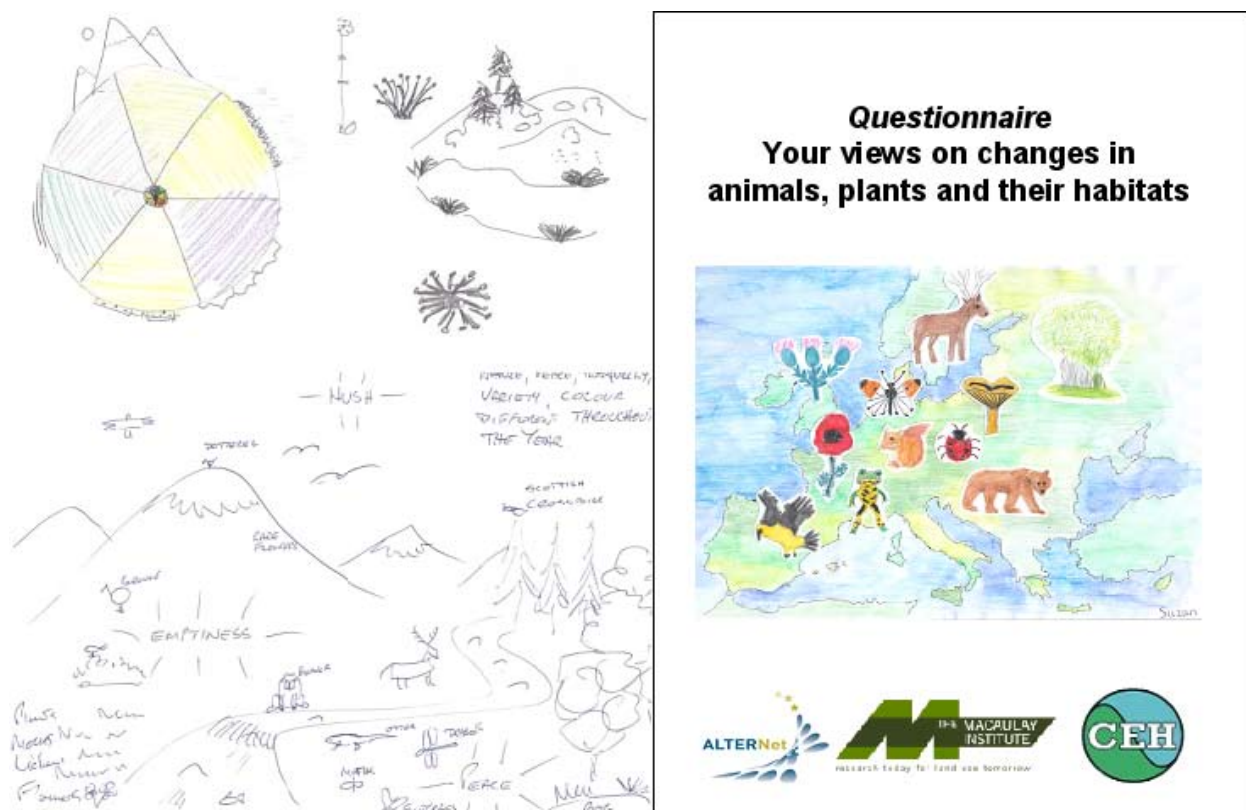


Figure 2: Qualitative (drawings) and quantitative (questionnaire) approaches to attitudes to biodiversity addressing questions such as: How do people understand biodiversity? Do people actually value biodiversity? What is it that people value about biodiversity? How do people perceive biodiversity? What do they perceive as relevant issues? This type of analysis catalogues attitudes and reveals wide ranging opinion from a practical management orientated mind-set to more esoteric ideas of openness and wilderness.

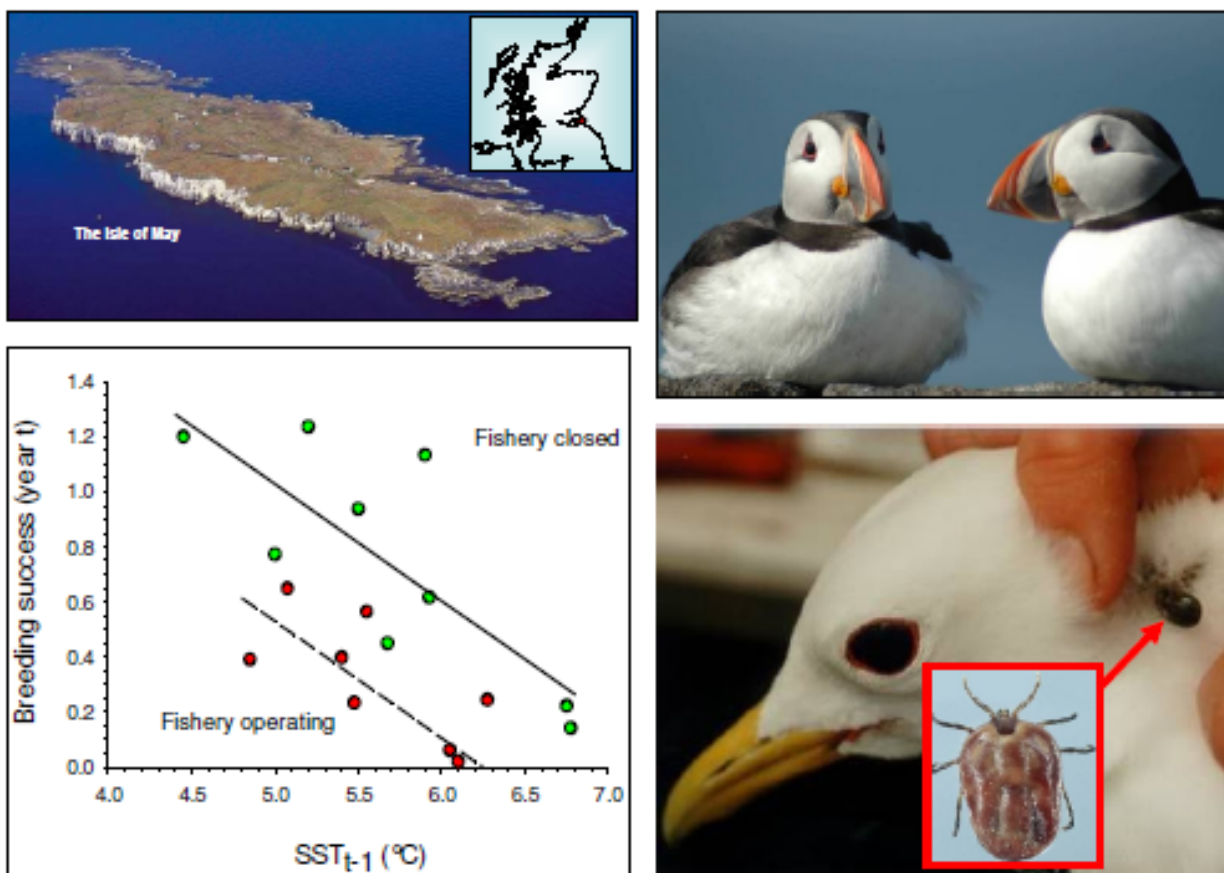


Figure 3: Clockwise from top left: the Isle of May, Atlantic puffins, tick infested black legged kittiwake and kittiwake breeding success vs. sea surface temperature during open and closed fishery. The study monitors European shag, black-legged kittiwake, common guillemot, razorbill and Atlantic puffin. Data include, individual behavioural studies, breeding success, parasitism and diet (quantity and quality). Diet is particularly important because it can indicate changes to marine ecology. The lesser sand eel, the most important forage fish, has become substantially smaller over the last 30 years. Climate change effects have also been linked to >50% decline in black-legged kittiwakes since 1990.

Case Study 3: Isle of May long-term study

A particular strength of CEH is our ability to carry out long-term monitoring:

Since 1973, the Isle of May study has become one of the most data-rich and complex studies of its type in Europe. It forms part of CEH's network of long-term monitoring sites for detecting effects of

environmental change, particularly climate change and is partly funded by the UK's Joint Nature Conservation Committee (JNCC).

Case Study 4: Land-use impacts on insect biodiversity

CEH have wide ranging invertebrate ecological expertise e.g. the examination of pollination and



Figure 4: GIS representation of increasing (right to left) landscape heterogeneity that can influence biodiversity. Carabid beetles were sampled from 48 1-km² heterogeneous landscape parcels from 8 European countries. Landscape heterogeneity was quantified using remote-sensing.

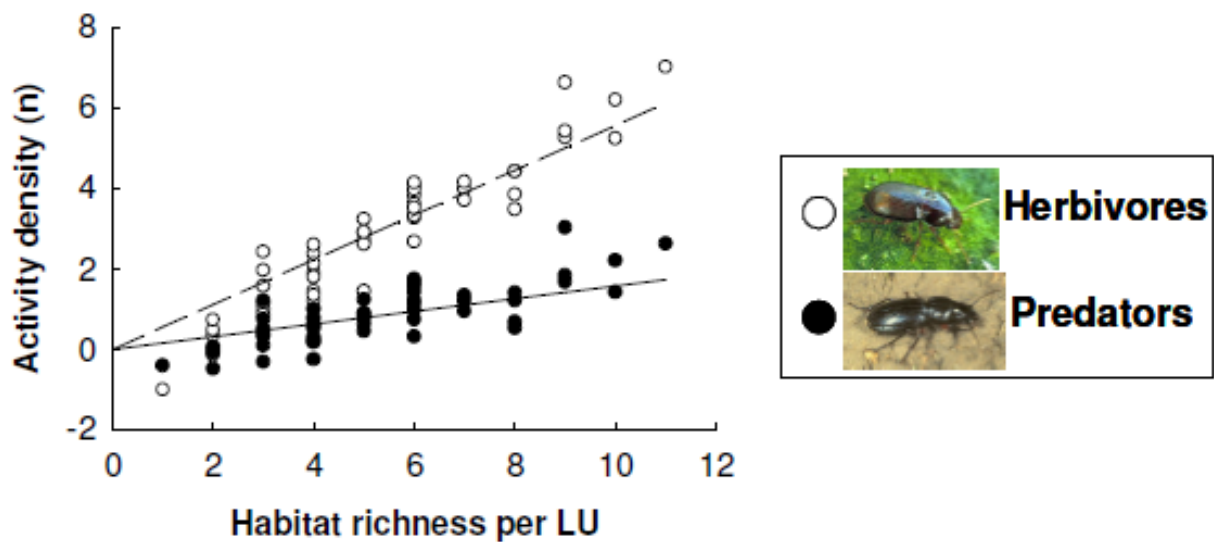


Figure 5: Feeding group response to landscape heterogeneity. Herbivores were more sensitive than predators to landscape heterogeneity in all 8 countries surveyed. These differential patterns appear driven by habitat specialisation (herbivores) and changes in the activity density of a single speciose herbivore genus.

biological control.

The conservation of carabid beetles can be important to regulate insect pest populations. However, increasing landscape heterogeneity has little effect on predatory carabids, and hence biological control.

INTO – The Future

Oliver Maurice (Hon Director, The International National Trusts Organisation (INTO))

Maurice, O. 2010. INTO – The Future. pp 171-174 in *Making the Right Connections: a conference on conservation in UK Overseas Territories, Crown Dependencies and other small island communities, Grand Cayman 30th May to 5th June 2009* (ed. by M. Pienkowski, O. Cheesman, C. Quick & A. Pienkowski). UK Overseas Territories Conservation Forum, www.ukotcf.org

INTO is a network of National Trusts and similar organisations from around the world, united by their common interest in the conservation and enjoyment of our shared heritage.

We bring people together to exchange information, develop and promote best practice, and work to effect change. INTO's mission is to "promote the conservation and enhancement of the heritage of all nations for the benefit of the people of the world and future generations".

INTO offers a communications network (website, e-bulletins, conferences), capacity building support, an expert knowledge bank, training programmes, strategies for collaborative projects and advocacy, and a forum for advancing intercultural understanding and the development of civil society.

The National Trust movement has grown to encompass more than 45 organisations throughout the world. The 'trust' model has evolved and been adapted to national circumstances but the basic hallmarks remain the same. National Trusts are independent organisations that help people and communities to protect irreplaceable heritage - intangible and tangible, both cultural and natural.

Beginning in the 1970s, many of these bodies came together at regular intervals to exchange best practice within the global movement, to develop professional expertise among staff and volunteers, to stimulate the formation of more National Trusts and to consider specific conservation issues that transcend national boundaries and that may benefit from a collective approach (such as tackling climate change).

The 13th International Conference of National Trusts (ICNT) *Heritage of the World in Trust: Conservation in a Changing Climate*, will be hosted by An Taisce The National Trust for Ireland, in Dublin from 13th - 17th September 2009.

Heritage is important in its own right, but also as a key contributor to the lives we want to lead in the future. INTO can demonstrate the potential of our built, natural and cultural heritage, to drive the economy, develop people's skills and improve quality of life by showing that the National Trust model is helping nations meet many contemporary challenges - economic and social as well as environmental.

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At a time when there are so many changes taking place in the world, from recessions to global warming, from man-made to natural disasters, from demographic to political changes, cheap travel creating mass tourism, and increasing pressures on our natural resources, the threat to the cultural and natural heritage of the world intensifies.

It is against this background that the International National Trusts Organisation (INTO) was founded in December 2007 in Delhi. It could not have come at a better moment, for INTO's mission is to "promote the conservation and enhancement of the heritage of all nations for the benefit of the people of the world and future generations."

INTO is the vision of the members of the original Steering Committee, now the Executive Committee, who saw the need for there to be an overarching organisation that could bring together the national and heritage trusts around the world as a global family united in their common purpose.

Shortly after its foundation, the Executive appointed an Officer, Catherine Leonard, to run the Secretariat, followed by two honorary Directors, Geoff Read, who is responsible for fundraising and infrastructure, and myself, in charge of membership development and services. INTO is a membership-based organisation that brings people together to exchange information, develop and promote best practice and work to effect change.

Its members will normally be national, voluntary, not-for-profit, membership-based organisations that are substantially independent and autonomous of government, operating at a national level and engaged in practical management of the cultural and/or natural heritage. There are also Associates and Affiliates, and recently it has been agreed that an individual can join as an Amicus.

INTO offers its members a communication network that connects organisations around the world through its website, e-bulletins, workshops and, every other year, through the International Conference of National Trusts: the next one is due to take place in Dublin in Sept 2009.

It provides also: a network of experts and a knowledge bank; capacity building support for existing trusts and support in establishing new trusts; training and exchange programmes; strategies for collective advocacy; and a forum for advancing intercultural understanding and the development of

civil society. So how is the mission to be accomplished? I will touch on some of the things that we are putting into practice and follow that with ideas for the future:

1. An increasing membership base. We have a number of members signed up and plenty more who are keen to join but we need to increase this number substantially and to encourage associates and affiliates to join, as well as individuals. The larger the family, the more powerful the voice. We have already started to do this by raising awareness of our existence through meetings with like-minded organisations such as UNESCO, IUCN, ICOMOS and Europa Nostra, an event that took place at the Canadian Embassy in London last November and via links to our website

2. Fundraising. A strategy has been developed both for core funding, which is unlikely to be met by membership fees alone and for project costs, some of which I have already touched on. We hope to establish funds to support our members' own projects as appropriate.

3. Advocacy. This is fundamental to INTO's mission. So often governments around the world give low or no priority to their heritage, ignoring the fact that it is often the very asset that can draw tourists to their country and thus increase their GDP. It is vital that tangible and intangible heritage, both cultural and natural, is put at the heart of global and national policy making. And it is not merely policies for the protection and conservation of the heritage; it is also ensuring that there are rescue plans in place in the event of seemingly ever-increasing natural disasters and human conflicts. We are hoping to develop an advocacy programme, funds permitting, that will achieve these aims and at the same time will support national trusts with campaigning techniques at a national level

4. Assisting with the establishment of new trusts. Another key element of our mission is to help countries that are wishing to set up a national or heritage trust. In terms of advocacy and raising awareness of the need for protection of the heritage, there is no better way than by leading by example and establishing an appropriate organisation.

We already have had a number of requests for assistance from Canada, South Africa and a number of other African countries, and most recently Kurdistan.

The idea of sending out 'Task Forces' of experts, normally volunteers, to the countries in question is being considered

5. Access to information. The INTO website is a repository for documentation from the various trusts around the world – legislation, strategies, business plans, advocacy documents, etc. - to inspire and assist other trusts facing similar issues. The bi-annual e-bulletin gives unparalleled up-to-date information in one place, from the global family of trusts.

6. Exchange of best practice. Because INTO has a knowledge bank and access to experts, it is in a strong position to provide its members, associates and affiliates with guidance as to best practice to save any one organisation from having to "reinvent the wheel"

As an example of this, I recently put the local office of the Environment Department in the area where I live in France, in touch with the National Trust in the Lake District in NW England, where I had previously worked. The French were trying to establish the best methods of restoring eroded footpaths in the mountains. For over 30 years, the NT has been dealing with this problem and a visit by the French was arranged. They learnt a huge amount in 3 days, culminating in the extreme likelihood of an exchange programme being organised and the possibility of a tripartite partnership with Ireland to bid for European funding.

7. I mentioned earlier the ICNT. This biennial event is the cornerstone of all that we do. It is the meeting ground for new ideas, best practice, networking, training and learning from others. It is an opportunity for experts on a particular topic to convey their thoughts to the gathering, for a series of workshops on specific relevant subjects and for site visits to learn how the host country deals with certain issues. Above all there is a spirit of great comradeship at the ICNTs amongst the global family that is now INTO.

The Conference in Dublin on 14-17 September 2009 is entitled *Heritage of the World in Trust – Conservation in a Changing Climate*. Little did we know when choosing the title some months ago that the pace of change in the financial climate would accelerate so fast that the Conference itself was at one time threatened!

Our future plans include:

1. The establishment of an Expert Network, by seeking volunteers willing to participate, through the e-bulletin or website. A number of advisory services, including the INTO Task Forces, will then be set up and funding sought

2. Professional Training. Best training practice in natural and cultural heritage issues will be identified across the world; courses will then be designed and promoted and funding sought

3. Funding will be sought to support research into the value of the National Trust model

4. Funding advice. INTO will offer advice and support to its members on where to go for external funding for specific projects. This will be supported by a volunteer at our office in London

5. Secondments. We hope to be able to facilitate secondments by matching the requirements of the host member to the appropriate skills of potential secondees. Experiences gained will then be shared with the wider INTO network through the website.

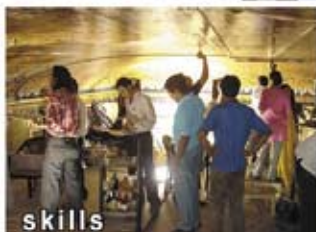
6. World Heritage Exchange Programme. We are hoping to establish an exchange programme that will enable staff or volunteers from our member organisations to work with colleagues from other trusts to gain new skills and experiences. This particular programme would focus specifically on World Heritage Site management. INTO would seek to work with relevant partners including UNESCO, ICOMOS and IUCN as well as the States Parties to the World Heritage Convention

I hope I have managed to convey to you an outline of the work of INTO both current and in the future, and some of the challenges it faces in bringing together the global community of heritage conservation organisations.

The 21st century is a time when built and natural heritage around the world is under increasing threat from environmental decay, neglect and conflict. Against this background is a growing awareness and recognition of the value of collaborative international action.

As it grows so INTO will be in a stronger position to enhance this collaborative approach and reverse the decline.

So let's go INTO - the future!



JNCC Overseas Territories and Crown Dependencies Programme

Tara Pelembe, Nikki Chapman, Deborah Procter, Deanna Donovan & Marcus Yeo (Joint Nature Conservation Committee)

Pelembe, T., Chapman, N., Procter, D., Donovan, D. & Yeo, M. 2010. JNCC Overseas Territories and Crown Dependencies Programme. p 175 in *Making the Right Connections: a conference on conservation in UK Overseas Territories, Crown Dependencies and other small island communities, Grand Cayman 30th May to 5th June 2009* (ed. by M. Pienkowski, O. Cheesman, C. Quick & A. Pienkowski). UK Overseas Territories Conservation Forum, www.ukotcf.org

The JNCC Overseas Territories and Crown Dependencies Programme has an overall aim to “Provide, to UK Government departments, the Governments of the Overseas Territories and Crown Dependencies and others, timely and sound advice to support the achievement of the 2010 biodiversity target, the progressing of Environment Charters, and the implementation of multilateral environmental agreements”. This is being done through 5 projects

1. Advice and Communications
2. Multilateral environmental Agreements
3. Agreement on the Conservation of Albatrosses and Petrels
4. Funding and Research
5. Sustainable Development (includes invasive species, economic valuation and climate change)

In addition to a general overview of the programme, 5 areas of work that are being developed under these projects will be displayed in posters i.e. economic valuation, ecosystem services, UKOT research and training programme, UKOT and CD funding project, climate change. More detailed information is available on the JNCC website: <http://www.jncc.gov.uk/page-4079>

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The UK Overseas Territories: the UK's hidden natural treasures

Royal Society for the Protection of Birds

RSPB 2010. The UK Overseas Territories: the UK's hidden natural treasures. pp 176-179 in *Making the Right Connections: a conference on conservation in UK Overseas Territories, Crown Dependencies and other small island communities, Grand Cayman 30th May to 5th June 2009* (ed. by M. Pienkowski, O. Cheesman, C. Quick & A. Pienkowski). UK Overseas Territories Conservation Forum, www.ukotcf.org

www.rspb.org.uk/ourwork/conservation

(Note: this article was prepared from a leaflet, by UKOTCF editorial staff at the request of RSPB.)

Background

The UK has responsibility for 16 Overseas Territories. These are mostly small islands dispersed across all the world's major oceans. They range from tropical coral atolls in the Indian and Pacific Oceans, to windswept volcanic landmasses rising from the depths of the South Atlantic. These spectacular islands are home to plants and animals that are found nowhere else in the world, and many are important seabird breeding areas.

The importance of biodiversity

The UK Overseas Territories are astoundingly rich in bird species. Worryingly, there are over 30 breeding bird species facing extinction within the Territories, compared to none at all in the UK itself. This places the UK ahead of countries like Madagascar and South Africa – which are famous for their wildlife – in terms of numbers of globally threatened birds. The people of the Territories are also reliant on the natural environment for their livelihoods and quality of life. The economies of many of the islands are dependent on revenue

raised from fisheries and tourism. Mangroves, forests and coral reefs provide protection from hurricanes, which under current climate change projections are likely to become more intense in the future.

An uncertain future

Many species face a high risk of extinction and ecosystems face irreversible destruction if current efforts to safeguard them are not strengthened. Most of the Territories have small populations and limited resources, so look to the UK for assistance. For example, Tristan has a population of just 275 people, yet there are 11 globally threatened birds breeding there. This tiny community has a huge responsibility to bear.

Threats

- The impact of introduced invasive species, such as rats and feral cats, has been catastrophic, causing species extinctions and reductions in every Territory.
- One third of the world's albatrosses breed on



Anegada Island, British Virgin Islands (Photo: Andy McGowan)



Birdwatchers (Photo: Stephen Mendes)



*Boatswainbird Island, Ascension
(Photo: Clare Stringer)*

the UK Overseas Territories. Long-line fishing kills 100,000 albatrosses per year so is having a devastating impact.

- Tourism is rapidly expanding and in some places, is in danger of damaging the natural environment on which it depends.
- Although beyond the Territories' control, climate change is a threat to many of the low-lying islands. As sea levels rise, some islands will disappear.

Threatened Birds in the UK Overseas Territories

1. Ascension

Ascension frigate-birds were previously confined to breeding on the 5-hectare offshore Boatswain Bird Island. The RSPB has supported the successful eradication of feral cats from the mainland so they can return to nest.

Threatened breeding bird species: Ascension frigatebird

2. Anguilla

The network of ponds on the mainland are a key stopover point for migrant birds flying to and from North America.

3. Bermuda

For three centuries, the Bermuda petrel (cahow) was thought to be extinct. A tiny remaining population was found in 1951, and determined conservation efforts on the island have led to a steady increase - a remarkable success story.

Threatened breeding bird species: Bermuda petrel (cahow)

4. British Indian Ocean Territory

A collection of remote coral atolls and reefs with





spectacular marine life, the Chagos Archipelago also hosts some of the largest and most diverse seabird colonies in the Indian Ocean.

5. British Virgin Islands

This archipelago of more than 60 islands, cays and rocks provides an important corridor for North American migrant birds. Great Tobago Island has one of the largest colonies of magnificent frigatebirds in the Caribbean.

6. Cayman Islands

The islands boast a wide variety of tropical sealife, but also many bird species, including red-footed boobies and the Cuban (Cayman) parrot. West Indian whistling-duck

7. Falkland Islands

A rich southern ocean seabird community supporting albatrosses, four species of penguin and many others. Eradicating rats has brought the Cobb's wren back to some islands.



Black-browed Albatross (Photo: David Osborn)

Threatened breeding bird species: Cobb's wren, black-browed albatross, white-chinned petrel, macaroni penguin, southern rockhopper penguin

8. Gibraltar

As the narrowest crossing point for migrating birds between Europe and Africa, Gibraltar is a critical bottleneck for many European species. A small group of lesser kestrels survives here, although the species has declined massively in Europe due to industrial farming.

Threatened breeding bird species: Lesser kestrel

9. Montserrat

Invasive species are severely degrading the habitat of the Montserrat oriole. Since the volcanic eruptions, the entire world population of this bird is now confined to two tiny patches of forest.

Threatened breeding bird species: Forest thrush, Montserrat oriole

10. Pitcairn Islands

The decline of bird populations in the Pitcairn group is largely due to predation by introduced rats. Uninhabited Henderson Island was designated a UNESCO World Heritage Site in 1988.

Threatened breeding bird species: Phoenix petrel, Henderson petrel, Henderson lorikeet, Henderson crake, Henderson fruit-dove, Pitcairn reed-warbler, Henderson reed-warbler

11. South Georgia and South Sandwich Islands

One albatross dies every five minutes by getting caught on long-line fishing hooks. Fortunately, this island's government has one of the best-managed fisheries in the world and is putting measures in place to reduce the number of birds being killed.

Threatened breeding bird species: Macaroni penguin, wandering albatross, grey-headed albatross, black-browed albatross, white-chinned petrel

12. St Helena

Five out of six endemic birds have become extinct since the discovery of this island. The St Helena plover (wirebird) is under threat due to changes in grazing land and predation.

Threatened breeding bird species: St Helena plover (wirebird)

13. Tristan da Cunha

The Tristan group is one of the world's greatest seabird colonies. The Inaccessible rail is the smallest flightless bird in the world and is found only on Inaccessible Island – a World Heritage Site.

Threatened breeding bird species: Northern rock-hopper penguin, Tristan albatross, Atlantic yellow-nosed albatross, sooty albatross, spectacled petrel, Inaccessible rail, Gough moorhen, Atlantic petrel, Gough bunting, Tristan bunting, Grosbeak bunting



Atlantic Yellow-nosed Albatross (Photo: Paul Tyler)

14. Turks & Caicos Islands

The combined effects of habitat loss, overhunting, and predation by introduced rats, cats and mongooses have wiped out West Indian whistling-ducks from some islands.

Threatened breeding bird species: West Indian whistling-duck

How the RSPB is helping

The RSPB works on the Overseas Territories because of their outstanding importance for biological diversity. Protecting these special places puts a very high level of responsibility on the UK. We work with local conservation organisations, government departments, scientists and volunteers to:

Protect globally threatened birds

Invasive species are one of the main threats to birds and biodiversity on the Territories. We have successfully eradicated feral cats from Ascension Island so that seabirds, including the Ascension frigatebird, can return to the mainland to breed. We are also assessing the possibility of eradicating introduced house mice from Gough Island, as they are driving both the Tristan albatross and Gough bunting to extinction.

Conserve Important Bird Areas

We have identified 78 Important Bird Areas on the Territories and are assisting partners to conserve these sites. We are working with partners on Montserrat to enable the effective conservation and management of the Centre Hills, the last remaining habitat for the critically endangered Montserrat oriole.

Build political and financial support

The RSPB is working to strengthen environmental policies and legislation on the UK Overseas Territories. It has commissioned a study to estimate the cost of meeting biodiversity priorities on the Territories. We have calculated a minimum of £16 million per year is needed, which is a small amount compared to the global importance of the wildlife.



Section 6: Spatial Planning, Protected Areas and International Standards – assets or liabilities?

**Co-ordinators: Colin Hindmarch (UKOTCF Council) &
John Cooper (CORE Initiatives, Rondebosch, South Africa)**

Issues relating to resource use in terrestrial and marine realms are clearly central to sustainable development. Used correctly, spatial planning, protected areas and international site designations are all tools that can contribute to the protection of livelihoods and the environment, whilst empowering stakeholders and ensuring resources and ecosystem services for the next generation. Equally, however, if such measures are poorly applied, or abused, they can become liabilities (actual or perceived) to communities, fail to deliver environmental protection, and even undermine the very concept of sustainability.

This session of the Making the Right Connections conference heard presentations which drew on experiences (both good and bad) in a range of relevant areas. The increasing integration of environmental considerations into spatial and strategic planning in the UK and the European Union was examined. The consequences of an ineffectual planning process and suppression of environmental democracy in the Turks and Caicos Islands was the focus of an impassioned and eloquent presentation. An overview of the approach to marine planning and protected areas in the Isle of Man was followed by a brief presentation on a potentially globally significant marine reserve in the British Indian Ocean Territory. Following discussion of issues raised thus far, aspects of international designations (particularly under the Ramsar and World Heritage Conventions) were examined. Delegates then heard of progress and challenges in relation to protected areas and wider environmental management planning in Montserrat, the Pitcairn Islands and the British Virgin Islands. Further discussion followed. Key conclusions from the session included acknowledgement of the value of linking spatial planning, protected areas and internationally designated sites into more integrated approaches and broader strategic planning, whilst ensuring that stakeholders and wider communities have a voice in the process.



*From left: Rob Thomas (rapporteur), Fiona Gell, Euwonka Selver and Colin Hindmarch
(Photos of conference participants in this Section by Thomas Hadjikyriakou unless otherwise stated)*

Framework Document: Protected Areas: Developing Sustainable Policy Options

Colin Hindmarch (UKOTCF Council)

Hindmarch, C. 2010. Framework document: Protected Areas: Developing Sustainable Policy Options. pp 182-185 in *Making the Right Connections: a conference on conservation in UK Overseas Territories, Crown Dependencies and other small island communities, Grand Cayman 30th May to 5th June 2009* (ed. by M. Pienkowski, O. Cheesman, C. Quick & A. Pienkowski). UK Overseas Territories Conservation Forum, www.ukotcf.org

The widespread, historic failure to consider fully the environmental impacts of economic development activities which rely fundamentally on natural resources has severely undermined the sustainability of human endeavours. However, there is an increasing shift towards the integration of environmental considerations into high-level policy development, as the need to protect biodiversity and ecosystem services becomes more urgent and apparent. Models for this new approach are emerging, including in the UK and the European Union.

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Many of the problems faced by the environment have been peripheral to the human exploitation of natural resources. As such, they have been tackled in an *ad hoc*, responsive, symptomatic way, without a coherent approach to the problem of such things as habitat loss.

The growing realisation that the 'natural' environment is a key life support system that underpins innumerable economic activities (MEA 2005), suggested the need to factor the value of ecosystem services into the essence of economic planning (Hindmarch *et al.* 2006). The idea has been around for some time but it is becoming the new wisdom (POST 2007) and consequently, environmental concerns are now being incorporated into policy development at the highest levels.

Although some UK territories have already moved along this road to varying degrees, it is worth looking first at an example from Europe, as a basis for discussion. Following the lead given by the Convention on Biological Diversity (CBD 1992), the EU Biodiversity Strategy gave momentum to the process of internalising conservation values by recommending that biodiversity concerns should be integrated into all EU policies (EUBS 1998). This was reinforced by a number of follow-up action plans (EUBAP 2001) that embraced Natural Resources, Agriculture, Fisheries and Economic Development. This process has helped to strength-

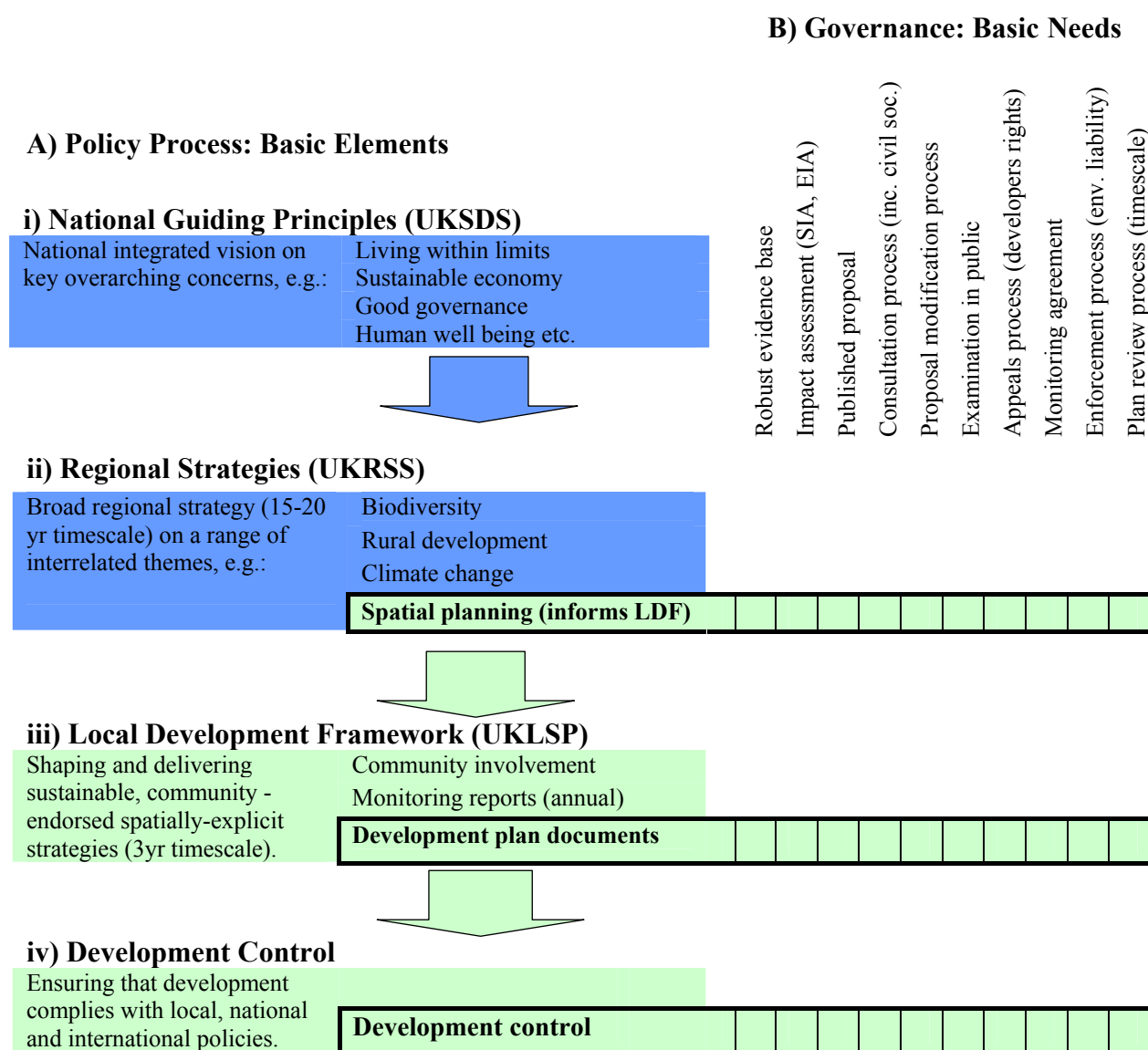
en policy integration and is opening up a way for a new relationship between the environment and human activities.

Part of this new relationship is an emergent type of strategic resource management that factors ecological concerns into economic thinking, thereby internalising the hidden costs of human activities (Hindmarch & Pienkowski 2000). This link will place economic limitations on over-exploitation, making it difficult, for instance, to roll out policies or implement plans that encourage farming practices (in the intensive farming systems of Europe) that erode the soil, pollute the water supply, threaten food security and degrade biodiversity.

This will help protect the ecological processes that maximise the biological potential of the protected area 'hot-spots', and, indeed, the wider environment. These will be increasingly protected and supported by an approach to policy development that accounts for the economic value of ecosystem services (Hindmarch *et al.* 2006). This approach will need a 'compatible planning' system and an environmental movement that becomes active at all levels of the policy process and works with the business community to devise sustainable development options.

Fortunately, recent reforms to the UK legislative system have produced a promising policy model

Figure 1. Integrating ecological concerns into development plans: policy process and governance (schematic representation based loosely on new UK procedures). SIA = Strategic Impact Assessment; EIA = Environmental Impact Assessment. (References: UKLSP 2008, UKRSS 2004, UKSDS 2005),



(outlined very sketchily in Figure 1) in that it:
Has a coherent policy process (Figure 1: A) with a nested suite of ‘tools’ ranging from an overarching general vision on key concerns (i), through broad regional strategies (ii), to local implementation frameworks (iii), to measures for the enforcement of policies on the ground (iv);
Ensures that biodiversity and sustainability concerns are integral to each stage of the process (i-iv) and their related themes, and that it;
Includes a system of governance (Figure 1: B) that ensures due process with respect to impact assessment, public involvement, monitoring, review, environmental liability and enforcement.

This model is not necessarily one that will fit all situations; but it could be a useful starting point for thinking about how Territory administrations

might enhance their support for the protection and sustainable management of their natural resources and at the same time meet some of the challenges posed by environmental governance.

In preparation for discussions on this topic, delegates were asked to compare the workings of their own administrations with that of the developing UK model (Figure 1). Table 1 is provided as one framework by which systems in individual territories can be rapidly assessed, and compared to the evolving UK approach.

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Table 1. Integration of ecological concerns into development plans: policy process and governance.

Name of Territory:

		Yes	No	Comments on sustainability issues – or other matters.
Policy tools (Figure 1 A)	Are there National Guiding Principles?			
	Are there regional strategies?			
	Are there local development frameworks?			
	Are there development control procedures?			
	Are the policy tools (above) part of an integrated package?			
Governance measures (Figure 1 B)	Is there a requirement for impact assessment?			
	Are plans and proposals published?			
	Is there a process for public consultation?			
	Is there a plan and proposal modification process?			
	Are plans and proposals examined in public?			
	Are there opportunities to appeal against decisions?			
	Are agreed plans and development schemes monitored?			
	Is there an enforcement process?			
	Are plans and policies reviewed regularly?			

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Protected areas: a new economic context and a sustainable future

Colin Hindmarch (UKOTCF Council)



Hindmarch, C. 2010. Protected areas: a new economic context and a sustainable future. pp 186-194 in *Making the Right Connections: a conference on conservation in UK Overseas Territories, Crown Dependencies and other small island communities, Grand Cayman 30th May to 5th June 2009* (ed. by M. Pienkowski, O. Cheesman, C. Quick & A. Pienkowski). UK Overseas Territories Conservation Forum, www.ukotcf.org

In many countries, protected areas have been an effective way of preventing the destruction of some of our biodiversity hot-spots; however, these remain vulnerable because their fate is intertwined with that of a wider environment that continues to deteriorate due to unsustainable human activity. These changes not only threaten protected areas but also the natural ‘capital’ that is fundamentally important to human economic activity and even humanity itself. The only realistic way of challenging this situation is to integrate ecological concerns into the heart of human economic activities and support these with effective enforcement. There is a convincing rationale for this route to a sustainable future, and a practical way forward using emerging European and National (UK) policies.

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A short history of sustainable resource management and environmental protection

Balancing human economic activity and the environment’s ability to recover from exploitation has become a critical issue, not least for island habitats, which suffer disproportionately from the global change.

Unsustainable human activity has produced widespread environmental problems. Where these have been responded to locally, the corrective measures have often faltered and produced new problems. Whilst these measures highlighted unwanted change and provided a focus for conservation action, they were incapable of tackling the underlying causal processes, which intensified to the point where they threatened the means of production (Hindmarch & Pienkowski 2000) and the basis of human society (MEA 2005). These life threatening impacts compelled policymakers to address the issues behind environmental degradation and, at the same time, provided some insight into the proc-

esses that trigger ecological change. They also cast some light on the difficulties faced by protected areas.

In accepting the gravity of the global environmental crisis and then “making the right connections”, policymakers are now beginning to develop and deliver policies that have the potential not only to secure the future of human economic development, but also safeguard the environment and support the work of protected areas.

Connecting human activity and ecological processes.

The relationship between human activities and ecological processes is predicted by the common-sense notion that, as the level of human exploitation increases, ecological and economic factors become linked, such that a change in one affects the status of the other (O’Neill *et al.* 1998).

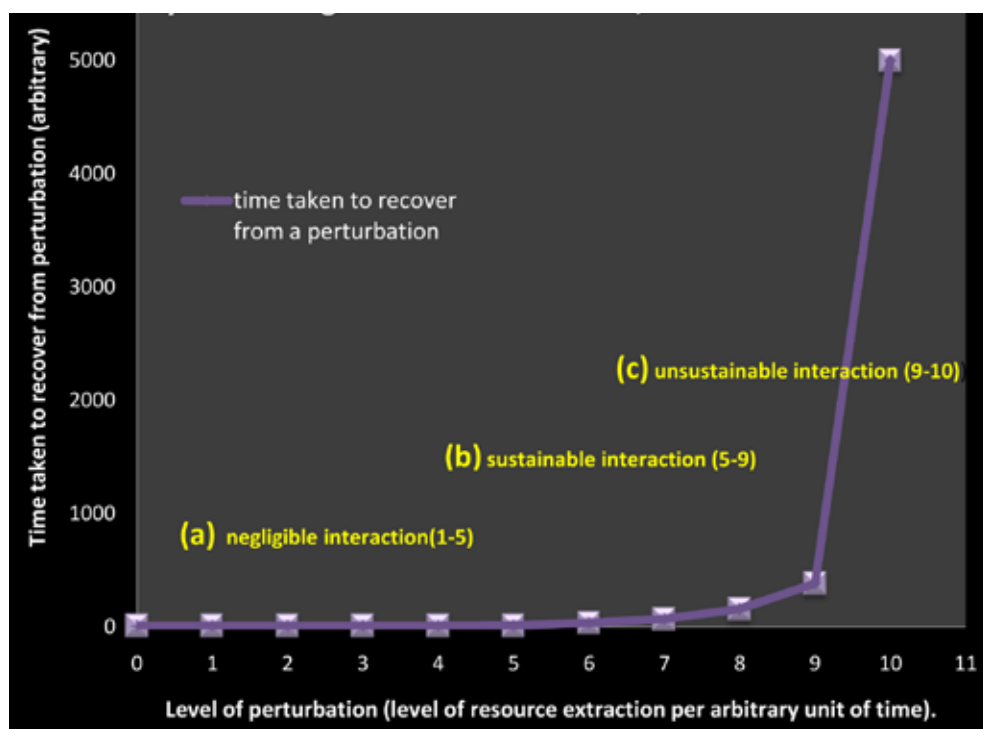


Figure 1. Interaction between 'natural' and economic systems using data from O'Neill et al (1998).

Figure 1 illustrates this process of 'linkage' in terms of the time taken for a 'natural' system to recover from increasing levels of human activity (perturbation). At low levels of activity recovery time is negligible (a), but as exploitation increases, 'natural' and 'economic' processes become linked such that they affect one another. At low levels of exploitation, this linkage (b) is able to increase biodiversity (crops, livestock and production systems) (see also Figure 3 c,d,e,f) and ecosystem resilience; but as the level of exploitation increases, a point is reached when the exploited system becomes incapable of recovery (c) precipitating a shift in state and possible collapse.

It is difficult to assess whether the current state of 'linkage' is approaching a critical shift in state; but there are reasons to believe that human economic activity is degrading the environment to the point where the resilience of its 'natural capital' (see Definitions) is being seriously reduced, along with its capacity to provide the 'ecosystem services' (see Definitions) needed to sustain economic development, human well-being and even human life itself.

Some definitions

Natural capital: An extension of the economic notion of capital (manufactured means of production) to environmental 'goods and services'. It refers to a stock (e.g. a forest) which produces a flow

of goods (e.g. new trees) and services (e.g. carbon sequestration, erosion control, habitat). (EEA 2009)

Ecosystem services:

"Ecosystem services are the benefits people obtain from ecosystems. These include provisioning services such as food, water, timber, and fibre; regulating services that affect climate, floods, disease, wastes, and water quality; cultural services that provide recreational, aesthetic, and spiritual benefits; and support-

ing services such as soil formation, photosynthesis, and nutrient cycling.... The human species, while buffered against environmental changes by culture and technology, is fundamentally dependent on the flow of ecosystem services." (MEA 2005)

Free goods: "We have habitually counted natural capital as a free good. This might have been justified in yesterday's empty world, but in today's full world it is anti-economic. The error of implicitly counting natural capital consumption as income is customary in three areas: (1) the System of National Accounts; (2) evaluation of projects that deplete natural capital; and (3) international balance of payments accounting." (Daly 1999).

Short-term benefits – long-term consequences:

"Historically, most responses to addressing ecosystem services have concentrated on the short-term benefits from increasing the productivity of provisioning services. Far less emphasis has been placed on the long-term consequences of ecosystem change and consequent effects for the provision of services. As a result the current management regime falls short of the potential for meeting human needs and conserving ecosystems." (MEA 2005, p, 100)

Connecting theory with reality

These adverse impacts are linked with forms of

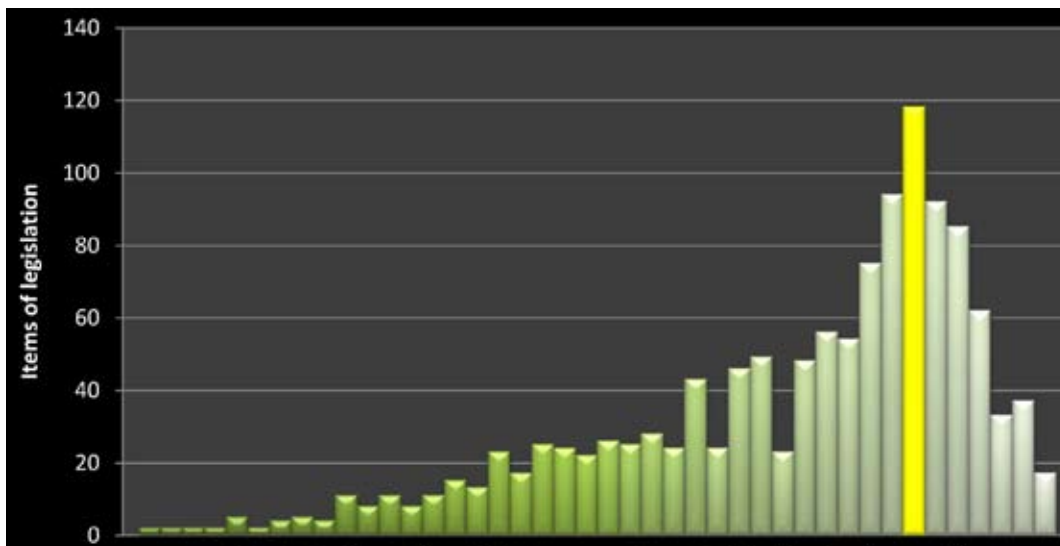


Figure 2. Number of items of EU environmental legislation adopted between 1996 and 2007 (data approximated from Figure 2.1.1 of IEEP 2009)

Notes: The bars show each year from 1966 to 2007. The decline in output from 2001 (yellow box) may reflect a change from responsive to integrative modes of policy development (see Figure 4).

‘protected’ areas continue to suffer from damaging external influences and inappropriate management (Lee & Barrett 2001; Allison *et al.* 1998), along with the associated loss of biodiversity (Eionet 2008) and ecological isolation (DeFries *et al.* 2005). Efforts to deal with these issues

economic activity that push production beyond sustainable limits on a large scale. An example of this phenomenon is provided by the European Union’s Common Agricultural Policy (CAP), probably the best supported ecological experiment since Genesis (Hindmarch *et al.* 2006). This aimed to provide cheap food and reduce imports, partly inspired by the hardships suffered by the drafters as young people during the Second World War. However, within a few decades, its hidden costs were revealed as the removal and simplification of semi-natural habitats, loss of locally distinctive crops and livestock, and the abandonment of farming systems that had a proven record of sustainable production and an ability to increase biodiversity (Hindmarch & Pienkowski 2000).

Ecosystem breakdown: policy reaction

The effect of this unsustainable economic activity was, for a long time, perceived as a random succession of ‘service’ disruptions that were addressed by a growing number of largely responsive, ‘downstream’ environmental legislative fixes (Figure 2). These struggled to deal effectively with the problem, because they were opposed by heavy ‘upstream’ measures (production support) that perpetuated the problem (Hindmarch & Pienkowski 2000).

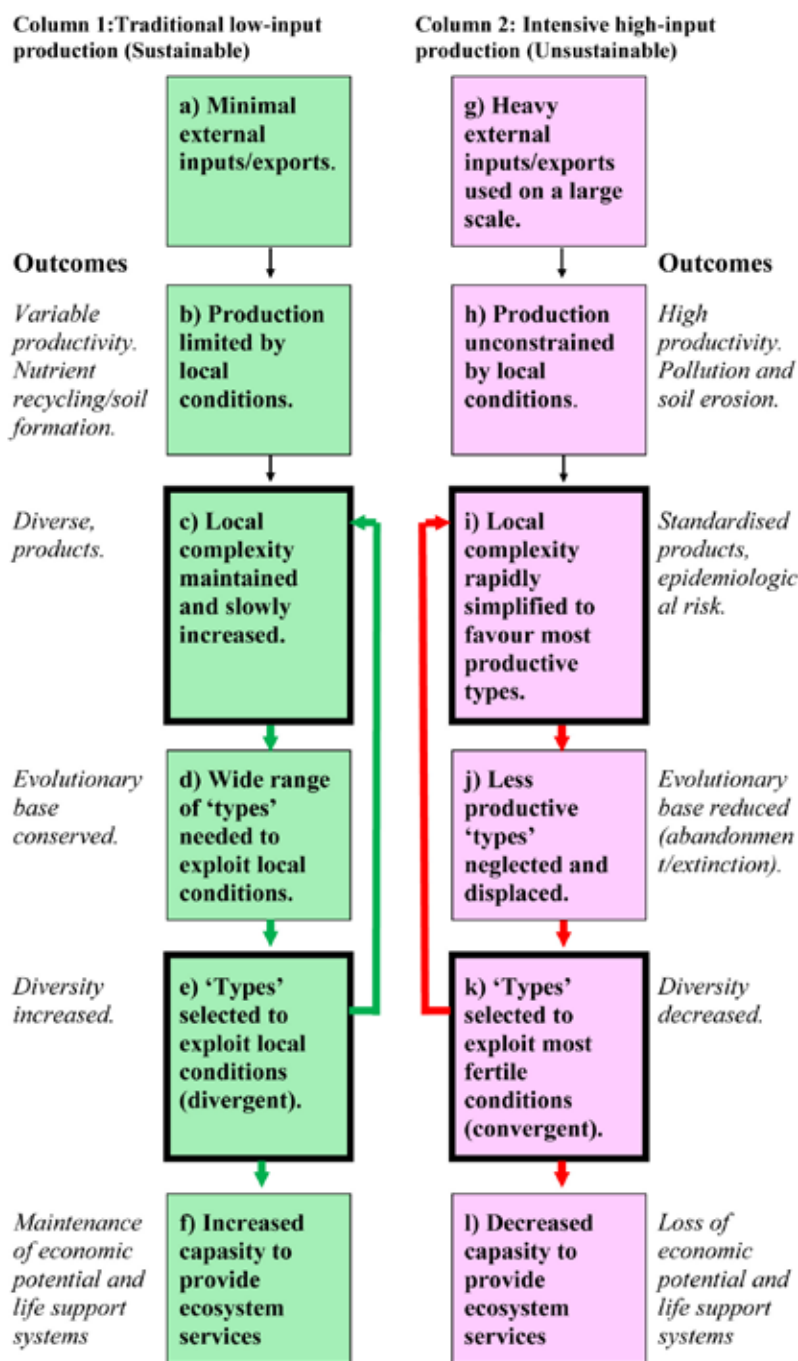
The protected area approach to conservation, for example, was developed to secure the long-term survival of important habitats. However, many

increasingly involve such things as buffer zones (Shafer 1999), corridors (Jongman & Kamphorst 2002) and networks (Natura 2000; EC 2000). However, since these are simply area-based approaches writ large (Hindmarch & Pienkowski 2000), they are unlikely to provide a defence against background environmental change on their own.

The ongoing limitations of site-based conservation and the pressing need to secure the economic potential and life-support functions of the wider environment are encouraging more of a ‘systemic’ approach to environmental protection (EUBS 1998) that involves ‘embedding ecosystem approaches’ (Defra 2007) into conservation management (Smith & Maltby 2003) and spatial planning (Nowicki *et al.* 2005). Importantly, the need for this reform is being supported by an understanding of the need to re-establish a sustainable linkage between economic development and ecological processes, by integrating ecological concerns into the heart of economic planning (Hindmarch *et al.* 2006).

Discerning causes

The unintended consequences of the CAP support for increased production and the subsequent difficulties in dealing with the ensuing problems using bottom-up remedies, gave some insight into the relationship between policy drivers and ecological impacts. It showed that high-level policies



NOTE 1: Green arrows highlight a sustainable cycle that increases the diversity of both natural and economic components of the environment and increases system stability by creating new opportunities for exploitation. Red arrows highlight an unsustainable cycle.

NOTE: 'Types' refer to: species, as well as crop varieties and animal breeds.

are able to manipulate environmental processes on a massive scale over a very short timescale and, by way of very simple measures, flip a system from a mode that maintains, or even augments, renewable resources (traditional land management systems) to one that undermines long-term productivity (intensive land management systems).

Figure 3 arranges the discriminating features of both traditional and intensive land-management systems into contrasting causal patterns and, at

Figure 3. Simple policy measures can shift a system from one state to another. Comparison of European low- and high-input land management systems in terms of characteristics, environmental effects and conjectured causal processes.

each stage, notes a few of the more important outcomes. This shows that human exploitation, in the form of traditional low-input production (column 1), has a number of clear features:

- it uses minimal external inputs (a) and a rate and scale of exploitation that is constrained by local circumstances (b).
- it also has an inherent need for a wide range of locally adapted plants, animals, landscapes, technologies, economies and cultures (types) (d), and;
- involves the ongoing selection of 'types' that can most effectively exploit locally-distinctive circumstances (e).

Traditional forms of exploitation, therefore, constitute a divergent process that not only depends upon inherited diversity (d) but also maintains and augments it (c, e), and increases the provision of natural capital and ecosystem services (f).

This suggests that they are not just sustainable, in the sense that they are activities that can be maintained indefinitely, but are evolutionarily active (see points 5-9 in Figure 1b) and able to enhance the productive base of the environment.

The factor that triggers the movement from sustainable 'linkage' (column 1) to collapse (column 2) appears to be the use of heavy external inputs on a large scale (g). This overrides naturally occurring

limits on production (h) and simplifies the environment by favouring a narrow range of productive types (i). This increases production (h), but causes widespread pollution, soil erosion and loss of biodiversity. It also displaces inherited diversity (j) in the form of locally adapted types and involves the convergent selection (k) of a narrow range of productive types dependent on the external inputs provided. This further simplifies the environment and compromises the provision of natural capital and ecosystem services (l).

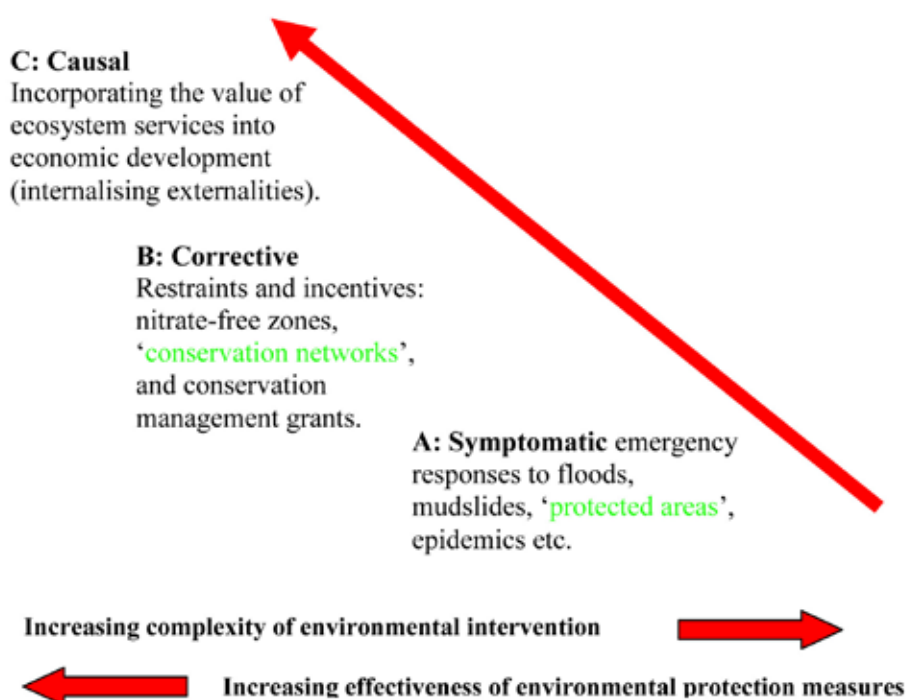
The processes illustrated by Figure 3 support the 'linkage' model (O'Neill *et al.* 1998). They also provide policymakers with a conceptual tool for identifying ways of building restraints into economic policies by decreasing external inputs (g), protecting biodiversity (c, d, e) and integrating the value of natural capital and ecosystem services into economic processes (*sensu* Hindmarch *et al.* 2006), rather than counting them as 'free goods' (see Definitions).

Emergence of sustainable development initiatives at a European level

The adverse environmental impacts of the CAP experience provided a compelling argument for a rapid realignment of farming subsidies. However, there were also concerns that farm subsidies were becoming too expensive and would increase with the planned accession of the Central European States (Schröder 2002). It was also becoming apparent that these subsidies were beginning to complicate world trade negotiations (Europa 2004). These influences combined to favour an approach to policy development that increasingly addresses causes rather than symptoms (Figure 4). This has helped to put the concerns of biodiversity and sustainable development at the heart of European affairs through a succession of initiatives, including the European Union Biodiversity Strategy (EUBS 1998), its related Action Plans (EUBAP 2001) and the ongoing Malahide process (EC 2006). Importantly, it has also informed the development and review of the European Sustainable Development Strategy (EUSDS 2006), which now includes provisions that will:

- Eliminate policies that are 'incompatible with sustainable development' (EUSDS 2006, para. 24);
- Improve the 'management and avoid over-exploitation of natural resource' (EUSDS 2006, para. 13);
- Encourage 'recognizing the value of ecosystem services' (EUSDS, 2006, para. 13).

These paradigm-shifting provisions are part of a high-level fiscal and regulatory framework for sustainable economic growth. Over time, this could help to protect the environment and its biodiversity



Note: policy measures have been moving from a 'responsive mode' (dealing with isolated episode of 'collapse') (A), through 'correction' (developing thematic remedies) (B), to a mode of operation that attempts to avoid collapse (by influencing causal processes) (C). This trend has been increasing the effectiveness of environmental intervention and arguably making it simpler and less self-contradictory.

Figure 4. Development of European environmental policy: schematic representation. Adapted from Hindmarch *et al.* (2006).

hot-spots (including those with protected area status). This would be by fostering an approach to resource management that incorporates conservation into all decision-making processes, and factors the value of natural capital and the ecosystem services it provides into economic planning (Hindmarch *et al.* 2006; Steiner 2006). These overarching measures have profound implications for European member states and associated Overseas Countries and Territories (OCTs).

National responses to the European policy reform

The process of reform underpinning the European Sustainable Development Strategy (EUSDS 2006) has resulted in a cascade of compliant reforms throughout European institutions and is informing the development of a more coherent approach to Europe's OCTs (OAD 2007; Hindmarch 2007; IUCN 2008). In the case of the UK, these reforms have already produced a promising joined-up policy model (outlined in Figure 5). Importantly, this provides:

- A coherent policy process with a nested suite of 'tools' ranging from an overarching general vision on key concerns (i) through broad

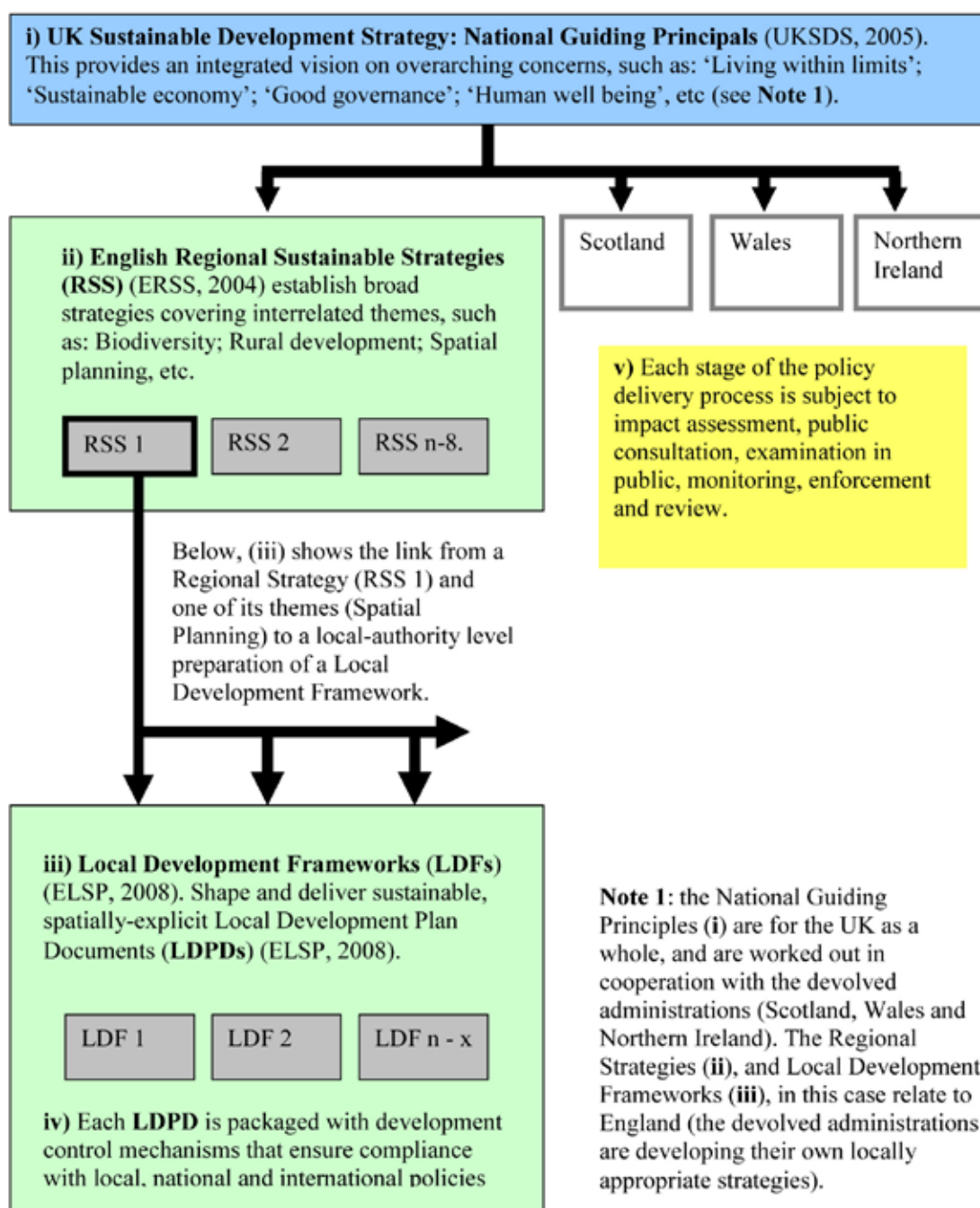


Figure 5. Integrating ecological concerns into development plans: policy process and governance (schematic representation based loosely on the UK approach)

regional strategies (ii) to local implementation frameworks (iii) to measures for the enforcement of policies on the ground (iv);

- Instruments that ensure the integration of biodiversity and sustainability concerns into each stage of the process (i-iv) and their related themes;
- A system of governance that ensures due process with respect to impact assessment, public involvement, monitoring, review, environmental liability and enforcement (v).

Although this model has been developed to suit the particular conditions of the UK, its flexible, 'delegated' structure would provide a useful strategic context for UKOT administrations as part of their reform of environmental governance (UKOTCF 2007; FAC 2008). Importantly, it would establish local ownership of a fiscal and regulatory network that extended to the core of Europe, helping to access resources and influence the up-stream policy initiatives that may affect the Territories.

Taking things forward

It is possible that the various elements of the model will progress at different rates and that environmental concerns might lag behind. There is likely also to be some denial over such things as:

- Whether there are in fact 'limits to growth' - even though this has been a widely accepted as a logical position for some time (*sensu* Malthus 1798);
- To what extent humanity's drive for population increase and economic growth is responsible for driving environmental change;
- Whether integrating the value of hitherto 'free' ecosystem services into economic development might be the best mechanism to moderate unsustainable activities and encourage effective husbandry of the earth's resources.

There may be resistance amongst conservationists to the idea of going beyond the safe and understandable site-based approach to habitat protection, because of its implications for established routines (Carpenter & Folke 2006) and historic investment. Overcoming these difficulties will take time, as well as the support of a social constituency (Jacobs 1997) and an informed conservation movement that 'runs' with the ecosystem approach to habitat management and becomes involved in its development. It will also need the support of political institutions and the business community; in particular, those sections that struggle to understand the long-

term economic value of the world's natural capital and the services it provides to economic enterprises (see Definitions).

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The role of environmental democracy

Euwonka Selver (Turks & Caicos Islands)



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The general value of natural areas, both for conserving the natural heritage and the ecosystem services that these provide, has been widely acknowledged. The vital tourism trade depends on our natural and historical environment. Effective safeguarding of such areas is dependent on a planned land-use strategy, and open and wide-ranging consultation on proposed developments in their vicinity. Planning needs to be open to local public debate, and to comment by international experts, rather than being a closed process involving a small number of people – whether elected or appointed officials, or commercial interests.

In several UKOTs, the public perception is that this vital open planning consultation process does not take place, and if it does, the views expressed are not taken note of. This presentation gives some examples from several UKOTs, and then focuses more specifically on my country of the Turks and Caicos Islands.

On paper, the Turks and Caicos Islands has an impressive suite of protected areas. However, despite being protected legally or by declaration, it has become apparent in recent years that this protection has not prevented significant damage to many of the protected areas, and a reduction in their effective size to enable significant, major and damaging development. In some cases, decisions by the Planning Board have been overturned in favour of built development.

At the heart of this has been the secrecy and lack of consultation about proposed developments. The first anyone has known about some of these has been when the bulldozers move in. The damage has included: tearing down mangrove trees; demolition of large sections of coral reefs; and removing land from National Parks and Nature Reserves to accommodate developers. Building permits have been granted to allow construction without Environmental Impact Assessments. Where Environmental Impact Assessments have been carried out, they are extremely difficult to access, and have not been circulated for comment and peer review. Effective public consultation rarely happens. The Turks and Caicos has seen perhaps its greatest period of the destruction of the environment in the last 6 years. Nearly all the islands have been affected.

Protest groups have already had some small successes, in making legal challenges to developments in protected areas. We must continue the campaign to preserve and re-instate our protected areas, demand open and full consultation on development proposals, and insist that high quality Environmental Impact Assessments (paid for by the developer but commissioned independently) are made widely available throughout the whole territory and beyond, as hard copies and on-line.

Euwonka Selver, Turks & Caicos Islands, euwonka@hotmail.com

I bid you all a pleasant morning. I want to talk to you today about a problem common to several UK Overseas Territories, especially in the Caribbean. I will concentrate on my own home, the Turks & Caicos Islands. The problem is being caused by over-development and inappropriate development, and the failure to follow internationally recognised planning procedures. Examples include the “Star Island” project, Life Resorts International development, and Salt Cay Dock. I want to highlight the importance of civil society in bringing such issues to wider public attention, and in challenging planning proposals and changing outcomes.

The general value of natural protected areas, both for conserving the natural heritage and the ecosystem benefits that these provide, has been widely acknowledged. Effective safeguarding of such areas is dependent on a planned land-use strategy, and open and wide-ranging consultation on proposed developments. Planning needs to be open to local public debate, and to comment by international experts, rather than being a closed process involving a small number of people – whether elected or appointed officials, or commercial interests.

As we have seen from the previous presentation, it is accepted that international best standards for planning and development require these processes to be open, and readily accessible to the public, with independent Environmental Impact Assessments.

This open, consultative process with proper independent Environmental Impact Assessments happens within the United Kingdom. It is the law. However, in some UKOTs, the public perception is that this vital open planning consultation process does not take place, and if it does, the views expressed are not taken note of. Thus, this process is frequently circumvented in some UKOTs, even when it is also the law there.

Many of you will be aware that, in the Turks & Caicos Islands over the last few years, we have excelled ourselves in disregarding proper planning procedures and open consultation.

However, I will start with some reference to the situation in some other Caribbean UKOTs. I will then present some specific examples from the Turks and Caicos Islands.

In this afternoon’s session, we look forward to hearing some presentations very relevant to my

topic, from the British Virgin Islands and from here in Grand Cayman. Therefore, I will not attempt to steal their thunder. I, for one, will be keen to see what we can learn from their experience. I see that there are also presentations from Bermuda. However, I will mention one example from there, because it has been in the press, but I do not think it is in the programme, and I suspect that we can learn from it. I hope that the participants from Bermuda – and elsewhere – will bear with me and, later in the discussion, correct anything I get wrong as well as drawing out other points that they think are relevant.

Bermuda is a prosperous, very densely populated territory and, as such, the pressure for further development is continuous. There is good environmental and planning legislation, but, as in many cases, there are provisions for over-ruling objections and giving the go-ahead for development - which is a common problem in the Turks and Caicos Islands. Fairly recently, it was proposed to construct a beach bar facility on Warwick Long Bay. There was concern locally about such a development in a National Park Conservation Area and on Bermuda’s last pristine large public beach. There was a suggestion that the proposal had been approved by the Environment Minister, over-ruling the previous rejection of the proposal by the Development Applications Board, and an independent planning inspection. A petition and other action opposing the project was organised by the Bermuda Environmental and Sustainability Taskforce. On March 6 2009 the petition, signed by over 5000 people, was delivered to the Premier, Dr Ewart Brown. As one of those involved, Stuart Hayward, said: “What is the point of laws and regulations and the expert counsel of planners, conservation specialists, custodians of parklands and even an Independent Inspector, if a Minister can ignore it all, and in the process endorse the trashing of the very environment he is pledged to protect?”

I do not know what the outcome of this was, or will be. There are people here from Bermuda who perhaps will be able to tell us in the discussion. However, it is clear that public opinion and civil society are making themselves heard in Bermuda. We have had some small successes, but have a long way to go in this regard in the Turks and Caicos Islands, to which I now turn.

On paper, the Turks and Caicos Islands have an impressive suite of protected areas. There are 33

of these, covering approximately 270 square miles, consisting of National Parks, Nature Reserves, Sanctuaries and Historic Sites. In addition, some are protected under the National Trust Ordinance, by virtue of being held, on behalf of the people of the territory, by the Turks & Caicos National Trust. However, despite being legally protected, it has become apparent in recent years that this protection has not prevented significant damage to many of the protected areas, and a reduction in their size to enable significant, major and damaging development. Decisions by the Planning Board have been overturned by Ministers. It is imperative that the Governor exercises his power under Chapter 81 No. 13 of the National Trust Ordinance, which states, "That the Governor may grant to the Trust such land or interest in land over which he has the power of disposition as he may deem fit, and may grant to the Trust control over submarine areas, including control over access to such areas, activities within such areas and such other form of control as he may deem fit". (There is also an extensive breakdown of the powers of the Trust in Chapter 81 No. 5. I bring this to your attention in order to emphasise that the Turks and Caicos has the right legislation on the book - it needs only to be moved by the Governor [although "the Governor" means, in many circumstances the Governor as advised by Ministers]. I suggest that Government grant all the land in our Nature Reserves and National Parks to the National Trust. This has not been done in many cases, so the land is used commercially, instead of being preserved for the people of the Turks and Caicos.

This is the fix needed to prevent situations where secrecy and lack of consultation about proposed developments exist. The first anyone has known about some of developments has been when the bulldozers move in.

The damage has included:

1. Shrinking of our National Parks

Land has been removed from National Parks and Nature Reserves (formally or in practice) to accommodate developers. I am sure you read the headlines about "Star Island", which boasted of the construction of a Dubai-style artificial island. This involved major dredging in the Princess Alexandra National Park, leading to the destruction of coral reefs and invaluable fish nurseries. The world's only conch farm was affected as well. However, my friends in Bermuda should be encouraged by

the fact that there is power in numbers, as the people of the Turks and Caicos came together in protest and forced an injunction putting a stop to the artificial island. Pressure and protest groups have had significant successes, in legally challenging developments in protected areas. Petitions against Star Island, and outcries led by Tanya Streeter (professional free diver) against the dolphinarium, and countless others, seem to have caused the project to discontinue.

2. Development in Nature Reserves

Life Resorts International was sold land in a Nature Reserve, in Frenchman's Creek, to construct a "Christian hotel". This should not have happened. No development is permitted in Nature Reserves "on our books" - even visitation is said to be limited and by permit only. That needs to be enforced, and I am looking for full support from my fellow environmentalists should they continue any further with this particular project. We must maintain the campaign to preserve and re-instate our protected areas, demand open and full consultation on development proposals, and insist that high-quality Environmental Impact Assessments (paid for by the developer but commissioned independently) are made widely available throughout the whole territory, as hard copies and on-line.

3. Knowingly Endangering the Population

Unplanned and uncontrolled development has been allowed to encroach into flood-prone localities, placing some segments of the community in unsafe areas. Inadequate (or non-existent) drainage systems have also contributed to serious flooding problems. The third point (which the Government was aware of) relates to ad-hoc tourism-related developments. These have led to a policy shift that promotes a high concentration of hotels and condominiums within the coastal zone, in some cases set back less than 100 ft from the edge of vegetation, bringing concerns about the impact of storm-surge during storms and hurricanes. All this, knowing that the smallest increase in sea-level or other climate change effects could result in a catastrophic disaster in the islands.

4. Secrecy

Building permits have been granted to allow construction, without Environmental Impact Assessments or allowing any public consultation or comment from international experts. Where Envi-

ronmental Impact Assessments have been carried out, they are extremely difficult to access, and have not been circulated for comment and peer review. Public consultation does not happen, as all EIAs are copyright and property of the developers. Even since the advent of the Commission of Inquiry, I have not been able to see specific EIAs that I have requested, as the Planning Department has recently denied that the projects (the Salt Cay Marina development, the Christian Hotel and the dolphinarium project) even existed.

5. Boards Bullied

I could not conclude without mentioning the recent crisis in Salt Cay, where planning officials complained publicly of being “bullied” by Ministers over the Board’s refusal to allow a developer to “cut the 1.5 mile island in half”. Hon. Misick, the former Premier, was quoted as saying that the “Board’s decision was unacceptable.” The Chairman of the Board tendered his resignation dubbing it, “a matter of conscience”. The developer intended to dredge through a Historic Site, The White House (which is hundreds of years old), through the Salinas, and right through to the other side of the tiny island to an industrial dock and golf course in the historic heart of Salt Cay. This would have completely isolated the developer’s half of the island.

6. Destruction of Coral Reefs and Mangroves

Large sections of coral reef have been lost, as was the situation with the Carnival Cruise deal, where a significant section of the coral reef was torn down to accommodate the ships’ passage into Grand Turk. Additionally, the large influx of persons has lead to damage to shoreline sections of coral, which has encouraged the development of artificial reef systems, stimulated electronically. There was also an incident in Providenciales (in North West Point), involving a treasure hunter with a permit from the Premier, giving him permission to unearth long-lost treasure at any cost. Whether or not his quest was successful is a secret affair but, at present, heavily damaged reefs are the only evidence left of his time spent with us.

Mature mangrove trees have been bull-dozed to accommodate the development of marinas in North Caicos and Providenciales. This destruction of our coral reefs and mangroves also makes us more vulnerable when Category 5 storms (such as Hurricane Ike) hit, as the ecosystems act as natural

barriers against huge waves and a defence against erosion.

7. We Don’t Recycle

There is no proper waste disposal system. In TCI, we do not recycle anything; garbage is currently burnt in the open, which is affecting the health of many residents in Casher Garden in Grand Turk, where clusters of cancer exist, and in Blue Hills in Providenciales, where residents complained of smoke inhalation leaving the taste of burnt plastic in their mouths. There have also been reports of increased respiratory problems, blistering and other skin blemishes, since the public dump was moved to that area. The Consultancy Terms of Reference for the National Physical Sustainable Development Plan (Revised April 2008), in Paragraph 5.2 under the heading Environmental Challenges, has pointed to population growth in the context of serious planning and development challenges. The Government was fully aware of the situation of the good people of Chaser Garden in Grand Turk and Blue Hills in Providenciales, as the document goes on in the next paragraph to note “ increased population has resulted in increased volumes of liquid and solid waste, so much so, that the existing waste disposal systems do not have the capacity to adequately process the waste. The result is a serious impact on the physical environment, particularly ground water resources”.

8. Straining Resources

Personally, I would like to see some investigation into the Darden project, which is directly affiliated with the Red Lobster company, that entered into an agreement with the TCI Government to undertake lobster farming. There have been reports that a few thousand specimens have been taken from nurseries by the scientists for studies. However, if you live in the Turks and Caicos, you would appreciate the fact that, over the years, our resources have been dwindling from export and local consumption. So I can only imagine what next season will be like, if thousands more are being removed.

In short, over the last few years, it has become apparent that the only importance of our precious natural resources to the powers-that-be is cashing it in for its monetary value. The fine words of the then Minister of Natural Resources, Fisheries and the Environment, in declaring 2007 the “Year of the Environment” (theme “Give Mother Nature a

Helping Hand”), and endorsing 2008 as the “Year of the Coral Reef”, have not been backed up by conservation actions. Rather than giving Mother Nature a Helping Hand, she was given the back of the hand instead.

The Turks and Caicos saw perhaps its greatest period of the destruction of the environment under the leadership at that time. Nearly all the islands were affected.

We are a very bright and very talented people in the Caribbean. We face many common problems and I truly believe that, if we combine our resources and intelligence, we can overcome our many environmental challenges collectively. I have often said that we operate as if we are not connected in the territories, when in fact we are connected in many ways. If we work together through a collaborative effort, we will combat common problems and we will overcome. I am not a scientist and have no background in any sort of formal education when it comes to the environment. I am just a simple person who cares very deeply about environmental preservation for my people and the future generations. I have been considered somewhat of an activist. I have, in my quest to establish an environmental protection agency, contacted our Caribbean neighbours to see if I could utilize a template from them, only to discover that there were virtually no environmental protection agencies in the Caribbean, the nearest being in Puerto Rico. I contacted all our neighbours, and found that most rely for environmental protection on bodies that work hand-in-glove with the governments and not as independent agencies. I would like to send out a challenge to the conference participants to seek to develop protection agencies in our respective countries which act independently and only in the best interest of the environment.

A large number of people in the Turks and Caicos Islands are now aware of the terrible plight of the environment (and the country). They realise that our natural areas are our capital and our legacy. The vital tourism trade depends on leaving enough natural areas to protect our natural and historical environment.

To recap:

1. We must have the protected areas transferred to the National Trust to ensure their protection.
2. We must work together and be open to help from international experts in combating our

problems. In the Caribbean and in the Territories, we face many common threats and challenges; working together we can address them collectively.

3. Planning processes should be open to public debate and comment by international experts.
4. Where the Planning Board, EIAs and the public interest are in agreement with not allowing a proposed project, a Minister should not have the power to overturn their decisions at the stroke of a pen. That right should be taken away.

Have we already gone too far?

Is it too late to curtail what has been done?

What, if anything, can be done?

It is very important that the answer to these questions is to affirm that something can and must be done.

We have the opportunity to do this now, and we must seize it.

The Marine Perspective on Spatial Planning, Protected Areas and International Standards

Fiona Gell (Senior Wildlife and Conservation Officer – Marine, Wildlife and Conservation Division, Isle of Man)



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The marine environment is diverse and often little studied and may be less actively protected compared to terrestrial systems. Uses of our coasts and seas are diversifying and intensifying all the time and it is essential to ensure that conservation of marine species and habitats forms part of new initiatives to exploit and manage marine resources.

A formal approach to planning in the marine environment is a relatively new development in many jurisdictions. Effective Marine Spatial Planning could put marine conservation considerations at the core of marine decision-making but waiting for the implementation of complex MSP schemes could also be seen to delay effective marine conservation initiatives in the shorter term.

For any new initiative associated with the marine environment a major challenge can be the lack of understanding of marine ecosystems at every level. How we tackle this underlying issue on small islands, when we may already be overwhelmed with the day to day work of taking forward marine conservation, is critical for the future of our marine biodiversity.

Marine Protected Areas (MPAs) present particular challenges and opportunities, from the start of decision-making on their designation through to daily running of a site, monitoring and adapting management to longer term changes. Could we do more to exchange information and best practice between geographical regions? Would it be useful to develop more collaborative work on the special MPA issues that small jurisdictions may need to address – e.g. developing appropriate legislation and management systems, lack of local scientific expertise and difficulties with funding?

Here, I develop these themes and hope that this will also be an opportunity to share good practice and case studies on how challenges have been met in different jurisdictions. Main issues discussed:

1. The development of formal Marine Spatial Planning.
2. Effective Marine Environmental Impact Assessment and good practice in coastal casework
3. The challenges associated with establishing new Marine Protected Areas and the effective management and monitoring of existing Marine Protected Areas.
4. Cross-boundary co-operation (regional and international) to support effective monitoring and support compliance with international obligations/regional best practice.
5. Education and awareness-raising at every level – a special challenge for marine management.

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Figure 1. The Isle of Man

Introduction and Isle of Man Background

In this paper I aim to give an overview of some of the uniquely marine challenges associated with spatial planning, protected areas and international standards, using the Crown Dependency of the Isle of Man as a case study (Fig 1).

The Isle of Man has a population of just over 80,000 (2006 Census) and is located in the middle of the Irish Sea, approximately 50km from Britain and 50km from Ireland. The island is approximately 52 km long by 22 km wide and has a land area of 572 km², with 160 km of coastline. The Manx Territorial Sea extends out to 12nm (22.2km) from shore, with a total sea area of nearly 4000km².

The Isle of Man has full jurisdiction out to the 3 nautical miles (nm) (5.6km) limit. From 3nm to 12nm the Isle of Man has responsibility for marine conservation, ownership of the seabed and mineral rights but fisheries management decisions have to be made with the agreement of the neighbouring jurisdictions (England, Northern Ireland, Wales, Scotland and the Republic of Ireland).

The first Conservation Officers were employed by the Isle of Man Government in 1998 and the first Marine Conservation Officer was employed in 2004. Chief Wildlife and Conservation Officer Liz Charter heads the Wildlife and Conservation Division, a team of five permanent officers and an additional Assistant Marine Officer, appointed in 2008 on a 3 year fixed term contract. With two dedicated Marine Officers it has been possible to begin to develop a much more pro-active approach to marine conservation.

The Wildlife and Conservation Division is part of the Department of Agriculture, Fisheries and

Forestry. Responsibilities for marine management issues are divided between a number of Government Departments. The Department of Local Government and the Environment is responsible for marine pollution issues, the Department of Transport owns the seabed and has responsibility for managing coastal erosion, sewage disposal and drainage. The Department of Trade and Industry is responsible for seabed minerals and their exploration and extraction.

The development of formal Marine Spatial Planning

Marine Spatial Planning is a process of managing the marine environment and marine resources sustainably through the allocation of space. It has recently become the focus for a number of pilot studies and strategies in the British Isles. In 2006 the Isle of Man had some involvement in a pilot project to look at the feasibility of Marine Spatial Planning in the Irish Sea and the Wildlife and Conservation Division are now leading a cross-government initiative to develop Marine Spatial Planning for the Manx Territorial Sea. It is hoped that this national initiative will also link into an EU-funded INTERREG project to look at Marine Spatial Planning across national borders in the Irish Sea.

Challenges:

On the Isle of Man, it has been a challenge to address the big issues in Marine Spatial Planning as individual officers with specialist responsibilities, so a co-ordinated project is a good way to take this forward.

Marine Spatial Planning can sometimes be presented as the solution to all marine conflicts and management challenges – it is important to see it is one core tool amongst others. Marine Spatial Planning can also be seen as a way of delaying decision-making on difficult issues, but if implemented effectively it is hoped that it will allow more effective decision-making in future.

Rapid development of new uses of the Isle of Man marine environment is currently overtaking the measured Marine Spatial Planning project. A major airport runway extension (Fig 2) and marine aggregate prospecting (Fig 3) have already taken place and there are discussions about marine aggregate extraction, offshore renewable energy development and possible hydrocarbon exploration. Our Marine Nature Reserve project will develop in parallel



*Figure 2. The Isle of Man Airport runway extension
(Photo: Clive Hanley)*

with the Marine Spatial Planning project. Ensuring that best practice is followed in the interim period before a formal Marine Spatial Planning system is established is vital.

Opportunities:

The appointment of a project officer will give a focus to Marine Spatial Planning in the Isle of Man and will bring relevant expertise together.

Small jurisdictions like the Isle of Man provide good trial sites for Marine Spatial Planning and numbers of marine developments and marine management initiatives are manageable so they can be easily understood by all involved.

Sharing of Marine Spatial Planning tools and protocols between UKOTs and CDs and other small island jurisdictions could be very beneficial.

Effective Marine Environmental Impact Assessment and good practice in coastal casework

What should we expect to see in a Marine Environmental Impact Assessment? In the Isle of Man we have recent experience of inadequate information in Marine EIAs and one case of a major coastal development where a desk based coastal/marine EIA was deemed insufficient through the terrestrial Planning system and a more extensive EIA

(which included original survey work and baseline data collection for monitoring) was a planning condition of the development.

Recently, the UK Institute of Ecology and Environmental Management released a draft version of their new Marine and Coastal Ecological Impact Assessment Guidelines:

www.ieem.net/docs/IEEM%20marine%20EcIA%20article.pdf

Once finalised, we hope that these guidelines will help consultants carrying out marine and coastal EIAs and those commissioning and assessing the EIAs.

Challenges:

A lack of case studies on marine development issues can mean that there are few guidelines on what we should be expecting and what is good practice.

Wide remits of conservation staff in small jurisdictions often mean that specialist staff are working outside their specialist area and need external advice on technical issues – e.g. aggregate extraction, marine pollution.

Opportunities:

Sharing case studies between UKOTs and CDs and other small island jurisdictions could support better decision-making and developing a contact list of marine expertise would also be useful.



Figure 3. Aggregate prospecting in Manx waters (Photo: DAFF)

This summer (2009) the Isle of Man Wildlife and Conservation Division have commissioned an MSc study by a student from the University of York to produce specific Isle of Man Guidelines for Marine Environmental Impact Assessment. It would be useful to know who already has similar guidelines and whether we could come up with something that would be useful for other jurisdictions.



Figure 4 – The Port Erin Closed Area

The challenges associated with establishing new Marine Protected Areas (MPAs) and ensuring effective management and monitoring of existing Marine Protected Areas.

Established MPAs in the Isle of Man

In the Isle of Man we have one well-established Marine Protected Area, the Port Erin Closed Area. This area was originally closed in 1989 as part of scallop dredging experiments carried out by Liverpool University's Port Erin Marine Laboratory. When the Marine Laboratory closed down in 2006, the Department of Agriculture, Fisheries and Forestry took on responsibility for the area and it became a permanent fisheries management area, closed to all scallop fishing (Fig 4).

The area has been extremely well-studied over the past twenty years and has shown dramatic increases in the numbers of scallops inside the closed area. Fishermen also report seeing the wider benefits of increased production of young scallops from the area, seeding adjacent fishing grounds. Fishing the line, where vessels fish up to the boundaries of the area, is often seen.

Fishermen were initially resistant to the closure of the Port Erin Closed Area, part of one of the most heavily fished scallop grounds in Manx waters. However, in the past few years most have become convinced of the fisheries benefits of the closure, leading to the main scallop fishermen's organisation, the Manx Fish Producers' Organisation,

instigating the closure of a second area as a scallop replenishment area. The second Fisheries Closed Area is in Douglas Bay, the capital of the Isle of Man and main port. This area was closed in February 2008 and trends in scallop populations and other effects are being monitored (Fig 5).

New Manx Marine Nature Reserve Project

The Isle of Man is making good progress with MPAs for fisheries

management and this is bringing clear conservation benefits, protecting areas of seabed from scallop dredging. However, there are no Marine Protected Areas in Manx waters that have been designated specifically for conservation. Legislation for Marine Nature Reserves was introduced into Manx law in 1990 as part of the Isle of Man Wildlife Act. In 1992 the Port Erin Marine Laboratory was key in a bid to establish the Calf of Man as the first Marine Nature Reserve. Extensive research was carried out and a detailed draft management plan put together, but a misunderstanding with the consultation on the draft management plan led to local residents fearing that they had no say in the management of the area and the whole project was boycotted. Since then there has been no real attempt to try and designate an MPA for marine conservation although the Manx Wildlife Trust kept working on



Figure 5. King scallops – one of the main commercial fishery species in Manx waters

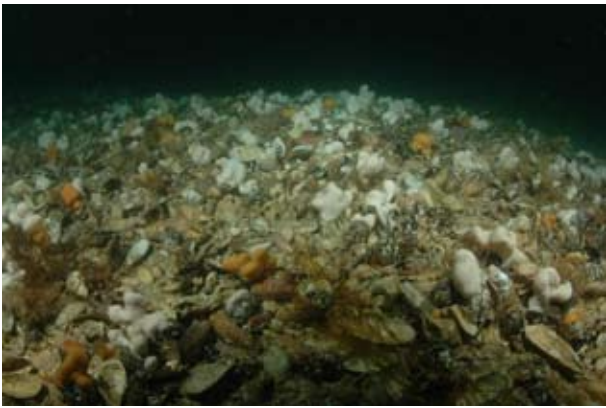


Figure 6. Horse mussel reef habitat in Manx waters
(Photo: Rohan Holt)

marine conservation issues raised through the process via their Marine Committee.

There are a wealth of marine habitats and species around the Isle of Man that need more active protection and would benefit from the designation of a Marine Nature Reserve. The Calf of Man has rich rocky reef and wall habitats and a high diversity of invertebrate life, with some species that have only been described from the site, and others that are extremely rare or restricted in distribution. However, there are many other sites that would meet MPA designation criteria elsewhere. The horse mussel (*Modiolus modiolus*) reef off the Point of Ayre (Fig 6) is one of only a few substantial horse mussel reefs in the British Isles and is an important habitat for many associated species. Maerl beds (a highly diverse habitat formed of calcareous seaweed), seagrass beds and important spawning grounds are also likely candidate sites. Recent research into cetaceans and basking sharks in Manx waters has also indicated the seasonal importance of coastal sites for these highly mobile protected species.

In October 2008, the Wildlife Division of DAFF



Figure 7. Manx Marine Nature Reserve stakeholder workshop, November 2008

launched a three year project to select and designate a Marine Nature Reserve, using a high level of community participation and stakeholder consultation. We met first with local fishermen to brief them on the project before it was advertised elsewhere and then launched the process with a one day invited stakeholder workshop (Fig 7). The workshop was designed by independent facilitators Dialogue Matters (www.dialoguematters.co.uk) who trained a local team of facilitators for group work and a series of activities to get the best possible information and discussion from participants.

Our target is to establish the first Marine Nature Reserve which provides active protection to important marine species and habitats by summer 2011. The high level of stakeholder consultation will continue over the next two years and social and scientific selection criteria will be used to identify candidate sites.

We have also run a series of eight open meetings in communities around the Island (Figs 8 & 9). These have been attended by a wide variety of marine stakeholders. We are currently drafting Marine Nature Reserve selection criteria (scientific and socio-economic) using best practice guidance from elsewhere (for example the OSPAR guidelines for selecting Marine Protected Areas) also incorporating information collected from community meetings. These criteria will be used to draw up a list of candidate sites for further consultation.

Challenges:

Manx fishermen are under pressure from all directions as fuel prices increase, scallop prices decrease and more sea areas are earmarked for developments. It is a priority to ensure that the Manx fishing community is fully involved, hence the ongoing community meetings to make the process accessible to all.

Marine conservation staff are also increasingly involved in new marine and coastal developments and other case work and this can reduce the time dedicated to pro-active and positive measures such as establishing effective MPAs.

Opportunities:

There is extensive experience of establishing Marine Protected Areas for conservation throughout the UKOTs and CDs and from other small island jurisdictions. Sharing experiences and best practice could support jurisdictions at an early stage in establishing MPAs.



Figure 8. Marine Nature Reserve community meeting in the Isle of Man, February 2009 (Photo: Stephanie Halsall)

Effective networks of MPA practitioners are in place in many regions – e.g. the Indian Ocean. Can there be more sharing and co-ordination of resources between small island jurisdictions globally to address those issues specifically faced by small islands?

Establishing communication between marine stakeholders in the same sector in different jurisdictions could also be very positive. For example, promoting links between fishermen, anglers or divers in areas at different stages in establishing networks of MPAs.

Cross-boundary co-operation (regional and international) to support effective monitoring and support compliance with international obligations/regional best practice.

The Isle of Man has its own environmental and wildlife protection legislation but it is not subject to the EU Directives which drive much of the site protection and active conservation measures implemented in EU countries – most notably the EU Habitats Directive. Many marine conservation initiatives in the Isle of Man are therefore aiming for some level of EU or global best practice but are not enshrined in law.

Agreement on realistic island-scale goals for monitoring and wildlife protection could support small jurisdictions to take steps towards larger scale reviews of legislation in line with larger countries.

The Isle of Man has a long history of monitoring sea temperature and other environmental variables.



Figure 9. Marine Nature Reserve community meeting – participatory techniques, February 2009 (Photo: Laura Hanley)

Sea temperature monitoring began in 1904 and has continued since then, first by the Port Erin Marine Laboratory and then taken over by the Government Laboratory on the closure of the Marine Laboratory in 2006. This monitoring has shown an increase in sea surface temperatures of at least 1°C over the century since records first commenced, with most of the increase occurring since the mid-1990s. It also showed mean local temperature for 2007 to have been the warmest on record (Government Laboratory 2007).

Marine biological monitoring is developing in Manx waters. The closure of Liverpool University's Port Erin Marine Laboratory was a great loss for marine monitoring and research around the Isle of Man. For decades the Laboratory was at the forefront of marine research in fields such as rocky shore ecology and fisheries assessment and biology. Without local marine science expertise it is important for Government departments to develop in-house capacity and also to build new links with universities, conservation counterparts and research institutions.

A good example of this is a joint monitoring initiative that the Wildlife and Conservation Division of DAFF has with the Countryside Council for Wales (CCW), the statutory nature conservation agency in Wales. CCW have an excellent marine monitoring programme in place in Wales and an active Marine Monitoring Team with staff divers who have extensive experience of marine research and survey. In 2007 a reciprocal agreement was established whereby CCW divers have set up permanent monitoring stations on the horse mussel reef in the Isle of Man (Fig 10) and a Manx marine consultant is providing expertise in analysing video and



Figure 10. CCW diver on horse mussel survey in Manx waters

photographic imagery of the site. The Isle of Man has gained valuable external marine monitoring expertise and CCW have gained an external control site with which to compare trends observed at their Welsh sites. It is hoped that in future this collaboration could develop into a much wider programme of research and survey into horse mussel reefs which are diverse biogenic habitats, vulnerable to damage and a conservation priority regionally.

Bangor University in Wales has been employed to provide fisheries management advice and as part of a diverse programme of fisheries research, Bangor scientists have carried out a broad drop down camera and video survey of Manx waters (Fig 11) to aid fisheries stock assessment and also to assess habitats. This is the first systematic survey of Manx marine habitats and we are awaiting the results which will assist in fisheries management and marine conservation.

The loss of the Port Erin Marine Laboratory has also led to the development of much more community monitoring and data collection which has also

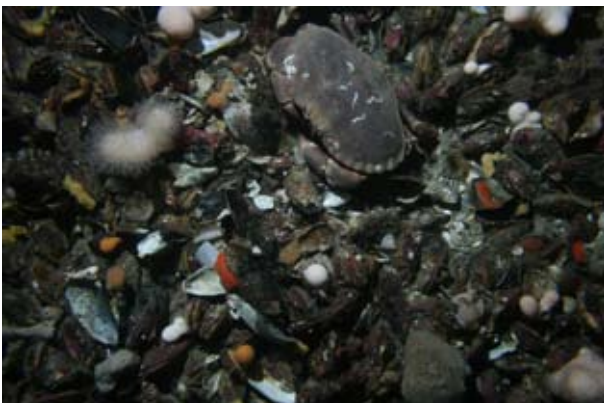


Figure 11. Bangor University seabed survey photograph (Photo: Bangor University)

provided an opportunity for education and awareness raising.

Manx Birdlife (formerly the Manx Bird Atlas) is a Manx research organisations that has been in existence since 1997 and has carried out a comprehensive survey of Manx birds, resulting in the publication of the first Manx Bird Atlas in 2006. In 1999 Manx Birdlife carried out a survey of coastal birds around the Isle of Man and they are embarking on a new round of comparable surveys this year which will provide a 10 year comparison.

Manx Birdlife also carried out seal haul out site surveys between 2006 and 2008 which have provided valuable baseline data on seal use of the Manx coast.

In 2005 two marine organisations developed as part of the Manx Wildlife Trust. Manx Basking Shark Watch started out co-ordinating public sightings of basking sharks in Isle of Man waters. Basking sharks are the second biggest fish in the world, second only to whale sharks, and can grow to well over 10m (Fig 12). The Isle of Man is now thought to be a global hotspot for the species and is one of the best places in the world to see basking sharks from shore. The scheme now records over 500 sightings of basking sharks each year and has hundreds of regular recorders who not only report sightings but also detailed accounts of behaviour, photographs and videos. Manx Basking Shark Watch is now developing leading basking shark research and in 2007 a shark tagged in Manx waters was the first to be recorded crossing the Atlantic (Gore *et al.* 2008). This research has attracted international attention and has led to the Isle of Man hosting the first international basking shark conference in August 2009.

www.manxbaskingsharkwatch.com



Figure 12. Basking shark in Manx waters



Figure 13. Seasearch divers collect biological data on a recreational dive

Manx Whale and Dolphin began as part of the Manx Wildlife Trust and has since evolved into an independent organisation. This organisation also started out collecting public sightings of cetaceans but has since developed into a research operation, carrying out systematic offshore surveys of whales and dolphins in the Manx Territorial Sea. MWDW has also started the first photo-identification catalogue for Risso's dolphins which frequent Manx waters and are finding matches locally and further afield.

MWDW also has a network of hundreds of regular reporters who contribute sightings and a smaller number of observers who do regular effort-based watches.

www.mwdw.net

SCUBA diving is a popular hobby in the Isle of Man and is also attracting increasing numbers of visitors. We are slowly developing schemes to encourage recreational divers to record important information on marine species and habitats. The UK Marine Conservation Seasearch programme involves initial classroom training to fill in two different levels of survey forms. A number of Manx divers have been trained in the Seasearch methods and we are slowly increasing the number of recreational dives that contribute important marine information (Fig 13).

<http://seasearch.wisshost.net/>

Challenges:

Lack of local scientific expertise, especially after the loss of a well-respected research laboratory is an ongoing challenge but a combination of developing local capacity and external links is working slowly to fill the gaps.

Funding is an issue for larger marine survey and monitoring projects, particularly more comprehensive seabed surveys. Collaboration with universities with access to European funding, UK Research Council grants and other scientific funding sources may be an option.

Opportunities:

Working in partnership with other organisations to develop effective survey and monitoring has been beneficial. Developing more links with universities would be very positive.

Working with UKOTs and CDs to share ideas and resources on cost-effective approaches to marine survey and monitoring would be beneficial.

Education and awareness raising at every level – the special challenge for marine management.

Environmental education is discussed in detail elsewhere but marine conservation presents a special challenge. The majority of the species and habitats which we are trying to conserve are invisible to all but a minority of the population. This is perhaps more of an issue in the cooler waters of temperate islands where it is much more difficult to get people face to face with the marine environment.

In the Isle of Man we are benefitting from the current interest of the UK media in British marine and coastal life. A number of different TV series have featured underwater footage from the British Isles, including the Isle of Man.

In the Isle of Man, the Manx Wildlife Trust takes an important role in environmental education and employs a part time Education Officer who works with schools and other organisations to raise environmental awareness and encourage fieldwork.

Manx Basking Shark Watch has taken a key role in marine awareness raising through the best known Manx marine species, the basking shark. Their visibility and accessibility make basking sharks an excellent focus for generating interest in the marine environment. Basking sharks can be seen easily from land at two of the island's coastal towns and this gives people a real connection with the Manx marine environment.

The Wildlife and Conservation Division have been



Figure 14. Cool Seas Roadshow visits Isle of Man school

promoting marine environmental education since 2004. The Division has run a regular public lecture series, promoted visits of the Cool Seas Roadshow (life-size marine animals such as basking sharks and associated interpretation – Fig 14) to primary schools and run training courses on a variety of marine topics. The Division is also working with the Department of Education to incorporate more marine education into the Manx curriculum. In the Isle of Man there is now a tailor-made Manx curriculum in some subject areas such as history but the Manx marine environment is not yet formally incorporated into the curriculum.

There is the need for more Manx marine and coastal education resources. DAFF and the Department of Education co-funded the UK Field Studies Council to produce the Manx Rocky Shore Resources pack which has been very successful and helped primary school teachers to get their pupils doing rocky shore fieldwork.

Challenges:

Informing politicians and decision-makers about the importance and value of the marine environment is a huge challenge and a priority. Very little marine education targets these groups but they often have the most influence on the big issues that threaten the marine environment. Is this a challenge elsewhere? How have people addressed it?

Opportunities:

Many resources and ideas exist for improving marine education provision in schools, and fostering a sense of wonder in and responsibility for the marine environment in children is a priority. To ensure that the wider community understands the need for active marine conservation I suggest that continuing or adult education holds great possibilities. I have run two community “Introduction to Marine

Conservation” evening classes over the past year and they have been very well received and there is a lot more interest in developing open access marine education opportunities further. A great advantage of such classes is that it is a dialogue and the tutor constantly learns from the class as they all bring diverse marine experience.

Sharing experience of how to engage the whole community in marine conservation will be very beneficial. Whether it is economic benefits to convince Government Treasury of the value of our seas, or linking marine litter to stranded leather-back turtles to make an impact on teenagers, the more evidence we can gather collectively, the more effective we can all be in protecting the marine environment (Fig 15).

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Figure 15. Pollack and kelp in Manx waters. (Photo: Caroline Perry)

The Chagos Archipelago: Its Nature and Future

Dr John Turner (Chagos Conservation Trust & Bangor University)



Turner, J. 2010. The Chagos Archipelago: Its Nature and Future. pp 209-210 in *Making the Right Connections: a conference on conservation in UK Overseas Territories, Crown Dependencies and other small island communities, Grand Cayman 30th May to 5th June 2009* (ed. by M. Pienkowski, O. Cheesman, C. Quick & A. Pienkowski). UK Overseas Territories Conservation Forum, www.ukotcf.org

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New Ocean Monuments Give President Bush a Blue Legacy

In January 2009, President Bush designated three new Marine National Monuments in the Pacific Ocean totalling more than 505,000 km² (95,000 square miles):

- Rose Atoll Marine National Monument (MNM) in American Samoa
- 7 uninhabited islands as the Pacific Remote Islands MNM
- Mariana Trench MNM in the Northern Mariana Islands

Together with the north-western Hawaiian Islands (Papahānaumokuākea) Marine National Monument, which was established in 2006, President Bush designated monuments protecting 869,000

km² (335,561 sq.miles) of ocean, a larger area of the world's marine environment than protected by any other person in history!

Global Legacy Reserves

The Pew Environment Group of the Pew Charitable Trusts have proposed world-scale marine reserves, places where no fishing or extractive activity is allowed, to protect our global marine heritage for future generations and to celebrate our shared ocean legacy. Such Strict Marine Reserves are defined as ocean areas that are permanently and fully protected from activities that remove animals and plants or alter habitats, except as needed for scientific monitoring. They are not seasonal or short term; they must be enforced. Strict Marine





Size of the Chagos Archipelago relative to southern UK

Reserves cover 0.01% of the world's ocean compared with Marine Protected Areas which cover 0.6% (although recent Ocean Legacy Reserves will increase these figures by an order of magnitude)

The British Indian Ocean Territory (BIOT) consists of the Chagos Archipelago, and covers an area equivalent to mid-southern England, consisting of 55 islands in a quarter of a million square miles (over half a million km²) of ocean. It is the most pristine tropical marine environment on the planet, and Britain's greatest area of marine diversity. Because of the coral reefs that occur in BIOT and the other UKOTs, the UK is ranked 12th in reef area in the world. The Chagos Conservation Management Plan has recently been expanded, proposing to protect 30% of the atolls and reef areas (this is awaiting implementation by the BIOT Administration).

The latest proposal is to create the Chagos Marine Park, on the scale of an Ocean Legacy Reserve. The plans are outlined in the brochure *The Chagos Archipelago: Its Nature and Future* (CCT 2009).

The aim is to encourage the British Government to make Chagos a very large marine protected area, comparable with those of the Galapagos or Great Barrier Reef. Sites like this are few in the world today – those left need the greatest protection

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A little of the exceptional biodiversity of the Chagos

Discussion

The discussion and questions to speakers centred on three main themes, and are summarised below under corresponding headings.

Protected Areas and Spatial Planning

The benefits that would accrue from more research into the effectiveness of Protected Areas and their integration into Sustainable Development Strategies and similar frameworks were noted. It was suggested that the approach to marine spatial planning and Protected Areas in the Isle of Man provided a good model, particularly where different marine zones existed in close proximity. The Isle of Man experience also emphasised the benefits of actively involving stakeholders (in this case, fishermen) in the process of spatial planning and Protected Area management.

Environmental Democracy

There was widespread dismay at the situation that had arisen in the Turks and Caicos Islands, and warm appreciation and support for all those locally who had fought to protect the environment under such difficult conditions. It was acknowledged that ‘environmental activism’ was particularly challenging in such circumstances; although it could lead to positive results, considerable courage was required to champion environmental causes and good governance where a climate of fear prevailed. It appeared that some of the excesses reported from the Turks and Caicos had been reduced as a result of UK Government intervention, in a general sense and (for example) in relation to the availability of EIAs on previous developments, allowing for the challenging of specific projects. However, the process of ‘recovery’ in TCI was inhibited by day-to-day challenges, such as lack of funds to pay civil service salaries. It was agreed that many lessons needed to be learnt from the recent experience in the Turks and Caicos, and that these would be valuable in guiding future advocacy for good governance and environmental protection in the UKOTs and more widely.

Legal and policy frameworks

There was some surprise at the extent of differences in relevant legislation that existed across the

UKOTs; some assumed that their common status as UK Territories implied a harmonisation of environmental (and other) legislation. Whilst relevant local legislation needed to reflect local circumstances, it was felt that a greater degree of commonality in approach (and, where appropriate, detail) would be useful, for example, in fostering cross-Territory cooperation and mutual support.

The Marine and Coastal Access Bill currently before Parliament in the UK was noted. This was essentially a piece of British domestic legislation, and did not encompass UKOTs, although UKOTCF had (through the consultation on the Bill) lobbied for it to include access for UKOTs to technical and advisory bodies. It was noted also that the mention of UKOTs in the EU Sustainable Development Strategy was a consequence of petitioning from UKOTCF.

As with Protected Areas, it was noted that robust enforcement measures were required to ensure that policy, and particularly legal, frameworks were effective and adhered to.

Declaring international protected areas in UK Crown Dependencies and Overseas Territories: the role of the Ramsar and World Heritage Conventions

John Cooper (CORE Initiatives, South Africa)



Cooper, J. 2010. Declaring international protected areas in UK Crown Dependencies and Overseas Territories: the role of the Ramsar and World Heritage Conventions. pp 212-220 in *Making the Right Connections: a conference on conservation in UK Overseas Territories, Crown Dependencies and other small island communities, Grand Cayman 30th May to 5th June 2009* (ed. by M. Pienkowski, O. Cheesman, C. Quick & A. Pienkowski). UK Overseas Territories Conservation Forum, www.ukotcf.org

Currently there are 23 inscribed or designated Wetlands of International Importance listed under the Ramsar Wetland Convention in 11 of 19 UK Overseas Territories and Crown Dependencies (UKOTCDs), with a total area of 493,040 ha. In contrast, there are only two Natural Properties inscribed on the World Heritage Convention list within UKOTCDs: Henderson Island, Pitcairn Islands and Gough and Inaccessible Islands, Tristan da Cunha, totalling 401,600 ha. Seven UKOTCDs (Anguilla, Ascension, British Antarctic Territory, Gibraltar, Montserrat, South Georgia and the South Sandwich Islands and St Helena) currently have no registered international sites or natural properties. A UKOTCF report to Defra in 2005 proposed 76 new Ramsar sites in UKOTCDs, including in those that currently do not support a Ramsar site. Eight of these have now been designated. No proposed World Heritage Natural Properties within UKOTCDs are currently listed on the UK's tentative list, although a review of UK's approach to World Heritage Sites is currently underway. The UKOTCF's regional working groups seem ideally suited to pursue the further declaration of international sites within UKOTCDs, by actively advising and by producing proposals, which could extend to producing draft nomination texts. Consideration should be given to the steps needed to ensure that all UKOTCDs support at least one internationally protected area, and to develop priorities for additional or extended sites for those UKOTCDs which already have at least one such area.

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Introduction

Gaining an international status for a protected area can bring several advantages. Firstly, awareness of the protected area is enhanced on a global scale. This increased awareness, can, and often does, bring an increased level of eco-tourism with its ability to “plough back” financial resources into management. Secondly, an international status can smooth the way for funding applications for management and research funds, including to the international registering bodies themselves. Third-

ly, and perhaps most importantly, gaining (or even the act of applying for) an international status helps both move the environmental issues the protected area faces “further up the agenda” of the governmental environmental authorities and develops a sense of pride among (and thus a willingness to lend support from) the local population. This enhanced sense of pride in the local natural environment may be particularly significant in isolated communities, where close familiarity might have resulted in the special habitats and endemic species they husband being taken somewhat for granted.

An international status will help open eyes domestically as to how the World values the communities' natural resources, and to their intrinsic worth.

Two major conventions award an international status to natural areas:

The Convention on Wetlands of International Importance especially as Waterfowl Habitat (Wetlands Convention, <http://www.ramsar.org>), signed

in Ramsar, Iran in 1971, is an intergovernmental treaty which provides the framework for national action and international cooperation for the conservation and wise use of wetlands and their resources. There are presently (updated 11 January 2010) 159 Contracting Parties to the Convention, with 1881 wetland sites, totalling 185 million hectares, designated for inclusion in the Ramsar List of Wetlands of International Importance. The definition of a Ramsar Wetland is a broad one, that allows, for example, the designation of peat bogs,

Table 1. Criteria for Identifying Wetlands of International Importance

Group A. Sites containing representative, rare or unique wetland types

Criterion 1: A wetland should be considered internationally important if it contains a representative, rare, or unique example of a natural or near-natural wetland type found within the appropriate biogeographic region.

Group B. Sites of international importance for conserving biological diversity

Criteria based on species and ecological communities

Criterion 2: A wetland should be considered internationally important if it supports vulnerable, endangered, or critically endangered species or threatened ecological communities.

Criterion 3: A wetland should be considered internationally important if it supports populations of plant and/or animal species important for maintaining the biological diversity of a particular biogeographic region.

Criterion 4: A wetland should be considered internationally important if it supports plant and/or animal species at a critical stage in their life cycles, or provides refuge during adverse conditions.

Specific criteria based on waterbirds

Criterion 5: A wetland should be considered internationally important if it regularly supports 20,000 or more waterbirds.

Criterion 6: A wetland should be considered internationally important if it regularly supports 1% of the individuals in a population of one species or subspecies of waterbird.

Specific criteria based on fish

Criterion 7: A wetland should be considered internationally important if it supports a significant proportion of indigenous fish subspecies, species or families, life-history stages, species interactions and/or populations that are representative of wetland benefits and/or values and thereby contributes to global biological diversity.

Criterion 8: A wetland should be considered internationally important if it is an important source of food for fishes, spawning ground, nursery and/or migration path on which fish stocks, either within the wetland or elsewhere, depend.

Specific criteria based on other taxa

Criterion 9: A wetland should be considered internationally important if it regularly supports 1% of the individuals in a population of one species or subspecies of wetland-dependent non-avian animal species.

coastal cliffs and shallow marine waters, as well as what are more usually considered as wetlands (essentially lakes and rivers). Indeed, in practice, what is acceptable is even broader, as witnessed by the inclusion of territorial waters extending out to 12 nautical miles (and this very much deeper than six metres at low tide) within several Ramsar sites, including the UK's Gough Island and Inaccessible Island Nature Reserves in the Tristan da Cunha Group. To qualify for listing, a site must fulfill at least one of the nine criteria developed by the Convention, which relate to such aspects as biodiversity, numbers of water birds and the presence of threatened species (Table 1). In practice, sites are usually designated on more than one criterion.

The Convention Concerning the Protection of the World Cultural and Natural Heritage (World Heritage Convention; <http://whc.unesco.org>), signed in Paris, France in 1972, seeks to encourage the identification, protection and preservation of cultural and natural heritage around the world considered to be of outstanding value to humanity. There are currently (updated 11 January 2010) 186 States Parties, with 890 inscribed properties, of which, however, only 176 are deemed to be natural sites. A natural property nomination is produced addressing up to four criteria, covering aspects of

the geomorphology, habitats, ecological processes, biodiversity and threatened species occurring within the site (Table 2).

The United Kingdom, including its Overseas Territories (less British Antarctic Territory) and Crown Dependencies, is a Contracting Party to the Ramsar Convention (entered into force in 1976) and a States Party of the World Heritage Conventions (ratified in 1984). Currently the UK has designated 169 Ramsar Sites (with a total area of 1.274 million hectares). In contrast, the UK has only four natural sites inscribed on the World Heritage List, with a total listed area of 404 220 ha.

International Ramsar Sites and World Heritage Natural Properties within UK Overseas Territories and Crown Dependencies

Twenty-three (13.7%) of the UK's 168 Ramsar sites fall within its Overseas Territories and Crown Dependencies (UKOTCDs). These sites, however, have a total area of 493 040 ha, or 42.6% by area of the UK's designated sites (Table 3). Of the four UK World Heritage natural sites, two (Gough and Inaccessible Islands, Tristan da Cunha and Hend-

Table 2. Criteria for assessing natural properties for nomination to the World Heritage Convention

The World Heritage Committee considers natural properties to have Outstanding Universal Value if they meet one or more of the following four criteria:

(vii) contain superlative natural phenomena or areas of exceptional natural beauty and aesthetic importance;

(viii) be outstanding examples representing major stages of earth's history, including the record of life, significant on-going geological processes in the development of landforms, or significant geomorphic or physiographic features;

(ix) be outstanding examples representing significant on-going ecological and biological processes in the evolution and development of terrestrial, fresh water, coastal and marine ecosystems and communities of plants and animals; and

(x) contain the most important and significant natural habitats for *in-situ* conservation of biological diversity, including those containing threatened species of outstanding universal value from the point of view of science or conservation.

Notes

1. The protection, management, authenticity and integrity of properties are also important considerations.
2. Criteria (i) to (vi) apply to cultural properties.

Table 3. Ramsar Sites within United Kingdom Crown Dependencies and Overseas Territories

Crown Dependencies

***Bailiwick of Guernsey, including also Alderney and Sark* (3)**

Alderney West Coast and the Burhou Islands, 24/08/05 15 629 ha
Lihou Island and L'Erée Headland 01/03/06 427 ha
Gouliot Caves and Headland, Sark 09/04/07 4 ha

***Isle of Man* (1)**

Ballaugh Curragh 06/09/06 193 ha

***Jersey* (4)**

Les Écréhous & Les Dirouilles 02/02/05 5459 ha
Les Minquiers 02/02/05 9575 ha
Les Pierres de Lecq (the Paternosters) 02/02/05 512 ha
South East Coast of Jersey 10/11/00 3210 ha

UK Overseas Territories

***Bermuda* (7)**

Hungry Bay Mangrove Swamp 11/05/99 2 ha
Lover's Lake Nature Reserve 11/05/99 2 ha
Paget Marsh 11/05/99 11 ha
Pembroke Marsh East 11/05/99 8 ha
Somerset Long Bay Pond 11/05/99 1 ha
Spittal Pond 11/05/99 10 ha
Warwick Pond 11/05/99 2 ha

***British Indian Ocean Territory* (1)**

Diego Garcia 04/07/01 35 424 ha

***British Virgin Islands* (1)**

Western Salt Ponds of Anegada 11/05/99 1071 ha

***Cayman Islands* (1)**

Booby Pond & Rookery 21/09/94 82 ha

***Cyprus Sovereign Base Areas* (1)**

Akrotiri 20/03/03 2171 ha

***Falkland Islands* (2)**

Bertha's Beach 24/09/01 4000 ha
Sea Lion Island 24/09/01 1000 ha

***Tristan da Cunha* (2)**

Gough Island 20/11/08 229 811 ha
Inaccessible Island 20/11/08 126 524 ha

***Turks & Caicos Islands* (1)**

North, Middle & East Caicos Islands 27/06/90 58 617 ha

Table 4. World Heritage Natural Properties within UK Overseas Territories

Pitcairn Islands

Henderson Island 1988 3700 ha

Tristan da Cunha

Gough and Inaccessible Islands 2004 397 900 ha

Notes

1. The Gough Island World Heritage Natural Property was inscribed in 1998 and included territorial waters to the then limit of three nautical miles. In 2004 the property was extended to include Inaccessible Island and renamed, with the boundaries of both islands reaching to 12 nautical miles, the new territorial limit.
2. Although the 12-nautical mile boundaries of the Gough and Inaccessible Islands World Heritage Property and the Gough Island and Inaccessible Ramsar Sites are the same, different measuring methods have resulted in their areas being listed as of different sizes by the two conventions.

erson Island, Pitcairn Islands) fall within UKOTs (Table 4), with a total area of over 401 600 ha (99.4%). The high area percentages for UKOTs (there are no World Heritage natural sites within UK Crown Dependencies) are due to the inclusion, with Gough and Inaccessible Islands, of their territorial waters extending out to 12 nautical miles, in both the Wetlands and World Heritage Conventions.

Eleven of the 19 UKOTCDs (or 13 of 21 if Alderney and Sark are counted separately) support Ramsar sites and two (Tristan da Cunha and Pitcairn) support World Heritage natural properties. Only Tristan has sites registered with both conventions. Seven UKOTCDs (Anguilla, Ascension, British Antarctic Territory, Gibraltar, Montserrat, South Georgia and the South Sandwich Islands and St Helena) currently have no registered international sites or natural properties with either convention.

Table 5. Proposed Ramsar Sites within United Kingdom Crown Dependencies and Overseas Territories (After Pienkowski 2005)

Site Name	Overseas Territory/ Crown Dependency
	Crown Dependencies
The Ayres	Isle of Man
Southern Coasts & Calf of Man	Isle of Man
Central Valley Curragh	Isle of Man
Gob ny rona, Maughold Head & Port Cornaa	Isle of Man
Dalby Peatlands	Isle of Man
North Herm and Les Amfrocques	Guernsey
Orchid Fields at Rocquaine Bay	Guernsey
St Ouen's Bay and Les Mielles	Jersey
	Overseas Territories
Bay of Gibraltar	Gibraltar
Devonshire Marsh East and West Basins	Bermuda
Trott's Pond and Mangrove Lake	Bermuda
Walsingham Formation – Karst and Caves	Bermuda
Harrington Sound and Notch	Bermuda
Reef areas	Bermuda
Castle Bay Islands and reef	Bermuda
Central Mangrove Wetland, Little Sound, Ponds and associated Marine Zones	Cayman Islands
Little Cayman Crown Wetlands and Marine Parks	Cayman Islands
Salina Reserve	Cayman Islands
Barker's Wetland	Cayman Islands
Grand Turk salinas, ponds and shores	Turks and Caicos Islands
Salt Cay creeks and salinas	Turks and Caicos Islands
Turks Bank Seabird Cays	Turks and Caicos Islands
Caicos Bank Southern Cays	Turks and Caicos Islands
West Providenciales Wetlands	Turks and Caicos Islands
West Caicos saline lake and coral reef system	Turks and Caicos Islands
Leeward-Going-Through Cays	Turks and Caicos Islands
Anegada Eastern Ponds and The Horseshoe Reef	British Virgin Islands
Fat Hogs and Bar Bays	British Virgin Islands

Site Name	Overseas Territory/ Crown Dependency
Sombrero Island	Anguilla
Dog Island & Middle Cay	Anguilla
Prickly Pear Cays	Anguilla
Scrub & Little Scrub Islands	Anguilla
Anguilla mainland wetlands	Anguilla
Montserrat NW coasts and marine shallows	Montserrat
Centre Hills and forested ghauts	Montserrat
Ascension Island	Ascension Island
St Helena Central Peaks	St Helena
St Helena inshore waters, stacks and cliffs	St Helena
Fisher's Valley	St Helena
Nightingale Group	Tristan da Cunha
Tristan Island	Tristan da Cunha
East Bay, Lake Sullivan and River Doyle	Falkland Islands
Pebble Island East	Falkland Islands
Cape Dolphin	Falkland Islands
Concordia Beach & Ponds, Limpet Creek and Cape Bougainville	Falkland Islands
Seal Bay	Falkland Islands
Volunteer Point	Falkland Islands
Kidney Island and Kidney Cove	Falkland Islands
Cape Peninsula, Stanley Common and Port Harriet	Falkland Islands
Swan Inlet and Ponds	Falkland Islands
Flats Brook and Bombilla Flats	Falkland Islands
Lafonia ponds and streams catchment	Falkland Islands
Bull Point	Falkland Islands
Beauchêne Island	Falkland Islands
Jason Islands Group	Falkland Islands
Keppel Island	Falkland Islands
Hawks Nest Ponds	Falkland Islands
Bird Island	Falkland Islands
New Island Group	Falkland Islands
South Georgia	South Georgia and the South Sandwich Islands
South Sandwich Islands	South Georgia and the South Sandwich Islands
Chagos Banks	British Indian Ocean Territory
Ducie Island	Pitcairn Islands

Site Name	Overseas Territory/ Crown Dependency
Henderson Island	Pitcairn Islands
Oeno Island	Pitcairn Islands
Browns Water, Pitcairn	Pitcairn Islands
Coastal waters, Pitcairn	Pitcairn Islands

Proposed international Ramsar Sites and World Heritage Natural Properties within UK Overseas Territories and Crown Dependencies

In 2005 the UK Overseas Territories Conservation Forum (UKOTCF) submitted a report commissioned by the UK Department for Environment, Food and Rural Affairs (Defra) that reviewed existing and potential Ramsar sites within UKOTCDs (Pienkowski 2005). A total of 76 potential sites was identified in the review for consideration for designation to the Wetlands Convention, each with a draft account prepared in the format required by the Wetlands Convention Secretariat (see below).

Nine of these potential sites have subsequently been designated as Ramsar sites by the UK Government; the most recent designations being of the Gough Island and Inaccessible Island Nature Reserves, leaving a total of 67 identified potential sites within UKOTCDs (Table 5).

No proposed World Heritage Natural properties are currently on the UK's tentative list. However, in December 2008 the UK Department for Culture, Media and Sport (DCMS) released for comment a consultation paper aimed at identifying, protecting and promoting the UK's World Heritage, including within UKOTCDs (DCMS 2008).

Applying for Ramsar and World Heritage international status

The UNESCO World Heritage Committee publishes operational guidelines (<http://whc.unesco.org/en/guidelines/>), which set out procedures for inscription of sites on the World Heritage List, detail criteria for the judgment of outstanding universal value (see Table 2) and provide guidance on

the submission of nominations. Nominations are then reviewed by the World Conservation Union (IUCN), prior to their being formally considered for inscription by the committee. Before a site can be formally nominated it has to be placed on the tentative list held by the convention. Nomination documents tend to be bulky and require maps and photographs. Texts may run to 100 pages or more, not counting the often numerous annexes, such as the texts of management plans. The need to undertake a comparative analysis (not required for Ramsar site designations) adds to the complexity of the task. Because World Heritage properties are regarded as of "outstanding value to humanity", there is no certainty that a nominated site will be accepted, and an unfavourable review usually leads to the withdrawal of a nomination before it comes before the World Heritage Committee.

Further, countries with a number of World Heritage Properties listed (such as the UK) are currently discouraged from submitting new sites, including from, it may be assumed, UKOTCDs. Because of this complexity, it is likely that many (if not most) UKOTCD governments will see the preparation of a World Heritage nomination as a daunting task, to be placed in the "too hard" box, as more immediate environmental issues take up their available capacity.

In contrast, designating a Ramsar wetland site is a relatively simple exercise, that appears to be more within the reach of UKOTCDs to effect. There is no comparative analysis required, and once a Party has designated a site, the Ramsar Secretariat restricts its role to assessing that the site meets the requirements of the Convention for defining a wetland of international importance (see Table 1) and that the text (for which a format called an "Information Sheet on Ramsar Wetlands (or RIS) is available) has been properly completed along with the required map. The RIS should be "succinct" and not normally exceed 12 pages in length. An "Explanatory Note and Guidelines for completing the Information Sheet on Ramsar Wetlands (RIS)" document (http://www.ramsar.org/ris/key_ris_e.htm#note) sets out in comprehensive detail how to prepare a designation.

Further, there is no formal requirement for a management plan for a prospective Ramsar site to be in place, unlike for the World Heritage Convention where it is stated as a requirement for a nomination. For the Wetlands Convention, the Contracting Party makes the decision by designation, again

unlike for the World Heritage Convention, where the States Party make a nomination with no certainty it will be successful.

Finally, both conventions allow for existing sites and properties to be extended. Such extensions may well be a simpler process to follow than proposing a new international site. Within a UKOTCD context, this route has already been followed, when the UK successfully applied in 2004 for an extension of the Gough Island Wildlife Reserve to include both a larger marine component and the Inaccessible Island Nature Reserve, under the new name of Gough and Inaccessible Islands World Heritage Property (see footnotes to Table 4).

A way forward for UK Overseas Territories and Crown Dependencies

The UKOTCF's regional working groups seem ideally suited to pursue the further declaration of international sites within UKOTCDs, by actively advising and by producing proposals, which could extend to producing draft nomination texts. Where capacity and/or available finances are limiting within UKOTCDs (as seems to be the usual case), then the UKOTCF could work in tandem with the various UKOTCD governments to make funding applications and help appoint contractors to draft texts. Such a procedure was broadly followed by Tristan da Cunha in successfully applying in 2007 for a small grant (GBP 3000) to the UK's Overseas Territories Environment Programme (a joint programme of the Department for International Development (DFID) and the Foreign and Commonwealth Office; www.ukotcf.org/OTEP/index.htm) to complete Ramsar Information Sheets for the Gough Island and Inaccessible Island Nature Reserves. The Tristan Government then contracted with Conservation and Restoration (CORE) Initiatives, a South African-based environmental consultancy, to produce the two RISs and electronic maps. This task was made easier by the existence of draft RISs for the two island reserves, produced by UKOTCF two years previously (Pienkowski 2005). In fact, draft RISs prepared by the UKOTCF exist for all 67 of the proposed Ramsar sites within UKOTCDs (see Table 4), making any UKOTCD government able to "hit the ground running" in working towards a designation.

The situation for World Heritage Sites is, as stated above, more complex. However, the principle of utilizing the skills and knowledge base and interest

of the UKOTCF and the members of its regional working groups still applies, although it seems likely that more input from the responsible UK Government departments will be required.

Working towards a "wish list" for new international sites in UK Overseas Territories and Crown Dependencies

It is proposed that, in principle, all UKOTCDs should support at least one internationally protected area. Currently Anguilla, Ascension, British Antarctic Territory (BAT), Gibraltar, Montserrat, South Georgia and the South Sandwich Islands, and St Helena have no designated sites. BAT falls within the competence of the Antarctic Treaty and is thus a special case, which is not considered further here (and anyway has not been included within the UK ratification of the Wetlands Convention).

Ramsar Sites have been proposed (Table 5) for all six of these UKOTCDs, totalling 14 sites. For two UKOTs (Ascension and South Georgia and the South Sandwich Islands) the whole territory has been proposed for listing in the Wetlands Convention (Pienkowski 2005). Designation of a site (or sites) within the latter UKOT may be seen as problematic as the territory is claimed by Argentina. However, this dispute did not deter the UK from designating in 2001 two Ramsar sites (Table 3) within the Falkland Islands (which are also claimed by Argentina). The list of sites on the Ramsar web site notes that the Argentine Republic has disputed the Falkland sites "by diplomatic notification", which, it can be assumed, it would do once more if the UK designated a site within South Georgia and the South Sandwich Islands. The situation with the BIOT and Mauritius appears broadly analogous (Chagos Conservation Trust 2009).

Which Ramsar sites are first chosen for designation from (or from outside) the potential list will largely depend on each UKOTCD determining its own priorities, but the following have been suggested for consideration (M. Pienkowski *in litt.*): Sombrero Island and Dog Island & Middle Cay, Anguilla; Ascension (most protected areas on island as a consolidated site); Centre Hills, Montserrat; South Georgia (effectively whole island); and Central Peaks, St Helena. Given the dry nature of much of Ascension, the proposed extent includes the cloud forest, the island's turtle beaches and seabird colonies, and certain other areas important

for wetland invertebrates and marine organisms. Such an argument may also be applied to leaving out the glaciated and mountainous interior of South Georgia (D. Christie pers. comm.).

In relation to the World Heritage Convention, in the first instance UKOTCDs would need to request that the properties they would wish to be nominated be added by the UK to its tentative list. Once that step had been achieved, then a process of applying for funds and contracting out the preparation of a nomination document would need to be followed. The World Conservation Union usually (but not always, as was the case with the Gough and Inaccessible Islands World Heritage Property - where no inspections were carried out, due largely to the difficulties of arranging short-time access) provides an expert to make an on-site evaluation of a nominated site, so UKOTCDs would need to factor this into their work schedule and budgets.

In the absence of a UKOTCD-wide review of prospective properties, and based on the very high value and status expected of a World Heritage natural property, the Chagos Archipelago, British Indian Ocean Territory and the Island of South Georgia appear worthy of inclusion on the UK's tentative World Heritage list (see DCMS 2008). Nomination of the former site could perhaps be linked with a large Marine Protected Area that has been proposed for the archipelago (Chagos Conservation Trust 2009; Turner, this volume). It has been recommended that the UK's tentative list be revised (DCMS 2008), so the time seems right to consider proposing the inclusion of these two UKOT sites. It is interesting to note that both these localities are considered to be managed as if they were already registered as World Heritage natural properties (Sheppard & Spalding 2003, Pasteur & Walton 2006, DCMS 2008, Chagos Conservation Trust 2009). However, the disputed status of both Overseas Territories makes either nomination to the World Heritage Convention particularly problematic (D. Christie & J. Turner pers comm.).

In addition, it is suggested that consideration could be given by the Pitcairn Islands to motivating for the extension of the existing Henderson Island World Heritage Natural Property (Brooke *et al.* 2004) to include a marine component. Extensions to existing World Heritage properties do not have to be first placed on the Party's tentative list, so the process will be simplified.

Priorities should also drawn up for additional or

extended international sites in those UKOTCDs which already have at least one such area, as well as giving consideration to updating regularly the 2005 potential list of Ramsar sites (Table 5) with new sites and/or changed boundaries.

Acknowledgements

Thanks are due to Mike Brooke, Darren Christie, Mike Pienkowski and John Turner for valued discussions and for pointing the way to relevant literature. Attendance at the *Making the Right Connections* Conference in the Cayman Islands was funded by the UK Overseas Territories Conservation Forum.

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Left: Existing World Heritage and Ramsar site: Gough Island, showing non-forested peat bogs (a Ramsar wetland category) and the Critically Endangered Tristan Albatross (Photo: author)

Below: Some sites which ought to be Ramsar Wetlands of International Importance but not yet so designated (Photos: Dr Mike Pienkowski)



Ascension Island: female Green Turtles return to the ocean after laying.



St Helena: Tree ferns in cloud forest



Some of the salt-pans at Grand Turk, Turks & Caicos Islands: hugely important for wildlife, closely viewable, but unprotected and being destroyed



Cayman Islands: aerial view of the Central Mangrove Wetlands



South Georgia: King Penguin colony and glacier



Dog Island, Anguilla: Sooty Terns land back in their nesting colony with Brown Noddies

Montserrat Centre Hills Management Plan: an example of planning and implementing protected areas at a site scale

Stephen Mendes (Montserrat Department of Environment)



Mendes, S. 2010. Montserrat Centre Hills Management Plan: an example of planning and implementing protected areas at a site scale. pp 221-225 in *Making the Right Connections: a conference on conservation in UK Overseas Territories, Crown Dependencies and other small island communities, Grand Cayman 30th May to 5th June 2009* (ed. by M. Pienkowski, O. Cheesman, C. Quick & A. Pienkowski). UK Overseas Territories Conservation Forum, www.ukotcf.org

Montserrat is currently subjected to volcanic activity which has restricted use of two thirds of the island. In the remaining third, the forested highlands make up about 27% of the inhabited area. They are of particular importance in providing communities with a wide variety of useful goods and services, including the only water source. The forest suffers from human-related pressures, such as agricultural encroachment, unregulated hunting, and limited enforcement of wildlife and environmental legislation due to capacity constraints, increasing pressure for infrastructural development and the increasing prevalence of invasive species.

Increased efforts have now been made, building on recommendations made since 2000, to ensure that the remaining forests and their wildlife are maintained and protected. A spatial planning exercise was carried out 1998 to address the future needs of the island. This exercise earmarked areas for conservation, including the Centre Hills.

In 2005, a Defra Darwin Initiative-funded project was launched. Supported by numerous local and international partners, it planned for the creation of a National Park. As part of the process, the local community was engaged through extensive outreach, and legislative frameworks were reviewed. An economic valuation of the area in question was also conducted; preliminary findings are demonstrating that the benefits of a management system, which can enhance and sustain the forest value, far outweigh the costs.

Despite the many challenges faced, especially compounded by the global economic crisis, a comprehensive management plan has been created for the Centre Hills, largely informed through the efforts of spatial data collection. It is sincerely hoped that, with increased capacity, this plan can be implemented and that it will serve as a blueprint for management of other biologically diverse areas on island and across the Caribbean.

Stephen Mendes, Montserrat Department of Environment, P.O. Box 262, Mahogany Loop, Woodlands, Montserrat. mendess@gov.ms

Montserrat, a quaint little island of 102 km², is located in the Leeward archipelago of islands, 16° 45' N 61° 10' W, 27 miles (44 km) south west of Antigua. It is one of the founding Members of CARICOM and the sub-regional Organisation of Eastern Caribbean States (OECS).

Currently, the biodiversity of the island is under the stewardship of the Department of Environment,

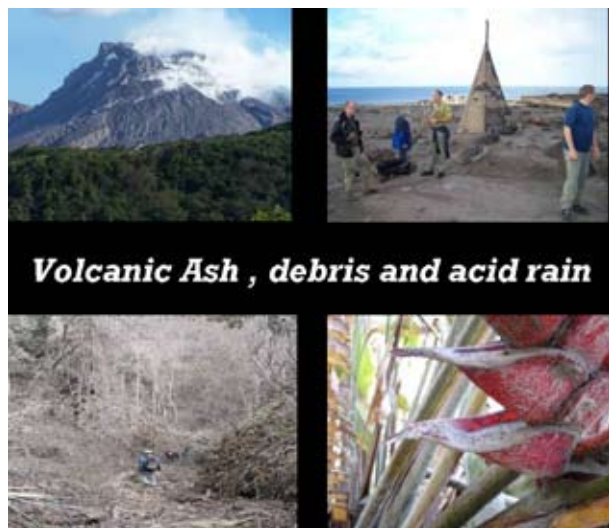
formed in late 2006. The Department is yet to have a full complement of staff to carry out its mandate. An NGO, the Montserrat National Trust, also has responsibility to ensure that the island's heritage, both natural and built, is preserved for future generations. It too is in need of enhanced capacity.

The natural environment of Montserrat has been wrought over the years by habitat destruction.



Since the seventeenth century, at least 30% of the lowlands were totally cleared for colonial sugar production. By 1670, the island's ecosystems came under increasing pressure as a law was passed that contributed to the drastic destruction of forest cover. It stipulated that "all owned land be cleared every year as a condition, confirming continued ownership." Unfortunately, the colonial Governors of the time also clung to myths that the forests exuded harmful vapours which caused "fevers and agues". Thus the slaves of the day were ordered to chop the forests down.

An initial attempt to curb the unchecked damage came in 1702, when a law was passed to protect all



Volcanic Ash , debris and acid rain

ghauts (streams/rivers) on the island. This encouraged the prolific planting of fruit trees that still remains a tradition today. Most ghauts are filled with breadfruit, mangos, mammie apple and hogplums.

Since the mid-1990s, the ongoing volcanic eruption has effectively wiped out at least 60% of the island's natural vegetation, and impacted marine fauna and flora with ash deposition. Of the 39.5 square miles of land, only 14 square miles can now be occupied by the human population.

The Centre Hills remain the last forested area of the island and occupy approximately 27% of the usable land.

Following the start of volcanic activity, planners realized that they would have to mobilize quickly to ensure that development on the northern third of the island could be expedited. The Centre Hills, though home to species of global importance, and providing the prime watershed for the entire island, was becoming subject to many pressures:

1. Volcanic ash, debris and acid rain



Global Biodiversity Importance

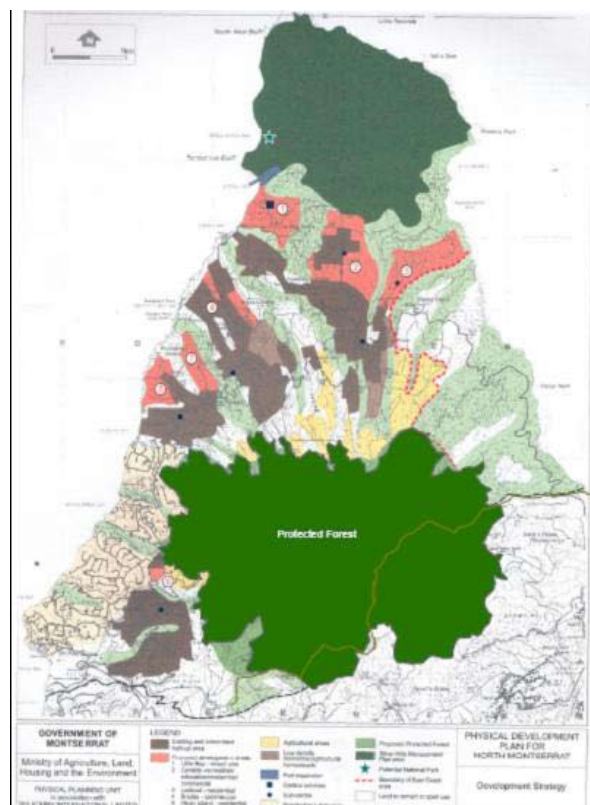
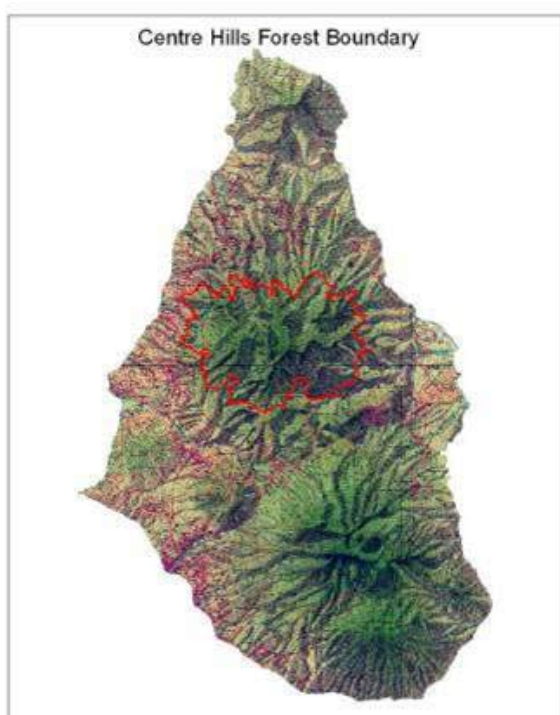


Development Pressures



2. Development pressure: land for agriculture, pasture, road infrastructure, and housing
3. A growing number of invasive species that could impact on biodiversity. Many of the problems resulted from the departure of farmers who had to abandon their livestock as a result of the eruption. Such animals include goats, sheep, cattle and pigs.

Early attempts at conservation included the proposed protection of all lands over 1500 feet (500 m) in elevation, although laws have not been made to implement this. However, the Forestry Act of 1956 gave some measure of management and protection. Specifically more targeted to the Centre Hills, the Wildlife and Protected Areas Act of 1996 was passed; this demarcated the Centre Hills Forest boundary as we know it today. This measure of protection was complemented by the Physical



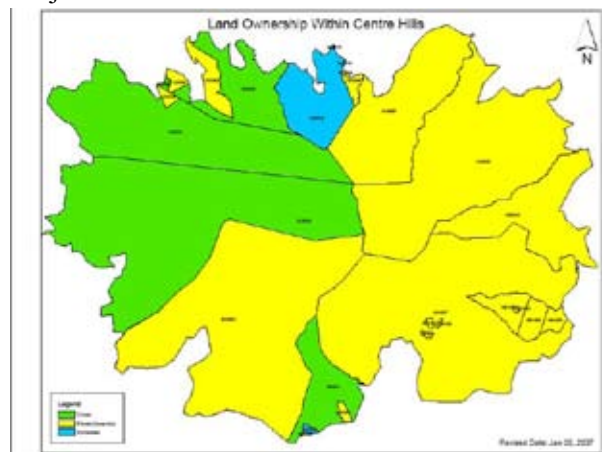
Physical Development plan for the north of Montserrat

Development Plan 1998-2008, which suggested the designation of the area as a protected forest.

Officials from the Physical Planning Unit were quoted as saying;

- “Montserrat is a small island and it is essential that we have a balance between the natural and the built environment.
- “Centre Hills is critical to the Island’s development, based on what it contributes (watershed, biodiversity, mitigation for soil erosion, storm protection).
- “Planning needs to be organised so that the built environment can co-exist with the natural one.”

Through a Darwin Initiative grant, the Centre Hills Project came into existence in mid-2005. This



3-year project was intended to enable the people of Montserrat to conserve the Centre Hills. The project included:

- In-depth biodiversity assessment within the forest boundary. This included the creation of numerous biodiversity assessment points throughout the forest, and recorded data for birds, bats, insects, plants, amphibians and reptiles. A report was compiled and is available on the Durrell website (www.durrell.org/library/Document/Durrell_Cons_Monograph_1_Full_Report.pdf).
- An economic valuation of the area. This was a pilot study in order to introduce techniques in valuing the ecosystem services of the Centre Hills. It was thought that placing a monetary value on these services, would make it easier for the person on the street to better appreciate the value of biodiversity. It is also a good tool to persuade decision-makers. The study highlighted also the need for additional data to be collected in order to get optimal results.
- Awareness raising, so that the general public would better appreciate the values of the natural area.

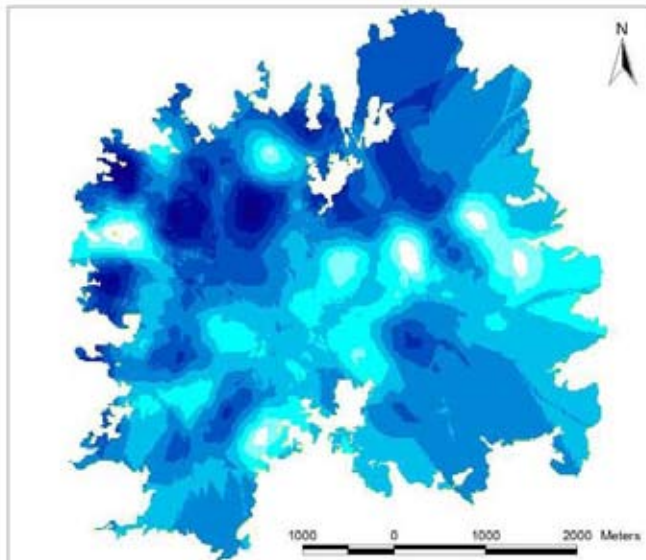
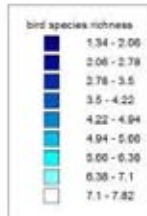
As the project progressed, it was realized that there would be a need to review current legislation, to take into account, the project findings, to meet multilateral agreement requirements, and to provide a legal framework for the Department of Environment. This legislation is still under review.

The Management Plan

The costs of full implementation of this Plan, developed by the project, is estimated (including staff costs) at US\$ 900,000 per annum.

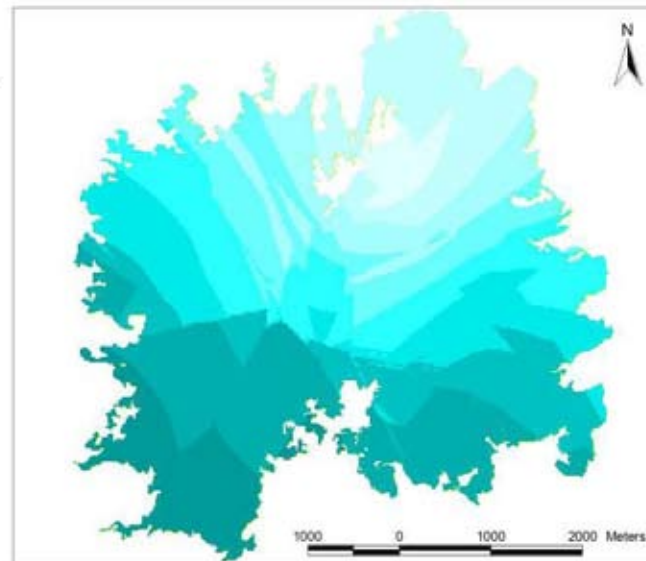
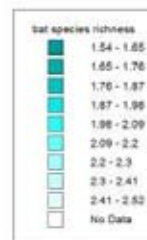
Bird species richness in Centre Hills

Interpolated by kriging using a linear with sill model and a 450 m search distance



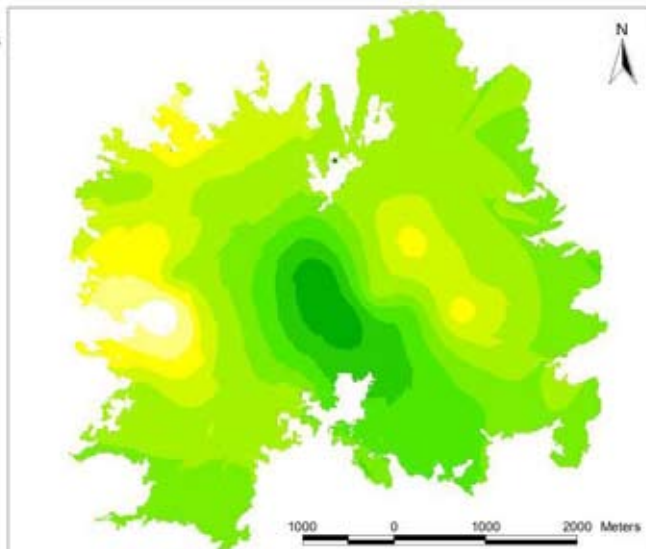
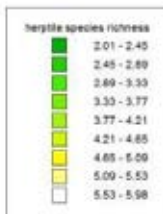
Bat species richness in Centre Hills

Interpolated by kriging using a circular model and a 2 km search distance



Herpetile species richness in Centre Hills

Interpolated by kriging using a circular model and a 2 km search distance



The Plan's aims are to:

- Promote sustainable livelihoods of resource users in and around the Centre Hills
- Conserve biodiversity, habitats, and ecosystem

Challenges for a small isolated island group - progress on the Pitcairn Islands environment management plan, designated protected areas and sustainable development

Noeleen Smyth (National Botanic Gardens, Dublin, Ireland; for Pitcairn Islands Council)



Smyth, N. 2010. Challenges for a small isolated island group - progress on the Pitcairn Islands environment management plan, designated protected areas and sustainable development. pp 226-228 in *Making the Right Connections: a conference on conservation in UK Overseas Territories, Crown Dependencies and other small island communities, Grand Cayman 30th May to 5th June 2009* (ed. by M. Pienkowski, O. Cheesman, C. Quick & A. Pienkowski). UK Overseas Territories Conservation Forum, www.ukotcf.org

The Pitcairn Islands are exceptionally remote, lying at the south-eastern extremity of the central Polynesian island chain, south of the Tropic of Capricorn. The people of Pitcairn have always been astutely environmentally aware, as their lives have always depended on the fine balance between population size and resource availability. Current plans revitalise Pitcairn with new infrastructure, but also bring environmental risks, and mitigating against these presents a major challenge.

The Pitcairn Islands need to develop and safeguard their unique environmental features and develop ways to enable visitors to experience these special features without damaging or downgrading the environment. Local Government Ordinances provide much of the basis for environmental management in the Pitcairn Islands, and these are integrated and commented on within the new Environment Management Plan for the island group.

Dr Noeleen Smyth (for Pitcairn Islands Council), National Botanic Gardens Dublin, Glasnevin, Dublin 9, Republic of Ireland. nsmyth@tcd.ie

The Pitcairn Island group comprises four islands located in the South Central Pacific Ocean. The islands, a UK Overseas Territory, are exceptionally remote, lying at the south-eastern extremity of the central Polynesian islands south of the Tropic of Capricorn (1570km west of Easter Island; 5350km north-east of New Zealand, Fig.1). The group consists of two atolls, Oeno and Ducie (the most southerly atoll on earth), the raised atoll of Henderson (a World Heritage Site) and the high volcanic island of Pitcairn itself.

The people of Pitcairn have always been astutely environmentally aware, as their lives have always depended on the fine balance between popula-

tion size and resource availability. The Pitcairn laws through the 19th Century reflect the people's concerns about the environment and its sustainability. Pitcairn Island itself is very isolated and only in recent months has regular shipping to the island been arranged. There is no safe port or harbour for ships to land (Figure 2), and recent infrastructure projects have begun to address this issue. A new harbour or safe port is planned for Tedside on the west side of the island.

Currently plans are underway to revitalise all aspects of Pitcairn Island with new infrastructure, power generation, communications, and transport links through French Polynesia, which will

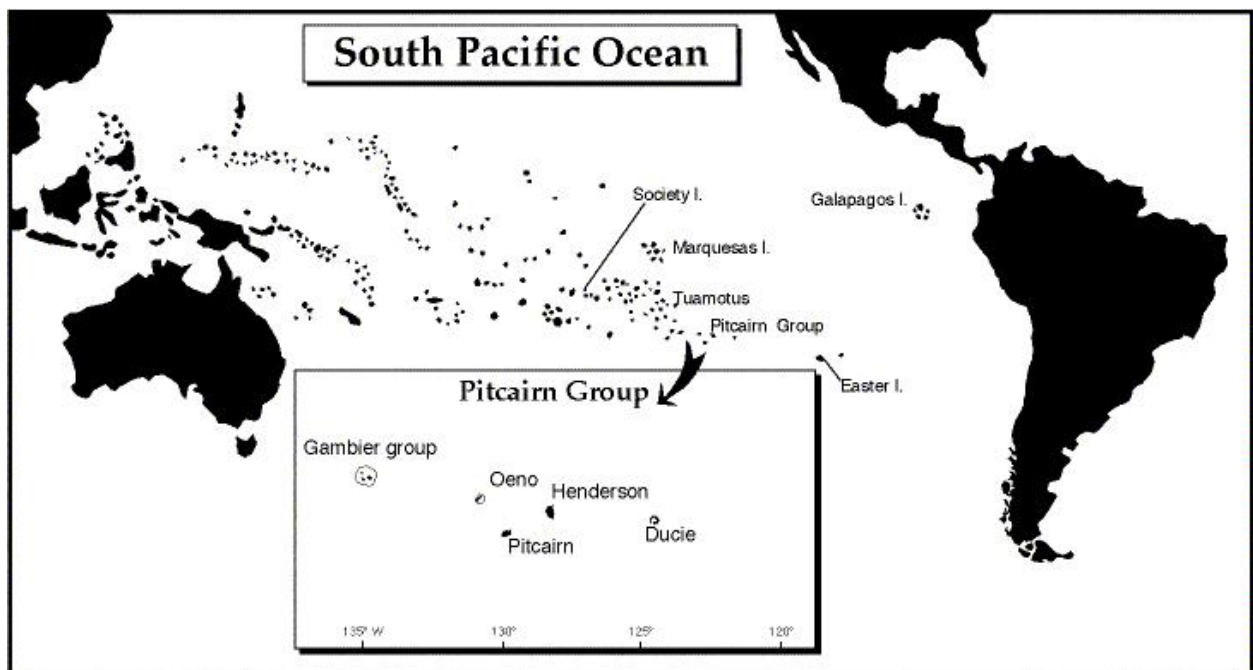


Figure 1. The location of the Pitcairn Island group.

bring tourism and more cruise ships to Pitcairn and other islands in the group (Jaques 2006). This development will also bring environmental risks, and mitigating against these risks presents a major environmental challenge for the group.

Ducie, Oeno and Pitcairn Island have sites identified for listing under the Ramsar Convention (Pienkowski 2005). Pitcairn has mostly disturbed habitat (with less than 30% of the island covered in native forest) but complementarily analysis has highlighted that most of the vegetation types and many of the threatened species on Pitcairn would be conserved if three areas were to be set aside as nature reserves (Tautama, High Point & Down Rope) (Kingston & Waldren 2005). There is also a need for new reserve areas to include areas of cultural importance such as Down Rope, Christian's Cave and Henderson's Caves. No marine protected areas are listed for any of the island group.

The Pitcairn Islands need to develop and safeguard their unique environmental features and develop ways to enable visitors to experience these special features without damaging or downgrading the environment. The Pitcairn Environment Management Plan has set out a series of actions

and recommendations under four main headings: Environmental Development, Economic Development, Biodiversity and Supporting Measures which would help the Pitcairn group protect and safeguard the environment while this stage of development is underway (see discussion under The Pitcairn Islands Environment Management Plan poster, Section 2).

Using some the unique biodiversity on Pitcairn to support the actions outlined in the Management Plan to protect the environment is one way of providing funding. Currently an eco-trail on the island is proving very popular with cruise-ship visitors. On this trail, signage has been erected highlighting the endemic plant species, problems with invasive species and local uses of plants. A small charge to visitors for use of this trail is one way to fund some



Figure 2. Bounty Bay, Pitcairn Island, the current harbour.

of the actions outlined in the Management Plan. Other resources such as a proposed guidebook to the flora and fauna of the islands could also help support conservation actions.

One of Pitcairn's most charismatic and attractive endemic plants *Abutilon pitcairnense* (Figure 3) is under consideration for commercialisation, and funding is currently being sought to raise an ornamental hybrid for sale using this critically endangered endemic as a parent. This funding method was employed very successfully at the Eden project in Cornwall where retail sales of *Impatiens* "Ray of Hope", bred using the critically endangered *Impatiens gordonii* as a parent, raised money for the conservation of other rare and endangered Seychelles plants with profits from the sales directly going back to the Seychelles.

The need for long-term funding, and novel and sustainable ways of raising funds to ensure the long-term protection of the environment, are a crucial step in this development phase of the Pitcairn group. A recent article in the *New Scientist* magazine (Young 2009) highlighted the fact that, to save and maintain global biodiversity, we need to be investing funds in tropical islands where the most important and "endemic rich" biodiversity is found. This "endemism richness" factor makes islands nine times more valuable than continental areas in terms of global biodiversity.

The Local Government Ordinances developed by the Island Council (Treadwell 2001) on environmental management of the Pitcairn Islands, integrated with the Environmental Management Plan for the island group, provides both the direction and actions needed to maintain and enhance the local environment.



Figure 3. *Abutilon pitcairnense* a critically endangered Pitcairn endemic plant

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BVI's *System Plan*: an example of planning and implementing protected areas at a national scale

Joseph Smith Abbott (Director, British Virgin Islands National Parks Trust)



Smith Abbott, J. 2010. BVI's *System Plan*: an example of planning and implementing protected areas at a national scale. pp 229-233 in *Making the Right Connections: a conference on conservation in UK Overseas Territories, Crown Dependencies and other small island communities, Grand Cayman 30th May to 5th June 2009* (ed. by M. Pienkowski, O. Cheesman, C. Quick & A. Pienkowski). UK Overseas Territories Conservation Forum, www.ukotcf.org

A comprehensive approach to protected area planning was followed during the process leading to final approval of the *System Plan for Parks and Protected Areas in the British Virgin Islands* in 2008. Prior versions of the System Plan were prepared in 1981 and 1986, with the assistance of the Eastern Caribbean Natural Areas Management Programme (ECNAMP). The latest review of the Plan built on the outcomes of an OTEP funded project designed to assess the status and health of Territorial coastal and marine resources in 2006. Baseline information gathered throughout the two-year process led to the design of various options related to the design of the Protected Area system, which was derived from a collaborative effort between international partners. MARXAN software was employed as the planning tool to explore options related to Protected Area design. Assumptions ranging from target species and habitats to be included and protected, the selection of marine areas to increase resiliency within the system, and target percentage of representation within the Protected Area system were entered into the software, and various maps were prepared and presented to all stakeholders on the four major islands. A multi-sectoral, year-long process of consultation led to the determination of a preferred Protected Area design which was submitted and approved by both the Board of the National Parks Trust and ultimately, the Government of the British Virgin Islands. The ten-year plan articulates the complement of Protected Areas declared under the National Parks and Fisheries Acts, which serve conservation and sustainable development purposes, the policy direction and institutional arrangements guiding Protected Area management at the national level.

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The policy support for Protected Area system planning was established in 1980, when the Government of the British Virgin Islands (BVI) requested the assistance of the Eastern Caribbean Natural Areas Management Programme (ECNAMP, now CANARI) in the identification of marine areas for inclusion in the system of National Parks and Protected Areas. That study resulted in the preparation of the first *System of Marine Parks and Protected Areas for the British Virgin Islands* in 1981. The study was further amplified by an additional assessment undertaken in 1986, which defined terrestrial areas for inclusion into the system. Inclusion of terrestrial areas took place as of 1986 resulting in the declaration of 20 terrestrial and one marine

National Parks. Moreover, the National Parks Trust managed a distributed network of marine areas through its Moorings Programme; however, these areas lacked formal designation, thereby limiting the scope of protective measures available to ensure the protection of marine resources in these areas. This sub-system became a network of “parks without the paper” as opposed to “paper parks”.

A parallel and complementary process to system planning was the revision of the National Parks Ordinance and the Marine Parks Ordinance. The latest legislative reform effort was undertaken as part of an institutional strengthening exercise in

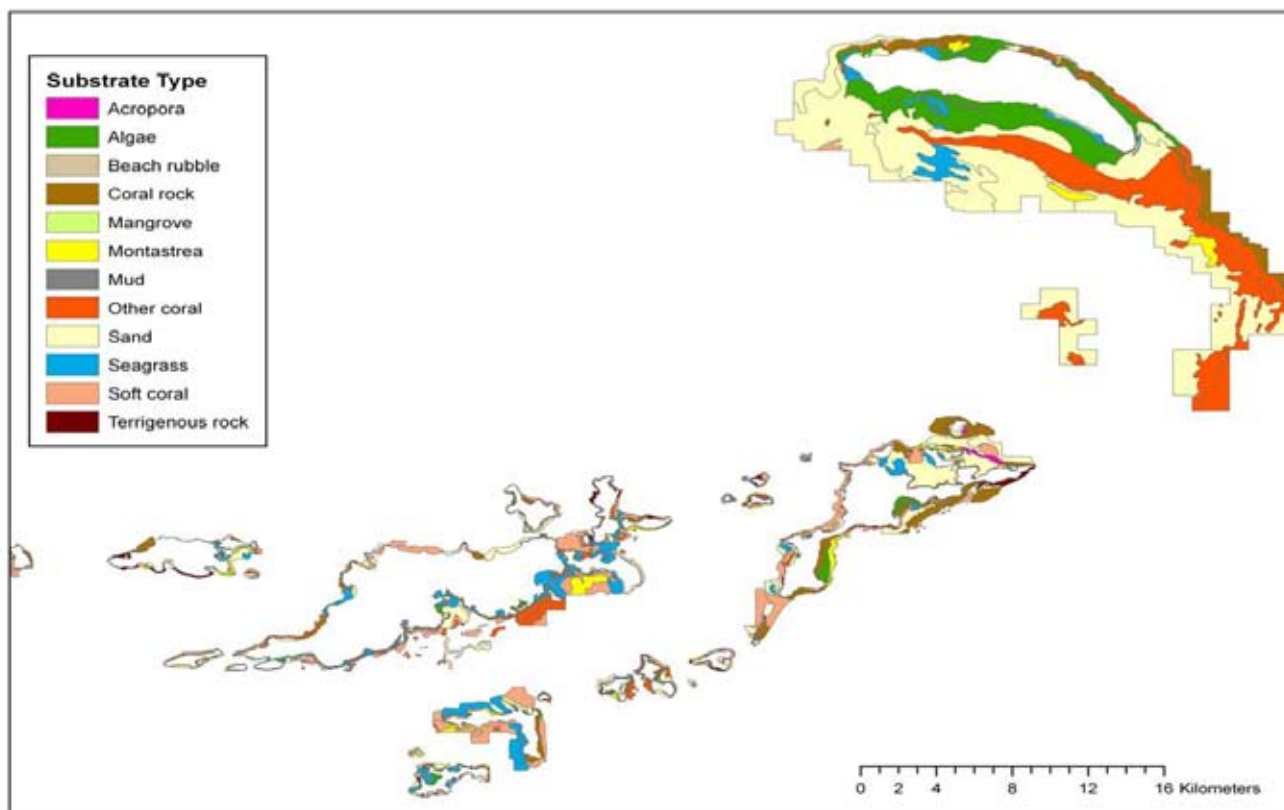


Figure 1. Coastal resources map for the British Virgin Islands

conjunction with the Island Resources Foundation starting in 2004. That process culminated with the update of Protected Area legislation in 2006. The inclusion of the requirement for the production of a System Plan for the Territory was an integral part of the legislative review process. Specifically, Section 10 of the National Parks Act entitled *Establishment of a Network or System of Protected Areas* states that:

“The parks and other protected areas established under this Act comprise a protected areas system and to guide the development and management of the system and specific areas within the system, the Trust shall prepare and periodically update, as needed, a protected areas system plan.”

The *Protected Areas System Plan for the British Virgin Islands 2007-2017* was approved by Cabinet in January 2008 and tabled in the House of Assembly March 2008. Various Protected Areas were established under the National and Marine Parks Ordinances from the Trust’s inception. Most declared Protected Areas were terrestrial in nature.

Various agencies within the Territory have the ability to declare Protected Areas. For instance, in addition to the National Parks Trust, the Conservation & Fisheries Department can declare Fisheries Protected Areas and can set aside Marine Parks under the Fisheries Act and its Regulations. Ad-

ditionally, the Physical Planning Act has provisions for the declaration of Environmental Protection Areas. Whilst the emphases for the declaration of individual areas may vary based on the primary purpose the area may serve, there was a collective recognition amongst all agencies with responsibility for Protected Area declaration and management that in order to further the conservation of Territorial natural resources and to avoid fragmentation and dissipation of effort, it was beneficial to integrate all types of Protected Areas beyond those declared under the National Parks Act into the latest version of the System Plan. The System Plan, therefore, articulates the need for the protection of various types of Protected Areas, which have or may be declared under the National Parks Act, the Fisheries Act or the Physical Planning Act. The System Plan excludes detailed site development issues thereby apportioning that discussion to site management plans.

Information required for the formulation of the System Plan was derived from the implementation of multi-year, UK-funded activities. An Overseas Territories Environment Programme project, managed by the National Parks Trust in collaboration with the Conservation & Fisheries Department, led to the update of the Territory’s coastal atlas between 2004 -2006 (Figures 1 & 2). Work also included an assessment of the efficacy of the Trust’s Marine Conservation Programme (MCP). Assess-



Figure 2. Diving of marine areas under the coastal resources and atlas update project

ment of the MCP was important, as the Trust managed various marine sites throughout the Territory without formal designation. In the British Virgin Islands there are *de facto* “parks without papers” as opposed to “paper parks”. Secondly and equally important, work implemented under a Darwin Initiative Project assessing the biodiversity of Anegada, spearheaded by the University of Exeter’s Marine Turtle Research Group, in collaboration with the National Parks Trust, Conservation & Fisheries Department, Royal Botanic Gardens Kew and the Royal Society for the Protection of Birds, provided critical site information to support the creation of various types of Protected Area on that island.

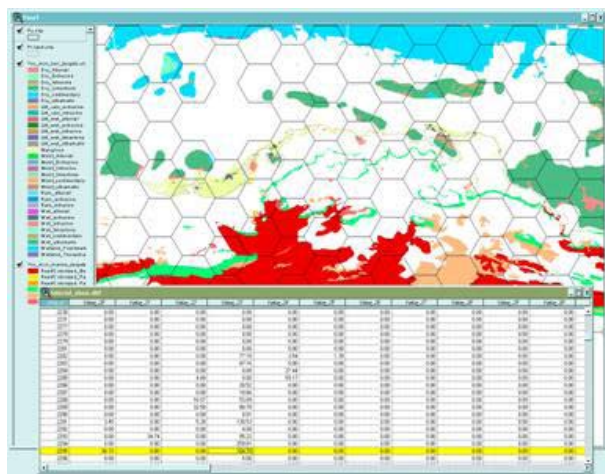


Figure 3. Marxan software was utilized to analyse areas containing target marine resources.

System-wide Protected Area design was conducted using MARXAN software (Figure 3). MARXAN was used to process and analyse GIS-based data, which was collated as part of an integrated national effort of data collection and sharing, to derive various Protected Area network options. The Nature Conservancy (TNC) facilitated the process of capacity building, training and assisting with the

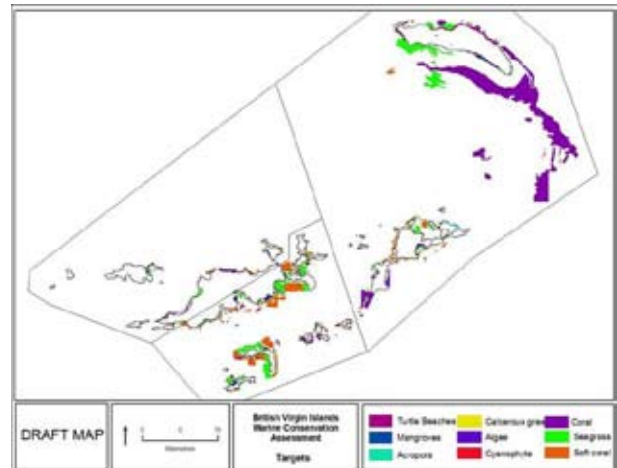


Figure 4. The Territory was divided into three regions and MARXAN was employed to analyse areas containing target habitats. 30% of target habitats were ultimately identified inside of each Territorial region.

design of the system. The marine component of the network was designed with resilience in mind. Therefore, to ensure representativeness and build resiliency within the Protected Area network, the Territory was divided into regions which were individually processed through MARXAN to achieve inclusion of target habitats (Figure 4). System design parameters included the determination of a target to conserve 30% of marine habitats by clustering areas of high biodiversity value and lock in special areas such as existing Marine and Fisheries Protected Areas. Existing and proposed terrestrial areas comprising at least 10% of land area were included in the final system design. Terrestrial site selection was based on: (a) the criteria and work performed in 1986 during that year’s revision of the System Plan, (b) areas which were acquired or donated by Government or private landowners, and (c) areas identified on Anegada as part of the Darwin Initiative’s biodiversity study.

Three rounds of public meetings took place over the span of two years. Public meetings were held on all four of the major islands (Tortola, Virgin Gorda, Anegada and Jost Van Dkye) during each consultative phase. The first round of meetings focused on the presentation of various options generated by MARXAN of an ideal Protected Area network. Stakeholders, through a process facilitated by TNC, were presented with three options which varied by the degree of clustering of Protected Areas (Figure 5).

Scenarios ranged from the first, which comprised a larger number of areas of smaller size, to the third, which comprised fewer areas of greater relative size. Stakeholders were asked to select their opti-

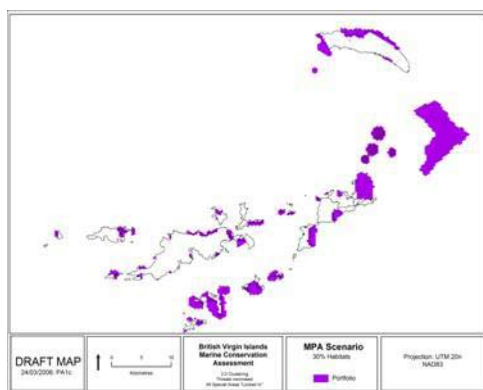
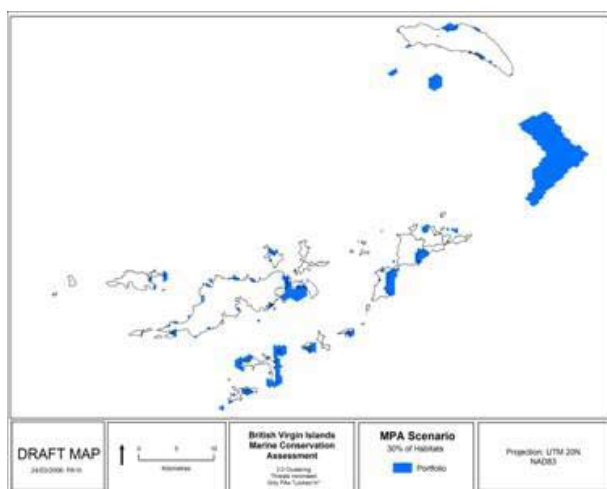
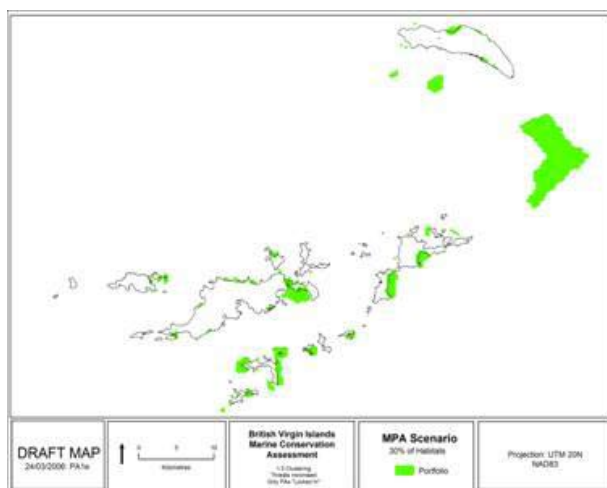


Figure 5. Marine Protected Area scenarios presented to stakeholders during the consultative phase

mal choice. Conflicts in terms of an area's active use and conservation goals were identified during the consultative process. Wherever a conflict arose between an area's current use and the proposed conservation goals, this was identified on maps which were marked up by users, and highlighted for further discussion. Insofar as possible, overall conservation targets were achieved by "swapping" the area actively being used with another of equal conservation value not being used. Ultimately, stakeholders opted for a network with fewer areas of greater size. Finally, a critical and useful output

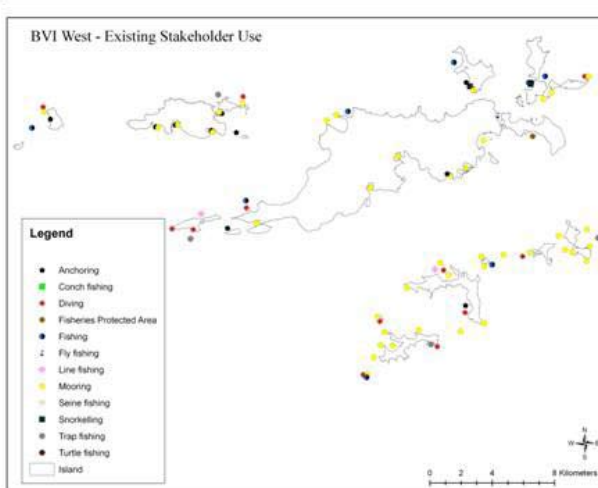
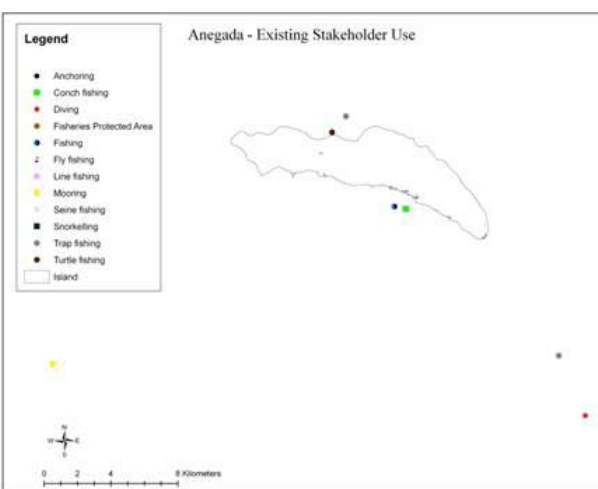
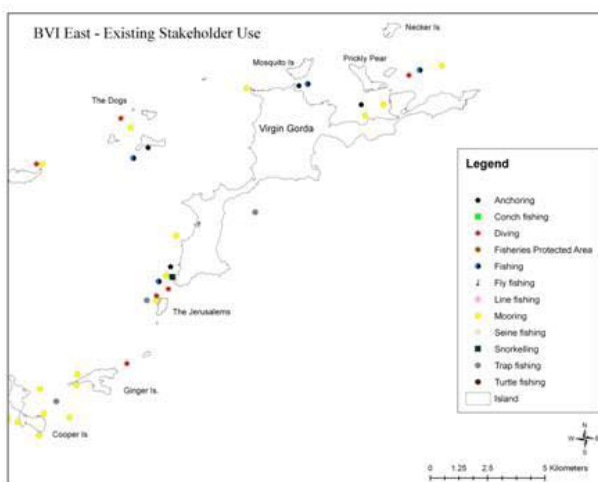


Figure 6. Stakeholder maps generated through the consultative phase of system design

of the public meetings was the generation of a stakeholder use map which documented the manner in which areas were being employed (Figure 6).

The preferred choice for the network of Protected Areas was presented to the same stakeholders to assure them that their input was recognised and adopted (Figure 7). Final consensus on system



Figure 7. Consultative phases of the network of Protected Areas and the System Plan

design was sought and secured during this consultative round. The System Plan was re-drafted taking into account all of the information and input received at various meetings related to Protected Area network design.

A preliminary draft of the Plan, inclusive of its goals and objectives, was presented to various stakeholders at a third round of consultation facilitated by Island Resources Foundation. Input was sought and the Plan was refined. The Plan, upon completion, was approved by the Board of the National Parks Trust, the Ministry of Natural Resources & Labour, Cabinet and the House of Assembly in 2008. The Plan contains maps detailing all of the marine and terrestrial Protected Areas which have been declared under either the National Parks or Fisheries Acts (Figure 8).

Ultimately, the System Plan provides the policy framework for the management of Protected Areas in the British Virgin Islands by:

- Defining the network of Protected Areas to be managed by various agencies with responsibility over the subject matter;
- Stating the overarching goals for the system of Protected Areas;
- Articulating the institutional arrangements established for Protected Area management;

- Defining the support systems needed for system development and management during the Plan period;
- Prioritising major issues to be addressed in Protected Area management for the next ten years; and
- Affording opportunities for evaluating progress in Protected Area system development over the next five years.

Acknowledgements

The National Parks Trust would like to thank the following local and international partners which have supported system planning in the British Virgin Islands:

International Partners:

CANARI

Darwin Initiative

IUCN Iguana Specialists Group

Island Resources Foundation

Royal Botanic Gardens, Kew

Royal Society for the Protection of Birds

The Nature Conservancy

UK Overseas Territories Conservation Forum

UK Overseas Territories Environment Programme

Warwick University

Local Partners:

Attorney General's Chambers,
Government VI, UK

Conservation of Fisheries, Gov-
ernment VI, UK

BVI Tourist Board

Survey Department, Government
VI, UK

Town & Country Planning, Gov-
ernment VI, UK

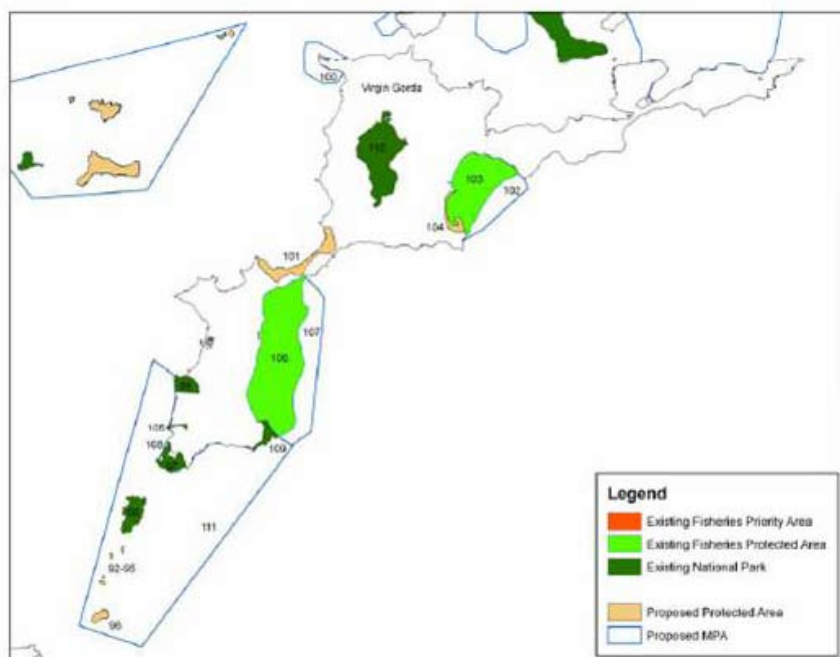


Figure 8. System Plan's map with Protected Areas declared under the National Parks or Fisheries Acts

Discussion

The discussion and questions to speakers centred on two main themes, and are summarised below under corresponding headings.

International Conventions and Site Designations

The role of the UK Government in the designation of international sites in UK Overseas Territories and Crown Dependencies (UKOTCDs) was discussed. The UK Government is responsible for extending its ratification of international conventions to cover a given UKOTCD, where the Territory concerned wishes to be included. Similarly, the UK Government is responsible for the international designation of World Heritage Natural Properties and Ramsar Wetland Sites of International Importance in a UKOTCD, where the Territory or Dependency itself wishes to advance this.

Experience, including from small islands outside the UKOTCDs, suggests that obligations under international conventions (such as those relating to site designations) could put pressure on the resources available in small, local communities. Whether such pressure is real or perceived, it could result in local reluctance to sign up to such obligations, particularly if the necessary support was not readily available from (for example) the UK Government. Some designations (including those related to EU mechanisms, which are not applicable to most UKOTCDs) were seen as very complex in their requirements, and could involve unforeseen pitfalls. Also, some designations required, in

practice or principle, consideration of the built (as well as the natural) environment in landscape-level planning, and issues such as the integration of on-going consumptive use of natural resources within plans.

In response to a question as to what happens when it is the UKOTCD Government that transgresses the terms of the designated status, UK officials indicated that UK Government should intervene, possibly with reference to an environmental lawyer.

Management Plans

It was noted that the process of designation of World Heritage properties and Ramsar sites required that a management plan be produced and submitted as part of the designation process, or within reasonable time - as is good practice also for protected areas designated domestically. These management plans tended not to be prescriptive in terms of methodology, focusing instead on outcomes. In addition, there was an on-going duty to report on the condition status of each site to the relevant convention. It was noted that several (but not all) existing management plans for UKOTs were available on the UKOTCF website (www.ukotcf.org) - and that additional plans could be added as they became available. Submission of other relevant documents was always welcome. CANARI also maintained a database of documents that might provide useful reference material, e.g. relating to other Caribbean countries.



From left: Rob Thomas, Noeleen Smyth, Stephen Mendes, John Cooper and Joseph Smith Abbott

Section 7: Raising our profile - engaging policy makers and the public

Co-ordinators: Bill Samuel (UKOTCF Council) & John Cortés (Gibraltar Ornithological & Natural History Society and UKOTCF Council)

Advocacy for the conservation of biodiversity, environmental protection and sustainable development comes in many forms. Whilst conservation (in particular) remains on the margins of the political mainstream, and is perceived as an “optional extra” by many in the general population, much of the work falls to small NGOs and other elements of civil society. Principle audiences for those attempting to promote conservation are policy makers (politicians) and the public; and these two audiences are linked, as the public also constitute the electorate that ultimately determines which politicians hold office. Effectively engaging these audiences requires the champions of conservation to deploy their limited resources carefully, and to remain alert and responsive to new approaches and opportunities. Successful engagement can bring important and lasting rewards for all concerned.

The Raising Our Profile session at the *Making the Right Connections* conference heard presentations from a range of speakers, addressing very different aspects of the challenge. Economic valuation is an increasingly widely used means of emphasising that the “free” products and services provided by natural ecosystems cannot be taken for granted. Work in Bermuda has shown how this approach can be applied to assessing the value of the Territory’s coral reefs to stakeholders, thereby integrating environmental concerns into policy and decision making. With respect to environmental (as well as other) matters, the relationship between the UKOTs and the UK Government is a crucial one, and one in which the UK Parliament can have an important guiding role. The session heard perspectives on this from a member of the UK Parliament’s influential Foreign Affairs Committee. The focus of the next presentation was the history of the framework within which environmental management has developed in the British Virgin Islands (BVI). Here, environmental matters are increasingly motivating public opinion, even to the extent of influencing the results of a recent General Election. Targeted campaigning was then considered, based in the experience of the hugely successful *Buy Back Bermuda* programme instigated by two local NGOs. In the Cayman Islands (as in BVI, Bermuda and elsewhere) there appears to be an increasing public appetite for protection of the few remaining natural areas, and successful public opposition to a road that threatened to damage Grand Cayman’s Ironwood Forest provided the next theme. The final presentation reminded delegates that, whilst the relationship between science and religion was sometimes strained, the Church and conservationists had a common cause in promoting responsible stewardship of the natural world. The session closed with a discussion of the issues raised.



*From left: Rob Thomas (rapporteur), Bertrand Lettsome, Paul Keetch MP, Samia Sarkis, Bill Samuel
(Photos of participants in this section by Thomas Hadjikyriakou unless otherwise stated)*

Framework Document: Engaging policy makers and the public

Bill Samuel (UKOTCF Council), John Cortés (Gibraltar Ornithological & Natural History Society; and UKOTCF Council) and Oliver Cheesman (Development Director, UKOTCF)



Bill Samuel



John Cortés

Samuel, W. , Cortés, J. & Cheesman, O. 2010. Framework Document: Engaging policy makers and the public. pp 236-238 in *Making the Right Connections: a conference on conservation in UK Overseas Territories, Crown Dependencies and other small island communities, Grand Cayman 30th May to 5th June 2009* (ed. by M. Pienkowski, O. Cheesman, C. Quick & A. Pienkowski). UK Overseas Territories Conservation Forum, www.ukotcf.org

Conservationists cannot rely on everyone else sharing their perspective and aspirations. For many, the protection of biodiversity can seem like a luxury, especially at times of economic hardship. Even large conservation bodies have to work hard to promote their message, and the challenge is much greater for smaller organisations with limited resources. Nonetheless, if the right methods are employed, key audiences (policy makers and the public) can be engaged and found to be responsive. Specific campaigns may provide the vehicle, but there are also opportunities for profile-raising through other avenues.

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Introduction

No-one sees the world in exactly the same way as anyone else. Thus, we may be deluded in thinking that everyone out there knows and understands the value of what we do and why we do it. We would be wrong to assume that everyone shares our perspective and aspirations. Even large, successful, international organisations, which we generally consider to be well known and high profile, have to work hard to promote and garner support for their activities. The challenges are much greater for small organisations, with limited resources.

There are always those who are ready to profit from habitat destruction, over-exploitation of natural resources and other environmentally unsustainable practices. They benefit from political inaction and public apathy. The protection of biodiversity can seem like a luxury, or at least a low priority, es-

pecially at times of economic hardship. Economic valuation of ecosystems and the services they provide is one means of emphasising that nature does not provide an endless supply of free resources.

This is an important general message to get across, to policy makers and the public (and an important factor to integrate into wider systems of planning – cf. Section 6). In relation to specific environmental issues too, awareness raising is critically important for enhancing public understanding and support, and for influencing policy development. This is certainly true in relation, for example, to climate change (cf. Section 4) and the threats posed by invasive species (cf. Section 8).

Very often, simply promoting our day-to-day work goes a long way towards being noticed. What may be mundane and routine to us may be interesting to others. So we should aim to share what we do with those around us, be they colleagues, families or

friends, who can help to spread the word.

The real challenges, however, lie in raising our profile and promoting our work to the wider public and to those in positions of power. In order to reach them, it is important to identify channels of communication and to speak in a language that they can understand. Policy makers, in particular, often seem remote and elusive. However, some are deeply concerned over the state of the natural world and the welfare of small communities, and have a genuine thirst for the information and insights that organisations ‘on the ground’ can provide. Others, at the very least, keep a close eye on public opinion, especially as election time approaches.

Recent reports from UK Parliamentary Select Committees (the House of Commons’ Foreign Affairs Committee, FAC and Environmental Audit Committee, EAC) have demonstrated the concern amongst groups of British MPs for issues affecting the environment and communities in the UKOTs (see *Forum News* 33, p.8). UKOTCF’s submission to the EAC’s inquiry on *Halting Biodiversity Loss*, in particular, clearly made quite an impression on the Committee, and influenced its criticism of UK Government support for environmental protection in the Territories, leading to some changes. In a number of UKOTs, there is evidence that environmental concerns are increasingly important political issues, locally.

The value of active campaigning to mobilise public support for our work lies in the indirect benefits that come with influencing politicians and political parties, as well as in direct benefits. These include the potential to raise funds and attract volunteers (cf. Section 9). Campaigning comes in many forms, from the use of specific, targeted appeals for support, to more subtle methods of raising the profile of conservation, sustainable environmental management, and the organisations and individuals who champion them, through the media, community groups, schools and colleges (cf. Section 3) and other means.

We should view all our actions, from the routine to the extraordinary, as providing potential avenues for promoting our work. Similarly, wherever possible and appropriate, we should be ready to share our aims and our achievements – sometimes even our failures. Raising our profile and communicating the value of our work are always important. If people do not know who we are, what we do or what we aim to achieve, then they will not support

or help us, and ultimately will not even appreciate our successes – and we all like to be appreciated.

This section examines these issues, and considers ways in which we can achieve the objective of raising our profile. What tools do we have, and what others do we need? Who should we target? How shall we reach these targets? How can we encourage the media to support what we do? Can we think of any unexpected ways in which we can make the occasional extra special splash?

Framework for Raising our Profile session discussions – possible questions to address:

Who do we want to reach?

- Politicians in the UK
- Politicians in the UKOTs/CDs
- Funding bodies
- Citizens and students in the UKOTs/CDs
- Business communities in the UKOTs/CDs
- Potential partner organisations

How do we reach them?

- Direct approaches
- Targeted campaigns and events
- International / regional / national “theme” days (Earth Day, Endemic Bird Day, etc.)
- Using the media (in the UK and UKOTs/CDs)
 - Press Releases
 - Letters to editors
- Links to the school curriculum
- Participation in on-line forums

What messages do we use?

- Environmental benefits
- Economic benefits

Some useful resources:

www.mediatrust.org/training-events/training-resources/online-guides-1

A range of on-line resources providing public relations/media advice, particularly for charities

www.planninghelp.org.uk/resources/campaign-tips

Advice on campaigning

<http://blog.vitispr.com/2009/01/26/useful-public-relations-advice-and-tips-websites/>

A range of links to websites providing general public relations/media advice and tips

www.volresource.org.uk/info/mediapr.htm#issues

A range of media/public relations advice, particularly for voluntary organisations

www.free-pr-advice.co.uk/prchecklists.htm

Advice on a range of public relations topics (business orientated, but also more widely applicable)

www.bvihcg.com/index.shtml

BVI Conservation Group website, providing background on the Virgin Islands Environment Council and their legal challenge to a major development on Beef Island

www.parliament.uk/

A range of information on UK Parliament, including All Party Parliamentary Groups, Select Committees, etc.

www.jncc.gov.uk/page-4065

Environmental Economics “Toolkit” published with the UKOTs in mind

www.ukota.org/

Website of the UK Overseas Territories Association

www.octassociation.org

Website of the European Overseas Countries and Territories Association

http://ec.europa.eu/environment/consultations_en.htm

Information on EU-level consultations on environmental issues

www.ukotcf.org

Website of the UK Overseas Territories Conservation Forum

Economic valuation as a tool for engaging policy makers: Total Economic Value of Bermuda's Coral Reefs

Samia Sarkis (Department of Conservation Services, Bermuda)

E. McKenzie (World Wildlife Fund US, Washington, DC, USA)

P. van Beukering (Van Beukering Consulting Ltd., The Netherlands)



Sarkis, S., McKenzie, E. & van Beukering, P. 2010. Economic valuation as a tool for engaging policy makers: Total Economic Value of Bermuda's Coral Reefs. pp 239-245 in *Making the Right Connections: a conference on conservation in UK Overseas Territories, Crown Dependencies and other small island communities, Grand Cayman 30th May to 5th June 2009* (ed. by M. Pienkowski, O. Cheesman, C. Quick & A. Pienkowski). UK Overseas Territories Conservation Forum, www.ukotcf.org

Assessing the Total Economic Value of Bermuda's coral reefs is a complex exercise, attempting to identify the "services" provided by Bermuda's coral reef ecosystem, and placing a monetary value on these. For the Bermuda case study, the following services are economically valued: commercial and recreational fisheries, tourism, amenity value (surplus value on real estate), recreational and cultural value (benefits to residents for recreation), physical coastal protection and biodiversity and research value. The integration of the monetary values estimated for each of the above services is compiled to obtain the Total Economic Value (TEV), expressed per surface area of coral reefs. This yields a quantitative measure of how important the reefs are to Bermuda in monetary terms, and hence provides quantitative information to guide decision making regarding management and conservation of this natural resource. There have been several challenges and limitations to comprehensive data collection, which are discussed. The methodology used for estimating the value for each service is summarised; for some of the services, namely for the amenity value, the development of the methodology itself is an important contribution to future coral reef economic valuation studies. Results obtained to date confirm and quantify in monetary terms the asset and contribution of coral reefs to Bermuda's tourism value, to the fishing value, and to the recreational and cultural value benefiting residents. The expected outcomes of the Bermuda study include the use of TEV in extended Cost Benefit Analyses involving marine developments, the establishment of damage compensation fees following ship groundings, and raising public awareness.

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Introduction

Increasing development places intense pressure on Bermuda's natural resources, both terrestrial and marine. Of immediate concern, is the lack of any "formal" procedure when assessing developments impacting the marine environment. The Bermuda study seeks to address the lack of environmental considerations in current policy and decision-making for the marine environment, by providing a means of recognizing the value of a range of ecosystem services provided by Bermuda's coral reefs.

Environmental Economic Valuations attempt to attribute a monetary value to natural resources; this enables the integration of environmental concerns into the policy and decision-making processes by placing them on a comparable basis with economic and social impacts. It provides a tool for the long-term conservation of natural resources and helps to identify and implement more sustainable policies and activities, thus balancing environmental, social and economic goals.

The strategy for this two-year project was developed in collaboration with environmental economists from the Joint Nature Conservation Committee (JNCC), in the UK, and consultants from van Beukering Consulting in the Netherlands. A Bermuda-based team consisting of marine scientists is responsible for providing the necessary data for a comprehensive and robust evaluation. The whole project is overseen by a Steering Committee made up of well recognized members of the community. The Steering Committee also assists in providing a strategy for the promotion of the integration of economic valuation in policy-making. Finally, this project is considered a stepping stone to the valuation of other environmental resources in Bermuda; for this reason, long-term sustainability is ensured by developing college modules for the education of young Bermudians in Environmental Economics, incorporating it in the current Economics curriculum.

The current paper discusses the approach taken to assess the Total Economic Value of Bermuda's Coral Reefs, the expected outcomes and the strategies taken to promote the integration of this TEV in policy making. A brief background on Bermuda, and its policies related to coral reefs is first given.

Bermuda's Coral Reefs - Background

Bermuda has experienced tremendous economic growth over the last quarter of a century, mainly due to the booming international business sector. This has led to one of the highest per capita incomes in the world. This wealth has led to a high level of consumerism and results in a large local ecological footprint. Bermuda is one of the most densely populated countries in the world, recorded at 1,145 people per km², on a total land area of 55 km². Increasing human development is required to accommodate the needs of the peoples, associated with increasing marine traffic for import of goods and tourism.

Bermuda's sub-tropical climate, explained by its proximity to the Gulf Stream, has allowed for the northerly extension of coral reefs to Bermuda, making it unique worldwide as the northernmost coral reef system, situated at 32°N and 64°W in the middle of the Atlantic. The shallow-water Bermuda platform encompasses an area of approximately 1000 km². Reef communities are among the healthiest of the Wider Caribbean Region. Due to the northerly latitudes, Bermuda's reefs have been

less affected by climate change and global warming, increasing their importance on an international scale in the future.

In order to ensure optimal preservation of this pristine coral reef system in light of increasing coastal development, environmental economics was proposed as an alternative approach to conservation. Environmental economics considers the "goods" and "services" provided by an ecosystem, and attempts to attribute a monetary value to these. The project seeks to determine the Total Economic Value (TEV) of Bermuda's coral reefs, and use it in such applications as Cost Benefit Analyses of future marine developments.

Goods and services provided by Bermuda's reefs valued in the current study include the following:

- Tourism asset;
- Recreational and cultural value (benefits to residents for recreation);
- Physical coastal protection (avoiding damage costs due to natural hazards, e.g. hurricanes),
- Amenity values (surplus value on real estate),
- Fisheries;
- Employment revenues (boatyards, charter boat, SCUBA);
- Biodiversity (only local research value included - global importance is beyond the scope of this study).

As mentioned previously, the increasing needs and developments associated with a booming international sector and high level of consumerism, pose potential threats to the environment. With regards to the marine environment, the reliance of Bermuda on imported goods by maritime transport leads to a re-management of shipping docks; in addition, the drive to accommodate a changing cruise-ship industry requires the consideration of modified passage and berths for larger ships. This necessitates the dredging of channels and/or coastal developments which have a direct impact on the coral reef ecosystem.

The potential threats facing Bermuda's reefs are the following:

- a. Destruction of reefs for enhanced passage;
- b. Pollution and sedimentation of shipping channels;
- c. Impact on recreational and commercial fisheries;
- d. Increased potential grounding of boats with associated destruction;



Figure 1. The existing North and South shipping channels

- e. Tourism repercussion - quality of visiting experience declines with poorer reefs.

Despite a long history of protection, Bermuda coral reefs are ranked on a global scale in the “high risk” category (World Institute Report 2004). Conservative measures in fisheries management and legal protection of coral reefs (Coral Reef Preserves Act 1966; Protected Species Order 1978) have ensured that the reefs remain healthy. However, their proximity to a high population density and high volume of shipping traffic pose potential pollution threats. Bermuda’s reefs have been under stress in the past during such events as the dredging of Castle Harbour for the airport construction, ship groundings and pollution and sedimentation in shipping channels.

Current Issues

Under current legislation, marine developments require a special permit issued by the Minister of the Environment. Environmental Impact Assessments are not mandatory and recommended only for larger developments by the Marine Resource

Board, an advisory board to government. The process is less formal than that required for terrestrial developments. This reflects in great part the nature of development in the terrestrial environment, where adjacent properties or neighbours are directly affected. In the marine environment, there is often no direct impact on neighbours, and hence the community is generally less aware of, and less concerned by, marine issues. The pressure put on policy and decision-makers by local NGO’s and the community at large in curbing terrestrial developments is significant, and does not exist for the marine environment. Due to the lack of policy regarding developments in the marine system, and the absence of a mechanism for integrating environmental values, decisions are tourism or business driven with little consideration for the marine environment.

The more immediate threat to Bermuda’s coral reefs is the assurance that shipping channels are suitable for safe passage of larger boats. Figure 1 illustrates the existing North and South shipping channels. Currently the use of the North Channel, on the outer rim of the lagoon, has been renewed to accommodate larger ships. This passage has been

rarely used in the past, and has remained for this reason a pristine coral reef. Although mega cruise ships have been using this channel since 2005 without any recorded incident, ship agents are concerned for the safety of the ships, as the passage in the North Channel is narrow and extremely difficult in windy conditions. In addition, a more direct access to the docking berths is being considered, requiring cutting through the reefs. Prior to the advent of the mega cruise ships, the South Channel was the most common route; this caused routine sedimentation affecting the surrounding reefs. The current issue is that both the South and North Channel should undergo modifications to accommodate larger ships. Hence, in the shorter term, having a quantitative measure for the value of Bermuda's coral reefs would enable the incorporation of reef values in Cost Benefit Analyses, comparing the costs associated with modifications of the North Channel and those of the South Channel.

Total Economic Valuation of Bermuda Reefs - Goals and Objectives

The objective of the study is to carry out a total economic valuation of the coral reefs by estimating the main values of the reefs for: (1) Tourism, (2) Physical coastal protection, (3) Fisheries (commercial and recreational), (4) Amenity values and (5) Quality of life, or recreational and cultural values. Additional indicators of the social importance of reefs will also be provided, such as employment revenues.

Expected Outcomes

In the shorter term, the TEV will be promoted for use in making a more informed decision on the selection of the shipping channel for larger ships, as described above. Expected outcomes in the longer term are the provision of a tool for assistance in decision-making towards a sustainable environment. This tool will also help in advocating the preservation of the coral reefs in Bermuda, in establishing damage compensation fees following ship groundings, or in further enabling coral reef restoration through the evaluation of potential financial contribution by tourists and residents.

Work Phases

This two-year project is divided into five phases. The first year focuses on data gathering; the second on economic analyses and strategy development for integration into policy and decision-making. Each phase has several tasks associated with it.

Phase I: Scoping and Data Gathering

This initial phase defines current users, uses, and threats to Bermuda's coral reefs and adjacent habitats, and identifies which resources will be most useful in determining the existing conditions of Bermuda's coral reefs. It also defines the geographic boundaries of the study. Existing GIS data for the study areas, and maps of the entire island are available facilitating this. Available resources related to the project, including available literature on reef ecology, threats and economics, are assembled, including work conducted in Bermuda. Government statistics (e.g. fisheries statistics, population census, tourism exit surveys, elevation maps, land valuation) are also compiled at this stage. Other information required is for coastal/infrastructure protection, local prices for structures to prevent erosion and hurricane damage, and price of land and properties, and is collected from realtors, and government agencies.

Phase II – Economic Valuation Methods and Stakeholder Interaction

The main objectives of Phase II are to gather information from individuals with key knowledge about Bermuda's coral-reef related resources and economy, and to conduct a survey of local residents to obtain a monetary value of previously intangible resources, such as the cultural value of Bermuda's coral reefs. Some of the key steps to be taken during this phase of the project include:

- Key informants and focus group interviews: Available knowledge from local experts and policy makers is compiled, through interviews; this allows retrieving of data, as well as gaining their interest in the study. Community consultations are included within this phase as well.
- Survey: A combined local recreation/cultural/traditional/non-use value stated preference survey is being carried out. The survey is based on 'choice modelling' to give respondents a set of options regarding their reef-related activities and perceptions, which can be used to estimate the values that they place on different reef-related attributes. This also includes the perception of local residents of the importance of biodiversity supported by the coral reefs. A representative sample of 400-500 individuals

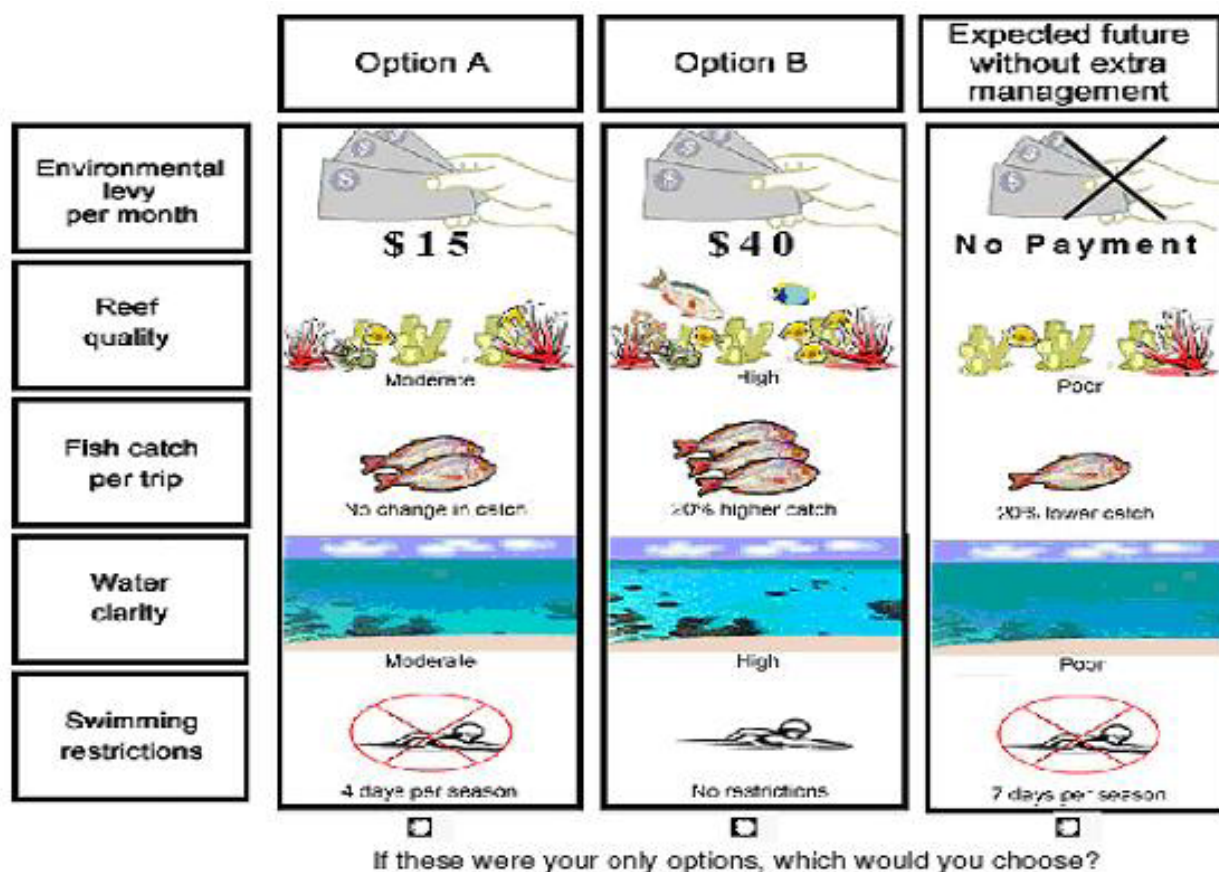


Figure 2. A sample of the choice card and description of the attributes developed for Bermuda's study

in Bermuda is being surveyed. A sample of the choice card and description of the attributes developed for Bermuda's study is given in Figure 2.

- The fisheries value of the reefs is obtained from existing surveys conducted by the Department of Environmental Protection. Market prices also provide information on the value of commercial fisheries.
- The value of the reefs as a tourism asset is determined using the Net Factor Income Method. This method requires data on revenues from SCUBA/Snorkelling/Sailing/Fishing Charters, on tourist expenditure through exit surveys, and on tour operator costs. A tourist exit survey is also developed and conducted, to supplement current information.
- The value of the reefs in coastal protection is determined through avoided damage costs, using data on local land, dwellings and infrastructure.

Figure 3 provides a graphical illustration of the range of economic values and valuation techniques used to determine the TEV of coral reefs in Bermuda.

Phase III – Synthesis of Values and Cost Benefit Analysis

The values for each of the categories above are combined to arrive at an estimate of the Total Economic Value (TEV) of Bermuda's coral reefs. Estimates are based for the 'production' side of tourism and fisheries on gross values. All other value estimates are, by their nature, in net terms. To enhance comparison and aggregation of the results, the tourism and fisheries values are transformed into net values. Final results are presented both in gross and in net terms.

Phase IV – Preparation of Final Report and Presentation

Once the data evaluation portion of the project is completed, a full-length final report is written, of sufficient quality and content to guide resource management in Bermuda, as well as a DVD for dissemination to the public and the media. The report is first submitted as a draft for review by advisors, stakeholders and the Steering Committee, at which time the final report will be prepared and submitted. A ten-page policy brief stemming from the report will be the main document for dissemination.

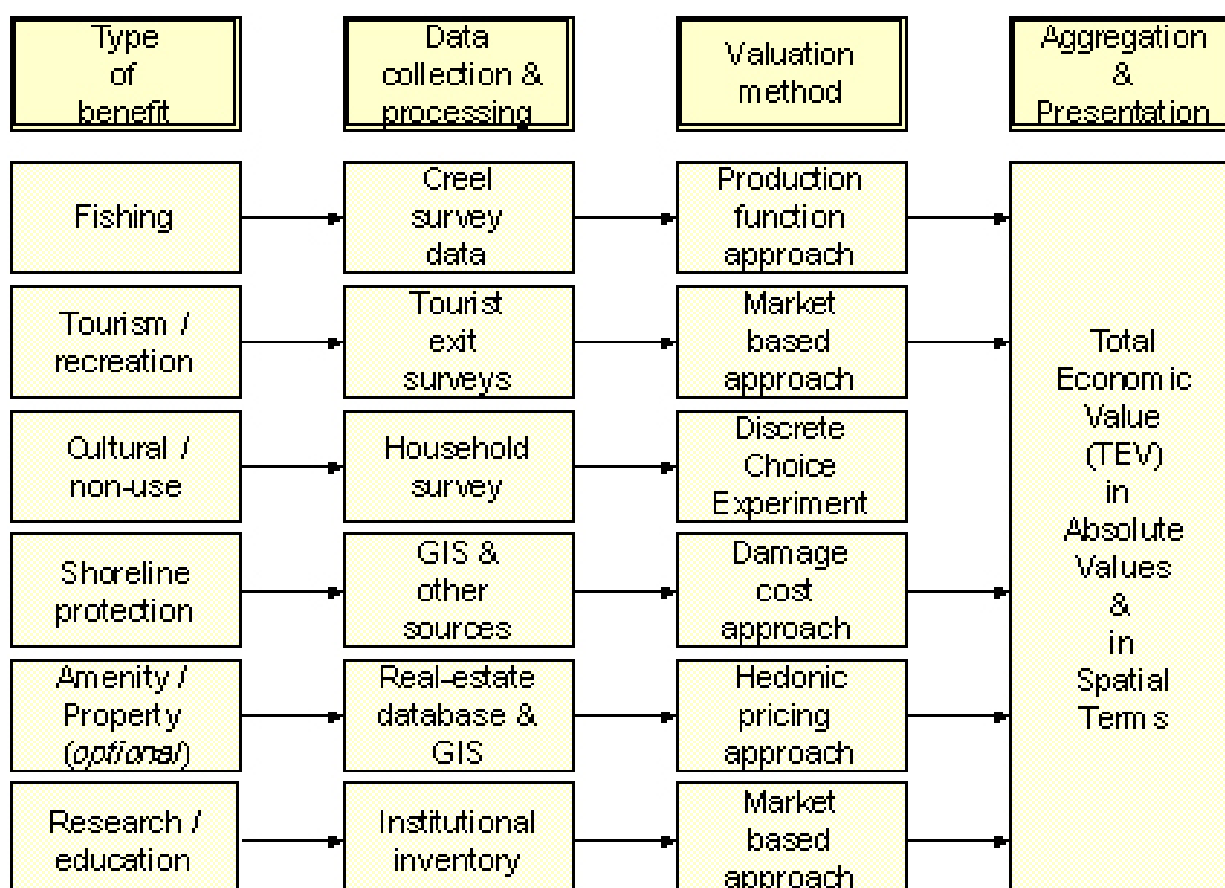


Figure 3. Valuation techniques for the services provided by Bermuda's coral reefs

Phase V- Capacity Building

The integration of economic valuation into policy-making is promoted through a workshop, to consult with senior policy-makers on the next step. The Steering Committee will assist in developing a strategy through public consultation and opinion surveys. This results in a list of recommendations for integration. In addition, the Environmental Economics Module developed for the Bermuda College, and a set of guidelines for future environmental economic valuation studies in Bermuda, will provide local expertise and tools for the long term.

At the time of writing of this manuscript, a first draft is being reviewed by the Bermuda-based manager and the Steering Committee. A number of challenges have been encountered, with some limitations relating mainly to data gathering which are outlined below.

Challenges and Limitations

Increased Costs: Economically valuating the services listed above requires comprehensive data, which may be obtained from existing databases and/or from developed questionnaires providing

the relevant information. Two main questionnaires were specifically designed: (1) Household survey, and (2) Tourist exit survey. For both of these, a representative sample of 400 needed to be interviewed face-to-face. Professional services were hired for the implementation, increasing the initial estimated budget substantially. Data from these surveys was used for the valuation of: (1) Recreational fisheries, (2) Tourism value, and (3) Recreational & Cultural value. In addition, economic analyses are comprehensive, conducted by a team of consultants assisted by M.Sc. students; consultant fees, travel and accommodation to Bermuda raised costs considerably, requiring active fund-raising from Bermuda-based companies during the second year of the project.

Limited dataset: Limitations in the data collection were encountered for the Amenity value; given the nature of confidentiality for Land Valuation Department records, data on houses sold could be obtained only by private Real Estate Companies; this became a labour-intensive exercise, yielding data on only 50% of the houses sold over a period of 4 years.

Lack of documentation: In order to obtain the

direct value of coral reef-associated fisheries, total catch, market fish value, and fishermen costs are required. Unfortunately, due to the lack of reporting on income – not required in Bermuda due to the lack of income tax - costs incurred by fishermen were difficult to obtain. Hence, although gross value of the fishery can be calculated on relatively solid data, net value is a guesstimate, and was based on the goodwill of a few fishermen (6) who shared information on their costs.

Preliminary Results

Results at the time of writing were not finalised but have brought to light new information on the uses of the marine environment and more specifically of coral reefs. This study has provided a first dataset quantifying the recreational fishery in Bermuda. This has highlighted the significance of this fishery in terms of total catch, and suggests the need for monitoring, if not regulating, this activity. Currently, there is no legislation with respect to recreational fishing, and based on this study, the majority of recreational fishermen comprise those fishing from shore. With respect to the coral reef value, the recreational fishery appears to be comparable to the commercial fishery. Secondly, the study confirms the importance of coral reefs as a tourism asset; however, it is interesting to note that the health of the reef seems to be a major contribution to the attraction it exerts on tourists, where a marked decrease in tourists is estimated should Bermuda's coral reefs become severely damaged. It follows that tourists do show a willingness to pay for restoration and preservation efforts. Similarly, the concern of residents for environmental issues, among which are damage to coral reefs and overfishing, was quantified through the household survey; 25% of residents interviewed showed willingness to support financially conservation efforts for the preservation of coral reefs; the main incentive is to preserve the ability to swim in any section of the island without restrictions (due to pollution or other causes) and have the continued assurance of swimming in areas with high water clarity.

Developing a strategy for promoting integration of TEV

The robustness of the methods used and thoroughness of the data obtained to date facilitate the acceptance of results by the Steering Committee at first, and by policy makers thereafter. A strat-

egy for promoting the integration of the results by policy and decision makers is developed by the Committee, as well as for raising awareness of the general public. The link between the Department of Conservation Services and the Education Department of the Bermuda Zoological Society provides several opportunities for dissemination of this information to Bermuda's youth.

The incorporation of TEV into a Cost Benefit Analysis for modifications to the South and/or North Channel will furthermore serve as a clear example of how such a tool may be used in future developments. Politicians have already bought into the idea of a TEV for the coral reefs, following newspaper articles and interviews on this topic. It is hoped that with adequate dissemination to the general public, political will shall be engaged and that the valuation tool developed becomes an inherent part of decision making in the future; this should further encourage the economic valuation of other natural resources in Bermuda.

Raising the Profile of the UKOTs in the UK Parliament

Paul Keetch MP



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The UK Overseas Territories (UKOTs) are not directly represented in the UK Parliament. This is despite their status as British sovereign territory, and the UK's 'ultimate responsibility' for the UKOTs, notably in areas such as good governance, representation under international conventions (including Multilateral Environmental Agreements) and wider aspects of international relations. Various mechanisms do exist in the British parliamentary system by which those in the UKOTs can highlight issues of concern. For example, anyone can make submissions to relevant Select Committee inquiries or establish contacts through relevant All Party Parliamentary Groups. Recent experience has demonstrated how Select Committee reports can influence UK Government thinking on UKOT issues – notably those arising from the Foreign Affairs Committee inquiry into *Overseas Territories* and the Environmental Audit Committee inquiry into *Halting Biodiversity Loss*. What can be done to enhance awareness and encourage use of these mechanisms by those in the UKOTs? What new mechanisms might be developed for raising the profile of Overseas Territories in the UK Parliament, for ensuring that the UK Government better promotes UKOT interests internationally, and for enhancing the UK Government's support to UKOTs in critical areas such as good governance and environmental management?

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I feel I must start by saying that, despite being a Member of the Foreign Affairs Committee (FAC), my opinions are just my own, although they have been influenced and formed from FAC meetings, evidence and reports.

Until last year the FAC had not published a report on UK Overseas Territories, apart from Gibraltar, since 1997. During this extended period, many important events occurred, none more so than the British Overseas Act 2002, which gave UKOTs their current name and provides the inhabitants of all UKOTs, except for Akrotiri and Dhekelia on Cyprus, British citizenship, although it is interesting to note that it cannot be acquired through naturalization in one of the UKOTs.

The FAC has had also an essential role in recommending and implementing the British policy towards the situation in the Turks and Caicos Islands (TCI), which the UK Government failed to address expeditiously, and I am proud of the work that we

have achieved, as one of the three MPs who went to TCI. The case of TCI shows that when a crisis does occur, the UK has the capability to intervene and implement successful measures to correct the situation. I believe we have done not only what is best for UK interests but also for the residents of TCI.

So I sincerely hope that, in future, the FAC will not leave discussing UKOTs for such a long period, as the Territories still maintain a unique status in the United Kingdom and they are not simply another member of the Commonwealth. I hope that all current UKOTs maintain this unique connection for many more years to come, as it is beneficial for all parties.

The FAC's report published last year was, I believe, comprehensive and fair. It evaluated what we believed were the most important issues, challenges and threats that faced the UKOTs and, obviously, environmental issues played an impor-

tant part, due to the incredibly diverse and unique environments that exist in UKOTs.

During the last parliamentary session in the lead up to the publication of the report, RSPB and UKOTCF both reported to the FAC that good governance is essential to ensure suitable legislation to protect the local environment. One of the largest criticisms from UKOTCF was that UKOTs 'lagged behind the UK in terms of environmental protection' and this was due to low political status, confusion over responsibilities, muddled departmental responsibility and confusion over the role of Governors. In my opinion, most of these are easily avoided through good and clear governance. Whilst I realize that each UKOT is different and almost all want a different degree of UK involvement in domestic matters, there has to be a clearer framework which allows better governance.

The direct funding that the UK provides many UKOTs is essential to ensure that the correct measures can be implemented to protect the environment, and also to provide infrastructure. It was the conclusion of both the Environmental Audit Committee (EAC) and of the FAC that the current funding by both DEFRA and the FCO is wholly inadequate to maintain the varied and complex environments of UKOTs. I am extremely disappointed that the FCO refused to increase the funding of the UK Overseas Territories Environment Programme (OTEP) during the last Parliamentary session. Furthermore, I am concerned that the FCO has told the FAC and the EAC that 'responsibility for environmental issues has been devolved to the individual territories'. I believe this to be completely the wrong attitude, as the UK Government must assist UKOTs in environmental protection. During the RSPB testimony, they suggested that £16 million per year should be spent to protect ecosystems, and rare species from extinction. I am extremely disappointed that the UK Government seems not have taken this message seriously as of yet, and that the small financial assistance that comes from DEFRA is wholly inadequate to address the situation. As the EAC report on *Halting Biodiversity Loss* states, 'the [UK] Government has a clear moral and legal duty to help protect the biodiversity of UKOTs', I could not put it better myself.

The UK isn't the only country that maintains overseas territories; France, Denmark and the Netherlands are the main European countries with overseas territories. I want to touch briefly on the different approaches that France uses.

France has a differing relationship with each of its territories in terms of autonomy. However, all French territories have elected representation in both houses of the French Parliament as well as voting rights for European and Presidential elections, giving them a more visible and active role in mainland France's political system. The latest French territory to embrace this system was Mayotte, which voted in a referendum in March this year to change its status from an 'overseas community' to France's 101st Department in 2011. This shows that overseas territories still feel that there is a benefit in the system.

The UKOTs have not independently signed up to international treaties, such as the Convention on Biological Diversity and the Ramsar Convention; and are instead represented by the UK - which shows that there has to be more cooperation to tackle environmental problems. UKOTs are also not members of the UN or the EU (although Gibraltar is of the latter) and instead rely solely on UK representation. Whilst no Dutch or Danish territories are parts of the EU, France's four overseas departments are, and so can more easily access EU funding and EU assistance. OCTA and UKOTA do provide representation for UKOTs to the EU but cannot effectively deal with specific issues for each territory.

I want to go into the background of the UK political system and talk about the options available for Overseas Territory Governments and NGOs to discuss and lobby on their domestic matters.

Committee inquires

Select Committees play an essential role in UK parliamentary life. They allow selected backbenchers from all parties who are appointed to the committees to access and assess information, including by conducting interviews on matters relating to the committee's mandate. Persons of interest called to give evidence to the committee can include cabinet ministers, members of NGOs and experts in the field; importantly, evidence sessions are not just for UK Government officials and representatives. Each committee has its own staff and they can provide more information concerning future and current reports.

APPGs – All Party Parliamentary Groups

All Party Parliamentary Groups (including those that focus specifically on UKOTs) comprise members from of both the House of Commons and the House of Lords, and can also include members of the European Parliament. The members can be from any political party or can be a crossbencher from the House of Lords. These groups meet at least once a year for an AGM. The objective of these groups is normally to ‘improve links and mutual understanding’ with the respective territory. The groups can be contacted through the Chairman of the group, whose name, political party and address can be accessed on the parliament website.

PQs - Parliamentary Questions

Parliamentary Questions are a useful tool for backbenchers in both Houses from all political parties. They are asked to the cabinet minister in charge of a Governmental department, although they can be answered by a junior minister. They can be submitted either for a written answer or for an oral answer in the chamber of the House. PQs are normally formed by contacting an MP, who is interested in the relevant field, and suggesting along what lines the PQs should be asked.

EDMs - Early Day Motions

These motions normally consist of about 250 words and, although sponsored by one MP, a motion will be co-sponsored by another five. These MPs can be from any political party although it is custom that no cabinet minister puts their name to any. Whilst these motions originally were supposed to be tabled for debate at the earliest possible day, they are now simply symbolic and are a way of disseminating information and attracting political support from other MPs. More cross-party support does help the cause, and improve the chances of the motion being approved should there ever be a vote on it, although this is almost unheard of. Despite this, EDMs remain a very useful tool in informing parliamentarians about a subject and gaining support.

St Helena

I want to move onto a specific case example from one of the territories that, for me, has managed to

use almost all the tools available in the UK political system. It has certainly raised its profile in the UK Parliament, so much so that, here I am in the Cayman Islands talking about it! I hope that by keeping to one specific example it will more clearly demonstrate how each step can have a different impact.

I am sure that you are all aware of the situation on the Island of St Helena, but I will just briefly touch upon it. St Helena is one of the most remote locations on earth and has a population of about 4,000. It is extremely rich in its biodiversity, partially due to its isolation. At the moment, it is extremely difficult to obtain access to the island, either to visit or provide supplies (or to try and leave, as Napoleon found out the hard way!) The only way is via *RMS (Royal Mail Ship) St Helena*, on which it takes two weeks to sail to the UK or about a week to South Africa, and is even a two-day sailing from the nearest airstrip on Ascension Island. However, the Government and the majority of the population of St Helena have managed to use almost every political tool to try and lobby the UK for an airstrip on the Island.

I realize that, due to the biodiversity of the island, there maybe a few of you in the room today that are against these plans, especially as the intended site of the airport, Prosperous Bay Plain, is known for being the home to a wide selection of invertebrates and the Wirebird. However, it is essential for the survival of the island that freer access is made available, not just to receive supplies more frequently, but also to generate more revenue on the island. There has also been an agreement to implement a Wirebird mitigation programme, which would hopefully protect this rare species from any environmental damage the airport might cause.

No one is advocating that the island should completely open up to mass tourism, as this could have serious ecological consequences, and so the plans would limit the size of aircraft able to land there, but an airstrip would be extremely beneficial to the islanders and would also make it more accessible. At the moment, the UK Government provides St Helena with annual funding amounting to approximately £5million. However, the projections of income provided by the new airport equate to £30million per annum. With the environmental programme in place, which will hopefully limit the environmental impact, the benefits seem to outweigh the costs.

In 2005, the Department for International Development (DFID) agreed to provide funding to build an airport on the island, due to be completed in 2010, in time for the end of the life for *RMS St Helena*. This would provide the island with a direct, more frequent and more efficient supply route. Unfortunately, due to the current economic climate, the plan was suspended on 8 December 2008. From that moment on, the Government of St Helena, local ‘Saints’, and expatriates have spent months lobbying the UK Government and politicians on what the future access to the island should be, and have been incredibly successful. So far they have achieved numerous PQs, two EDMS, a meeting of the St Helena APPG, a Westminster Hall Adjournment debate, and a petition to the Prime Minister. The Adjournment debate was actually called by Meg Munn, the former Parliamentary Under-Secretary of State for the FCO, showing just how high profile the campaign has become. My Liberal Democrat colleague, Bob Russell, is the Chair of the St Helena APPG and has taken an important role in involving himself with the Adjournment Debate, drafting the two EDMs and asking various PQs.

DFID has now opened up a consultation. I am sure that the organized campaign that has, so far, achieved great success in lobbying the UK Parliament is partly responsible for this.

Adjustments to the current system

Whilst I am not in favour of changing much of the current system, there are certain tweaks that can be made to make it more effective.

1. The first change would be concerning the role of a Governor. Whilst the majority of Governors do an exceptional job, there are no criteria for their selection or training and, unfortunately, they are often not given the support they require to do their job effectively. Under the current system, I appreciate that the majority of Governors have differing levels of responsibility throughout the UKOTs. However, more training and influence should be given to Governors, as suggested in the FAC report on *Overseas Territories* during the 2007/08 session. Another suggestion made by the FAC report, which I again agree with, is that the FCO should consider appointing Governors who were not career diplomats.

2. Although most Territories have signed Environ-

ment Charters, we must ensure that all do so, so that there can be full co-operation between the UK Government, the UKOT Government, the private sector and NGOs and, more importantly, so that the progress from all sides can be monitored.

3. I believe we must also ensure increased representation of UKOTs in the UK. Whilst there are a number of options available, I would like to see an elected representative based in London, either as a fully fledged MP or as part of a new UKOT Assembly, representing all UKOTs where British citizenship is available, which could have a direct relationship with the UK Parliament and UK Government. True, there may be problems implementing such a scheme, but this would ensure that the most important issues of all UKOTs could receive the same importance with the UK Government. At the moment, despite doing an excellent job, the UKOTA does not have elected, but appointed, officials, and so their viewpoints are very dependent on the respective Governments, which in itself presents its own problems. There is also no mandate for representing NGOs, which play an important role in the UKOTs. What we need is a representative, elected by the citizens of UKOTs, who can successfully lobby the UK Government on the issues that really matter to the people of the UKOTs. I also believe that the French system of having an elected representative of overseas territories in their parliament could work very well for UKOTs. It would give UKOTs full access to the UK Parliament.

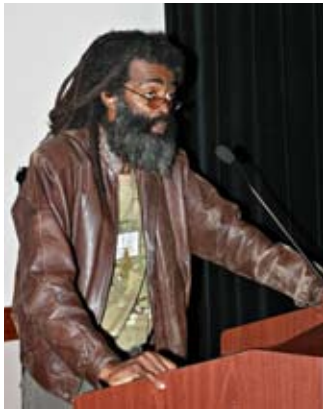
4. Most importantly, we must ensure that there is a clear definition of what the role is for each department within UK Government (including HM Governor). This would prevent ‘passing the buck’ as well as ensuring that closer co-operation is possible. I believe also that the time has come to have a designated junior minister specifically dealing with UKOTs. This would allow UKOTs to be more easily represented internationally and would also give the UKOTs a direct voice in the UK Government. Finally, The UK Government must pledge support both in an advisory and financial capacity to assist UKOTs support their fragile and unique ecosystems and the endangered species that live there. I would urge the UK Government to listen to the recommendations of both the EAC and FAC, and provide the necessary framework to pool the resources of DEFRA, the FCO and DFID to take more responsibility for the environments and biodiversity of the UKOTs.

I would like to end with another passage from the FAC report from the 2007/08 session which, in my opinion, summates what relationship the UK should have with UKOTs: the UK Government 'must take its oversight responsibility for the Overseas Territories more seriously - consulting across all UKOTs more on the one hand while demonstrating a greater willingness to step in and use reserve powers when necessary on the other'. With this policy, both sides will receive a greater benefit, better governance, greater environmental protection and fully utilize the unique connection that UKOTs enjoy with the UK.

Thank you.

The Environment as an Election Issue: The Virgin Islands Experience

Bertrand Lettsome (Dept of Fisheries & Conservation, British Virgin Islands)



Lettsome, B. 2010. The Environment as an Election Issue: The Virgin Islands Experience. p 251 in *Making the Right Connections: a conference on conservation in UK Overseas Territories, Crown Dependencies and other small island communities, Grand Cayman 30th May to 5th June 2009* (ed. by M. Pienkowski, O. Cheesman, C. Quick & A. Pienkowski). UK Overseas Territories Conservation Forum, www.ukotcf.org

The British Virgin Islands has a legacy and long standing tradition of conservation and sound environmental management, having enacted its first set of environmental legislation more than half a century ago, and its first National Parks Trust Act in the early 1960s. The post of Conservation Officer was established within the Ministry of Natural Resources in September 1984, and the National Parks Trust Office was established in January 1985. The Conservation and Fisheries Department was established under the Ministry of Natural Resources and Labour in 1990. The Virgin Islands are party to a number of multilateral environmental agreements (The St George's Declaration is an example, regionally) and a bilateral environmental agreement (the Environment Charter).

As the Virgin Islands developed, a series of plans, policies, and strategies were instituted and legislation enacted to address the growing myriad of environmental issues. These included the 1995-1999 National Integrated Development Strategy, National Environment Action Plan, Public Sector Development Programme, The National Physical Development Plan, and National Parks and Protected Areas System Plan; The Fisheries Act 1997, Fisheries Regulations 2003, Physical Planning Act 2004, National Parks Act 2006, and the Draft Environmental Management and Conservation of Biodiversity Bill 2009.

Environmental education and public awareness; institutional strengthening and succession planning; and legislative reform were the main areas of focus, and remain the bedrock, the fundamental principles on which this emerging culture of conservation and environmental responsibility is based. "As the environment goes, so goes the Virgin Islands" and the fact that "the environment is everyone's business", have been burned into the consciousness of the people of the Virgin Islands. Public consultation has always been the norm, but now it is a fundamental component for policy, strategy, and legislative review and development. This need for public consultation is now enshrined in the four major environmental Acts: Fisheries, Physical Planning, National Parks Trust, and the Draft Environmental Management and Conservation of Biodiversity Act. While the environmental situation in the Territory continues to evolve, it is of significant note that an umbrella environmental Non Government Organization, The Virgin Islands Environmental Council (VIEC) has been formed, and using the provisions of the Fisheries Act and Regulations, National Parks Act and Physical Planning Act, they have successfully challenged the planning approval of a major development project and earned the right to a judicial review.

There is a high degree of environmental advocacy and activism within the general population. Public sensitivity to environmentally-responsible development contributed to the recent outcome of General Elections in the Virgin Islands, wherein public perception of the previous administration being too accommodating of environmentally-irresponsible new developments led to an upset. A similar public sensitivity has been observed growing in other UK Overseas Territories.

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Campaigning - Buy Back Bermuda

Jennifer Gray (Executive Durector, Bermuda National Trust; and Bermuda Audubon Society)



Gray, J. 2010. Campaigning - Buy Back Bermuda. pp 252-257 in *Making the Right Connections: a conference on conservation in UK Overseas Territories, Crown Dependencies and other small island communities, Grand Cayman 30th May to 5th June 2009* (ed. by M. Pienkowski, O. Cheesman, C. Quick & A. Pienkowski). UK Overseas Territories Conservation Forum, www.ukotcf.org

Buy Back Bermuda is a partnership between two synergistic conservation charities with similar goals and mandates which have combined their energies into a single force to buy back Bermuda's precious open space.

The *Buy Back Bermuda* Campaign materialized as a result of development challenges in Bermuda where open spaces are vanishing rapidly during times when landowners can achieve all-time high prices for selling to developers. We recognized that, as our open spaces became scarcer, the "free" natural services that they provided made them equally (if not more) important economically than some of our developed areas. For the first time in Bermuda, two environmental charities considered paying full real estate values to save open space.

Buy Back Bermuda was started in 2004, when the Bermuda National Trust and the Bermuda Audubon Society joined forces to raise money to purchase a significant area of open space which was about to be sold to a developer for mass condominium creation. After a successful first campaign, a second is now underway to further save two threatened open spaces.

With a mission 'to save our precious remaining land by reclaiming special areas for the benefit of the people of Bermuda and her flora and fauna', the *Buy Back Bermuda* Committee have set site selection criteria to assist in the overwhelming response to our efforts and tailored an engaging public relations drive across all sectors of the community. This article outlines the tremendous success of the collaborative approach to conservation and fundraising and the unexpected challenges generated from this success.

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Buy Back Bermuda is a community-wide fundraising campaign to purchase and save open space in Bermuda. It is the result of a focused partnership between two like-minded conservation charities, the Bermuda National Trust and the Bermuda Audubon Society, which together set a mission to save our precious remaining land by reclaiming special areas for the benefit of the people of Bermuda and her flora and fauna.

The driving force behind this partnership was the challenge both charities faced in advocating for, and acquiring, open space in a time of escalating

property prices and development. Open space is becoming increasingly rare, and therefore able to command extremely high prices on the market. In Bermuda, incidentally, the market means that whatever someone is prepared to pay determines its value. So a basic principle of economics follows: if a resource is diminishing, especially because of consumer demand, then the law of supply and demand dictates the price will increase. In 2004, when landowners were achieving all-time high prices for selling their open space to developers, the two NGOs joined forces in an attempt to meet



Housing density is high in Bermuda.

the current demand and challenge the developers in purchasing rights.

To give you an example of what I mean by a challenge consider this: Bermuda's luxury homes market is still buoyant despite the current economic crisis, with total sales up at \$63 million in 2008. More than \$30 million worth of luxury home sales were closed during the last six months of 2008. Approximately 10 luxury homes were sold in the 4 to \$13 million dollar range.

The average price of a condo is now just above \$1 million. More than a third of family's spending in Bermuda is now going on housing — nearly double that of the US. The Bermuda standard price for real estate is now \$1.6 million an acre, for undeveloped land, without a house or utilities.

In 2001, the *Bermuda Biodiversity Country Study* reported that over 13.7% of the land in Bermuda was covered in concrete, with an estimated 227 acres lost to development every 10 years - and this on an island of only 13,000 acres. The current area of land protected in parks and reserves is only about 800 acres.

Pressure on open space for housing, tourism and commercial development is so great that it is predictable that all land not specifically protected in Parks, Reserves, golf courses and other recreational grounds will eventually become urban. The skyline in Bermuda is so interrupted with construction equipment that local environmentalists now joke that the crane is replacing our beloved Cahow as the national bird.

Without a doubt, precious open space is becoming fragmented. Perhaps the biggest threat of all to our biodiversity and our quality of life is the lack of human awareness. Our affluence and associated concepts of greed and ownership are leading to the

demise of our own life support system.

Unprecedented in their respective 50- and 40-year histories, the Audubon Society and the National Trust entered in 2004 into market value purchase of land in a brave attempt to protect open space.

It all started at a round table discussion of environmentalists when it came to light that planning permission had been granted to develop pristine open space in the western end of the island to build 22 beach front condominiums. The 2.86 acre lot included an inland pond frequented by local birders looking to record migratory species on their approach to the islands and the breeding season's first appearances of waterfowl offspring.

The idea of approaching the owner to purchase was then discussed by the Audubon Society, who determined that, even emptying their bank account, would not cover the down-payment on the land. A proposal for collaboration was taken to the National Trust Council, who embraced the concept despite financial concerns regarding the vast holdings they were already struggling to manage on limited resources. Three members of the Trust and three members of Audubon approached and nominated a facilitator to the new committee, and the *Buy Back Bermuda* Campaign was launched.

The committee reviewed all potential and threatened open spaces in Bermuda and framed the site selection criteria which mandated that suitable sites:

- Be significant in terms of a natural habitat with biodiversity, and worthy of protection and conservation as a nature reserve;
- Be at risk to development or loss of habitat or public amenity;
- Be capable of public access;
- Have educational value to the public at large;
- Be contiguous with an existing protected site;
- Be bordering a natural shoreline on at least one of its boundaries;
- Have a connection to a historic structure or use.

Somerset Long Bay East is bordered by a National Park and a Nature Reserve in the charming and secluded area of Long Bay, Sandy's Parish. With an inland pond, woodlands, grassland, beach and the rocky coast, the property provides a diverse range of habitats for local biodiversity.

For the people of Bermuda, the woodlands and



Existing and new reserves at Somerset Long Bay

beach provide a place of serene beauty and tranquillity, the best medicine for weary souls suffering from today's fast pace.

For our birds this is one of the most important nesting habitats in Bermuda. Moorhens, Pied-billed Grebes and Purple Gallinules have established breeding niches in this pond habitat.

Meeting the criteria on all counts, an approach was made to the land owner of the threatened property. An environmentalist at heart, in financial difficulty, the owner was all too happy to pull out of the sales and purchase agreement with the developer and sell to *Buy Back Bermuda*. And so it was in June of 2004 that the *Buy Back Bermuda* Committee were tasked with putting a vision into action. The target for the campaign included the purchase price, professional fees and an additional \$300,000 for implementation of a conservation management plan. As agreed with the land owner, and after a deposit was made,

we had 18 months to reach our target and make final payment.

The financial plan for the campaign relied heavily on major gifts from the corporate world in Bermuda and, in particular, key foundations. Thousands of letters were sent out, presentations made to numerous committees, philanthropic groups and schools and personal phone calls and visits made to friends and business associates.

A marketing strategy was key to advertising the campaign with flyers distributed island-wide. Posters were also distributed and ads placed in the local print media. A Christmas ad encouraging the public "to give the gift that gives back" proved to be very popular with the older generation who purchased countless gift certificates for nieces, nephews and grandchildren. All donors were offered the opportunity to have their name engraved on a bronze plaque to be erected on the Nature Reserve.

I have to say that the response to our campaign was overwhelming and, indeed with the community behind us. *Buy Back Bermuda* Round 1 proved to be one of the most successful campaigns Bermuda had ever realized, with funds raised in cash and pledges within only 7 months. The campaign was oversubscribed, raising more than \$2 million through donations from school children, individuals, large corporations, foundations, government



Marketing: print ads, internet, flyers, posters, media coverage

and a grant from OTEP for management plan implementation. This first *Buy Back Bermuda* campaign showed unequivocally that we had struck a sensitive nerve in our community and that people were aware and concerned about the critical issue of vanishing open space.

Under the direction of our dynamic *Buy Back Bermuda* team, an incredible amount of effort went into implementing the conservation management plan for the site. Truck loads of bottles and trash and invasive species were removed, the pond dredged and expanded to create a healthier environment for biodiversity, and native and endemic flora planted across the landscape. The community showed their support once again with hundreds of volunteers contributing gifts of time to assist in the field over the course of an entire year.

Finishing touches included the addition of a small dock where school groups can better view pond life, a bird observatory and educational interpretive signage. An education guide has been created for the Reserve for supply to all schools on the island. Earth Day 2007 was a memorable day indeed as the Reserve was officially opened to the public. By this time, plans were already in the works for campaign II.

Following the success of the first campaign and having received numerous calls concerning threatened open spaces, we once again followed our criteria to identify possibilities for land acquisition and protection. In October 2007, *Buy Back Bermuda* Campaign 2 was launched with a target of 2.5 million to save not one but two parcels of land totaling 11 acres.

Some years ago, the Audubon Society had been interested in acquiring a 3.36 acre plot near Shelly Bay, that is the site of the former Eve's Pond. As luck would have it, this property was on the market again. The inland tidal pond, which connected to Harrington Sound, was filled in with the dredgings of Flatts Inlet in the early 1940s. *Buy Back Bermuda* has provided a new opportunity to purchase the land, which incorporates a diverse range of habitats including a rocky coast with tide pools, an



*Somerset Long Bay East Nature Reserve:
Implementing the Conservation Management Plan*

inland valley and an upland hillside with a densely forested lower slope. The property is connected to the Shelly Bay National Park by a Parks Railway Trail, and there is potential to restore the original pond if funding allows.

The second site in the Round 2 Campaign had been put out to tender in the local papers and we submitted a modest bid for it. The 7.5 acres extends from the verges of Evans Pond in Southampton, over a high ridgeline, to the shoreline of the Little Sound. It borders a Government-owned Nature Reserve and is adjacent to the Parks Railway Trail. The site is predominantly lush woodland, with many live cedars and rare native flora, including the *Rhacoma*, a relative of the sage bush found only in a couple of locations in Southampton Parish. Evans Pond, in the bottom of the valley, is a tidal saltwater pond bordered by mangroves and arable farmland.

Overgrown quarries occur along the east slope of the valley and are of great interest culturally and for the native and introduced ferns they support.

Following the template of Campaign 1, Campaign 2 was well on its way to being another success.

This was especially true with the welcome news that the landowner of the Southampton site wished to donate the land to *Buy Back*. This gift has allowed *Buy Back Bermuda* to realize our vision of not only saving precious open spaces, but implementing management plans that enhance the quality of these reserves.

I am thrilled to report that, as of 10 days ago [i.e. in May 2009], Campaign 2 reached its goal of 2.5 million dollars. Donations were received from



Round 2 Campaign Launch, October 2007

over 1,000 individuals, 96 organisations and the government's Ministry of Environment. The children of Bermuda embraced the concept, with many asking for donations to *Buy Back Bermuda* in lieu of birthday presents. Schools across the island held fundraisers, with one prep school in particular raising \$10,000 through trash-athons, bake sales and neighbourhood enhancement projects. *Buy Back Bermuda* has infiltrated the community, and perhaps the greatest reward of all is the emergent awareness for the need to protect our dwindling open spaces.

So what have we learned through the success of our campaigning?

- Anything is possible and you won't get what you don't ask for.
- Foundations like to give to charity partnerships – they get to cross off two charities in one donation.
- If you send the press an image-rich, camera-ready story they will often print it – no cost to you because you've done the work for them.
- Campaigning is a great tool for raising awareness.
- Donors like to have their name cast forever in bronze.
- Don't underestimate the power of our youth.
- People love to get out in the great outdoors to help you get your work done - but only once, so plan lots of different groups.

- Governments can sometimes be guilted into giving.
- Be passionate about whatever you do, and...
- It's important to have a 'face' for your campaign.

The public face of our campaign is our nominated Committee Chair, Dr David Saul, known widely in the community for his years in politics as Minister of Finance and for a short period as Premier of Bermuda. Now retired, David is well connected in the community, knows where all the money is, loves to be in the limelight, and is passionate about the

environment. While his tactics sometimes border on unorthodox, there is no doubt that his leadership has been fundamental to our success - giving testimony to the importance of carefully choosing the public face of any campaign.

Keeping your message simple and relevant is also key to capturing an audience.

Don't be afraid to tug on their heart strings

and never hesitate to ask for money for something you believe in.

And now just a few comments on the unexpected challenges generated from our success.

The perception of the community that we have been, and should continue to be, the environmental watch-dog for the entire island is reasonable, based on past outcries and successes, but this role has become very challenging in times when legal processes are not followed, enforcement is weak and the rate of financial growth and development is exponentially greater than our organisations' resources can accommodate. The *Buy Back Bermuda* campaign has resulted in a marked increase in pressure from the public to stop development and save all open spaces. This can be viewed as posi-



Eve's Pond, Hamilton Parish. From left, top row first: joined to a National Park via a walking trail; rocky shore tide pools (x 2); inland valley (previous site of a pond); water still there.

tive regarding awareness and action, but has put extra pressure, in the form of public expectation, on the organisations. It is our hope that the emerging 'green generation' will join forces in a voice for conservation rather than expecting the Trust to fix every problem.

It is interesting to note that the Ministry of Environment historically had an open space budget of one million dollars per year. The last known parcel of open space purchased by Government was in the year 2000. In 2004, the budget was reclassified as an open space and environmental enhancement budget, and funds were soon after allocated to small neighbourhood projects and the hiring of consultants. In 2007, the budget allocation was 500,000 and, in 2008, it was zero. It is concerning to see such a decline in Governments prioritization of open space, and one has to wonder if there is any association with the launching of *Buy Back Bermuda*.

Perhaps the greatest challenge brought on by *Buy Back Bermuda* hit the National Trust, the larger of the two organizations, in the form of a huge drop in funding to support our operations. As this is a charity reliant on donations to support our programmes and general operations, it became apparent that we could no longer rely on the corporations and foundations that have historically supported us when they are giving in a grand way to *Buy Back Bermuda*. In essence, we found we were in competition with ourselves for funding. Corporate foundations, individuals and the Bermuda Government have all been extremely generous to us in the past, but the recent economic crisis has changed the giving trend. In 2009, the donor com-

munity is sharply focused on ensuring the survival of those most vulnerable in tough times: families, children, the elderly and the sick. Funding has been cut for arts and environment until recovery from the recession is realized. The success of *Buy Back* and the unfortunate timing of the recent economic crisis have left the Trust with a budget deficit that will challenge us for months to come. The *Buy Back* Committee has much work to do to finalize and implement conservation management plans for the two new nature reserve, and campaign 3 has been put on hold for the time being.

We have without a doubt raised our profile and engaged a wide cross-section of the community for the better of Bermuda's environment and look forward to future successes in our campaigning.

How long a reprieve for the Grand Cayman Ironwood Forest?

Lilian Hayball (University College of the Cayman Islands)



Hayball, L. 2010. How long a reprieve for the Grand Cayman Ironwood Forest? pp 258-260 in *Making the Right Connections: a conference on conservation in UK Overseas Territories, Crown Dependencies and other small island communities, Grand Cayman 30th May to 5th June 2009* (ed. by M. Pienkowski, O. Cheesman, C. Quick & A. Pienkowski). UK Overseas Territories Conservation Forum, www.ukotcf.org

Located on raised dolomite rocks, the Ironwood Forest occupies a small area of land that has long been above sea level. The ecosystem is a haven for endemic plant and animal species, some reliant on the humid conditions generated by wetland within the forest. This ancient forest ecosystem has developed on sharp, abrasive jagged limestone pinnacles. Threats to the Ironwood Forest emerged in 2002, when the first edition of the *Official Street Atlas of the Cayman Islands* showed the location of a proposed 4-lane highway through the forest. This paper summarises increasing concern expressed by the public, resulting in a stop to the work, at least in the short term.

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Located on raised dolomite rocks, the Ironwood Forest grows upon a small area of land that has been above sea-level for longer than any other parts of central and western Grand Cayman, except Hell. The Forest is a haven for endemic plant and animal species found nowhere else in the world.

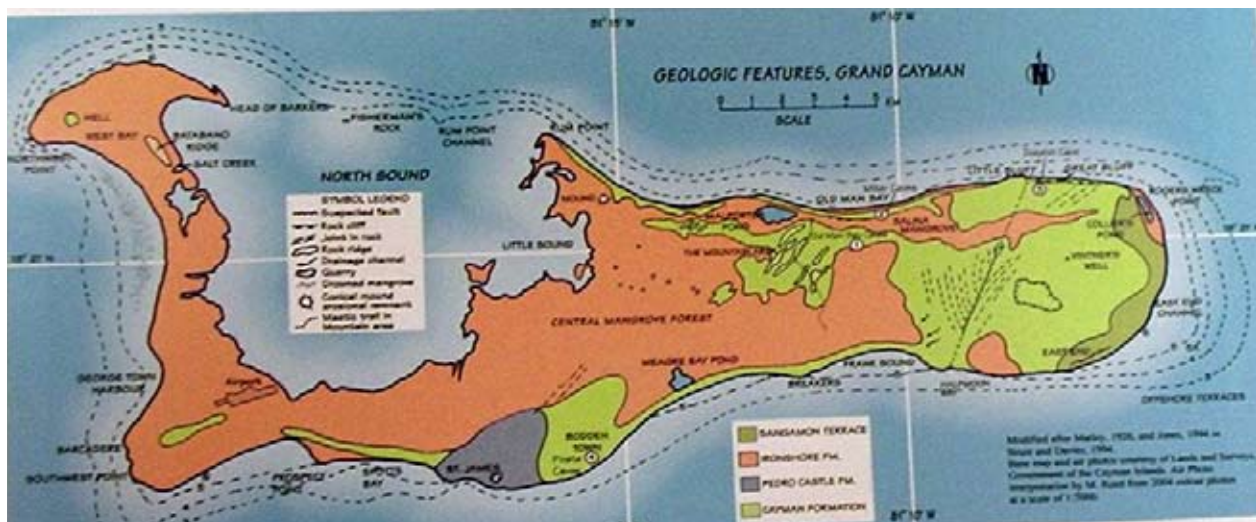
This ancient forest ecosystem has grown uninterrupted at the back of the capital, George Town, on sharp, abrasive jagged limestone pinnacles. A wetland area within the forest provides a warm and humid atmosphere ideally suited to the growth of a diverse range of plants and trees, many endemic to Cayman. The Ironwood Forest supports the only remaining natural population of the 1 - 2 metre tall, strap-leafed, endemic bromeliad *Hohenbergia caymanensis*, dubbed "Old George" in the recent Darwin Initiative *Plant with No Name* competition, entered by Cayman's school-age children.

Unique environmental characteristics make this tiny, 70-acre patch of dry forest ecosystem a stronghold for at least twenty critically endangered Red-Listed species of Cayman's plants and trees.

Threats to the Ironwood Forest emerged in 2002, when the first edition of the *Official Street Atlas of the Cayman Islands* was published. The atlas was a full-colour, alphabetically indexed, 170-page publication, and clearly showed the route of a proposed 4-lane highway through the Forest. Though it is now out of print, each page from the first edition of the atlas is available in PDF format from the following link:

http://www.caymanlandinfo.ky/Portals/0/ls_documents/atlas/gcindex.html. (The location of the proposed road can be seen marked in red dashes across the forest area on pages 41 and 42. To identify the required page, select Grand Cayman and an index map will appear. Click on the page of interest and it will load on your screen.)

Apart from disrupting a long-lived ecosystem, the planned road would have reduced this unique forest habitat into unsustainable fragments, introducing weed species to the heart of the forest, increased sunlight and road-polluted air into this stable humid system, drying the surrounding area and threatening endemics like Old George, Ghost Orchids and others, which thrive in the moist air,



The Ironwood Forest is on the most southwestern outcrop of Cayman Formation rock (shown in pale green). Map from Murray Roed's Islands from the Sea (2006).

Public concern mounted for the preservation of the Ironwood Forest. On Wednesday 30 April 2008, concerned citizens of Cayman gathered in front of the Grand Cayman Glass House to protest about the proposed road that would effectively cut the 70-acre Ironwood Forest in half. Following this public protest, more than 50 people attended a lunchtime rally on Friday 2 May 2008.

On 14 May 2008, at a public meeting, the Cayman Island Government spokesman on the proposed road said, "I don't think that you or anyone else has to convince us about the preservation of the forest. As a matter of principle, the Government is in total support of preserving what is known as the Ironwood Forest. No one has to have any fear of us going behind anybody's back and building a road in the middle of this forest if that's not what people want."

Speaking of the proposed alternative route, which skirts the forest's northern edge, it was noted that it would cost Government an additional \$5-6 million and was "absolutely necessary" in alleviating traffic congestion from the eastern districts to George Town. However, it was understood by the public that the forest would still be invaded and areas lost by this alternative road-building scheme.

On Monday 26 May 2008, citizens at a community meeting attended by Cayman Island Government officials, argued thus: "Cayman has seen much development in recent years, and we all know that no one can stand in the way of progress... but what is progress? Gaining a road at the expense of two unique species going extinct is not progress. Gain-

ing a road at the expense of our cultural heritage is not progress. Gaining a road at the expense of losing a unique learning opportunity for ourselves and our children is not progress. If this road is essential, why not select a different route? If no other route is available, why not design the road as a scenic two-lane parkway, with a maximum speed of 20-25mph, skirting around the forest and delivering the traffic to the schools at a safe and steady rate? This would protect the forest and our children."

During deliberations on the budget for 2008/2009, Cayman Island Government officials stated that there was no need for an Ironwood Forest Environmental Impact Assessment, since it has now been decided not to build the road through any section of the forest. Proposals were now on the table to approach the private land-owners about purchasing the land in order to leave the forest as an environmentally sensitive area in perpetuity. Funds in the budget would continue to be used as planned to expand the roundabout at the head of the Linford Pierson Highway, and to do work on Outpost Road to alleviate some of the congestion during morning school traffic. It was stated that, as these are not near the Ironwood Forest, an Environmental Impact Assessment was rendered unnecessary.

It is likely that the building of a road through the Ironwood Forest has been delayed by public action and also by the recent global economic downturn of November 2008. The Ironwood Forest endemic species have been given a reprieve and a new lease of life by these efforts and the change in fiscal circumstances which affect Grand Cayman.



Views of the Ironwood Forest

That said, it is important that a weather-eye be kept on future road-building initiatives on Grand Cayman, in case the old arguments for invading the forest re-surface as funds become available for road-building once more. It is imperative that consolidation of interest in conserving the Ironwood Forest be strengthened during this period of reprieve by educating the public further, in schools and colleges, and by keeping the issue in the public eye. Preserving the Ironwood Forest should always be at the top of the list of Grand Cayman's conservation agenda.

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The Church as an Advocate for Conservation

Rev. M. Alson Ebanks, Cert. Hon. (Cayman Islands)



Ebanks, M.A. 2010. The Church as an Advocate for Conservation. pp 261-263 in *Making the Right Connections: a conference on conservation in UK Overseas Territories, Crown Dependencies and other small island communities, Grand Cayman 30th May to 5th June 2009* (ed. by M. Pienkowski, O. Cheesman, C. Quick & A. Pienkowski). UK Overseas Territories Conservation Forum, www.ukotcf.org

Ecological conservation is one of those areas that should naturally offer both the scientist and the churchman wonderful opportunities for joint advocacy. Unfortunately, these opportunities have not always been embraced, and I would suggest that both sides are to blame. Unfortunately, the church has been rather deaf to the groanings of creation, and in some quarters it may have even promoted practices that exacerbated the pain. The scientific community has contributed to the rift by the attitude and behaviour which some scientists have displayed towards those of faith. Both sides must demonstrate tolerance and understanding for other points of view. Whether sentient or one-celled beings, all need conservation. We all know that when we isolate ourselves, we also insulate ourselves from new ideas that have the potential to radically change our paradigms. Therefore being inclusive is tantamount to adopting a survival strategy. The stakeholders in the conservation of planet Earth are not just those whom we choose to engage in the planning and strategising processes; it is all of us! Policies that promote global conservation necessitate public participation. Our job, not just mine, is to convince our community that conservation is a religious duty as much as a civic duty, because the “world” is not just humanity, but creation as a whole. As a churchman, as a Christian, I encourage you to engage the church as a key stakeholder in this critical business of conservation. And I applaud you for even considering that the church has anything worthwhile to contribute to this vital campaign.

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Any cursory study of history will reveal that the pulpit and the laboratory — religion and science — have had a rather interesting relationship over the past several centuries. Copernicus was demonised and Joseph Mendel was idolized. In more recent years, however, this relationship has been mostly adversarial, with very few instances of cooperation and joint advocacy for causes that transcend both the lab and the pulpit.

Ecological conservation is one of those areas that should naturally offer both the scientist and the churchman wonderful opportunities for joint advocacy. Unfortunately, this has not been the

case. And here I would suggest that both sides are to blame. The church, for example, continues to preach and promote a very narrow view of Redemption. Our favourite verse is John 3:16: “For God so loved the world, that he gave his only begotten son that whosoever believes in him should not perish but have everlasting life.” We continue to interpret the Greek word, “kosmos” that is translated as “world” in the narrowest sense to mean humanity, rather than in the broader sense of the whole created world; this despite the fact that a fuller understanding of Redemption is inclusive of both humanity and all of creation. In Romans 8:19-22, for example, it is absolutely clear that all

of creation is the beneficiary of the Redemption. The English Standard Version states:

“For the creation waits with eager longing for the revealing of the sons of God. For the creation was subjected to futility, not willingly, but because of him who subjected it, in hope that the creation itself will be set free from its bondage to corruption and obtain the freedom of the glory of the children of God. For we know that the whole creation has been groaning together in the pains of childbirth until now.”

Admittedly, the church has been rather deaf to the groanings of creation; and unfortunately in some quarters it may have even promoted practices that exacerbated the pain. Therefore it is high time for the church to reevaluate our doctrines as well as our practices.

But the fault does not lie singularly at the feet of the church. The scientific community has contributed hugely to the rift, primarily by the attitude and behaviour which some scientists have displayed toward those of Christian faith. And here I am not referring to assertions and pronouncements that this or that theory is proven fact, whether it is the existence of God or macro-evolution. What I refer to may be best explained by way of an illustration from the trenches of religion.

I’ve had occasion to minister to the sick in hospitals. With growing frequency I will meet someone of another faith other than Christianity. One such case comes to mind. I had been visiting a particular gentleman, conversing with him, and before leaving his room, I offered to pray for him. He always graciously accepted the offer. However, on a return visit, I found his partner there. When I offered to pray, she reminded me that they were of a certain faith and asked that I respect that. I prayed, and as usual ended my prayer with, “In Jesus’ name. Amen.” The lady quickly chided me for not respecting their faith. However, on reflection, I realized that, in a subtle way, she was not really asking that I respect her faith, but that I disrespect my own faith. To respect her faith would require me to allow her to practice her faith as she desires, and pray as she is convicted to pray; for her to respect mine would require the same. I have found that the lady’s point of view reflects a growing trend in our western culture — to the point that tolerance does not mean live and let live for all; rather it means, to use the words of George Orwell, “all animals are created equal, but some are more equal than others.” And apparently, the less equal do not deserve

to have a voice.

Now, what exactly is my point? My point is that, until the scientific community can allow the church to be the church, and hold to its dogmas with the same sincerity and tenacity that it does to its dogmas, without condescension and a “high brow” superior attitude, there can be no cooperative effort, no real partnership in advocacy. The scientific community needs the voice and the views of the church, just as it needs a genuine partnership with policy makers and legislators. We all know what happens when science is devoid of morality and ethical guidelines — and hopefully we will not forget Auschwitz or Dachau.

But it is even larger than that. Just as the church must review its dogmas and expand its thinking on Redemption to include our stewardship over all of creation, so must the scientific community rethink its approach to the Church. For in a rather strange sort of way, both are guilty of a similar sin — the sin of inconsistency. Some in the church seem willing to allow creation to go to hell (figuratively), provided we can save mankind, while some in the scientific community appear to prefer the conservation of the planet at the expense of human life or welfare. Inconsistency in our core values and practices serve to further erode any basis for partnership that will enlarge the advocacy base that influences policy-makers, and the community that influences them.

I believe that a clear understanding of conservation instructs us that all of creation is groaning — whether sentient or one-celled beings. It is therefore the duty of policy makers to be inclusive in their entire approach to conservation — and not after policies have been crafted, but from Alpha to Omega. The stakeholders in the conservation of planet Earth are not just those whom we choose to engage in the planning and strategising processes; it is all of us!

We all know that when we isolate ourselves, we also insulate ourselves from new ideas that have the potential to radically change our paradigms. Therefore, being inclusive is tantamount to adopting a survival strategy.

If policy, by definition, means that which an organization always or never does, then policy making is by far the least important aspect of the process. It is the implementation that is crucial. It means that policies that promote global conserva-

tion necessitate public participation from (to use modern parlance) the “get go.” Our job, not just mine, is to convince our community as a whole that conservation is a Christian obligation, a religious duty as much as a civic duty and the duty of legislators, because the “world” of John 3:16 is not just humanity, but creation as a whole.

Pastors and theologians need to trumpet the call to conservation with the same vigour that the church has embraced its duty to the poor, the sick and the orphan. Regardless of one’s eschatological position, it is clear that we have no mandate from God to hasten the destruction of the earth by poor stewardship. A better theology of conservation that is true to the Biblical view of redemption can and should be taught in our seminaries and preached from our pulpits.

Church-run schools should ensure that their curricula include the teaching of conservation as a biblical mandate. “This is my Father’s world” should be more than a song that we teach our children. We need to take it one step further and teach that because “this is my Father’s world” we have a duty to protect and conserve as good stewards of God’s creation.

My hope is that those from among us will initiate focus groups and “think tanks” that include teachers from faith-based schools in an effort to ensure that the message of conservation is integrated into their curricula in the same way that diligent faith-based schools strive to integrate faith principles into their lesson plans and classroom presentations. And why can’t our annual Earth Day themes be contextualised to a greater degree so that churches and church schools — and indeed societies that are more religious than secular as a whole — will have faith-friendly avenues to promote and practice conservation? To paraphrase a patriot of another era and another cause, “Either we all stand together, or we will all sink together.”

As a churchman, but more pointedly as a Christian, I encourage you to engage the church as a key stakeholder in this critical business of conservation. And I applaud you for even considering that the church has anything worthwhile to contribute to this vital campaign, which as we know, it most assuredly has.

Discussion

In regard to getting economic value from the environment, an example was given from the English Lake District where local businesses charge a voluntary levy for tourism operations, thereby contributing to an environment fund.

Raising the profile of the UKOTs in the UK Parliament was felt to be very important. Concern was expressed that there needs to be more joined-up, cross-departmental thinking – which a dedicated Minister for the UK Overseas Territories would address. The example of the postponement of the St Helena air access was cited where greater cross-departmental consultation, particularly involving the DFID Minister, would have been helpful.

The issue of UKOT representation in the UK Parliament was raised, with the French model cited as a better system than the UK-UKOT relationship. Participants commented that the profile of the UKOTs certainly needed raising within UK Government, and also within UK generally. Although members of the Foreign Affairs Committee had visited many UKOTs (Paul Keetch having visited 11 of the UKOTs and CDs), many other members had very limited knowledge and understanding. However, the question of potential taxation implications of achieving parliamentary status at the territory level was also raised. A further comment about the role of UK Government was made

about training and expectations of the Governors appointed to UKOTs. In particular, what could Governors do when presented with poor decision making by UKOT governments. Were they expected to be silent on such matters?

The importance of monitoring progress in implementing Environment Charters, as an important part of the UK-UKOT relationship, was also noted.

On successful campaigning strategies, specifically with the strategies used in the *Buy Back Bermuda* campaign, it was confirmed that the approach used had been appropriate but, for the future, including NGO overhead costs within a strategy plan was required.

The extremely important role of the Church as an advocate for conservation had been raised previously, but was specifically addressed in this session. In answer to a question about the best way of getting support from the church for environmental issues, this was considered to be through the children. The effective use of gospel choirs, reaching a wide audience (for example at the 1999 London Conference *A Breath of Fresh Air* and the education package resulting from that) was also mentioned. A final comment that conservation should be considered a Christian duty was widely supported.



From left: Rob Thomas (rapporteur), Rev. Alson Ebanks, Lilian Hayball, Dr John Cortés, Jennifer Gray

Section 8: Invasive species

Co-ordinators: Oliver Cheesman (Development Director, UKOTCF) & Karen Varnham (University of Bristol and UKOTCF Council)

Invasive species continue to represent a major environmental challenge, including (it has been argued) as the greatest threat to the biodiversity of island ecosystems. In addition, the substantial economic and human costs of managing invasive species and their impacts are increasingly clear. Difficulties in funding long-term programmes, particularly in support of measures such as biosecurity, which could vastly reduce long-term costs by preventing species introductions (and the need to manage the spread and impacts of invasive species, once they are established) remains a significant obstacle in the UKOTs. Nonetheless, valuable work is being undertaken at a local and cross-Territory level.

The Invasive Species session at the *Making the Right Connections* conference focused on discussion of practical aspects of tackling the invasive species threat. The first two speakers shared their experiences of work under the regional South Atlantic Invasive Species (SAIS) project, particularly those aspects relevant to St Helena and Ascension Island, and lessons learned from the management of an invasive insect pest which threatens the National Tree of the Turks & Caicos Islands. The audience then heard about work undertaken by JNCC to enhance available information on non-native species and related activities across the UKOTs/CDs, and about a cross-Territory project led by the Cayman Islands to help disseminate information and to raise public awareness of the invasive species threat. A lively discussion of the general issues raised then followed. Further examples of relevant work in the UKOTs/CDs was presented in poster form.



*From left: Dr John Cooper, Bryan Naqqi Manco, Tara Pelembe, Karen Varnham, Andrew Darlow
(Photos of participants in this section by Thomas Hadjikyriakou unless otherwise indicated)*

Framework Document: Invasive Species - What is needed for the future?

Co-ordinators: Oliver Cheesman (Development Director, UKOTCF) and Karen Varnham (UKOTCF Council and University of Bristol)



Cheesman, O. & Varnham, K. 2010. Framework Document: Invasive Species - What is needed for the future?. pp 266-269 in *Making the Right Connections: a conference on conservation in UK Overseas Territories, Crown Dependencies and other small island communities, Grand Cayman 30th May to 5th June 2009* (ed. by M. Pienkowski, O. Cheesman, C. Quick & A. Pienkowski). UK Overseas Territories Conservation Forum, www.ukotcf.org



Since discussions at the *Biodiversity That Matters* conference in Jersey in 2006, which focused particularly on priority setting, there has been much activity (globally, and in the UK) in relation to the environmental threats posed by invasive species. Valuable work has been undertaken in the UKOTs/CDs themselves (e.g. under local or cross-Territory projects), and there are also lessons to be learned from elsewhere (e.g. through experience gained in other island ecosystems). The Invasive Species session at the *Making the Right Connections* conference aimed to consider progress that has been made and to focus on discussion of practical aspects of tackling the invasive species threat, based on sharing of experience.

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Background

The *Dealing with Alien Invasive Species* session at the Jersey conference (Cheesman & Clubbe 2007) focused on the setting of overall priorities for invasive species projects. It concluded that there was no simple, generic formula for this, as the urgency of need for particular measures varied so greatly from one place to another and tended to be very context-specific. However, it was noted that the same fundamental elements occurred repeatedly in relation to invasive species management needs around the world. These included measures to:

- Raise awareness at all levels of society, and across all relevant sectors, including through education programmes (cf. Section 3: Environmental Education; Section 7: Raising Our Profile)
- Engage all relevant stakeholders in development of policy, management plans etc., and implementation activities (cf. Section 2: Progress on Environment Charter implementation)
- Enhance cooperation and communication between relevant sectors and authorities (including within governments) (cf. Session 10:

Joined-up Thinking)

- Develop and enforce appropriate legislation, voluntary codes of conduct etc.
- Establish facilities (including technical capacity) for research, monitoring, surveillance and control activities
- Apply risk assessment to characterise critical vectors, pathways and species
- Participate in relevant regional initiatives and establish linkages with relevant international instruments

In all cases, of course, significant progress was dependent on availability of resources.

With respect to the UKOTs, overall priority areas were identified as development of the information base on invasive species and the infrastructure (existing and required) for their management. In relation to the next steps, it was suggested that particular attention should be given to:

- Enhanced information gathering and information sharing, including development of the database arising from Varnham (2006) (cf. Varnham & Fleming 2007)
- An audit of measures that are already in place

in each UKOT for invasive species management (possibly as part of a broader Needs Assessment in each Territory)

- Planning for better co-ordination of activities, within and between UKOTs, and across the regions in which UKOTs are located
- The development of rapid response mechanisms.

The *Invasive Species* session of the *Making the Right Connections* conference aimed to consider progress that has been made in these areas and to focus on discussion of practical aspects of tackling the invasive species threat, based on sharing of experience.

Introduction

Since the Jersey conference, work on invasive species globally has continued to develop rapidly. There is an ever-expanding body of information on the impacts, biology and management of invasive species, of which the following are just a selection of the more general reviews and similar works: Brooke *et al.* (2007), Howald *et al.* (2007), Jones *et al.* (2008), Kenis *et al.* (2009), Russell *et al.* (2007), Towns *et al.* (2006) and Varnham (in press). There is also an increasing body of individual case studies, as particular threats and problems are tackled in particular localities.

At a policy level, things have also moved forwards. In the UK, building on earlier work in this area (cf. Moore 2007), a *Framework Strategy* for management of the invasive species threat was published in 2008, covering England, Wales and Scotland (Defra 2008). In continental Europe, the threat posed by invasive species has been increasingly recognised (e.g. Hulme *et al.* 2009), and a European Commission paper *Towards an EU Strategy on Invasive Species* was published towards the end of 2008 (EC 2008). This specifically notes the particular impact of species invasions on isolated islands with high biodiversity value, such as the Overseas Countries and Territories of EU Member States, and acknowledges that they do not receive appropriate attention in this regard.

In terms of international information and support networks, the Global Invasive Species Programme (GISP - <http://www.gisp.org/>) has published a new 2008-2010 strategy. The Invasive Species Specialist Group (ISSG - <http://www.issg.org/index.html>) continues its work on the Global Invasive Species

Database (GISD), and is preparing for a conference on *Island Invasives: Eradication & Management* in February 2010. As well as continuing work on its Caribbean regional initiative (see Cheesman & Clubbe, 2007, Box 2), CAB International is developing an *Invasive Species Compendium*, which, at the time of writing, has reached the 'alpha' test phase (see <http://www.cabi.org/datapage.asp?iDocID=180>). Also relevant to the Caribbean is a recently published pathways analysis (Meissner *et al.* 2009). With 2009's International Day for Biological Diversity (22 May) devoted to invasive alien species, the Convention on Biological Diversity (CBD) secretariat have produced a useful booklet providing an overview on this issue (see <http://www.cbd.int/idb/2009/resources/booklet/>).

In relation to work focused on the UKOTs specifically, the South Atlantic Invasive Species (SAIS) project (see Cheesman & Clubbe 2007, Box 1; Darlow, this volume) has made significant strides in Ascension, St Helena, Tristan da Cunha, the Falklands and South Georgia. JNCC organised a workshop on invasive species in the UKOTs in June 2007 (see <http://www.jncc.gov.uk/page-4081> and brief summary of conclusions in Cheesman & Clubbe 2007), followed by another in March 2009. The latter included discussion of the latest work commissioned from Karen Varnham in collating information on non-native species, and relevant activities and infrastructure for tackling the invasive species threat, in the UKOTs/CDs (see Varnham & Pelembe, this volume).

Framework for Invasive Species session discussion

Suggested areas for discussion:

Overcoming obstacles

What are the main obstacles to effective invasive species management in your Territory – either in relation to prevention (biosecurity) or control measures?

Have particular obstacles been overcome, and (if so) how?

Raising awareness

What examples have you seen of effective awareness-raising activities (including posters, leaflets, campaigns, training days, etc.) in your Territory or

elsewhere

Improving access to information and training

What sources of information and training have you found useful (e.g. in relation to invasive species impacts, invasive species control, biosecurity measures)?

What sources of information and training are most needed, either expert-practitioner or peer-peer?

Enhancing stakeholder involvement, co-operation and communication

How can information sharing and co-operation within and across UKOTs/CDs be encouraged?

Biosecurity

Development of comprehensive biosecurity systems (e.g. to reduce the risk of accidental introductions and for early detection of newly introduced species) is very costly – what simple measures can be taken to enhance biosecurity?

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The South Atlantic Invasive Species (SAIS) Project

Andrew Darlow (St Helena SAIS Project Officer)



Darlow, A. 2010. The South Atlantic Invasive Species (SAIS) Project. pp 270-273 in *Making the Right Connections: a conference on conservation in UK Overseas Territories, Crown Dependencies and other small island communities, Grand Cayman 30th May to 5th June 2009* (ed. by M. Pienkowski, O. Cheesman, C. Quick & A. Pienkowski). UK Overseas Territories Conservation Forum, www.ukotcf.org

The South Atlantic Invasive Species Project, funded by the European Union EDF 9, has entered its third and final year. The project has seen regional cooperation between five UK Overseas Territory governments and two NGOs, across the half a billion square miles of the South Atlantic. Early planning with local stakeholder workshops educed priority actions. Implementation of activities has been guided by the input of local steering groups, conservation organisations and advisory bodies in the UK. Additionally, a worldwide e-network has been established for exchange of ideas, information and advice. Representatives of this wider group and partner organisations constitute a regional steering group which consider invasive species which have a common theme across the region. On both Ascension and St Helena Islands, significant gaps in quantitative baseline data were highlighted as detrimental to the planning of invasive alien species management. To begin to address this, botanical surveys of both islands were completed in 2008, with support from Royal Botanic Gardens Kew. The outputs from this considerable dataset are now informing decisions on island in the management of invasives and beyond. The local project officer for St Helena and Ascension Islands describes some of the challenges, constraints and successes encountered in this and other activities undertaken by the project.

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The South Atlantic territories span an area of 10 million square miles from the sub-Antarctic to the near equatorial. The invasive species problems facing each are diverse. The five territories have a combined population of less than 10,000. Only two of the territories, those with military installations, have air access. The remainder can be accessed only by a ship or boat trip of between 3 and 7 days. There are, however, areas of commonality. To address these, the project has operated also at a regional level, with a regional steering group made up of territory representatives and international experts. The region contains a wealth of biodiversity of native flora and fauna. This paper focusses mainly on St Helena and Ascension.

St Helena is one of the most remote inhabited islands in the world. It was formed by volcanic activity over a 6 million year period, becoming dormant around 7 million years ago. At least 8 endemic terrestrial bird species, 50 endemic plant species and genera, over 400 endemic invertebrates

and an established marine fauna evolved there. Following its discovery by man in 1502 and the subsequent stream of species introductions, 88% of native bird species have gone extinct, and over 99% of native plant life has been eradicated. Invertebrate loss is not fully quantified but a number of notable extinctions have been recorded, and several aggressive introduced species are now present.



Access problems: off-loading from RMS St Helena on to barges, Ascension Island.

St Helena today

Natural Environment: Degraded, subject to ongoing erosion, small permanently threatened pockets of relict flora and fauna.

Humans: Rapidly declining population driven by negligible economy propped up by grant-aid.

Man made environment: Labour intensive agriculture and forestry. Market and workforce constrained by depopulation and lack of economy, exacerbated by imports.

The cost of management of invasive plants and shortage of personnel are making marginal agriculture unprofitable and thwarting incentive schemes. Abandonment of worked land is accelerating, leading to more source areas of invasive species. Reinstatement requires substantial investment. Legal measures are limited, with government as a key 'offender'.

Little status is afforded to conservation employees, leading to de-motivation and loss of experienced and dedicated staff, and decline of this already under-resourced sector.

The South Atlantic Invasive Species Project is a regional project with seven project partners: the five territory governments of St Helena, Ascension, Tristan da Cunha, Falkland Islands, South Georgia and the South Sandwich Islands, and NGOs Falklands Conservation and St Helena National Trust.

The three-year project, which commencing in November 2006, has as its main objective: "increasing capacity to deal with the impacts of invasive species in the South Atlantic overseas territories". The project is funded by the EU from EDF-9 and is managed by RSPB on behalf of the project partners.

The approach of the project team has been to encourage participation. In order to identify concerns on each of the territories, background reports were undertaken by the initial core project team of three. The team worked with small groups or on a one-to-one basis to elicit as many concerns as possible. The reports informed workshops held with local stakeholders from government, NGOs and civil society. The key output from each workshop was a wish-list and set of prioritised activities. A steering group for each territory was set up from the stakeholder groups to assist with implementation of the defined actions across sectors.



Workshop

Prioritised actions on St Helena included: improvement of degraded pasture, horticultural and nursery support for ecosystem restoration, rabbit control, Indian myna bird control, rodent control and improved border controls. With the exception of pasture improvement, all these concerns were highlighted on Ascension too. Rodent control and improved border controls were common issues on all territories in the region.

Stakeholders highlighted shortfalls in: detailed baseline data, training in monitoring, assessment and control skills, funding for personnel, capital equipment and recurrent supplies.

The project team was asked to underpin gains made with: appropriate bio-security measures, improved (enforceable) legislation, and work towards self sustaining ecosystems.

Project personnel were asked to undertake public awareness, education and training in all aspects of project implementation. Notable successes to date include:

- Developing network of skills and support. Increasing involvement of Kew, RSPB and JNCC, and thanks are due to Colin Clubbe, Sarah Sanders and Tara Pelembe respectively.
- Collaborative working between agencies on island, the only way in many cases to increase personnel capacity. Cross-cutting activities between related projects are essential to achieve some objectives.
- Botanical surveys carried out across two territories, St Helena and Ascension, to give a distribution and abundance dataset of all plant and fern species.

- Improved ability to inform decision making locally. A dynamic repository of information across invasive taxa has been created.
- Volunteer involvement. A pilot exercise using visitors on extended sabbatical leave provided useful labour on island and new advocates in the UK.
- Increased awareness. Feedback is beginning to show that ongoing programmes of information are raising awareness of invasive species issues and control within the community
- Regional conference. A very successful and participatory meeting, which had as its key output a draft strategy for invasive species across the South Atlantic region to be launched in November 2009. Messages within the strategy include the need for a bio-security position on each territory with a coordinating support position across the region. An idea of a 'roving' task force was also put forward as one way of increasing capacity on territories.

Botanical survey

Invasive plants and their dispersal agents are at the heart of many of the issues on both islands. Therefore, much of the work to date has been botanically focussed. The project was fortunate to engage the interest of Dr Colin Clubbe and the UKOTs team at Kew early in the project. This is a partnership that has grown in strength and seen Kew becoming a key player in conservation on both islands.

It was recognised early in the project that we were lacking baseline data on the flora of the two




Botanical survey can be more intrepid than many assume.

islands. Endemics were quite well documented, but other species had not been surveyed for over 25 years. The project hired a botanist, Dr Phil Lambdon, and a survey was undertaken - a simple sentence which belies the three man-years of effort expended over 11 months last year. Drawing a grid and transects on a map is easy but, without local

Agavaceae

Status
Naturalized

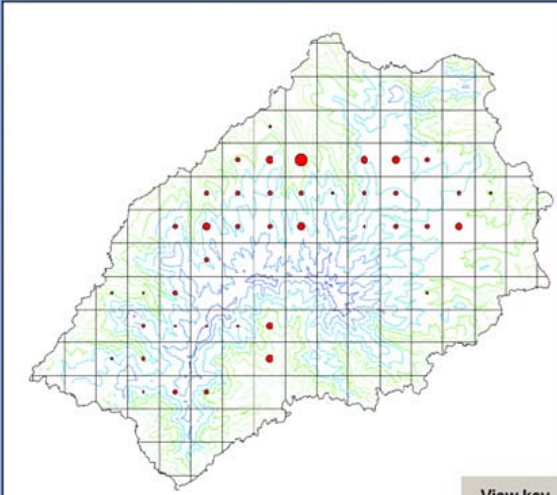
Local name
hedge aloe



Habitat	%
Sparsely vegetated hillside	23.8
Alien thickets/hedges	13.5
Vegetated/banked roadsides	11.1
Succulent scrub	7.3
Neglected tall alien herb areas	6.7

Habitats recorded, in descending order of importance. The % indicates the relative frequency of the species.

Agave angustifolia



[View key](#)

Part of plant database

knowledge, they are likely to be impossible to use effectively, given the terrain encountered on these two volcanic islands.

The results of the survey have yielded a database of the abundance, distribution and habitats for over 700 plant species. Detailed information was gathered for a list of twenty key invasives for each island. An endemic sedge, not recorded for over 200 years, was rediscovered, and a new endemic grass species described. These were real rewards for the survey team. The survey results, which reference earlier GIS work on the local St Helena Environmental Information System (SHEIS) system, will in turn be incorporated into SHEIS.

The dataset is now in use and has informed research on global island invasive species and a project-sponsored economic impacts study. Contributions to risk analysis and preparation of government papers have also drawn from the dataset. An OTEP project proposal was submitted to allow the production of a complete flora of St Helena utilising much of the data collected.

Additionally, much of the dataset can now be accessed through a simple interface, fulfilling part of the need for easily accessible data on invasive species.

Some lessons learned

Expectations vs involvement. Be realistic in what is offered to engage people in the project actions. If not enough, it 'won't be worth their time'; if too much, any shortfall will be deemed a failure.

Media. Provide media with information when they request it. Better still, provide regular output. Informative articles take time to prepare, but regular output will start to build a following. Feedback is useful to gauge effectiveness but, quite often, it is not forthcoming.

Capacity building. Consider how project initiatives will be maintained or extended. Try to develop realistic if less ambitious targets, ones that can be sustained by local resources post project funding.

Physical movement of people and equipment. Logistics have been a major challenge in this project. Three of the territories are accessible only by ship or boat; the other two have restricted air access. Places on flights and ships are often in demand; so



Volunteers at work clearing invasive flax from areas which could still support threatened endemic species.

most work revolves around transport. The other main challenge is finding and affording external experts who can commit to extended absences to undertake work.

Education. It is necessary to try and maintain ongoing education and to target multiple groups. Practical involvement is a good way to encourage engagement and ownership.

Communication. The core project team has acted as a communication node in an ever increasing network of information and skills. The benefit of this network was obvious at the recent regional meeting on Ascension. It is vital to understand, involve and value local stakeholders. Be honest if it goes wrong.

Funding. To ensure continuity, consider the next funding source from day one. Engage as many people at different levels as possible to advocate for this.

And finally, if the rhetoric fails to deliver, just get out there and do it.



Radio interview on site.

Lessons from the Caicos Pine Scale

Bryan Naqqi Manco (Senior Conservation Officer, Turks & Caicos National Trust)



Manco, B.N. 2010. Lessons from the Caicos Pine Scale. pp 274-278 in *Making the Right Connections: a conference on conservation in UK Overseas Territories, Crown Dependencies and other small island communities, Grand Cayman 30th May to 5th June 2009* (ed. by M. Pienkowski, O. Cheesman, C. Quick & A. Pienkowski). UK Overseas Territories Conservation Forum, www.ukotcf.org

The Caicos Pine Recovery Project aims to safeguard the future of the Caicos pine *Pinus caribaea* variety *bahamensis*, which has suffered over 90% mortality in the Turks & Caicos Islands since the introduction of an invasive North American plant pest, the pine tortoise scale *Toumeyella parvicornis*. The Recovery Project, managed by the Turks & Caicos National Trust, in collaboration with the Royal Botanic Gardens at Kew, and funded primarily by the Turks & Caicos Islands Conservation Fund, aims to create an *ex-situ* conservation population of Caicos pines while documenting the extent of the damage to wild populations. The project aims also to establish an international working group, investigate the historic extent of pine-yard habitat and its fire-dynamics, and identify potential reintroduction areas.

Bryan Naqqi Manco (Senior Conservation Officer, Turks & Caicos National Trust), naqqi@aol.com

The Caicos Pine Recovery Project was launched in September 2008, for the purpose of safeguarding the future of the Caicos pine *Pinus caribaea* variety *bahamensis*, which has suffered over 90% mortality in its Turks & Caicos Islands range due to the introduction of an invasive North American plant pest, the pine tortoise scale *Toumeyella parvicornis*. The Recovery Project, managed by the Turks & Caicos National Trust, in collaboration with the

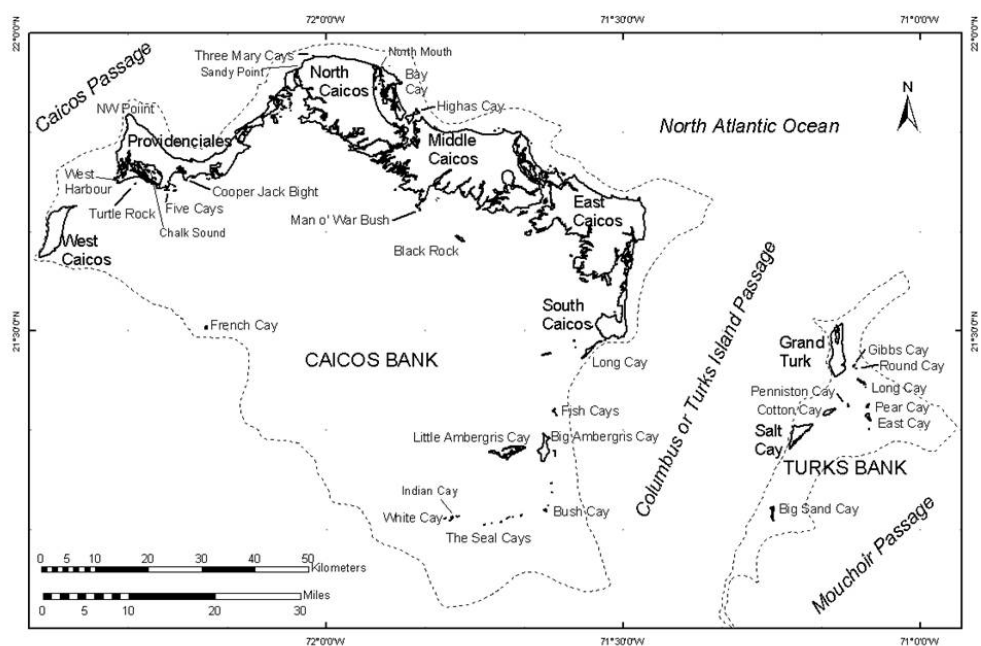
Royal Botanic Gardens at Kew, and funded primarily by the Turks & Caicos Islands Conservation Fund, aims to create an *ex-situ* conservation population of Caicos pines while documenting the extent of the infestation and damage to the wild populations. The project is a ten-year species recovery project, broken into three sub-projects and three long-term phases. Also included in the project is the creation of an international working group, mapping the historic extent of pine-yard habitat, establishing a history of fire in the pine-yards, and scouting potential reintroduction areas for managed and protected pine ecosystems.

Background: The pine and the scale insect

Caribbean pine *Pinus caribaea* variety *bahamensis* is the National Tree of the Turks & Caicos Islands. Caribbean pine ranges through Central America, Cuba, Hispaniola, and the Bahama Archipelago. the Bahama Archipelago variety of Caribbean Pine is restricted to islands in the Northern Bahamas (Grand Bahama, New Providence, Abaco, and Andros), and then in the Turks & Caicos Islands



Pinus caribaea var. *bahamensis*,
the National Tree of the Turks & Caicos Islands.
(Photo: M. Hamilton. RBG Kew)



Top: The variety's range in the Bahama Archipelago (outlined in red) includes Andros, New Providence, Abaco, and Grand Bahama in the northern Bahamas and Pine Cay, North Caicos, and Middle Caicos in the Turks & Caicos Islands. Base-map Copyright Google.

Middle: Turks & Caicos Islands (Map Copyright Dr Mike Pienkowski, UKOTCF)

Bottom: Close-up of part of TCI, showing (in red) the pine distribution in Pine Cay (westernmost), North Caicos and Middle Caicos.

(North Caicos, Middle Caicos, and Pine Cay) forming a disjunct population.

A scale insect was observed parasitizing Caicos Pines by RBG Kew Overseas Territories Programme Director Martin Hamilton in January 2005, as part of UKOTCF's OTEP-supported project in TCI.



Left: the UKOTCF Biodiversity Management Project group in January 2005 (Photo: Dr Mike Pienkowski, UKOTCF) which found the pine tortoise scale (above; Photo: M. Hamilton, RBG Kew).

Collections taken by RBG Kew confirmed the identity of the insect as the pine tortoise scale *Toumeyella parvicornis*, native to northern North America and a common pest on cultivated pines. TCNT staff collected some pine seedlings to begin an *ex-situ* nursery collection but these had a poor transplant success rate.

The Caicos Pine Recovery Project was proposed by RBG Kew and TCNT as a 10-year species recovery programme, comprising three component projects. Part One was to establish an *ex-situ* conservation collection of the Caicos pine in a nursery. Part Two was to map, monitor, and use remote sensing to establish the extent of the pine-yards and the scale infestation. Part Three was to set up an international pine scale working group.

Year One of all three projects was proposed to the Turks & Caicos Islands Government and was awarded funding from the Conservation Fund, through the Ministry of Natural Resources and Department of Environment and Coastal Resources for the 2008-2009 financial year. A project steering committee



was built, consisting of TCNT Pine Project staff and TCNT management, RBG Kew

TCNT field staff collecting pine seedlings to form an ex-situ population.

UKOTs Programme representatives, Department of Environment and Coastal Resources, Department of Environmental Health, and the Fire Department.

TCNT and RBG Kew made important international contacts with the Pine Rockland Working Group based in south Florida.

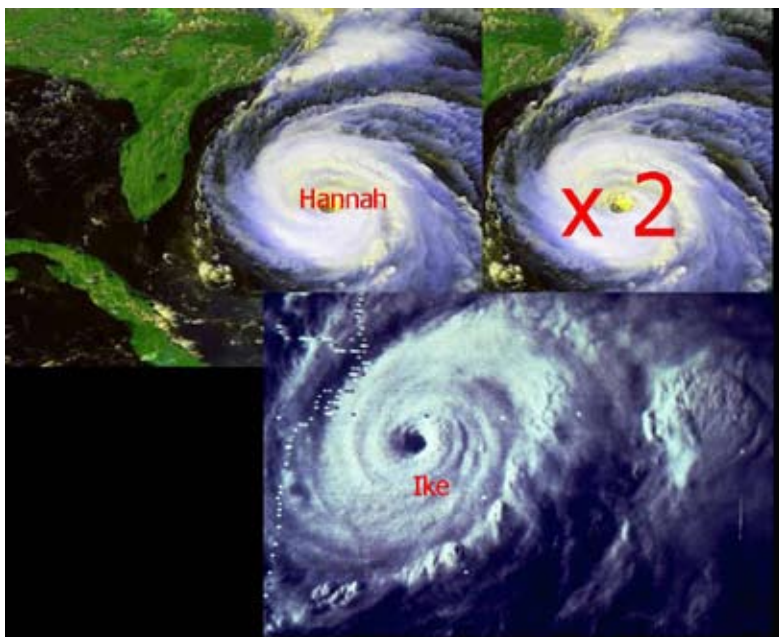
TCNT and RBG Kew representatives attended and presented at the February-March 2008 Pine Rocklands Working Group Conference in Miami (USA) and Andros (Bahamas). Team members gained important insights on the use of controlled burning in pine-yards, social and ecological impacts of burning, and the different structure and habitat type of the Bahamas pine-yards, compared with those in TCI.

The project began slowly amid a number of difficulties

A makeshift nursery was built to house pines collected by the Kew team in May 2008. Project officers arrived to TCI in late August. Hurricane Hanna hit Turks & Caicos Islands the day after the project staff arrived, destroying the nursery as well as the causeway between North and Middle Caicos, cutting off access to the site. Hurricane Hanna returned as Tropical Storm Hanna and flooded the Middle Caicos Conservation Centre yard and road.

Hurricane Ike struck Turks & Caicos about one week after Hanna, as a Category 5 hurricane; luckily Middle Caicos was spared the worst, but electricity was down for over a month; project staff members were evacuated to USA and UK to avoid Hurricane Ike.

The pine seedlings had been stowed in the wash-house of the Conservation Centre before hurricane



One week after Hanna hit TCI twice, Hurricane Ike arrived as a Category 5 hurricane. (Satellite images when the hurricanes were centred on TCI, in the case of Ike obscuring the ground geography)

Hanna; they remained there for over a month until the causeway was repaired.

When the project officers tried to return after the causeway was repaired, a security breach (not by them) at London's Heathrow Airport caused them to miss their flight, delaying arrival by a week.

The project manager arrived but the GIS officer was delayed. Nursery construction was delayed, due to necessary architectural redesign to fit building codes; budgeted costs proved too low and so a new makeshift nursery had to be constructed. Materials such as pots, media, fertilisers, and equipment proved difficult to procure locally and internationally. We expected the mosquitoes to be a problem for the project staff, but unexpectedly, blue land crabs proved to be a pest on young plants!

Through collaboration and perseverance, the project began taking shape.

Project 1 progress

The appointment and taking up of post of the project manager was an enormous step forward to begin the work on building an *ex-situ* collection of pines. Crucially, his residence on site had been made possible by work by UKOTCF-organised volunteers, Steve and Mary Cheeseman, who had donated more than 12 person-weeks of time to

making the Middle Caicos Conservation Centre useable and the adjacent building suitable for accommodation for visiting scientists (see Section 9).

Other National Trust staff members collaborated on work for nursery and pine work. DECRC staff members shared in a great deal of fieldwork, nursery development, and materials procurement with TCNT. DECRC recruited volunteers to assist with seedling rescue, seed collection, photography, and construction. Seeds were collected from Middle Caicos and Pine Cay through winter 2008, to plant in the nursery; seedlings were continually collected from pine-yards.

Project 2 Progress

The completion of the appointment of the new GIS officer in March 2009 allowed mapping and GIS work to begin; it also freed up other TCNT staff to work on other sites. Kew's GIS specialist, Susanna Baena, visited TCI in 2008 to begin work on remote sensing.

Martin Hamilton used remote sensing data to propose transects to locate pine areas. Exploration of areas of pine and areas suspected to have pine began and continues.

A genetic study by RBG Kew's Michele Sanchez aims to determine the relationship between Bahamas and TCI populations of *Pinus caribaea* var. *bahamensis*.



Second temporary nursery constructed and in use. (Photo: M. Hamilton, RBG Kew)

International collaboration to begin: Project 3 took shape.

A visit from pine rockland and pine fire specialists from The Nature Conservancy, Bahamas National Trust, US Forest Service, and Bahamas Department of Agriculture, along with RBG Kew, TCNT, and DECR personnel provided field data about fire history in TCI pine-yards.

The team visited Pine Cay, North Caicos, and Middle Caicos pine-yards to assess fire history and potential in pine-yards by looking at fuel load and evidence of past burns. Water quality became a concern in some areas of pine, because of increased salinity due to hurricane activity or sea-level rise. The feasibility of using controlled burning in TCI pine-yards was investigated.

A presentation to TCI Government was made in February 2009 by fieldwork participants, on the use of controlled burning as a pine rockland management tool in other areas (South Florida, Bahamas, Central America).



Fire in Ready Money pine-yard, North Caicos around Easter weekend 2009 (started by agricultural activity) swept through large areas of dead pine. (Photos: R. McMeekin, TCNT)



A fire in Ready Money pine-yard, North Caicos, around Easter weekend 2009 (started by agricultural activity) swept through large areas of dead pine and will provide a valuable lesson on the role of fire in TCI pine-yards and its effect on scale-insect infestation.

Work continues to save the pines... for how long?

The nursery now contains about 350 pine seedlings and rescued saplings.

The project has generated a great deal of media and PR interest from magazines, newspapers, TV, radio, and education programmes.

The current project first-year funding ends in September 2009; this includes funding for project staff, supplies, water, and other consumables. No further funding has been identified, but some applications are being made.

What will happen in the future? Will the pine-yards recover and will our efforts to help this recovery receive the necessary funding?

The future for the Caicos Pine:



OR:



?

Invasive species in the UKOTs and CDs – What's new?

Karen Varnham (University of Bristol) and Tara Pelembe (JNCC)



Varnham, K. & Pelembe, T. 2010. Invasive species in the UKOTs and CDs – What's new? pp 279-281 in *Making the Right Connections: a conference on conservation in UK Overseas Territories, Crown Dependencies and other small island communities, Grand Cayman 30th May to 5th June 2009* (ed. by M. Pienkowski, O. Cheesman, C. Quick & A. Pienkowski). UK Overseas Territories Conservation Forum, www.ukotcf.org



Invasive species are continuing to cause serious problems for the UK Overseas Territories and Crown Dependencies. However, there is also a lot of work going on to control, eradicate and monitor invasive species, as well as to prevent the arrival of new species. The JNCC, as part of its Overseas Territories and Crown Dependencies Programme, has recently carried out a review of current activities on invasive species, pulling together information from a wide variety of sources. Collecting information on what is being done is a vital first step in identifying what remains to be done and how limited resources can best be applied to conserving the UKOTs and CDs most valuable species and habitats. The recent review also added new information to the non-native species database, first set up in 2006, collecting hundreds of new non-native species records as well as further information about those already included. In addition, a workshop was held at JNCC with a range of stakeholders to advise JNCC on how best to focus its efforts in addressing invasive species in UKOTs.

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Introduction

It is well known that invasive species are one of the biggest threats facing global biodiversity, and are arguably the greatest single threat to the biodiversity of small islands. Consultations with UKOTs have also shown that addressing invasives species issues is a high priority for UKOT personnel. Subsequently, this is one of the areas of work that JNCC is focussing on in its Overseas Territories and Crown Dependencies Programme.

This presentation gives a brief overview of JNCC's programme, outlining in more detail its targets under the invasive species component. There is significant focus on a recent piece of work commissioned by JNCC which builds on its 2006 review of non-native species in the UK Overseas Territories. We are very grateful to all those who contributed to the 2006 database. The report and database are available for download from the JNCC website (<http://www.jncc.gov.uk/page-3634>). They have been useful tools in raising the profile of invasive

species issues in the UKOTs.

As part of its UKOT and CD programme, in late 2008 the JNCC commissioned a piece of work to build on the 2006 review with four main components:

1. to gather more information for the database (both new species records and supporting information for existing records);
2. To identify high priority areas of action;
3. to collect data on past, current and planned actions to deal with non-native species in the UKOTs and CDs;
4. to identify the gaps where actions are not being taken or planned to address high priority areas.

This information will be used to help JNCC in its role as UK Government advisor, and will also help guide JNCC input into invasive species activities in the UKOTs.

Because of the scale of the task, and the range of stakeholders involved, the commissioned work is

the first phase of a process. Draft documents only were produced, and these will be used as a foundation for further development.

Collecting information for the 2008 review

As with the 2006 project, information was collected from a range of sources. The key contacts were people living and working in the UKOTs and CDs, including representatives of government and NGOs, local and international biologists, conservation organisations and biological recording services etc.

Potential contributors were asked for information on: non-native/ invasive species (especially those occurring since 2005), control or eradication measures related to non-native species and biosecurity policies or other measures in place to prevent new species arriving. Where relevant, people were prompted for information on specific projects or species mentioned in the database.

In addition, searches were made of the scientific literature and a variety of online sources. 'Invasiveness elsewhere' is still one of the best predictors of which species will go on to become invasive in a new area. Therefore, information from other lists and databases of invasive species were used to identify species that might be expected to become invasive in specific UKOTs and CDs. Data from these sources were used to supplement specific data from the OTs/CDs.

Results

Updated database

The project collected information on 484 additional species, plus additional information for many more. This increased the total number of non-native species included in the database from 2950 to 3434. In addition, more than 50 new references were added to the database, many of which have been collected in an electronic library to be held by the JNCC.

Who's doing what?

The project collected information on a wide range of activities, including biosecurity initiatives, monitoring known/ potential invasives, control and eradication projects, and invasive species strate-

gies. Examples of current eradication work include the Cayman Islands Department of Environment's ongoing efforts to eradicate monk parakeets from the island, which has involved intensive work in trapping and, where possible, neutering and then releasing the birds.

There has also been a range of biosecurity initiatives, such as the new quarantine store on South Georgia, funded by the Government of South Georgia and the South Sandwich Islands and the RSPB-managed South Atlantic Invasive Species SAIS) project. There have also been a number of monitoring projects, gathering data on non-native species for a variety of purposes. On Montserrat, for example, black and brown rats are being monitored in areas of the Centre Hills as part of an ongoing study to see if they can be controlled well enough to protect the Critically Endangered Montserrat Oriole. There have also been lots of training activities for people working in the UKOTs, notably that offered by SAIS, including training in the use of chain-saws, brush-cutters and herbicide spraying equipment.

Other relevant activities have included the production of invasive species strategies, such as those produced by Anguilla and Bermuda, and initiatives such as native plant nurseries. While these may not seem like a direct action against invasive species, they cut down on the use of introduced and possibly invasive species, as well as reducing the importation of plants which may also carry pests and diseases. Awareness raising and education activities have also taken place across many UKOTs and CDs.

As well as actions in individual territories there have also been a number of regional projects. The SAIS project has worked in all five territories in the region, evaluating and addressing the invasive species issues in each. Caribbean territories have also been included in a number of regional initiatives including CABI's 2003 report on invasive species in the Caribbean, as well as a more recent review of pathways of invasion in the region.

Funding

Projects are being funded by a range of sources, including the FCO/DFID Overseas Territories Environment Programme (OTEP), which has funded at least 15 projects involving non-native species, and the EU's European Development Fund which funded the SAIS project.

What are the priorities?

For some species, the database contains information on their known or suspected ecological impacts, so this was used as a proxy for invasiveness. One of the best predictors of which species will become invasive is whether they are invasive elsewhere, especially in similar environmental conditions. On this basis, species included on relevant lists (e.g. the Global Invasive Species Database and the Florida Exotic Plant Pest Council list of invasive species) were also flagged as being potentially invasive in a territory, even if no specific ecological impacts had yet been recorded for them there.

This combination of information from the database and from other lists/ databases was used to create 'long' and 'short' lists of priority species. Those on the 'long list' were those for which ecological impacts were recorded in the 2006 version of the database or appeared on at least one relevant list of species known to be invasive elsewhere. The 'short list' comprised those species that appeared on multiple lists. The total of almost 3500 species in the database was reduced to 818 on the 'long list', 261 of which made it onto the 'short list'.

These lists were then used to come up with a manageable number of species in each of three categories for each UKOT/ CD. The categories were:

- species recommended for immediate or ongoing control or eradication,
- those recommended for monitoring and/or gathering more information,
- those which were agricultural or other economic pests, even if they had no wider ecological consequences. It is important to recognise that people's lives are often more directly impacted by the ecological impacts of invasive species.

The next step is to get feedback from local experts to see if these lists make sense in individual UKOTs and CDs. Do they include all of the species that are known to cause problems and not too many of those which clearly don't? It is also important to incorporate some measure of which species are causing impacts on high value species and habitats, something which has not currently been included.

Prevention and Capacity

Although it is very important to deal with invasive species already present, this is not the only challenge currently facing the UKOTs and CDs. Ca-

capacity building and biosecurity are also extremely important. Without local capacity, that is to say trained, motivated and well-equipped staff, there can be no effective long-term action. And without good biosecurity measures to stop new species arriving, the ecological benefits of controlling and eradicating those already present will always be compromised.

What next?

The report commissioned by JNCC is currently in draft form. The first follow up to this was a small workshop in March 2009 at JNCC which focussed on the stakeholders present sharing their advice and expertise on the four areas of the report. This will be used by JNCC to determine its future input into this areas of work.

The second day of the workshop considered the potential for a regional UKOT Caribbean Invasives Project. This idea is now being progressed with the intention of submitting a concept note to the European Commission's ENTRP fund in a few months' time. The project will be led by the Cayman Island Government.

The draft document produced by the contractor will be available for input from all stakeholders. We are hoping to encourage UKOT personnel to input and to co-author the sections that relate to their territory, so that the overview can be strengthened, build on the work done, and become a useful tool for all involved.

JNCC has incorporated invasive species in the UKOTs into its internal strategy on invasives, and will continue to work in this very important area, giving advice and support as required.

Invasive species: awareness-raising and education – getting rid of stuff that people like, with little or no money

Mat DaCosta-Cottam (Cayman Islands Department of Environment)



DaCosta-Cottam, M. 2010. Invasive species: awareness-raising and education – getting rid of stuff that people like, with little or no money. pp 282-284 in *Making the Right Connections: a conference on conservation in UK Overseas Territories, Crown Dependencies and other small island communities, Grand Cayman 30th May to 5th June 2009* (ed. by M. Pienkowski, O. Cheesman, C. Quick & A. Pienkowski). UK Overseas Territories Conservation Forum, www.ukotcf.org

Control of invasive species presents an extraordinary problem for conservation managers. Because invasive species have an inherent capacity to overwhelm local species, conservation management is invariably set against the driving force of natural selection, albeit in a decidedly unnatural context. In some cases, single invasive species may overwhelm entire habitats or species complements, representing a wholesale loss of biodiversity.

(Photo: Dr Mike Pienkowski)

In many cases, the problems of implementing conservation management actions are compounded by lack of understanding. Shifting baselines and lack of awareness amongst members of the public often result in well-intentioned efforts geared towards the preservation of “charismatic” invasive species, media backlash, or the proposal of unrealistic management scenarios. In the face of public outcry, effective conservation strategies may be severely hampered, cancelled, or simply delayed until remedial action is no longer tenable.

While most conservation managers work within the confines of scant financial and human resources, such constraints are often particularly acute in the case of UKOTs and other small-island states, where the responsibility for research, assessment, public relations and implementation may fall to an individual, rather than to a department. While each country is unique, with a unique complement of potentials and challenges, the identification of commonalities can facilitate the establishment of frameworks for action – common resources which can be tailored to suit individual cases, disseminating expertise and information, saving time, and maximising effectiveness.

This approach helped to frame the recent OTEP bid “*nvasive Species in UKOTs: databases and awareness* – which provides the focus for this paper, illustrated with some examples from the Cayman Islands.

Dr Mat DaCosta-Cottam, Manager – Terrestrial Unit, Cayman Islands Department of Environment, Cayman Islands Mat.Cottam@gov.ky www.doe.ky

Control of invasive species poses a severe challenge to conservation managers. The concept that otherwise charismatic exotic creatures may constitute biological pollution can be highly problematic to communicate effectively to the public. This is one challenge faced by the *National Biodiversity Action Plan for the Cayman Islands*. The Plan, completed in 2009, includes action points aimed at the control of charismatic invasives, both in the marine environment (Lionfish *Pterois volitans*) and

the terrestrial environment (Casuarina *Casuarina equisetifolia* and Beach naupaka *Scaevola sericea*). Detailed habitat mapping established that *Casuarina equisetifolia* has established some 5,082 individual stands on Grand Cayman, covering an area of over 320 acres. The majority of occupied habitat is coastal, and together these invasives constitute a significant pressure on the native species associated with coastal shrubland and forest.

Once invasive species are established locally, control attempts effectively pit conservation managers against the forces of natural selection (although the situation was caused by human, rather than natural, actions). Conservation managers are faced with the need to make accurate decisions regarding the (often unplanned arrival of) exotic flora and fauna, about which they may have little or no knowledge, and anticipate the species response to a novel environment. To complicate matters, the control of invasive species may be perceived as a contradictory action by the public, especially by individuals with an overriding interest in animal welfare.

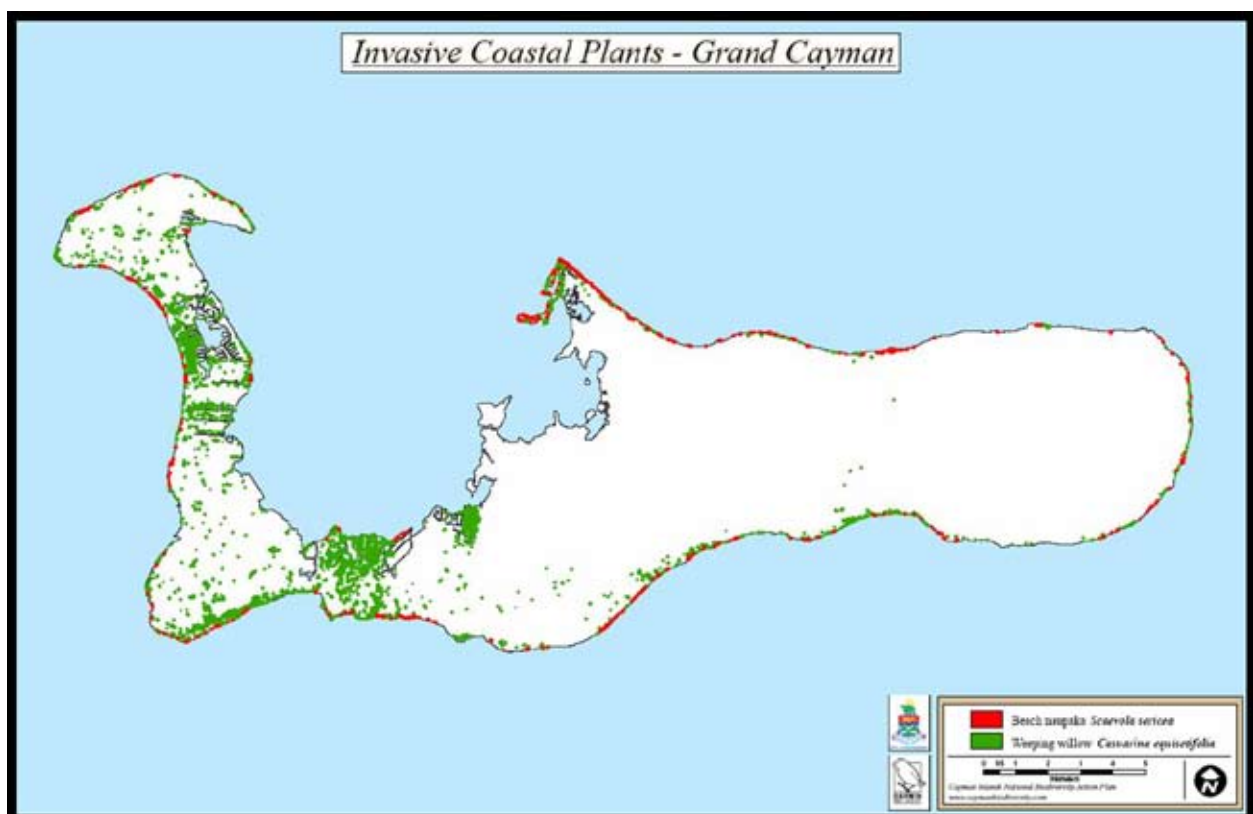
More often than not, lack of information and delayed action leads to a lost opportunity for prevention / early control, and a predisposition towards late control, at greater cost, both financially and with respect



Control of Lionfish is necessary to protect the diversity of native reef fish in the Cayman Islands. (Photo: Patrick Weir, Cayman Islands Department of Environment)

to impact on the environment and need for restoration. Additionally, the longer eradication is delayed, the greater the potential for shifting-baselines to enable the invasive to establish a foothold in the popular psyche.

UKOTs are scattered around the world; however, the great majority are small islands. Small islands share a disproportionate compliment of globally important biodiversity, and a concomitant propensity for loss of that biodiversity – 80% of all recorded extinctions have occurred on islands. The cost of conservation managers making the wrong decision can be very expensive. In the United States, ecosystem services lost to *Tamarix* over 55 years are estimated at \$7,331 -16,062 billion (Moon-ey & Hobbs 2000). In the case of small islands, this cost is more likely to be expressed as the loss of unique biodiversity.



Distribution of invasive coastal plants in 2004. Red is Beach naupaka Scaevola sericea, and green is Casuarina Casuarina equisetifolia for which 5,082 stands occupy 320 acres.

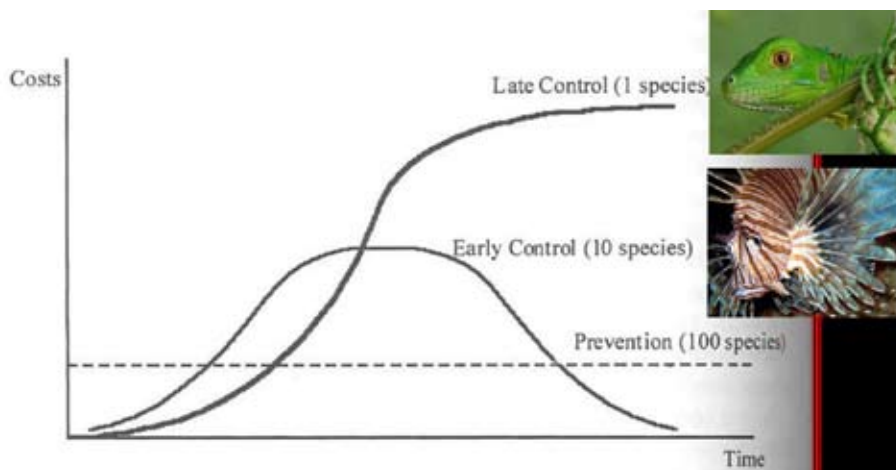


Illustration of the trade-off between target specificity and cost of control for three control strategies. Late control of a single species that actually becomes invasive will be less costly in the short run, but far more costly in the long run, than prevention measures for a much larger number of species, many of which may never invade. (From Figure 11.2 of Mooney & Hobbs 2000)

In 2009, the Cayman Islands Department of Environment was successful in a cross-territories bid for OTEP Project XOT603 *Invasive Species in UKOTs - databases and awareness*. The objective of this project is to help address the public relations and informational challenges facing conservation managers, and to help facilitate early control of invasive species.

Towards addressing informational challenges, this project will take the data compiled by Varnham (2006) and, additionally, more recent data compiled by Royal Botanic Gardens, Kew, on invasive plants in the UKOTs, and upload these to the Global Invasive Species Database.

This will serve to improve the UKOT presence within this global reference resource, and present local issues and initiatives to a global forum. We anticipate that this will benefit conservation managers in UKOTs through facilitation of transfer and updating of information. Additionally, this should benefit conservation managers in other small islands outside the UKOTs/CDs network, enabling them to learn from our problems and our initiatives – successful and otherwise – through the provision of information, management case-studies, contacts and references.

Towards addressing public relations challenges, working in partnership with the International Reptile Conservation Foundation, this project will produce a high quality poster series. Background artwork and formatting will be standardized, to reduce production costs. However, unique text and images provided by each UKOT will be used to individualize print runs. Each run will feature the top five worst invasives for each UKOT, set alongside the native counterpart (species and or habitat) which is most at risk as a result of estab-

lishment or spread of the invasive. By presenting the information in this balanced format, it is the objective of the poster campaign that members of the public will see for themselves that regulation and early control measures, aimed at curtailing the establishment and spread of invasive species, do not represent the premature persecution of exotic plants and animals. Rather, they are an unfortunate but necessary measure for the minimization of the impact of invasive species and the maintenance of local biodiversity.

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Cayman Islands Department of Environment - www.doe.ky



Public Relations Challenges

Poster: Planning to reduce rodent impacts on seabird colonies at Tristan da Cunha and Gough Island

Andrea Angel, Derek Brown, John Cooper, Richard J. Cuthbert, Trevor Glass, Geoff M. Hilton, John Parkes, Peter G. Ryan & Ross M. Wanless

Angel, A., Brown, D., Cooper, J., Cuthbert, R.J., Glass, T., Hilton, G.M., Parkes, J., Ryan, P.G. & Wanless, R.M. 2010. Planning to reduce rodent impacts on seabird colonies at Tristan da Cunha and Gough Island. pp 285-286 in *Making the Right Connections: a conference on conservation in UK Overseas Territories, Crown Dependencies and other small island communities, Grand Cayman 30th May to 5th June 2009* (ed. by M. Pienkowski, O. Cheesman, C. Quick & A. Pienkowski). UK Overseas Territories Conservation Forum, www.ukotcf.org

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⁸ DST/NRF Centre of Excellence at the Percy FitzPatrick Institute, University of Cape Town, Rondebosch 7701, South Africa

The Tristan da Cunha Group, including Gough Island, support some of the World's greatest albatross and petrel colonies, along with many endemic plant, invertebrate and bird taxa. In common with many of the World's oceanic islands, introduced rodent species have caused massive reductions in seabird populations, and threaten further losses.

Tristan da Cunha has Black or Ship Rats *Rattus rattus* and House Mice *Mus musculus*, and formerly held feral and domestic cats *Felis catus*. Consequently, the great majority of the millions of pairs of petrels that previously nested has been lost, leaving only tiny remnants.

By contrast, Gough Island, which has only House Mice, still supports several million pairs of 20 seabird species. However, it is now clear that the mice of Gough have evolved to be devastating predators of albatross and burrowing petrel chicks, and threaten to destroy much of the island's biodiversity value (Angel & Cooper 2006).

Meanwhile, Inaccessible and Nightingale Islands, near to Tristan, are still rodent-free, but are continuously at risk of rodent introduction, particularly via boats from Tristan.

Investigations into the potential for reducing the impact of rodents on the UK Overseas Territory have been ongoing since 2005. The impacts of ro-



One less rat on Tristan: Black Rat Rattus rattus, 13 February 2008. Photo: John Cooper)

dents have been reviewed (Angel & Cooper 2006), and independent experts have conducted feasibility studies into the potential for rodent eradication from both Tristan and Gough, and for bio-security for Inaccessible and Nightingale (see <http://www.rspb.org.uk/ourwork/conservation/projects/tristan-dacunha/publications.asp>).

Research to develop an operational plan for mouse eradication on Gough Island is continuing, since such a programme would break new ground in terms of island size for this species, and there are several areas of uncertainty to be resolved before an eradication exercise can commence. These include the possibility of caves acting as refugia for mice, deciding on bait type and sowing density by helicopter, and ensuring the survival of endemic land birds, probably by resorting to the catching, husbanding and then releasing of “re-founder” populations.

Reference

Angel, A. & Cooper, J. 2006. *A review of the impacts of introduced rodents on the Islands of Tristan da Cunha and Gough (South Atlantic)*. RSPB Research Report No. 17. Sandy: Royal Society for the Protection of Birds.

Poster: Invertebrate Conservation in the UKOTs: Tackling Invasives in South Georgia

Roger Key (independent consultant), Rosy Key (Natural England) & Jamie Roberts (Buglife)

Key, R., Key, R. & Roberts, J. 2010. Invertebrate Conservation in the UKOTs: Tackling Invasives in South Georgia. pp 287-288 in *Making the Right Connections: a conference on conservation in UK Overseas Territories, Crown Dependencies and other small island communities, Grand Cayman 30th May to 5th June 2009* (ed. by M. Pienkowski, O. Cheesman, C. Quick & A. Pienkowski). UK Overseas Territories Conservation Forum, www.ukotcf.org

Roger Key (independent consultant), Rosy Key (Natural England) & Jamie Roberts (Buglife). Buglife, First Floor, 90 Bridge Street, Peterborough, PE1 1DY. (Jamie Roberts attended the Conference in his new role as Executive Director, St Helena National Trust: sth.natrust@cwimail.sh)

South Georgia (53°55'S 36°33'W) is an isolated island, 170km in length, between 40 and 2 km in width, partly a remnant of the Gondwanaland supercontinent. Situated south of the Antarctic Convergence, half its area is permanently covered in ice or snow, and much of the remainder is bare rock. The remaining area is vegetated and supports just 25 indigenous vascular plants. There are about 45 indigenous insects and 55 other invertebrates.



Maiviken - Mt Buse walk.

Alien Species

Indigenous island faunas are commonly threatened by introductions from elsewhere. The objective of the Buglife expedition was to survey the invertebrate fauna of South Georgia to produce a baseline against which further introductions and species spread can be monitored. A parallel group

of botanists from the Royal Botanic Gardens at Kew surveyed the non-indigenous vascular flora of the island. The results will help to inform future control and monitoring strategies.



New non-native hoverfly – probably Eristalis croceimaculata

Invertebrate Sampling

We stopped at 18 separate sites along the coast, taking a total of 655 separate samples from 177 locations - an estimated 88,000 individual invertebrate specimens. Standard samples were taken using a vacuum sampler, Malaise, pitfall and water traps and by sweeping, searching and Berlese extraction of plant litter.



*New invasive Pill beetle –
possibly Chalciosphaerium sp.*

Interim Results

The Buglife project found all of the known introduced invertebrates, and helped to delimit their current range. The surveys also identified at least two additional non-natives, and there may be more amongst the yet-to-be identified samples. In addition we found apparently thriving populations of many of the indigenous species. The photographic record of the fauna and flora of South Georgia is at http://www.flickr.com/photos/roger_key/

Invertebrate work in other UK Overseas Territories

Buglife is currently developing a project to address invertebrate survey and monitoring needs on other UKOTs.

Acknowledgements

The Buglife project is part of the South Atlantic Invasive Species project, funded by the European Commission, and managed by RSPB. We also acknowledge the support of the South Georgia Government.

Poster: Action to reduce the impacts of invasive species on the South Atlantic UK Overseas Territories

Clare Stringer, Brian Summers & Andrew Darlow (RSPB)

Stringer, C., Summers, B. & Darlow, A. 2010. Action to reduce the impacts of invasive species on the South Atlantic UK Overseas Territories. pp 289-292 in *Making the Right Connections: a conference on conservation in UK Overseas Territories, Crown Dependencies and other small island communities, Grand Cayman 30th May to 5th June 2009* (ed. by M. Pienkowski, O. Cheesman, C. Quick & A. Pienkowski). UK Overseas Territories Conservation Forum, www.ukotcf.org

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About the project

Invasive species are a problem for all of the South Atlantic Territories. They affect livelihoods, lifestyles and endemic biodiversity. Each of the South Atlantic Territories has unique values that may be threatened by the arrival of new non-native species, and by the impacts of those species that have already arrived.

A project proposal submitted to the European Commission's European Development Fund (EDF-9), was awarded funding of some 1,900,000 Euros over three years. The project began in December 2006, and will finish at the end of November 2009. The RSPB is managing the project's implementation in the five Territories concerned – the Falklands, St Helena, Ascension, Tristan da Cunha and South Georgia and the South Sandwich Islands.



An albatross soars over Tristan waters. The nesting sites of many seabirds in the Territories are threatened by invasive species: problems range from rodents eating chicks and eggs to plants encroaching on nest sites. (All photos in this article are by Clare Miller, RSPB, except thistles by Brian Summers, RSPB)

The objectives of the project are:

Overall: To conserve native biodiversity, and therefore enhance economic prosperity and quality of life for people living on the South Atlantic UK Overseas Territories.

Specific: To develop regional capacity to reduce the threat that invasive species pose to the native biodiversity of the South Atlantic UK Overseas Territories. The project works with local communities and stakeholders on the South Atlantic Territories to focus on those issues that people feel are most important and have the highest current or potential impacts. A multi-disciplinary approach is needed to address issues in areas such as policy, infrastructure, capacity building and training, as well as practical surveys and control activities. The focus of the project will vary in each Territory according to specific needs. The descriptions below illustrate the diversity of the Territories and their problems with invasive species.

Ascension

Ascension Island is no stranger to invasive species issues – in 2006, the island was declared “feral cat free”. Post-eradication, Ascension's seabirds have started to re-colonise the mainland, freed from the pressure of intense cat predation. However, new threats continue to arise. Mexican thorn *Prosopis julifera* is spreading over most habitats on the island, and may lead to degradation of volcanic features, make seabird nesting habitat unusable and prevent turtles from nesting as it encroaches on beaches.

Other problems on Ascension include a suite of other introduced plants (including *Lantana camara*, *Paspalum conjugatum* and *Heliotropium curassavicum*) that are out-competing threatened endemic species on Green Mountain. Rabbits, rats and myna birds are also having unknown impacts.

In the first 18 months of project operation, actions on Ascension have included supply of equipment and training to combat some of the invasive plants; and assessment of rabbit numbers and training for Ascension staff in rabbit survey techniques. Future work may include developing education materials; assessing rat impacts on seabirds; carrying out botanical surveys island-wide to assess the distribution of introduced plants; and assessing the effectiveness of current Ascension legislation in preventing introduction of further invasive species.



Raymond Benjamin and Stedson Stroud work in the endemic plant nursery on Ascension. Many endemic plants are threatened by more vigorous introduced invasive plants, as well as by grazing mammals.



Location of the UK Overseas Territories in the South Atlantic

St Helena

St Helena was discovered in 1502, and the introduction of invasive species began almost immediately, with the release of goats to provide food for visiting ships. Rats, mice, livestock and various plant species have had a devastating effect on St Helena's endemic species, and continue to do so – the St Helena Olive became extinct in 2004. Invasive species are having an impact on many aspects of life on St Helena, including agriculture, recreation and way of life. Plants such as whiteweed (*Eupatorium pallescens/Austroeupatorium inulifolium*), bilberry (*Solanum mauritanum*) and gorse or furze (*Ulex europaeus*) encroach on pasture and necessitate expensive management. Conservation and restoration efforts in the national park are being complicated by the need to remove invasive plants prior to replanting with native species, and to prevent the return of invasive plants into restored areas. In the first 18 months of project operation on St Helena, actions have included starting an island-wide botanical survey with the aim of determining the distribution of all invasive plant species. Future work will include: the development and implementation of management plans for key invasive plant species; working with landowners to improve pasture management; and the development of education materials and support for government in improving nursery production of endemic plants, to facilitate restoration and prevent re-colonisation by invasive species.

Tristan da Cunha

Tristan da Cunha is the world's most isolated inhabited island – it requires a six-day boat trip, usually from Cape Town, to get there. The 300 Tristanians are rightfully proud of their islands and their unique biodiversity. Unfortunately, the impacts of invasive species have reached even this remote corner of the world. Mice *Mus musculus* on Gough Island have been observed eating live albatross and petrel chicks of several species. On Tristan, mice and rats are affecting wildlife and livelihoods. If rats and/or mice ever reached the rodent-free islands of Inaccessible and Nightingale, the impacts would be devastating. Introduced plants have become problematic more recently, and are starting to affect crops and become naturalised in some sensitive areas. To-date, project activities on Tristan have included: supply of equipment for control of invasive plants; provision of equipment and advice on improving rodent control on



Fishing boats on Tristan: fishing is a significant part of most South Atlantic territories economies. Invasive marine species could devastate fisheries, with flow-on effects through these small communities.

control thistles and European ragwort. Surveys of the distribution of introduced plants are ongoing, and will continue throughout the project. Other future actions will include: a workshop related to rat eradications; training for border staff; development of education materials; and further support for practical eradication and control projects targeting introduced mammals.

Tristan, and on preventing establishment of rodents on Nightingale or Inaccessible; and support for introduced plant surveys. In the future, there will be investment in training for Tristan conservation staff, development of education and training materials, and development of a quarantine manual.

The Falkland Islands

The Falklands is the largest of the South Atlantic Territories in terms of its land area – some 12,173 km². There are around 700 islands in the archipelago, most with some assemblages of introduced species. Most land is privately owned, and land-owners take a variety of approaches to dealing with invasive species. Mammalian predators (rats, cats, foxes) have caused problems on many islands in the Falklands; in its first 18 months, the project has supported purchase of equipment and transport for projects related to fox and rat eradications. Actions have also been undertaken to investigate methods of control for calafate *Berberis buxifolia*, and to

South Georgia

South Georgia is probably best known for glaciers, penguins and albatrosses. It has a spectacular landscape, and is visited by tourists from around the world who marvel at its history and wildlife. However, rats *Rattus norvegicus*, introduced reindeer *Rangifer tarandus* and various introduced plant species do appear to be having negative impacts on South Georgia. As climate change continues to warm the islands, these impacts are predicted to increase. Already, biologists who have a long association with South Georgia have remarked on the increased distribution of some plant species. A programme to eradicate wavy-leaved bittercress *Cardamine flexuosa* at King Edward Point has been started, and this will continue throughout the project. A survey of other introduced plants and invertebrates will be undertaken in the coming months, together with an analysis of which are likely to become invasive in the future. Improvements to quarantine systems are also planned.



Above and right: Plants such as thistles and calafate encroach on agricultural land and require ongoing management to reduce economic impacts.



Common Ground

All of the South Atlantic UK Overseas Territories are unique and have distinct problems related to invasive species, but they have several features in common.

- All have small human populations, and a corresponding shortage of trained personnel to undertake work on invasive species.
- All are isolated – though travelling times range from a fairly short flight from Chile to the Falklands, to a minimum of six days on a boat to get to Tristan da Cunha.
- All have economies centred on one or two main areas that depend heavily on the environment (e.g. fisheries, tourism).

Through action plans designed in consultation with stakeholders, this project will reduce the current effects of invasive species in the Territories and help to prevent future impacts occurring. For all of the

Territories concerned the long-term outcomes will include:

- a regional invasive species strategy;
- a regional early warning system;
- a programme of education, awareness raising and training activities.

This should enable the development of regional skills and networks, and enhanced capacity for the Territories to address invasive species issues and to avoid ongoing or increased impacts on biodiversity and the unique communities of these islands.

This project is a partnership of the RSPB, the Falklands Islands Government, the St Helena Government, the Ascension Island Government, the Government of South Georgia and the South Sandwich Islands, the Tristan da Cunha Government, Falklands Conservation and the St Helena National Trust. This project is funded by the European Union.

Guided discussion: What is needed for the future?

With thanks to those taking notes of discussions (in this case mainly Dr John Cooper), summarised below are the discussions resulting from this session. Attention is drawn also to the brief session summaries in the introductory section of these proceedings.

What are the main obstacles? How to overcome them?

The need for research in order to tackle invasive species issues effectively was raised several times. In response to a question about the Caicos Pine Scale, Bryan Naqqi Manco reported that the scale does occur in all three dif-

ferent groups of pines, but as yet the transport method within TCI was unknown (although the arrival in TCI was thought to be via Christmas trees imported from North America). It may be avian, as the infestation was thought to have moved against the wind. There are some apparently resistant trees, and trees on sand do better (but are still infested) than those on limestone where there is more access to water. In answer to a question about research on the rats on Anguilla's Dog Island, it was confirmed that there had been some work looking at impacts, particularly diet. JNCC were also collecting data, but it was more difficult to get information on marine than terrestrial species.

Lack of adequate biosecurity facilities was felt to be one of the main obstacles (see also further references to biosecurity issues below). Issues raised here were the importation of other taxa of plants, for example amphibians, and the large funding needed for the big biosecurity projects required. An example from South Georgia noted the exclusion of such projects from EU funds. However, there was a suggestion that even small measures could be effective, for example mandatory and monitored boot-washing before people were allowed to land on sensitive islands.

The problem of obtaining funding for such work was also raised in the context of rat eradication in BIOT. Not only were the islands remote, so lacked facilities and infrastructure for an eradication programme, but it was difficult to see where the large-scale funding for such work would come from. It was suggested that work needed to concentrate on one island at a time, with considered prioritization of which ones to tackle first, but that on-going long-term support would be needed from UK Government.

Further suggestions for strategies to make the most effective use of limited funds, especially in remote places, were to look for opportunities to co-ordinate project work at these locations at the same time, thereby using economy of scale to maximise the efficacy of limited funds. In addition, it was suggested that cross-territory projects and increased volunteer involvement would allow for skilled personnel to move between territories and contribute to the training of local personnel.

In answer to a question about how the work of the South Atlantic Invasives Species project would continue post-funding, it was explained that the project aims to build capacity among territory inhabitants. They were also aiming for a project extension, as the project has started rather slowly.

Another issue was that the necessary habitat restoration takes longer than the life of an eradication project. Awareness of this was also required at high levels of policy and decision-

making. In this regard, the suggestion was made that the project title should highlight positive aspects, such as habitat and species restoration, and not refer solely to the removal of alien species. This had been done with the cat eradication programme on Ascension Island, which was referred to as seabird restoration (its objective, rather than its method).

Clearly, more funding was required to support all kinds of work on invasive species in the UKOTs/CDs. However, it was also agreed that more strategic approaches to funding were required. Individual projects could tackle specific challenges, but different elements needed to be addressed together, in longer-term programmes, if sustained successes were to be achieved. This would require funding mechanisms that could support integrated activities, e.g. linking prevention measures to control, and control to ecosystem restoration, and all activities to enhanced local capacity.

Raising awareness

One issue raised here was the importance of getting public support for invasive species eradication programmes. Many people in the public arena felt that alien species also had rights. In addition many alien species were attractive, and the example of the reindeer on South Georgia was given. Projects for the eradication or control of attractive species gained global media attention, and the question was raised as to whether there was the need for professional public relations in such instances. It was certainly felt to be important to work with the public to explain issues.

It was felt important to avoid demonizing species, and to talk about stewardship, and the responsibility to protect native species. In this regard, it was important to emphasise the positive legacies of projects, such as masked booby returning to breed on Ascension Island following the feral cat eradication. Another persuasive argument which could be made here was the need to maintain the genetic variation of native populations and their adaptation to their environment. An example was given of

the stresses which climate change is causing, and native vegetation being more resilient. On Nonsuch Island in Bermuda, the native vegetation had been more resilient to hurricanes than introduced vegetation. Again, the importance of habitat restoration after an eradication project was cited.

Where land for which an eradication programme was necessary was in private ownership, it was obviously vital to get the agreement and support of the landowners, and arguments such as those given above could be used persuasively.

Clearly schools curricula should be used as much as possible to educate children about the issues of invasive species.

Several ways of raising public awareness were given as examples. The British Birdwatching Fair was an important publicity opportunity, and not only for the public, but also for eco- and adventure-tour companies. Visitor centres and conservation body offices could strive to have invasive-free sites, and publicise this (although in locations such as the Channel islands the closeness to the mainland could be a problem). Where invasive species threatened resources linked to commercial interests, novel ways could be used to encourage public support to deal with the problem. Many Caribbean Islands, as part of their strategy for dealing with the Pacific Lionfish which was devastating the coral reef ecosystems, were advertising the fact that it was good to eat. Distributing donated native seedlings to plant, to new home owners and through other organisations, like schools, had also been shown to be successful.

Where policy-makers were the target for awareness raising, it was felt that an emphasis on the economic costs of managing invasive species impacts was important. This seemed to be the most effective means of communicating, at a high level, the severity of the threat, and the need for control and (particularly) prevention measures.

Biosecurity

Lack of expertise was one problem. An example was given for Diego Garcia (BIOT), where introduction of a snake from Guam was a threat, as were invasive widow spiders, but there was no expertise on Diego Garcia.

Many places (as mentioned earlier in problems to be overcome) lacked biosecurity facilities, or the funding to provide these, despite the incredible value for money that investment in prevention measures represented.

It was felt that, as this was such a huge issue, with lack of trained personnel and facilities, and no funding to address these, a prioritisation exercise was needed, and the worst problems should be addressed first.

Other points

Turning an invasive species into a resource could be one way of supporting invasive species eradication. Eating Lionfish had already been suggested, other suggestions were hunting feral pigs and donkey bounties. This approach could support the argument that not every eradication or control programme necessarily had a cost.

Another discussion point raised the sometimes difficult question of what is a non-native species. It was suggested that self-introduced species were not alien, but part of an evolving ecosystem, whereas human-induced or facilitated introductions were a different matter. The question was also posed as to whether human beings are an invasive species.

Section 9: Enhancing capacity - how on earth are we going to cope with the workload?

Co-ordinators: Dace Ground (Bermuda National Trust & UKOTCF Council) & Mat DaCosta-Cottam (Cayman Islands Department of Environment)

Help in finding resources for all the work that needs to be done is always one of the highest of priorities identified by many people for a conference session - and one of the most difficult to organise. As Dace Ground identified in her introduction, this session approached the issue from several angles.

First, it is important to have a clear idea of what the resources are needed for. In the first part, this is addressed from the important viewpoint of the implementation of species recovery plans. Fred Burton takes the successful Blue Iguana Recovery Programme as an example, while Colin Clubbe looked at why so many Plans run into bottlenecks impeding effective implementation. This, as for the other two parts of the session noted below, was followed by discussion.

The second part of the session addressed funding. Relevant to this was the document circulated in advance in the conference handbook (and included also here) in which Mat Cottam gives an example as to how to seek external funding. In the session, Nikki Chapman gave an outline of JNCC's efforts in identifying conventional grant sources. The funding to JNCC from UK Government for this work was itself a result of encouragement from UKOTCF and previous conferences to UK Government to address its Commitments under the Environment Charters:

The third part of the session addressed the matter of volunteer help. This started with a focus on local volunteers, addressed by Pierre Pistorius on the experience of the Falklands; and by an additional short contribution, prepared at short notice by Stedson Stroud, on Ascension. Then Dace Ground recalled the long role of UKOTCF in organising external volunteers to meet Territory requests, and how this had changed over the years. Steve Cheeseman outlined the recent experiences of a non-traditional UKOTCF volunteer. Within the discussion, Oliver Cheeseman summarised responses relating to capacity building to the recent wider consultation of UKOTCF Member and Associate organisations, and the question was discussed of how UKOTCF and others can help further.



*From left: Joseph Smith Abbott (rapporteur), Dr Colin Clubbe, Dr Nikki Chapman (hidden), Stedson Stroud, Pierre Pistorius, Dr Mat DaCosta-Cottam, Dace Ground and Steve Cheeseman
(Photos of participants in this section by Dr Mike Pienkowski and Dr Rob Thomas, unless otherwise indicated)*

Enhancing capacity: how on earth are we going to cope with the workload - Introduction

Frederic J. Burton MBE (Director, Blue Iguana Recovery Programme, Grand Cayman)



Burton, F.J. 2010. Enhancing capacity: how on earth are we going to cope with the workload - Introduction. pp 296-300 in *Making the Right Connections: a conference on conservation in UK Overseas Territories, Crown Dependencies and other small island communities, Grand Cayman 30th May to 5th June 2009* (ed. by M. Pienkowski, O. Cheesman, C. Quick & A. Pienkowski). UK Overseas Territories Conservation Forum, www.ukotcf.org

For those of us actually working in the UK Overseas Territories, it is an everyday fact of life that human resources for conservation work are extremely limited. Here in the Cayman Islands, we are probably better off than most, with a Department of Environment 32 strong, and a National Trust with 6 or so paid positions. But even here, for example, we have only two and a half qualified terrestrial biologists on anyone's payroll. More typically in a small UKOT, that might be one, or even none at all.

Match that against the work plans we aspire to, and there is obviously a huge mismatch. The Cayman Islands' new *National Biodiversity Action Plan* calls for active work on 19 habitats, 43 priority species, and still by no means covers all the environmental issues we would like to address. 36 of the NBAP priority species / species groups are terrestrial. Conservation of one single priority species can easily demand full time attention of a team of specialists, yet the well-staffed Cayman Islands has 0.07 paid terrestrial biologists per species for the job. In the UKOT's, the ratio doesn't get much higher than this; hence the question: indeed, how on earth are we going to cope with the work load?

Linking conservation of multiple key species, through conservation of shared habitat, is a potent way to maximize results using limited human resources. Volunteerism, training, academic affiliations, institutional partnerships, and use of strategic planning to focus resources to maximum effect, are the other main strategies the *Blue Iguana Recovery Programme* on Grand Cayman has used to manage successfully a typical workload for a priority 'flagship' species.

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www.blueiguana.ky

For those of us working in the UK Overseas Territories, it is an everyday fact of life that human resources for conservation work are extremely limited.

Here in the Cayman Islands, we are almost certainly better off than most. We have a Department of Environment 32 strong, and a National Trust with 6 or so paid positions. But if, for example, we look just at conservation on land, we have only two, maybe two and a half qualified terrestrial biologists on anyone's payroll.

More typically, in a small UK Overseas Territory, that might be one - or, in some cases I have known, there are none at all.

If we just pitch those numbers against the work plans we aspire to, it all tends to look rather overwhelming. The clearest example I have looked at recently comes from the Cayman Islands' new *National Biodiversity Action Plan*. This calls for active work on 19 habitats, 43 priority species, and if we are honest, it still does not nearly cover all the environmental issues we would like to address.

Thirty-six of our BAP priority species / species groups are terrestrial. And we all know that conservation of one single priority species can easily demand full time attention of a team of specialists.

Yet the well-staffed Cayman Islands has 0.07 paid terrestrial biologists per species for the job. In the UK Overseas Territories, the ratio does not get much higher than this; hence indeed the question: how on earth are we going to cope with the work load?

I imagine that most of us here struggle with this question constantly. I have tendencies to over-extend myself chronically; so I may not be the best to advise anybody on the subject of coping. I think it will be more useful for me to stimulate discussion by using an example from my personal experience.

The *Blue Iguana Recovery Programme* shows quite well, I think, how several very familiar, often-used strategies can sometimes be combined to achieve multiple conservation goals with remarkably little by way of paid professional staff.

The Flagship Species approach is an obvious place to start. In the case of the Blue Iguana, if we are to restore a wild population then we need to protect its habitat. If we protect the Blue Iguana's habitat, we also protect *Agave caymanensis*, *Phyllanthus caymanensis*, *Scolosanthus roulstoni*, and *Coccothrinax proctorii*. That's five priority endangered endemics for the price of one. If you look at the Blue Iguanas' xerophytic shrubland habitat as a whole, we are saving one of the Cayman Islands two most biodiverse ecosystems.

The Blue Iguana happens to be the most charismatic and attention-grabbing element of all that biodiversity, so that's the creature we selected to make our case for them all.



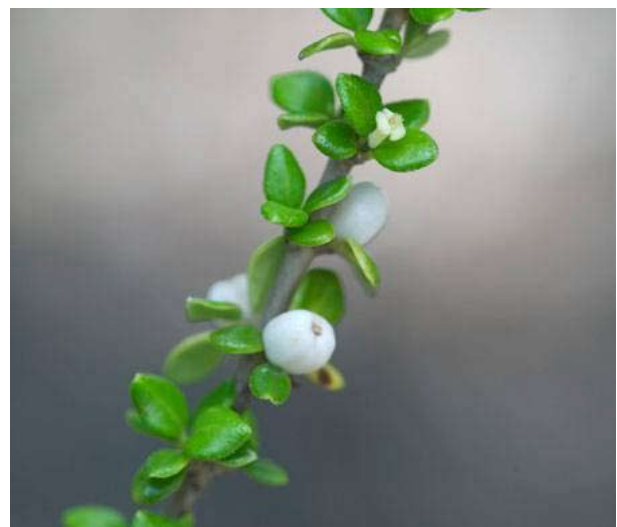
Blue Iguana



Agave caymanensis



Phyllanthus caymanensis



Scolosanthus roulstoni

Linking conservation of multiple key species, through conservation of shared habitat, is obviously a potent way to maximize results using limited human resources. When the habitat concerned has



Coccothrinax proctorii

a good flagship species which commands public attention, that species can swing the balance of public opinion in our favour, perhaps better than any mere mortal can achieve.

Volunteerism is not the simplest thing to manage sometimes, but if you get the selection and management processes right, it gives you people power



very cheaply indeed. Nobody in this picture is being paid, and all were working six- or seven-day weeks on the *Blue Iguana Recovery Programme* when this shot was taken.



The Blue Iguanas' xerophytic shrubland habitat



We recruit our international volunteers online. The web site module (above) was built and is managed by volunteers. A local volunteer filters the applicants, checks references, and coordinates arrivals with accommodation space. We house our international volunteers in a building whose use is gifted to the National Trust.

Our use of international volunteers works well for a few reasons:

- The online application process demands a lot of information, which puts off casual or unsuitable applicants.
- We don't charge people to volunteer, so we can attract energetic young students and active professionals who don't necessarily have a lot of money. They just have to pay for their air fare and their own food.
- We do have just enough permanent staff to be capable of training and managing the volunteers at work.
- The work experience and programme success are psychologically and sometimes practically rewarding for the volunteers, and a little bit of training and experience helps students flesh out their resumés.



Locally, we have two different types of volunteer: weekend work crews, and individual long-term volunteers. Finding suitable tasks for corporate volunteer groups, like this crowd from our Domino's Pizza company, isn't always easy. There's little scope for training with a one-off group like this; so it only works for minimally skilled jobs. But weekend work crews pay off in other ways – it's a kind of community outreach, it catches individuals' interest and it makes news.

Individual volunteers are harder to find, and very valuable. At best, someone who isn't in full time work can end up being a voluntary full member of staff. In fact, most of the staff the BIRP has ever hired started out with us as volunteers. These are people that we can invest in training, so they can take on key roles and feel some real ownership and pride in their work.



Postgraduate students can sometimes offer substantial benefits to conservation. The key in these university partnerships is to ensure the project's academic agenda is negotiated with the student and their supervisor - so that it generates information that the conservation programme needs, and can use. This kind of negotiation needs there to be an academic within, or advising, the conservation or-

ganization, maybe even serving as the local supervisor. Without that, there is the risk the opportunity to benefit conservation gets missed, no matter how triumphant the purely academic outcome may be.

Universities apart, the BIRP relies very heavily on long-term institutional partnerships. Locally, we operate under the umbrella of the National Trust for the Cayman Islands, and we have a close link with the Department of Environment. We are operating our captive facility and tours within the QE II Botanic Park; so there's three local institutions to start with.

Screenmaster images credit: Blue Iguana Recovery Programme

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BLUE IGUANA RECOVERY PROGRAM, GRAND CAYMAN, CAYMAN ISLANDS

A programme of the National Trust for the Cayman Islands, with local and international partners



Internationally, we get all kinds of support, both technical and financial, through the International Reptile Conservation Foundation, and the Durrell Wildlife Conservation Trust. Then San Diego Zoo advises us on genetic management; the Wildlife Conservation Society sends specialist vets down annually to health-screen our iguanas before release; and so it goes on. The Iguana Specialist Group network, and many individual zoos are some of the others who stay involved, one way or another.

With so many independent players, there is a danger of conflicting agendas, duplication of effort, turf wars, and other common expressions of tribal behaviour.

I have always found the best way to keep everyone aligned and working happily together, is to maintain a detailed and realistic strategic plan, and to invite anyone who wants to help, to help us implement specific elements of that one plan. Our major partners are intimately involved in formulating the plan, so it's theirs as much as it is ours. We're now updating it every 3 years.

So to summarize, linking conservation of multiple key species through conservation of shared habitat,

**Species Recovery Plan
for the
Grand Cayman Blue Iguana, *Cyclura lewisi***

2009 - 2011

Formulated in a workshop held on 2nd to 5th December, 2008
Grand Cayman, Cayman Islands



OVERALL PROGRAMME GOAL

To restore a self-sustaining, free-roaming population of
Grand Cayman Blue Iguanas
in the wild

We envision a population of at least one thousand Grand Cayman Blue Iguanas, living freely within protected areas, reproducing naturally and continuing to evolve in step with their ever-changing natural environment.

Together with the iguanas, the native ecosystems in these protected areas will be managed over the long term, to control or maintain eradication of non-native species which threaten to disrupt natural processes, and to ensure that human activities do not conflict with the well-being of the iguanas and their natural environment.

The Blue Iguana will be a flagship for the conservation of the ecosystems which they inhabit. As such, they will attract nature tourism and be the inspiration for a range of commercial products. Commercial activity linked to the Blue Iguana and their habitat will generate sustainable revenue which will fund management of the Blue Iguana population and its associated protected areas, indefinitely.

is a powerful way to maximize results with minimal staff. And good flagship species can really help bring public support to bear on habitat protection. Volunteerism, training, academic affiliations, institutional partnerships, and use of strategic planning, are the other main strategies we have used successfully, to manage a typical workload for a single priority 'flagship' species. But, as I've said, this lets us pull in habitat protection and so saving a bunch more priority species, on the same wave of public support.

This is a success story, but it's also a bit of a story about how success breeds more success. A lot of what works with the BIRP works because we already have some expertise and human resource in place. So we have people to attract and manage the additional support we need. We have people to keep that support working on our agenda, to keep it focussed on our goals.

As bullet points:

- Use flagship species if you have them.
- Save many species by conservation of shared habitat.
- Select, recruit and train your volunteers.
- Look for postgraduates to produce conservation-relevant data.
- Find and keep the right institutional partners.
- Use Strategic Planning to hold it all together.

I have seen situations where some of this would

not work so well, because the trained local human resources are just too scarce to manage it. In other words, if you've got people, you can greatly amplify their capacity in some of the ways I've just described. But zero times anything is still zero, and there are situations where investment in hiring and training local people is still needed first, before any of the rest of this can really get off the starting blocks.



Yearling's eye
"Henry"

Bottlenecks in implementing action plans

Colin Clubbe (Royal Botanic Gardens, Kew)



Clubbe, C. 2010. Bottlenecks in implementing action plans. pp 301-302 in *Making the Right Connections: a conference on conservation in UK Overseas Territories, Crown Dependencies and other small island communities, Grand Cayman 30th May to 5th June 2009* (ed. by M. Pienkowski, O. Cheesman, C. Quick & A. Pienkowski). UK Overseas Territories Conservation Forum, www.ukotcf.org

Conservation is essentially 'management for change'. Effective management requires planning. Good planning requires understanding, documentation and actions. To conserve, maintain, manage or utilise biodiversity requires clearly articulated action plans. Many UK Overseas Territories (UKOTs) and Crown Dependencies (CDs) are developing action plans.

Action plans come in all shapes and sizes, to meet many and varied specific needs. At the country level, 166 of the 190 Parties that are signatories to the Convention on Biological Diversity (CBD) have developed National Biodiversity Strategies and Action Plans (NBSAPs) (<http://www.cbd.int/nbsap/>).

At a species level, IUCN-The World Conservation Union's Species Survival Commission (SSC) has co-ordinated some 75 action plans for a wide range of key taxa groups of plants, birds, mammals, reptiles, amphibians and a few invertebrates (www.iucn.org/about/work/programmes/species/publications_technical_documents/publications/species_actions_plans/). Individual Species Action Plans have been developed for a wide range of single species in many countries across the world.

Sadly, many action plans are inactive and gather dust on shelves! Why is this? What are the bottlenecks to implementing action plans? Is it a question of funding? Is it lack of capacity? Is there inadequate legislation? Is there a lack of political will? The talk will explore some of these causes in relation to examples drawn from UKOTs and CDs, in an attempt to examine the challenges of implementing action plans and promoting a discussion that might identify key bottlenecks and come up with strategies to clear these, so that action plans can be activated and conservation action results. Only then, will we stand some chance of even remotely achieving the 2010 biodiversity target: "to achieve by 2010 a significant reduction of the current rate of biodiversity loss at the global, regional and national level as a contribution to poverty alleviation and to the benefit of all life on Earth" (www.cbd.int/2010-target/).

Colin Clubbe, Head, Conservation Team, Royal Botanic Gardens, Kew, Richmond, Surrey TW9 3A, UK. c.clubbe@kew.org

I want to focus in this short presentation on one specific aspect of conservation management that highlights the extreme capacity issues that most UKOTs are facing – identifying the bottlenecks to implementing Action Plans and identifying strategies to unblock these

We've been hearing during this week of the tremendous pressure that biodiversity is under from:

- Habitat loss and fragmentation

- Development
- Invasive species
- Global climate change.

We need agreed Action Plans to conserve biodiversity in the face of these increasing threats.

Action Plans have been a key feature of biodiversity planning and management for many years. They are, in fact, built in to many Multilateral Environmental Agreements (MEAs). They are also part of



Government planning and a key mechanism for implementing MEAs - be it species action plans, habitat action plans, or biodiversity strategy and action plans. But how many of these action plans have been implemented, let alone successful?

A good plan emerges when it is inclusive and all stakeholders have the opportunity to input. Isabel Peters told me of the phenomenon of 'consultantitis' when I was in St Helena recently, whereby consultants come to St Helena, write a report which then sits on a shelf, often completely ignored. This is applicable to action plans, where an 'expert' might write the plan and then hand over to a local implementing organisation who have no real ownership - and so the plan sits on a shelf! The key to getting a good plan that has the potential to be successfully implemented is for it to be developed in an inclusive and participatory way

Much wildlife legislation is out-dated and not up to the job of protecting biodiversity, so needs updating. We heard, for example, from Stephen Mendes on the drafting of the Conservation and Environmental Management Act (CEMA) as a comprehensive way of including all the needs in this area. We heard also from Gina Ebanks-Petrie on Sunday (Section 1) about the problems of out-dated legislation and the challenges of getting good new legislation passed and enacted.

For successful implementation, it is vital that the skills necessary are possessed by those implementing action plans. This is where international partnerships are important, and where I feel Kew's key role in UKOTs lies – capacity building. We have a range of programmes and opportunities for international partners.

Funding is the major issue and often why a good action plan remains on the shelf – lack

of the sustained funding to implement the plan. It is really important to include a realistic budget to implement plans, and to identify sources of funding.

A clear implementation plan is the real key to a successful action plan:

- Who is responsible to do what?
- What is the timeframe?
- What resources are needed for each step?
- Who is responsible for providing these resources?

One area that we have discussed extensively this week is:

- how do we mainstream biodiversity/conservation issues into the political process?; and
- how to we ensure it appears as a key priority, rather than, say, purely as a supporting pillar for tourism?

In summary, for a successful Action Plan, we need to unblock the various bottlenecks identified, enhance capacity and resource all elements of the process to ensure that the Plan is:

- Inclusive
- Agreed
- Owned
- Resourced
- Funded
- Implemented
- And finally ensure that it results in action!

We need to unblock these because the clock is ticking. As we've heard throughout this week, the UKOTs hold unique biodiversity which is under extreme pressure, and there is not the capacity for everything that needs to be done. And as we delay in liberating these resources and enhancing capacity, we are still losing biodiversity.



Enhancing capacity - sponsorship

Mat DaCosta-Cottam



DaCosta-Cottam, M. 2010. PEnhancing capacity - sponsorship. pp 303-311 in *Making the Right Connections: a conference on conservation in UK Overseas Territories, Crown Dependencies and other small island communities, Grand Cayman 30th May to 5th June 2009* (ed. by M. Pienkowski, O. Cheesman, C. Quick & A. Pienkowski). UK Overseas Territories Conservation Forum, www.ukotcf.org

As an introduction to seeking sponsorship funding and to stimulate the discussion, Dr Mat DaCosta-Cottam has written the following article, based on his forthcoming book *Goose Whisperer - The Fundamental Principles Of Writing Grants, Winning Sponsorship, And Obtaining Free Money And Stuff For Your Worthy Cause*.

Dr Mat DaCosta-Cottam, Manager - Terrestrial Unit, Cayman Islands Department of Environment, Cayman Islands. mat.cottam@gov.ky

THE GOOSE THAT LAID THE GOLDEN EGGS

Most of us will know the story of *The Goose That Laid the Golden Eggs*, attributed to Aesop. It tells the tale of an old farmer and his wife, who had the good fortune to possess a goose that squeezed out eggs of the 24-carat variety.

Lucky though they were, the couple soon began to think they were not getting rich fast enough. Neither the old farmer nor his wife were blessed with a background in avian biology, and it was not long before they started to imagine that, to lay a golden egg, the insides of their prize bird must be made of solid gold.

Tempted by glossy real estate magazines, and frustrated by the innocent goose's low rate of return, the old farmer and his wife hatched a dastardly scheme to cash in the mother load.

There followed a terrible scene involving a hatchet, a chopping block, flying feathers and the cold steel of betrayal. When they cut the goose open, however, they made a solemn discovery. *The Goose That Laid the Golden Eggs* was just like any other goose: all guts, no gold.

After one good meal, and a few pâté sandwiches, they were broke.

The Goose That Laid the Golden Eggs has always been one of my favorite tales. It has all the essential elements of a good drama: conflict, high cash stakes, a bit of murder and mayhem, and no schmaltzy ending involving magical kisses or woodland creatures holding hands and singing.

You might be tempted to dismiss *The Goose That Laid the Golden Eggs* as a fairytale. It isn't. It is a fable: a story which illuminates a moral – a fundamental principle of life.

The Goose That Laid the Golden Eggs enshrines the fundamental principles of *Writing Grants, Winning Sponsorship, and Obtaining Free Money and Stuff...*

Greed destroys the source of good.
Think before you act...

... and last, but by no means least...

A well-tended GOOSE will keep you in GOLD.

WORKING WITHOUT AWARDS CRITERIA

Identifying which DONORS are best suited to funding your PROJECT is usually a simple matter of comparing your SKELETON PROPOSAL to the AWARDS CRITERIA of potential DONORS...

... but how do you identify your ideal DONOR in the *absence* of any AWARDS CRITERIA?

Poorly defined (or completely lacking) AWARDS CRITERIA probably represent the single biggest reason why many fundraisers shy away from approaching a CORPORATE DONOR.

To pluck your golden-egg laying goose from the pedestrian gaggle, you will need to use the following 3 MAGICAL ITEMS:

Your NETWORK
Your RESEARCH MATERIALS
Your THEMES

NETWORK

Your NETWORK is probably the most powerful tool you have at your disposal. Some people overlook their friends, family and people they know... *after all, what could they have to offer?*

Don't be one of these people. Your NETWORK is packed full of people with insider information and experience, just *waiting* for that warm and fuzzy feeling from *helping* YOU. Your NETWORK is there to help.

Do them a favor – let them HELP YOU.

If you know someone, or know *someone who knows someone* who might be interested in supporting your PROJECT – they *deserve* a place on your DONOR SHORTLIST.

REMEMBER: *There is no NEED to feel embarrassed about asking. You are NOT asking for something for nothing. You are OFFERING your prospective DONOR the opportunity to be a part of your great PROJECT.*

RESEARCH MATERIALS

A large part of targeting your ideal DONOR boils down to *effective* RESEARCH. Nothing can guarantee you success, but effective research will *minimize* your chance of rejection.

THE INTERNET is an invaluable tool for hunting down DONORS. Anyone can select a SEARCH ENGINE such as Google, then type a combination of the words and phrases such as “charitable”, “funds”, “grant”, “awards”, “philanthropic”, “grant awarding trusts”, “corporate giving”. Press ENTER and see what turns up.

Many search engines offer ADVANCED SEARCH options. ADVANCED SEARCH options enable you to search for specific phrases or groups of words, while excluding others.

A more *targeted* approach is to check the CORPORATE WEBSITE of a potential donor. Look for the section devoted to “Charitable Programs” or “Corporate Giving”. If you don't find what you are looking for, drop them an email through the “CONTACT US” section.

You can also use the INTERNET to search for LOCAL PRESS items.

THE LOCAL PRESS is an important source of information on LOCAL donors. WHO is giving? HOW much? WHEN? To WHAT causes? The easiest way to search the LOCAL PRESS is through their own INTERNET websites. Most publications have an online version which is easily searchable.

LIBRARIES will usually take a wide variety of LOCAL and NATIONAL PRESS, allowing you to keep tabs on potential DONORS free of charge.

LIBRARIES are a great source of information. LIBRARIES will help you search and REQUEST books, including DIRECTORIES OF CHARITABLE TRUSTS... enabling you to take advantage of their valuable information completely free of charge. Libraries are also a source of PRESS, and (often free) computer and INTERNET access.

Your LOCAL TELEPHONE DIRECTORY is an essential research tool. Not everyone is online or has a website... but almost everyone is in the PHONE BOOK. Use the TELEPHONE DIRECTORY to source LOCAL DONORS. You can also use the phone directory to get *quotes* on items of equipment and professional services enabling you to quickly construct an accurate BUDGET for your PROJECT.

ESSENTIAL FIELD EQUIPMENT:

HIGHLIGHTER PEN: When you are researching potential DONORS it can be easy to accumulate a large amount of paperwork, press articles and corporate literature. Your HIGHLIGHTER PEN will help guide your eyes back to the *key* words and phrases, and save you from having to re-read the fluff.

Effective research on your prospective DONOR is essential. The more YOU know about your DONOR, the more YOU will know what they find *attractive*.

... you will discover their THEMES...

THEMES - HARNESSING THE POWER OF COMMONALITY

A THEME is a concept or an ethos, a way of thinking that is central to a company or business. THEMES influence mottos and logos, product design, Mission Statements and advertising campaigns. THEMES are powerful. Rather like an iceberg - just a small part might be visible, but the business end lies out of sight... and carries some serious weight.

When CORPORATE DONORS see that *your* PROJECT shares *their* THEME, they will immediately feel they have something in common with YOU. When corporations sponsor PROJECTS which match their core THEMES, it facilitates a simple and effective advertising avenue for them.

... no doubt, they also help out of the goodness of their hearts – but that great advertising sure is a bonus ...

The general public often overlooks THEMES, or thinks they are little more than an advertising gimmick, but in many cases THEMES run to the very *heart* of big business.

If your PROJECT shares a THEME with a DONOR, your PROJECT will appeal to the very heart of the company.

THE THEME MACHINE

Fortunately there is a simple technique YOU can use to identify common THEMES at will. All you need is a PEN and PAPER, or alternatively, a spreadsheet program like EXCEL. This is all you need to make

yourself a THEME MACHINE.

I first developed the THEME MACHINE as a teenager. At the time I was determined not to get a proper job, and planned instead to make my living by traveling the world and winning commercial caption writing competitions in my spare time. (*Yes, father, you were right...*).

For those who don't know, caption writing competitions are the ones you sometimes see on the back of cereal boxes: *"Complete the following sentence in 15 words or less..."* The objective of the competition is to deliver a catchy phrase, which links together a brand product, some mythical product virtue, and an obscure prize - like a holiday for two in Ibiza. To win a *caption writing competition* you need to identify COMMONALITIES between disparate entities, and wrap it up in a punchy, one-line sales pitch.

CASE STUDY:

Caption competition for Budweiser, the "great American beer". Complete the following sentence in 15 words or less. "I'm gonna beam with Budweiser because..."

The THEME MACHINE identified the commonalities as "gonna" and "wanna", and "beer can" and "Uncle Sam" - on the basis that they both sort of rhyme with each other, and that "can" was a homograph with alternate meanings of a "a container for beer" and "a prison".

The prize winning caption: "I'm gonna beam with Budweiser... because I wanna spring Uncle Sam from the can".

Why am I telling you all this?

YOU can use a THEME MACHINE to identify COMMONALITIES between anything: beer cans and the U.S. of A. : your PROJECT and your DONOR.

Maybe you have a PROJECT and want to know what sort of DONOR might sponsor you?

Maybe you have a PROJECT and a prospective DONOR, and want to identify which aspects of your project will most likely interest them?

... the THEME MACHINE will help you.

EXAMPLE: You are busy conducting a research project on an interesting but obscure little lizard on the Caribbean Island of Little Cayman. The lizard is called the "Little Cayman Green Anole", and though it is endemic to the island, and bright green with a remarkably long snout, its diminutive size and unassuming nature mean many locals have never even heard of it. You are concerned by loss of lizard habitat to development, and the possible impact of insecticides on their food sources, making your survey of great conservation value. One fateful day, however, an unexpected global economic meltdown results in your project funds being redirected to bail out a major financial institution, and your anole study suddenly looks to be out on a limb...

What sort of CORPORATE DONOR might sponsor your anole project?

Let's run your lizards through a THEME MACHINE.

STEP 1:

Take your spreadsheet (electronic or paper) and in the top left hand corner write down your KEYWORD – THE WORD central to your PROJECT QUESTION... let's try LIZARDS...

STEP 2:

Move along the row, adding DIFFERENT KEYWORDS or COMMON PHRASES as they come to mind. Keep going till you get six or so *different* words or phrases. Try to cover *different* aspects of your PROJECT.

Different words →

LIZARDS	Little Cayman	Endemic	Long nose	Survey	Green
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STEP 3:

Next, go back along your line of WORDS and PHRASES, and beneath each one, write down as many *related* WORDS and PHRASES as you can – each one should have *something in common* with the word or phrase at the top of the column. *Just add whatever comes to mind.* It doesn't matter whether your words appear in another column, are ridiculous, or don't even make sense. RANDOM WORDS are often the best ones - they are the ones bubbling up from your subconscious...

↓ Similar words

LIZARDS	Little Cayman	Endemic	Long nose	Survey	Green
Anole					
Scales					
Claws					
Gecko					
Agile...					

IMPORTANT: *Don't stop to edit your list, or check your spellings.* DON'T THINK, JUST WRITE!

STEP 4:

When you have run dry of new words and phrases, *then and only then*, reach for your DICTIONARY or THESAURUS, and add additional words or phrases which take your fancy, until you feel your spread-sheet is complete.

How long should you take filling out your THEME MACHINE? This example took about five minutes to finish, but I have spent an hour or more on larger ones. The best idea is to stop before you get bored.

LIZARDS	Little Cayman	Endemic	Survey	Long nose	Green
Anole	Little	Rare	Look	Nose hair	Green lantern
Scales	Cayman Islands	Unique	Search	Tweezers	Green goblin
Claws	Peaceful	Species	Opinion poll	Pinocchio	Eco-friendly
Gecko	Diving	Local	Compass	Elephant	Recycling
Agile	Beaches	Conservation	Land	Win by a nose	Solar power
Cute	Peace and quiet		Surveyors	Knows	Village green
Tiny	Relaxed		Chartered	Runny nose	Bowling green
Godzilla	Sun			Have a nose	Grass
Dinosaur	Tourism			Nose for trouble	Green iguana
Cold-blooded				Nosey parker	

STEP 5:

Look through your matrix. HIGHLIGHT any words and phrases which look interesting. Highlight anything you LIKE. Highlight COMMONALITIES.

- WORDS and PHRASES which rhyme, or nearly rhyme, or just sound good together
- Synonyms, homographs and other words with the potential for word play

- WORDS and PHRASES which appear in more than one column, or
- PHRASES which contain a word or similar words to other columns.

Whatever the reason they appeal to you, it doesn't matter, just highlight them.

When you have finished you will have highlighted a list of interesting and catchy words and phrases which are linked to one another, and which are also linked to your central QUESTION. These WORDS and PHRASES represent your raw THEMES.

IMPORTANT: For anyone who thinks that incidental COMMONALITY with an obscure lizard will likely be insufficient reason for a CORPORATE DONOR to drop thousands of dollars, I suggest you look no further than the Geico gecko... yup, that's a multi-million dollar ad campaign based on words which are "sort of similar"...

USING YOUR PROJECT THEMES TO DETERMINE WHAT SORT OF DONOR MIGHT SPONSOR YOU

So, how did our LIZARDS do?

Let's see what LIZARD THEMES leap out at us...

LIZARDS: The first column highlights an interesting issue with LIZARDS – there are words like "cute" and there are words like "claws". Mention "lizards" and some people will immediately think "ahh", others will be rolling up the newspaper or reaching for a handy flip-flop. In the CORPORATE world, IMAGE IS EVERYTHING... and so IMAGE is worth bearing in mind when YOU approach a CORPORATE DONOR. Well... let's not give up hope just yet, Godzilla and Dinosaurs are certainly cool (if unlikely sources of sponsorship). For me, the only thing creeping out of this list is GECKO... hey, if Geico can cash in on lizards, maybe our lizards can cash in on Geico?

NOTE: It should come as little surprise that Geico do indeed use their Gecko in support of wildlife conservation, most recently with the GEICO-AZA 'Traveling Gecko' Exhibit.

LITTLE CAYMAN: Hmm... I am relaxing just reading this column. This makes me think "eco-tourism industry". In the case of Little Cayman, this option is perhaps not so strong... anole lizards are tiny, and the island has already filled its billing for herpetological superstars with the impressive Sister Islands Rock Iguana.

ENDEMIC: Boy, this column was a struggle... however, once again it highlights an important concept: facts such as "ENDEMISM", which may be of key scientific interest or conservation importance, may not be so helpful in securing a CORPORATE DONOR. If your background is in science or conservation, it may benefit you to put your value system on hold... at least temporarily. If "a bird with pretty colours" feeds on your "critically endangered endemic slime", you may be better off angling your corporate approach towards helping feed the pretty birds...

SURVEY: Again, not much luck with the technical side of things. While dedicated scientific funding sources might relish an opportunity to support a well-designed population survey, CORPORATE DONORS are likely to be less thrilled at the thought of your innovative mark and recapture technique. On the other hand, "Chartered surveyors" might just relate to your interest in tape measures? Remember, when corporations sponsor PROJECTS which match their core THEMES, it facilitates a simple and effective advertising avenue for them.

LONG NOSE: The long nose of the Anole is a novel feature, and one which is great visually. GREAT VISUAL = GREAT ADVERTISEMENT POTENTIAL. This is complemented by "knows" and "nose" - a powerful homograph, because most businesses like to consider themselves professionally "in the know"

or to “have a nose” for their area of expertise. Combining these two THEMES, “a good nose” and “a big nose” makes me think of WINE TASTERS!

GREEN: In addition to bringing to light my latent and rather embarrassing interest in comic books, this last column gave rise to some interesting opportunities through the homograph “green” – which is the NAME and the COLOUR of our ANOLES *and* also means “environmentally friendly”. What better MASCOT or LOGO for a local green initiative, than a funny-looking local endemic species which is actually called the “GREEN ANOLE”?

A cursory glance through the matrix, has revealed a couple of THEMIC opportunities already. Time to reach for your HIGHLIGHTER PEN and highlight the most interesting words and phrases. Remember, ANYTHING GOES! Look up and down columns and BETWEEN columns for words which are repeated or possess similarities. THEMES repeating between columns indicates MULTIPLE COMMONALITIES. In the “GREEN” column, I immediately highlight “SOLAR POWER”. A “GREEN” “SOLAR POWER” company is likely already sympathetic to environmental causes. Additionally, our “GREEN” “LIZARDS” are “COLD-BLOODED”, and so they are effectively “SOLAR POWERED” too... and in “LITTLE CAYMAN” there is plenty of “SUN”. There – a triplet of good reasons for our local SOLAR POWER company to sponsor our lizard project.

Okay, so you have used your THEME MACHINE to successfully identify potential CORPORATE DONORS. Given the strong connecting THEMES of being “GREEN”, relying on “SOLAR POWER” the “SUNNY” Cayman Islands, and the NETWORKING value of a local company, approaching a local SOLAR POWER company would probably be my number one choice. Approaching GEICO might be my number two choice...

... however, lets make life difficult for ourselves... and set our sights on the more obscure option of the WINE TASTER. Personally, I am a *Red Stripe* guy, so a bit of RESEARCH is needed for me to find out something about the WINE business.

My first INTERNET search is for “CARIBBEAN WINE” to capitalize on the THEMES of “ENDEMIC” and “LOCAL”. Unfortunately, Caribbean wine is not on a par with Caribbean rum, so I move further afield to search for “FLORIDA WINE”... only to discover 90% of U.S. wine is produced in CALIFORNIA, way over on the west coast. Looks like we might have to lose the “LOCAL” THEME if we are going to pursue a WINE TASTER donor.

The Wikipedia page for “CALIFORNIA WINE” states “Today there are more than 1,200 wineries in the state, ranging from small boutique wineries to large corporations like E & J Gallo Winery with distribution across the globe.” So, let’s take a closer look at “E & J Gallo”.

What we need to do now is get to KNOW our prospective DONOR.

The best way to do this is to go on a WEBSITE TREASURE HUNT.

WEBSITE TREASURE HUNT

Forget about wearing your heart on your sleeve, DONORS wear their CORPORATE HEARTS on their WEBSITES. If you want to get inside the heart of a potential DONOR - get inside their WEBSITE.

ORACLE MOMENT: *Getting to your DONOR’S heart is the first step to getting into their pockets.*

Time to use your THEME MACHINE to identify commonalities between E & J Gallo Winery and our lizard study...

The key phrase this time is, rather imaginatively, “E & J Gallo”, beneath which I list everything I know about the company. As you can see, I am no aficionado, however, after noting “GRAPES” I am reminded

that a major habitat for our anoles is “SEAGRAPE”. Sure, it’s tenuous. Make a note of it anyway.

E & J GALLO	Environment	Geography	Marketing
Wine	50:50 set aside	California	Barefoot Cellars
Red	Code of practice	Cayman	Sebka cheetah
White	Beneficial insects	Community	Black Swan
California	Hawk encouragement	90 countries	Leaves
Grape	Prevention of soil erosion	Wine buyers	Fact sheet
Seagrape	Goose habitat	Sales	
	Bird survey	Distributors	
	Wetland creation		
	River restoration		
	Composting urban waste		

Next I SEARCH for “E & J Gallo Winery” in Google. The top hit is their homepage. One click and we are transported to a world of lush vineyards and ancient barrels slumbering in mysterious cellars.

The first tab on the page invites us to “Meet our family and discover the values that guide our business”... not a bad idea! Here we discover the Mission Statement, and Values of the company. We also discover an “ENVIRONMENT” tab... this will become our next column heading.

In the “ENVIRONMENT” section we learn that “As a family-owned winery, it is important to us that future generations can enjoy the natural resources we take pleasure in today”, and the page goes on to list a slew of ENVIRONMENTAL PROJECTS which the company has supported, including a 50:50 wildlife habitat set-aside for each acre of vineyards. It would seem that this company appreciates the value of a healthy environment for healthy crops, and is prepared do something about it. So far so good. Their work on encouraging natural crop management and BENEFICIAL INSECTS is especially interesting given our concern regarding the impact of insecticides on our anoles.

However, the page also states “The company underlines its commitment to develop environmental and business strategies that demonstrate our long-term commitment to the communities in which we operate”. This may raise a flag regarding “GEOGRAPHY” - California is hardly in the neighborhood of the Cayman Islands. An apparent lack of international projects in their ENVIRONMENTAL PROJECTS list could work against us... it could equally work *for us*, if we make an approach which makes a strong case that the Cayman Islands is one of the “communities” in which E & J Gallo operate. One thing is for sure, plenty of wine is drunk in the Cayman Islands. In this case, PARTNERING with a LOCAL DISTRIBUTOR of E & J Gallo, would certainly support an approach. YOU *know* the LOCAL DISTRIBUTOR, and he *knows* E & J Gallo (at least on a professional basis). As such, PARTNERING in this way would transform our approach from a COLD CALL to a NETWORK approach.

Okay, lets get back to the WINE. According to their list of BRAND NAMES, the winery produces many different brand products. No “GREEN ANOLE WINE” unfortunately, though I make a note of “BARE-FOOT CELLARS” as that sounds kinda islandy. Their Sebeka brand has a cheetah on the front, so they are not averse to animal labels... other logos used include a crest, twin cockerels, a Black Swan, and an abundance of barrels. “LEAVES” feature as a prominent logo on many labels. Anoles live on leaves... (hmm, that really *is* tenuous...)

Review your new THEME MACHINE, and also compare it with your first attempt. It would appear that our Little Cayman Green Anole Project has several THEMES in common with E & J Gallo as a prospective DONOR:

- NOSE: A good nose is a cornerstone of the wine-making industry, and our anole is certainly nasally advantaged.

- ENVIRONMENT: The company seems to have a healthy history of supporting diverse environmental projects. Of special interest is their work on reducing crop spraying, and use of beneficial insects.
- COMMUNITY: Pitching the wine buying public of Cayman as part of the E & J Gallo “community” would likely be an important component in the potential success of our bid. An apparent lack of involvement in international conservation projects, however, may indicate a strict preference by the company, to support projects closer to home.

Okay... are these common THEMES enough to warrant an approach to support our project? Maybe. Maybe not. My gut feeling is that our “E & J Gallo” THEME MACHINE did not reveal any stand out COMMONALITIES. If one of their wines had actually had a lizard on the label, that would have been great... hey, wait a minute...

A quick Google search of “Lizard Wine” results in some recipes for a rather literal traditional Vietnamese beverage ... and then up pops “Leaping Lizard Wine”. A wriggly lizard unashamedly adorns each bottle. “Leaping Lizard”, a product of Adler Fels Winery, is also located in the Napa Valley, California. (We can probably assume that the lizard content of “Leaping Lizard” is restricted to the label).

“An entertaining name, easy-drinking wine...” ... and these guys obviously love lizards!

Maybe it’s time for another website treasure hunt?

IMPORTANT: *Don’t use your RESEARCH as an excuse for not IMPLEMENTING. It is not necessary for you to find “THE ONE best donor in the whole world” for your PROJECT – you simply need to find “ONE OF THE ONES” that will give you the support which YOU and your PROJECT need. Once you have found ONE GOOD DONOR - go for it - finding extras is a waste of time.*

2 MORE IMPORTANT POINTS TO REMEMBER:

- Don’t assume that just because you share many common THEMES with a prospective DONOR, you are on to a sure thing. *There is no such thing as a sure thing.*
- THEMES are a POWERFUL TOOL. Don’t get carried away by a THEME which is not your own. If your CORPORATE DONOR wants to turn your project into an advertising fiasco, look for someone who is interested in helping you as well as helping themselves.

DISCLAIMER: Please note company names appearing in this example are by way of illustration only, and carry no inference.

Adapted from Goose Whisperer - The Fundamental Principles Of Writing Grants, Winning Sponsorship, And Obtaining Free Money And Stuff For Your Worthy Cause

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Dr. Mat DaCosta-Cottam 2009

www.thegoosewhisperer.com

JNCC Overseas Territories and Crown Dependencies Programme - Fundraising

Nikki Chapman (Joint Nature Conservation Committee)



Chapman, N. 2010. JNCC Overseas Territories and Crown Dependencies Programme - Fundraising. p 312 in *Making the Right Connections: a conference on conservation in UK Overseas Territories, Crown Dependencies and other small island communities, Grand Cayman 30th May to 5th June 2009* (ed. by M. Pienkowski, O. Cheesman, C. Quick & A. Pienkowski). UK Overseas Territories Conservation Forum, www.ukotcf.org

In November 2008, Joint Nature Conservation Committee (JNCC) appointed a UK Overseas Territories Fundraising Officer, Dr Nikki Chapman. This is a 12-month, fixed-term appointment position, funded by Department for International Development (DFID). The position was the UK's response to acknowledging the requirement that nature conservation in the UKOTs is a priority and that by facilitating access to existing and new funding source information it may assist in providing needed support for future nature conservation projects.

There are two main deliverables within the appointment:

1. To collate both existing and new funding sources into a database which is accessible to UKOT personnel.
2. To support, where required, UKOT personnel in funding applications or related training

The database, located on the JNCC webpage [http://www.jncc.gov.uk/International/UKOT and crown dependencies/Funding Sources](http://www.jncc.gov.uk/International/UKOT%20and%20crown%20dependencies/Funding%20Sources), will be launched at this conference. The poster advertises both the launch of the database and also invites UKOT personnel to provide feedback to whether they would like support from the Fundraising Officer, between June-December 2009, and in what format e.g. literature, advice, workshop.

Dr Nikki Chapman, Joint Nature Conservation Committee,
nikki.chapman@jncc.gov.uk

[The full version of this article was not received.]

Mobilising local volunteers in support of environmental work: a Falklands Conservation Case Study

Pierre Pistorius (Conservation Officer, Falklands Conservation)



Pistorius, P. 2010. Mobilising local volunteers in support of environmental work: a Falklands Conservation Case Study. p 313 in *Making the Right Connections: a conference on conservation in UK Overseas Territories, Crown Dependencies and other small island communities, Grand Cayman 30th May to 5th June 2009* (ed. by M. Pienkowski, O. Cheesman, C. Quick & A. Pienkowski). UK Overseas Territories Conservation Forum, www.ukotcf.org

Falklands Conservation, the charity taking action for nature in the Falkland Islands, was established in 1979 and has since become the lead organization involved in many aspects of biodiversity monitoring, research and habitat restoration. To increase the capacity to allow for the myriad of field-based activities necessary to meet some of the larger goals of the organization, a volunteering programme was established in 2000. Engaging local volunteers has increased the capacity of the organization to deal with environmental problems, such as oiled penguins, habitat restoration (mainly through tussock planting) and coastal pollution. Although volunteers that have listed with the organization are often used, the local community at large are also called upon through the local newspaper to assist with functions such as beach clean-ups. Members of a “Watchgroup”, consisting of school children at various levels, are also called on to help and engage in environmental programmes. While this fulfils some of the organization’s needs, it also instils a sense of environmental custodianship within the community. The Falklands host significant proportions of the world populations of several seabird species, and these have been central to Falklands Conservation’s activities. This has attracted global interest from foreign ornithologists to volunteer with the organization. These candidates are often used to fill in during the summer months and breeding season for most monitored species. The use of foreign volunteers to help with this relatively glamorous work comes at a cost, as local volunteers often lose interest and become difficult to recruit for the more arduous field activities.

Dr Pierre Pistorius, Conservation Officer, Falklands Conservation.
pierre.pistorius@conservation.org.fk

[The full version of this article was not received.
The rapporteur noted the following key points of conclusions additional to the information provided by the author in the abstract above:

- Effective coordination and recruitment of volunteers
- Having a prioritised list of work/projects that can be undertaken at various times of the year
- Engaging military in volunteer work
- Ensuring volunteers are good custodians
- Networking with other organizations that could benefit from volunteers
- Enabling locals to assist with passive surveillance.]

Mobilising local volunteers in support of environmental work: Ascension

Stedson Stroud



Stroud, S. 2010. Mobilising local volunteers in support of environmental work: Ascension. p 314 in *Making the Right Connections: a conference on conservation in UK Overseas Territories, Crown Dependencies and other small island communities, Grand Cayman 30th May to 5th June 2009* (ed. by M. Pienkowski, O. Cheesman, C. Quick & A. Pienkowski). UK Overseas Territories Conservation Forum, www.ukotcf.org

Stedson Stroud, Ascension Island Government Conservation Officer
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Good afternoon everyone. I would like to begin by thanking the UKOT Conservation Forum for inviting me to this event. My name is Stedson Stroud and I head the Ascension Island Government Conservation Department. I am originally from St. Helena.

On Ascension, we have an up and running volunteer programme. We started this by developing a policy framework for volunteers which addressed a range of areas, including health and safety, liability etc. We also developed information packs for the volunteers. This framework has proved to be very successful and is being considered as a model by other South Atlantic Overseas Territories. The framework and volunteer packs are on our website – please feel free to copy them as you wish if that is useful.

The volunteers come from a range of different backgrounds: local youth groups, UK and US military personnel, visiting scientists, visitors to the island and expats' spouses to name a few.

What do the volunteers do? There are a range of activities that volunteers become involved in – from species monitoring of whales, dolphins, land crabs, turtles and endemic plants, to invasives species control. Many volunteers pull out weeds from endemic plant restoration areas and from wild habitats. Others do beach clean-ups or path clearing.

Volunteering on Ascension works really well. Part of this is because there is a good framework in place. The volunteers are integrated into existing work programmes and used almost as 'free' extra members of staff. Part of our volunteer programme is to appreciate their work with a departmental traditional Ascension Fish Fry in their honour when they leave.

If you would like any more information our programme, please contact me or feel free to look at and use the documentation on our website.



For those of you who don't know, Ascension island is 5 degrees south of the equator: in the middle of the Atlantic Ocean. As someone said, it's the gateway to the lost islands of the South Atlantic.

The role of UKOTCF in recruiting and coordinating volunteers for UK Overseas Territories and Crown Dependencies

Dace McCoy Ground (Bermuda National Trust; UKOTCF)



Ground, M.C. McCoy. 2010. The role of UKOTCF in recruiting and coordinating volunteers for UK Overseas Territories and Crown Dependencies. pp 315-316 in *Making the Right Connections: a conference on conservation in UK Overseas Territories, Crown Dependencies and other small island communities, Grand Cayman 30th May to 5th June 2009* (ed. by M. Pienkowski, O. Cheesman, C. Quick & A. Pienkowski). UK Overseas Territories Conservation Forum, www.ukotcf.org

This presentation recalls the long role of UKOTCF in organising external volunteers to meet Territory requests, and how this has changed over the years, to take account of both the success of this programme and changing needs.

Dace McCoy Ground (Bermuda National Trust; UKOTCF), dace@logic.bm

Initially, UKOTCF worked mainly to co-ordinate the efforts of the UK-based member organisations, to help meet the needs of the member organisations in the territories.

Some of the examples of these which depended on the co-ordination of volunteer input were:

- Helping local people to establish and develop conservation NGOs in several territories
- Helping both NGO partners and some government departments develop their capacity
- Providing assistance to several territories to help review conservation legislation.
- Facilitating the review of conservation priorities in the territories
- The Seabird Restoration in Ascension
- Establishing a biodiversity survey in an example Caribbean Territory, initially Montserrat and then (after volcanic interruption) the Cayman Islands
- Pulling various partners in to assist the conservation of the Montserrat Oriole and the Mountain Chicken, after the Montserrat volcano.
- Helping to explain the implications of the Ramsar Convention on Wetlands to decision makers in various territories, resulting in complete sign-up to Ramsar by UK territories; and continuing to advise in this area.

- At various stages putting forward the idea of what became the Environment Charters, and facilitating their use.
- Developing conferences, website and other communication means to help partners in the different territories exchange ideas, something that rarely happened previously between either NGO or Government bodies.
- Initiating ideas for the recent series of studies on Tristan da Cunha
- Promoting the initiation of the OTEP fund and some of its FCO predecessors

With the successful development of these over several years, UKOTCF encouraged its member organisations to develop strong links between each other, so that the UKOTCF secretariat needed to play less of a role of intermediary. The Forum re-directed effort to widen the involvement to include individual volunteer experts (mainly scientific), as well as member organisations, in work to support local partners.

The work with partners in the Turks and Caicos Islands provides an example of this, elements include:

- Identification, with the local community, of the potential and needs for conservation, interpre-

tation and sustainable use of the areas adjacent to the North, Middle and East Caicos Ramsar site.

- Darwin Initiative Project to investigate the natural and other interest of these areas.
- Work, supported by OTEP and many other bodies, to use the Darwin results to implement interpretive and conservation facilities.
- Facilitation, with TCI Government and stakeholders, of a strategy to implement the Environment Charter, a pilot for other territories also.
- Work on the TC National Trust Primary School Education programme, “Our Land, Our Sea, Our People”

In recent years, the Forum has been investigating the potential for bringing in a wider range of volunteer specialists – in addition to the scientific, conservation and education areas that are well established.

One of these involved the completion of the refurbishment and fitting out of the Middle Caicos Conservation Centre of the Turks and Caicos National Trust. This was done by Steve and Mary Cheeseman (see following article). Mary is a semi-retired primary school teacher. Steve was previously a Harrier pilot in the Royal Air Force (including a stint as head of the detachment in Belize), and then a senior pilot with British Airways. Since retiring from BA, he has developed his own business. He advises schools on their Information Technology needs and is an IT consultant. In addition, he designs and manages building renovation projects. His talents in this area range from sophisticated technical computer-aided design to being able to fix nearly anything. Steve will shortly give a short taster of working as a volunteer.

The Future

Several partners in the Territories have indicated interest in UKOTCF developing this work. The Forum already receives offers of such help, and is working to develop a programme putting these together.

Volunteering: a view from the bottom up by a non-traditional UKOTCF volunteer; or *Are volunteers an invasive alien species?*

Steve Cheeseman (UKOTCF volunteer)



Cheeseman, S. 2010. Volunteering: a view from the bottom up by a non-traditional UKOTCF volunteer; or Are volunteers an invasive alien species? pp 317-322 in *Making the Right Connections: a conference on conservation in UK Overseas Territories, Crown Dependencies and other small island communities, Grand Cayman 30th May to 5th June 2009* (ed. by M. Pienkowski, O. Cheesman, C. Quick & A. Pienkowski). UK Overseas Territories Conservation Forum, www.ukotcf.org

A slide-based presentation from a 'non-traditional volunteer' about experiences of volunteering for UKOTCF in Turks & Caicos. At the end of a long supply chain, a high degree of flexibility and preparedness to face challenges is required. In this case, considerable discomfort for the volunteers should result in a much more comfortable and practicable working environment in future for scientists and conservationists, as well as enabling a working visitor centre for passing on the conservation message. UKOTCF is exploring further use of novel forms of volunteering.

In this light-hearted, but serious, presentation the author indicates: who these volunteers are and what they did, and offers some conclusions.

Steve Cheeseman (UKOTCF volunteer), steve.cheeseman@hemscott.net

We, Steve and Mary Cheeseman, are not scientists. I am a retired pilot (Royal Air Force harriers and then British Airways longhaul) and Mary is a teacher. We were 'recruited' by Mike and Ann Pienkowski at a party in our village at home; as we walked home from the party, we realised we had volunteered to go to a small island that we didn't even know where it was...

We both had time to do something different for a challenge, and both had a fairly wide range of skills and experience. The eventual outcome was that we survived having done a lot of work, and our experiences suggested that this might provide a model for some future project-based volunteering.

Where did we go? To the Middle Caicos Conservation Centre (MCCC), Bambarra, Turks & Caicos Islands. Middle Caicos covers about 48 square miles and has a human population of about 300.

The MCCC had been converted from a disused school building by a local contractor, but the stand-





One of the smaller faults: light fitting not well fitted - and positioned where it would be hit every time the door opened.

ard of finish was very poor and the building could not be used for the purpose it was designed for.

We went out for 4 weeks. During this

time, we were to get the buildings into a fit state for use. The main building was really two adjoining ones, one with rooms to serve as a visitor centre, an office and a laboratory, and the other as accommodation for visiting scientists. A separate building provided a laundry room and washrooms for visitors to the Centre.

We had a 6-page list of tasks. We also had a number of challenges, such as being at the end of a tenuous local supply chain which included the new causeway from North Caicos to Middle Caicos. Travel was by British Airways to Providenciales, then small boat to North Caicos. then truck to the MCCC on Middle Caicos.

The mosquitoes were in season.

We had limited resources: building materials, tools, transport, time, endurance and, last but not least, tonic for Gin & Tonics.



Transport was, in fact, very limited. One of our first tasks was to look at this truck and fix it. We could not - it was in such poor condition.

This had a significant impact on our work. We had two bikes instead.

It was 40 minutes by truck to the nearest shop. So

we had to share a truck with Naqqi, who lived an hour away and needed the truck for his own work.

.....then a wheel fell off this other truck, just to make things more difficult.

One of the major tasks was to fix the toilet block which had 4 toilets installed but had no connections and no water supply. Our task involved getting into an old raised concrete tank, fixing old pipework, and installing a new system. Unfortunately, this tank was also part of the social housing area for mosquitoes.



Pictures of toilet block and associated work



We finished the toilets in a nice blue colour. (It was all they had in stock.) The toilets are now in regular use - both by the intended users and by an invasive species of frog.



The next task was to build a storm drain and retaining wall from local resources. This was needed because the



Flooding into MCCC from heavy rains

original building had been badly positioned, leading to flooding into the MCCC and soil runoff whenever it rained heavily - which, of course, it does in the hurricane season and at some other times.

We completed the digging of a storm drain and wall using entirely local resources. The stone was dug from the 'swamp' around the building, another area of mossie social housing. It was then cut by hand. The sand was dug from the beach (under a local byelaw) and transported, using an old dustbin and a box from the local dump. Unfortunately the wheelbarrow wheel fell off - which did not help.



Storm drain and wall being built and finished

We did a number of tasks in the accommodation, including reinstalling the oven which had been put in by a local 'electrician', who really did not understand; the casing had been wired to the live supply, causing some fireworks and a certain amount of pain.

Also in the accommodation, we:

- moved the kitchen units to fit;

- installed hot water pipework from the boiler to the kitchen and bathroom;
- wired and commissioned the boiler;
- re-wired the phone points so that they worked;
- installed network wiring and points;
- made curtains, coat hooks and a bookshelf.



Part of finished accommodation. We ran out of tonic. due to the transport problems: hence the orange juice with the gin on the table (not recommended).



This shows a SkeeterVac, a device designed for reducing mosquito impact in a restricted area.

We had to assemble these without instructions - which proved amusing.

They take 3 weeks to work - by attracting and then killing the breeding females. They were very suc-

cessful at attracting mossies, but quickly became full. They were meant to be serviced every week, but we had to do this every day and even then we could not keep up with the excessive supply of mossies. Mike and Ann tell us that this shows how biologically rich the area is.

The mossies that got away seemed to be very aggressive. So, assesment for mosquito control: a short term failure – long term hope....

We also had to fix leaks in the roof and fix the gutter, which had been installed so that all the water ran to the middle. However, there was no down-pipe there, so the water just overflowed. We fixed this by re-installing the gutter with a new down-pipe.



Roof and gutter – both had major leaks. The gutter was rebuilt, and the roof leaks plugged from inside and out. Also showing the home made ladder; the proper one had gone missing but re-appeared late in our stay.

UKOTCF, with help from Naqqi, had designed, produced and mounted, in the public area, a series of display boards on the natural and cultural heritage of the area, and its sustainable use and conservation. However, some boards relating to exhibits



Mary working on the display boards in part of the public area.



Part of office with, in the background, the backs of the mangrove aquarium and cave diorama exhibits, with access in the laboratory area

needed special mounting. We made and installed these.

We rebuilt the supporting structure for the mangrove aquarium and cave exhibit, which had been built by the contractor at the wrong height, in spite of specific instructions. We also installed the lighting for the aquarium.

We installed a wired and wireless network, with internet access and an office computer and printer

We isolated faulty electrics in the lab area, which had been installed incorrectly, and re-wired the phone sockets

While we were at MCCC we were also asked to be on hand if any illegal development activity was reported in the area. The pictures below show the theoretically protected site at Indian Caves and an illegal development there. The site had been transferred to the Turks & Caicos National Trust but others seemed to think that they owned it. A developer broke through into part of the cave when



Inside Indian Cave



Forest illegally cleared and foundation/cistern excavation above Indian Cave, with (below) breakthrough to cave at the bottom of the excavation



the cistern hole was dug out. We were able to take photos of the site and email them direct to Mike Pienkowski who could then get pass these on to TCNT and the relevant authorities to try and get the work stopped.

Outcomes of our volunteering

The outcomes of the work were that we completed most tasks.

We returned for another two weeks some month later to build screening around the MCCC accommodation, build a covered decking area using wood already bought but not used for another project, and help install the air conditioning with the contractors

The MCCC is now in use:

- by scientists working on the Pine Scale project
- as a public visitor centre
- and the toilets are in regular use - by visitors and the frogs

We produced an extensive series of reports for



Finished MCCC building with screening and hut

TCNT and for UKOTCF, to help in further work.

Scientific conclusions

The scientific conclusions we drew were:

1. Processed orange juice is no substitute for tonic in G&T.
2. There are a limited number of ways to cook spam. Despite being an island, the only fish we could get was frozen and spam was what the shop had in stock.

3. Scientists may not be the best people to build things (see nearest chair in picture). So, use volunteers and match skills to tasks. Naqqi is an excellent botanist and educator, but it is a waste of his time and skills to employ him assembling furniture. (On an aside, it is in the culture of pilots to be very open about errors - with obvious benefits for safety - but this is not the same in many cultures. It would have been nice if someone had told Naqqi he had put the chair together wrong when he was doing it.)



Volunteering Conclusions

Volunteering can be a highly rewarding experience for both volunteers and hosts.

Planning and open communication are essential to make the best use of volunteers' time and skills.

We would volunteer again for UKOTCF and its partners without hesitation, and would thoroughly recommend this model of volunteering as a practical answer to some of the resource problems facing organisations.

We would like to thank UKOTCF and TCNT for the opportunity to participate, particularly Mike, Ann, Ethlyn, and especially Naqqi for putting up with us.



UKOTCF did insist that we took a few hours off during our 6 weeks; this beach was not too far a cycle away.

Something to ponder

Would it be useful to have a UKOTCF database of volunteers with their skills and availability for project-based work, so that UKOT organisations could refer to it when considering projects?

Finally, are volunteers an invasive alien species? The *Casuarina* pine is seen as useful by many people in the short term, but is a long term problem as it damages native species, reproduces *in situ*, and is difficult to get rid of. Whereas volunteers are *in situ* for a limited time and, hopefully, leave behind only long term benefits.

Discussion

For most points coming out of the discussion, readers should look to the summary prepared by rapporteur, Joseph Smith Abbott and co-convenor Dr Mat DaCosta-Cottam, and included in the introductory section of these Proceedings. Some additional points are given below.

Barriers to achieving project goals

There was wide support for the key conclusions of the two presentations:

1. Use flagship species if you have them.
2. Save many species by conservation of shared habitat.
3. Select, recruit and train your volunteers.
4. Look for postgraduates to produce conservation-relevant data.
5. Find and keep the right institutional partners.
6. Use Strategic Planning to hold it all together.
7. Successful action plans are inclusive, agreed, owned, resourced, funded, implemented and result in action.

Funding

Wide appreciation was expressed for Mat Cottam's article in the conference handbook (and these proceedings) on seeking of funding particularly from commercial sources, often a difficult area but potentially a very rewarding one.

In relation to the developing JNCC database, questions were raised about the applicability to UK Overseas Territories of many of the entries and the way in which it would be updated after JNCC's set-up phase.

Comment was also made that a lot of funding organisations were not aware of the UKOTs; various bodies, including UKOTCF, Royal Botanic Gardens Kew and JNCC, could build on UKOTCF's earlier work in making funding bodies more aware of the UKOTs.

The issue of funding organisations covering overheads, such as salaries and servicing costs, was also raised.

Participants from several coordinating bodies noted

the difficulties in securing funding from European Union sources. This seemed to result from a combination of: excessive and inflexible bureaucracy; understaffing at the European Commission; poor internal communications there; Commission staff lacking in relevant knowledge and experience; a tendency to re-interpret their own procedures unilaterally and retrospectively, and the dealing of applications from UKOTs via EU offices in foreign countries, rather than from Brussels.

Volunteers and the role of UKOTCF

There was general agreement that, if local volunteers with the skills required are available, they should be employed with international ones being used if they are not. Steve Cheesman noted that that was the case in the example given, with neither suitable local volunteers nor paid personnel being available. He encouraged international volunteers to train local personnel where possible, as he and Mary had done.

The importance of having a reward or recognition scheme for volunteers was also widely agreed.

Oliver Cheesman (no relation) took the opportunity to refer to the relevant results from the consultation exercise with UKOTCF Member and Associate organisations, initiated at the end of 2007, and co-ordinated by the 'Review Team' of John Cortes (Gibraltar Ornithological & Natural History Society), Rob Thomas (Royal Zoological Society of Scotland) and Oliver Cheesman (UKOTCF). Key elements were outlined in *Forum News* 33 and in UKOTCF's *Annual Report 2008-9*. The response rate was impressive (for a questionnaire-based survey) at 74%, and feedback was received from all but three of the 21 UKOTs/CDs. There was overwhelming support for the Forum's stated purpose: *to promote the conservation of the rich and unique biodiversity, natural environment and related heritage of the Overseas Territories and Crown Dependencies of the United Kingdom*. Most respondents felt that UKOTCF had met this purpose 'well' or 'very well', by providing the hub for a network of organisations, reducing the sense of isolation of Territory-based bodies and enhancing collaboration. Feedback suggested that the strategic approach and priorities already embraced by

the Forum were essentially the right ones. Particularly relevant to the current discussion, capacity building in UKOT/CD-based NGOs was seen as the most important future priority, followed by identification of local priority needs (and development of strategies to address these), raising awareness in the UK of UKOT environmental issues, and exchange of information. UKOTCF saw increased coordination of volunteers as a key way in which it could contribute to the highest priority need (and several others) expressed by the UKOTs.

Several partners in the territories had already indicated interest in UKOTCF developing the volunteer work. The Forum already receives offers of such help, and is working to develop a programme putting these together. Further discussion stressed that there should be a well-established volunteer scheme, with a structured application process, and contracts should be signed before the volunteers started work, setting out expectations and defining work. UKOTCF was encouraged by many to develop this coordinating scheme further, to marry up requirements with volunteer human resources.



This session in progress

Section 10: Joined-up thinking – institutional arrangements for environmental management

Co-ordinators: Liz Charter (Chief Wildlife & Conservation Officer, Isle of Man), and Farah Mukhida (Executive Director, Anguilla National Trust)

This section recognises that a joined-up approach is essential for sustainable development generally and conservation management in particular; it is built into at least three articles of the Convention on Biological Diversity. In pursuit of a joined-up approach, key questions include: how do key government and NGO players work together, engage with other stakeholders and manage their information base?

The section is in two parts. During the conference itself, for time-tabling reasons relating to the availability of the UK Minister for Biodiversity, Mr Huw Irranca-Davies, these two parts were separated by a session of reporting back on other sessions and the speech by the Minister. This material is reported in the following Section 11. However, we are pleased to note that the Minister's address alludes also to joined-up work.

Part 1: Joined-up government and government/NGO co-operation

Conservation organisations operate through partnerships with other organisations which share the same aim. Gina Ebanks-Petrie describes how the Department of the Environment, of which she is the Director, and the National Trust for the Cayman Islands work together. Liz Charter (Chief Wildlife and Conservation Officer of the Isle of Man Government) identifies significant legislation, government procedures, policies in the island *Strategic Plan* and tools such as the Memorandum of Understanding, which have assisted in getting the Isle of Man Government to develop a more joined up approach to the environment. Michael Gore provides a valuable insight into the role of a UKOT Governor in environmental issues. He emphasises that the extent to which a Governor gets involved in conservation depends on the individual. The link between good governance and good environmental practice gives a Governor a platform for involvement if he or she feels the situation warrants it.

Part 2: Information sharing

Alan Mills, a consultant who has worked in the South Atlantic as well as in the Caribbean, illustrates the value of GIS in information sharing on Ascension. GIS technology is adaptable and enables a joined-up approach through multi-layered mapping. Mike Pienkowski briefly explains the state of the UKOTCF web-database, which is being further developed. Colin Hindmarch introduces Marimar Villagarcia from the Canary Islands Marine Science Institute who is collaborating with all tropical and sub-tropical overseas entities of EU countries in the Net- BIOME project, along with UKOTCF and others. The first stage is information sharing but this is expected to lead to further bids for EU funds for joint research projects.



*From left: Liz Charter, Michael Gore, Farah Mukhida and Gina Ebanks-Petrie
(Photos of participants in this Section by Thomas Hadjikyriakou unless otherwise indicated)*

Framework Document: Joined-up thinking

Oliver Cheesman (Development Director, UKOTCF), Liz Charter (Chief Wildlife & Conservation Officer, Isle of Man) & Farah Mukhida (Executive Director, Anguilla National Trust)

Cheesman, O., Charter, E. & Mukhida, F. 2010. Joined-up thinking. pp 326-329 in *Making the Right Connections: a conference on conservation in UK Overseas Territories, Crown Dependencies and other small island communities, Grand Cayman 30th May to 5th June 2009* (ed. by M. Pienkowski, O. Cheesman, C. Quick & A. Pienkowski). UK Overseas Territories Conservation Forum, www.ukotcf.org

The concept of a joined-up approach is enshrined in key international agreements (such as the Convention on Biological Diversity) and lies at the heart of effective policy and action towards conservation, environmental management and sustainable development. The “joining up” may be within or between key institutions, or between such institutions and wider civil society. Exchange and management of technical or strategic information may be the focus, although more subtle aspects of institutional arrangements may ultimately be more important. In the context of environmental concerns in the UKOTs/CDs, “joining up” within UK Government, and amongst/between governmental and NGO bodies, has particular significance.

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Background

Because of the sheer number and diversity of organisations and individuals involved, effective conservation, environmental management and sustainable development rely on a “joined up” approach. Indeed, sustainable development can be seen, in itself, as a “joining up” of social, economic and environmental imperatives. The aims of a joined-up approach should include:

- to enhance communication and sharing of resources between stakeholders;
- to promote co-ordinated (integrated, holistic, interdisciplinary) working;
- to manage potentially conflicting priorities;
- to minimise duplication of effort;
- to maximise potential synergies.

A lynchpin of conservation and sustainable development, the Convention on Biological Diversity (CBD) makes numerous references to the need for a joined-up approach, at various levels. These include aspects of: co-operation between states, and

between states and international organisations (Article 5); integration of conservation and sustainable use into cross-sectoral plans and national decision making (Articles 6 and 10); conservation respecting local communities (Article 8), and; scientific co-operation (Articles 12 and 17-19). Indeed, it is in the very nature of Multilateral Environmental Agreements (MEAs), like the CBD, that co-operation between administrations and stakeholders is required for effective implementation. In the context of UKOTs, this is particularly relevant, given that responsibility for the Territories’ engagement with MEAs rests with the UK Government. Also in the context of UKOTs, the Environment Charters (cf. Section 2) represent a further important example of agreements that rely on a joining-up of UK Government, UKOT Governments, civil society organisations and other stakeholders for effective implementation.

The involvement of local communities amongst stakeholders extends the joined-up approach in this field to encompass aspects of environmental democracy and environmental justice. This also

involves a shift in emphasis towards “governance, rather than government”, implying “a shared responsibility for devising policy, for preparing management plans, for assessing the likelihood of meeting targets, and for auditing performance” (O’Riordan & Stoll-Kleeman 2002).

Exchange of information

Appropriate methods for disseminating information on environmental issues and the work of environmental bodies (e.g. through awareness-raising initiatives) represent important means of engaging a range of stakeholders. Such issues are considered further in the Section 7 *Raising Our Profile* and Section 3 *Environmental Education*, as well as being touched on to various degrees in other sessions.

In environmental management (as in other fields), the exchange of technical information is a key feature of the joined-up approach. The information involved might relate to baseline biodiversity data (including distribution of species and habitats), boundaries of protected areas, management planning arrangements, and so on. Electronic facilities for information management have revolutionised access to information and data sharing. The internet provides instant access to a wide range of resources (with a few attendant quality assurance problems), and e-mail provides a vehicle for rapid communication and exchange of documentation (with a few attendant problems of “information overload”). Specific tools, and tailored systems, such as those based on some form of Geographic Information System (GIS) have particular value for integrating various “layers” of information and making them simultaneously available to a wide range of users. Similarly, on-line databases provide a valuable means for sharing (and regularly up-dating) potentially large volumes of technical information.

The exchange of strategic information between organisations with common interests and objectives is an important aspect of any joined-up approach. Networks and partnerships of organisations have an important role to play in this respect. However, relationships between institutions invariably rely on relationships between key individuals. Turnover of staff (resulting from retirement, organisational restructuring or even misguided personnel policies) can break important links, and disrupt “institutional memory” of arrangements that worked well in the past. Clear “handover” procedures, involving writ-

ten summaries of arrangements and the rationale behind them, or (preferably) face-to-face briefings involving out-going and in-coming staff, and key contacts in partner organisations, can help to overcome this problem – but are sadly rare.

Institutional arrangements

Unfortunately, the structure of institutions, particularly large ones, and the ways in which they typically operate, tend to compartmentalise and disconnect key functions. Such arrangements inhibit, rather than promote, a joined-up approach. They can lead to a “fragmentation of responsibility”, where accountability for key tasks is unclear and important issues may be left without coverage. They may also encourage a “silo mentality”, where individual teams of workers become entirely fixed on their own departmental targets, and lose sight of the organisation’s overall objectives, so that co-ordination breaks down. Departments within the same institution, which should be working together towards a common goal, may even develop a culture of competition (e.g. for internal resources) rather than co-operation. The problem is only exacerbated when such institutions are required to work together in a coherent way, particularly where different types of organisations (public, private, governmental, non-governmental) are involved. In this case, obstacles may even include the lack of a common terminology with which to define the challenges faced and solutions required. The careful development of partnership agreements and Memoranda of Understanding (MoUs), by those who will be responsible for their implementation (rather than others within the respective organisations), is one way to help to forge constructive relationships and to foster mutual understanding.

The need for joined-up thinking can be thought of in terms of vertical and horizontal dimensions. The vertical dimension involves the need to link policy makers (at the top) to the individual citizen (at the bottom), via the various levels of government, policy advisors, regulators, implementing agencies, businesses, NGOs and community groups in between. The horizontal dimension involves the need to integrate the work of those various bodies that occupy a similar position in the vertical hierarchy, but who have responsibility for different aspects of the challenge, such as the various NGOs whose activities promote conservation, or the various government departments whose policies influence sustainable development. Problems associated

with the latter, for example, include the fact that environment and development departments may typically be represented at international talks, when it is finance and trade departments whose policies have most significance (Callway 2005).

Joined-up Government

The need for a joined-up approach to environmental management, sustainable development (and other issues) has been particularly emphasised within governments, where it is often synonymous with a “whole of government” approach, and with placing (for example) sustainable development “at the heart of government”. Unfortunately, governments (like other large organisations) often have long-established and inflexible internal arrangements and patterns of institutional behaviour that impede a joined-up approach (Kavanagh & Richards 2001).

Even if we confine our attention to issues relevant to environmental management, the relationship between the UK Government and the UK Overseas Territories and Crown Dependencies has long exemplified the problems associated with fragmentation of responsibility and a lack of horizontal integration. Multiple departments have responsibility for different geographical or thematic areas: Foreign & Commonwealth Office (FCO - policy lead on nearly all UK Overseas Territories, issues of good governance); Department for Environment, Food & Rural Affairs (Defra – Multilateral Environmental Agreements); Department for International Development (DFID – support of sustainable development); Ministry of Justice (MoJ - Crown Dependencies), Ministry of Defence (MoD – policy lead and governance of Cyprus Sovereign Base Areas, holder of major areas of Gibraltar); Department of Culture, Media & Sport (World Heritage Sites). For some years, the regular joint meetings between UK Government and the NGO community co-chaired by UKOTCF and FCO provided the main mechanism for joining up these various departments and other stakeholders in addressing conservation issues in and across the UK Overseas Territories and Crown Dependencies. Sadly, limitations in FCO have effectively ended these, although UKOTCF is attempting continuance.

In attempting to move towards a more joined-up approach in relation to conservation issues in general, the UK Government has formed an Inter-

Departmental Ministerial Group on biodiversity (IDMGb), which comprises Ministers from Defra, FCO and DFID, and the Chair of the Joint Nature Conservation Committee (JNCC). Established in 1997, the House of Commons Environmental Audit Committee is another mechanism by which the UK Parliament has attempted to encourage Government to “join up” its own approach to environmental management and sustainable development (Ross 2005). In its recent report on *Halting Biodiversity Loss* (HoC EAC 2008), the Committee called for the UK Government to “adopt a truly joined-up approach to environmental protection in the UKOTs and Crown Dependencies, by bringing together all relevant departments...and the governments of the UKOTs and Crown Dependencies” and to “make better use of [and expand membership of] the Inter-Departmental Group on biodiversity” in this respect. In its response to the Committee’s report, the UK Government (HoC EAC 2009) agreed that “more effective and better integrated support is needed for the UK’s Overseas Territories in order to halt the loss of their biodiversity”, noting that the IDMGb was paying particular attention to this issue and that it had asked JNCC to develop a Government strategy for biodiversity protection in the UK Overseas Territories. We look forward to hearing more at this conference, and to future opportunities for strengthening joined up government approaches, government-NGO co-operation (which seems to have declined over the last couple of years, while government has made internal efforts), and other strategic partnerships for advancing conservation in the UKOTs/CDs.

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Possible framework for session discussions

Part 1 – *Joined-up government and government-
NGO co-operation* Delegates might like to con-
sider:

What particularly good examples of joined-up
government and government-NGO co-operation
are you aware of:

In your own Territory?

Elsewhere?

What particular failures of joined-up government
and government-NGO co-operation are you aware
of?

In your own Territory?

Elsewhere?

What are the main constraints to joined-up govern-
ment and government-NGO co-operation in your
own Territory?

Part 2 – *Information sharing.* Delegates might like
to consider:

What existing information-sharing resources have
you found particularly useful:

In your own Territory?

In relation to cross-Territory issues?

In relation to conservation, environmental manage-
ment and sustainable development issues in gen-
eral?

What information-sharing resources would you
like to see made available:

In your own Territory?

In relation to cross-Territory issues?

In relation to conservation, environmental manage-
ment and sustainable development issues in gen-
eral?

Government/NGO partnerships - successes and failures in Cayman

Gina Ebanks-Petrie (Director, Department of Environment, Cayman Islands Government)



(Photo:
Thomas Hadjikyriakou)

Ebanks-Petrie, G. 2010. Government/NGO partnerships - successes and failures in Cayman. pp 330-332 in *Making the Right Connections: a conference on conservation in UK Overseas Territories, Crown Dependencies and other small island communities, Grand Cayman 30th May to 5th June 2009* (ed. by M. Pienkowski, O. Cheesman, C. Quick & A. Pienkowski). UK Overseas Territories Conservation Forum, www.ukotcf.org

This presentation will examine the relationship between the Department of Environment (the Cayman Islands Government agency charged with conservation management and protection of the natural environment) and two environmental non-governmental organisations in the Cayman Islands: the National Trust for the Cayman Islands and the Central Caribbean Marine Institute. Successful strategies and mechanisms used to differentiate and coordinate roles and functions will be described and examples of projects and programmes successfully implemented will be provided. Problem areas will be identified and possible solutions offered.

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“Government/NGO Partnerships – successes and failures in Cayman” would be more correctly expressed as “Government/NGO Partnerships in Cayman – those which work well and those which don’t work so well”

Partnerships that work well

The National Trust for the Cayman Islands and the Cayman Islands Department of Environment work together extremely well, as I hope that many of you are seeing in this conference as well as elsewhere.



The National Trust for the Cayman Islands was established by Law in 1987. The Purposes of the Trust are:

- The preservation of the historic, natural and maritime heritage of the Islands;
- The conservation of lands, natural features and

submarine areas of beauty, historic or environmental importance;

- The protection of native flora and fauna.

The Cayman Islands Department of Environment was established in its current form in 1996. Its Mission is:

The Department of Environment works to promote and facilitate the conservation and sustainable use of the natural resources and environment of the Cayman Islands through various programmes and strategies.



How does the partnership between these two bodies work? A key is the Environmental Advisory Committee (EAC). Technically, this is a committee of the Trust Council as per Section J (1) of the Bye-Laws of the Trust. It is chaired by a Trust Council member. The members consist of National Trust Environmental Programs staff, the Director of the Blue Iguana Recovery Program, DoE staff

and other respected local scientists and naturalists.

The EAC Terms of Reference are:

- To advise the Trust on environmental issues in Cayman and to provide policy recommendations on the Trust's environmental programmes.
- To assist in defining environmentally important areas; prioritise parcels for acquisition and other protection measures.
- To review management policies and plans for all the Trust's environmental properties and provide input to Trust's Environmental Programmes Manager.
- To review major proposals from scientists overseas wishing to work collaboratively with the Trust.

The EAC's composition and reporting is set out as:

- The Committee shall be chaired by a member of the Trust Council.
- The Environmental Programmes Manager shall be the Secretary of the Committee.
- Other members of the Committee are selected by the Chairperson.
- All members of the Committee shall be members in good standing of the National Trust for the Cayman Islands.
- The Environmental Advisory Committee's recommendations shall be presented to the Trust's Executive Committee and/or Trust Council by the Chairman and/or Secretary as appropriate.

This framework leads to much effective co-operative effort. This is manifest in many ways, including major initiatives, such as the Blue Iguana Recovery Program and Cayman Wildlife Rescue.

DoE has successful partnerships with other NGOs. These include:

with Queen Elizabeth II Botanic Park:
Native Tree Nursery; Millennium Seedbank project;

with Cayman Islands Orchid Society:
Orchid Shade House;

with Cayman Wildlife Rescue:
Ironwood Forest campaign; Butterflies of the Cayman Islands.



Partnerships that we're working on...

The Central Caribbean Marine Institute was founded in 1998. Its mission was initially to conduct and facilitate research and education, and outreach that will sustain marine diversity for future generations. It recently added "conservation" to mission statement.

The issues that we need to address are:

- The Mission has never been clear, and there have been changes;
- Competition with long-established NGOs, like the National Trust, for government and local corporate funding.

Possible solutions are:

- Keep lines of communication open and honest;
- Establish mechanisms like MoU, DoE liaison and Research Application procedure.

Summary

Pre-requisites for functional Government/NGO partnerships:

- Constant, open and honest communication;
- Practical mechanisms to assist ;
- At least one, preferably both/all, of the partners need to care more about the result than the means.

There are major challenges that we need to address, and co-operative working is our best chance.. These challenges include:

Habitat Loss;





Coastal Erosion;



Hurricanes;



Visitor Impacts;



Coral Bleaching/Ocean Acidification (Climate Change);



Invasive Species.



“Unless someone like you, cares a whole awful lot.
Nothing is going to get better, it’s simply not.”
The Lorax, Dr. Seuss, 1971

Working together for biodiversity on the Isle of Man

Elizabeth Charter (Chief Wildlife & Conservation Officer, Isle of Man Government; and UKOTCF Council)



Charter, E. 2010. Working together for biodiversity on the Isle of Man. pp 333-342 in *Making the Right Connections: a conference on conservation in UK Overseas Territories, Crown Dependencies and other small island communities, Grand Cayman 30th May to 5th June 2009* (ed. by M. Pienkowski, O. Cheesman, C. Quick & A. Pienkowski). UK Overseas Territories Conservation Forum, www.ukotcf.org

This paper will review tools, arrangements and factors to enable joined up approaches to the management of the environment, and particularly nature conservation, on the Isle of Man. This will be based on my own experience since setting up a government conservation office in this Crown Dependency 11 years ago.

The paper covers:

Developing a joined up approach to resource management on land and in the sea within the Department of Agriculture Fisheries and Forestry,

Developing a joined up approach to management of the environment and conservation within the Manx government,

Joining up with non-government conservation organisations to bring greater conservation benefits,

Joining with others around the Irish Sea to bring a regional ecosystem approach to marine management and conservation,

Joining forces to provide the biological data to inform conservation policy, and

Joining up with HMG and research bodies to keep up to speed with hot issues and research findings.

This presentation highlights recent partnerships at the local and regional level and some of the small but effective actions taken in the early days of setting up the office.

There are many areas of this work which are still developing and where we could learn from other territories' experience.

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Joined-up government is an essential element of modernising governance and fundamental to pursuing sustainable development and effective conservation management.

This paper identifies some key tools which we have used on the Isle of Man to get consideration of biodiversity built into decision making. We acknowledge that we have a long way to go but offer these for use by other territories.

I will summarise some of the challenges and obstacles to a joined-up approach. I am sure there will be common themes with other territories.

The first challenge of introducing conservation considerations into the thinking of other government departments was location and lack of proximity to those we wished to influence. The Wildlife Office is in the Department of Agriculture, Fisheries and Forestry (DAFF). We are in a bull-shed behind a government farm, 11 miles across the Island from the Departmental headquarters and other government offices. Fiona Gell's paper (Section 6) will have given you some background about the Island and the Wildlife Office. Our main legislation is the Wildlife Act 1990. Since I established the Wildlife Office in 1998, we have designated 12 protected areas on land, including a Ramsar site, a National



Sign at the Ramsar Convention Wetland of International Importance at Curragh's

Nature Reserve and a bird sanctuary. These areas cover 3.5% of the Island.

At the UKOTCF conference in Bermuda in 2003, I spoke about the proposed departmental Conservation Strategy. We are still working towards this conservation strategy, and having this would greatly assist us in getting a consistent approach to biodiversity within the Department of Agriculture Fisheries and Forestry. Conservation policies have been ignored or open to challenge without this.

However, as Fiona Gell has explained in her paper, we are making great strides with the marine policy and effectively we do have an agreed marine conservation strategy.

This year, we are aiming to persuade the politicians to agree to the Island being party to the Convention on Biological Diversity in 2010.

The centre of government is the Chief Secretary's Office. The Chief Secretary is the head of Civil Service, and this body has responsibility for corporate governance and external affairs, among other things. So they are also responsible for joined-up working. This is the office we need to enlist in the run-up to the decision about signing up to the Convention on Biological Diversity (CBD).

By accident of the evolution of Manx Government Departments, the environmental responsibilities are scattered through at least four departments. Wildlife conservation is separate from pollution control and river quality monitoring. Manx National Heritage holds biological records and runs a Bird Observatory. Aspects of the marine environment

are a Department of Transport responsibility, as are flooding and watercourse management.



Painted Lady butterfly

These are some of the tools of joined up government from which I plan to select some examples:

- Legislation
- Cross-government committees
- Policies and plans
- Procedures
- IT and GIS
- Internal government partnerships
- Government/Non-Government Organisation partnerships

Legislation

In so far as one can legislate for joined-up-ness, our Wildlife Act says Government Departments have a duty to have regard for the environment "as far as is consistent with the discharge of their functions". We have had to remind departments of this duty at times.

Section 36 of the Wildlife Act 1990 is closely modeled on the UK Wildlife and Countryside Act 1981. I hope we can strengthen this to include a duty to "further biodiversity" for all public bodies and office holders. These words are from the Nature Conservation (Scotland) Act 2004 (which now embodies the CBD article committed to integrating biodiversity into plans, policies and strategies - see Annex II to this paper).

Of course these good words are effective only if there is awareness of this legislation. We have contemplated putting on a course about wildlife legislation for civil servants.

Cross –government committees

In 1995, our Minister, Phil Gawne, established the Sustainability Working Party, on which a senior officer from each department and board was represented. The Chief Secretary's Office had a key role in co-ordinating and reporting. The aim was to have drawn up a sustainability strategy and build sustainability principles into all Government departments' work. Sadly, at the end of last year, this was disbanded as it was failing to make progress. It failed largely because there was no mechanism for influencing government policies and because it had no dedicated officer or resources. This group has been replaced by the Climate Change and Energy team (with two full time officers).

Since attending the UKOTCF event in Westminster Hall in January, our Minister has had a new idea on how to improve Departments' treatment of the environment – to bring in an Environmental Charter.

These are further examples of cross-government committees on the Island:

- Territorial Seas Committee
- Japanese knotweed working group (invasive plant)
- Marine pollution contingency planning committee
- Marine tourism committee.

Policies and plans

Our recently revised development plan is the *Isle of Man Strategic Plan, Towards a Sustainable Island*. We have been successful in strengthening policies for protection of local, national and internationally important species and habitats (see Annex 1).

A critical policy worthy of mention is General Policy 3:

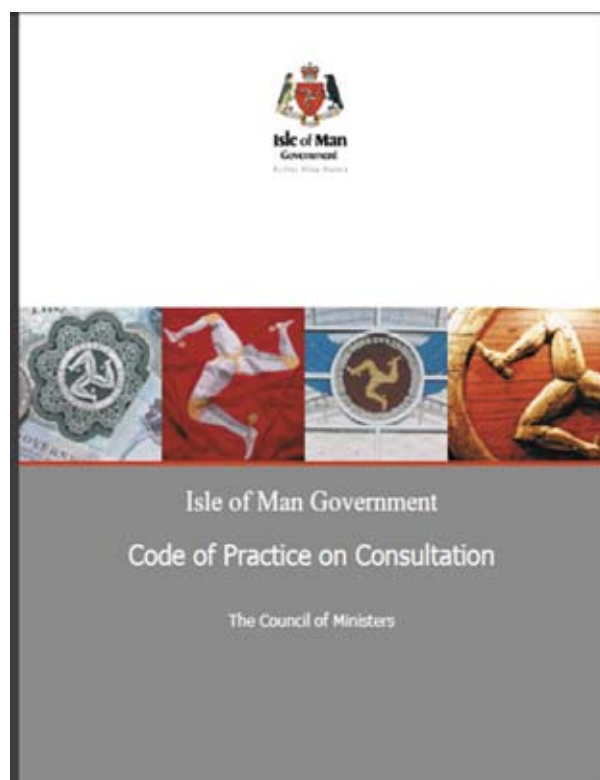
Development will not be permitted outside of those areas which are zoned for development on the appropriate Area Plan with the exception of: (g) development recognised to be of overriding national need in land use planning terms and for which there is no reasonable and acceptable alternative;

I would be interested to hear how other territories' planning policies deal with "over-riding national need" and when it is invoked to the detriment of the environment.

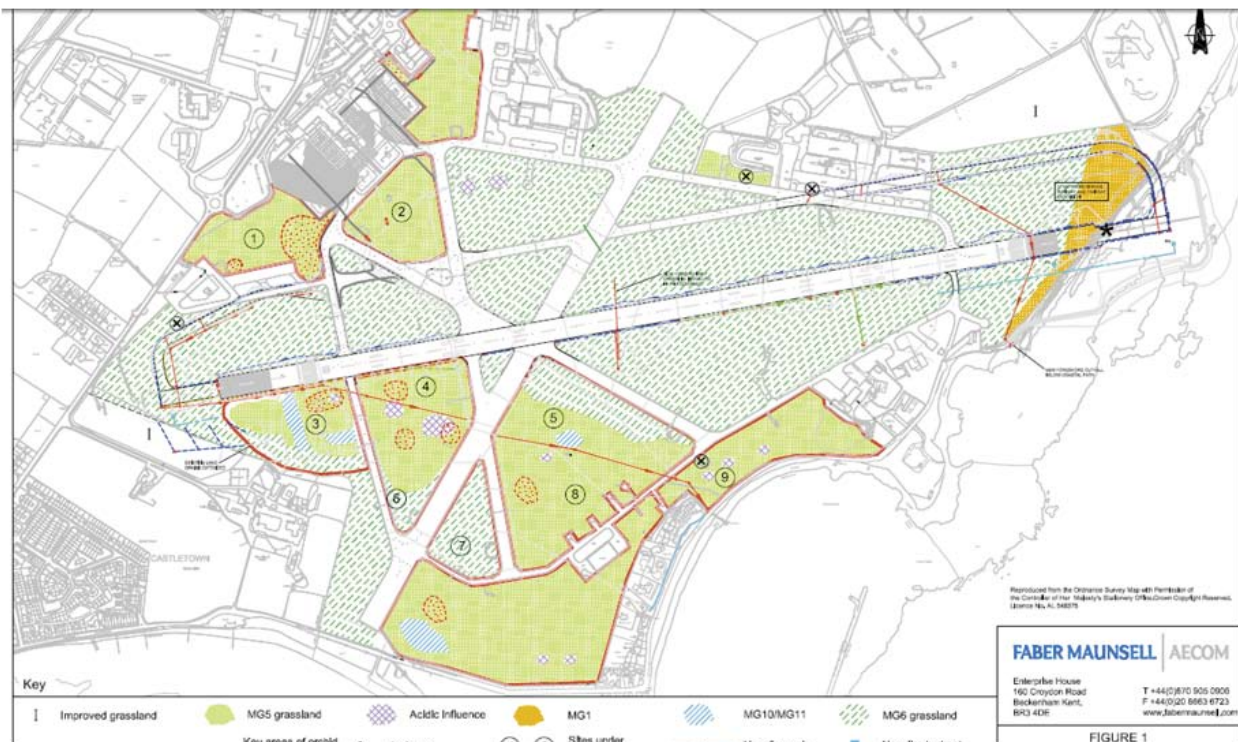
Procedures

Departments have to go to the Treasury to approve their budget for large capital projects. We have established a requirement for Departments to check whether the DAFF Wildlife Office has any comments on the proposals. This does not always mean that we can stop the development, but we have a say in how or where it happens. We need our recommendations to be taken into account at the earliest stage, when there is still a choice of sites. This means that, if there is any impact assessment or survey requirements, they can be budgeted for.

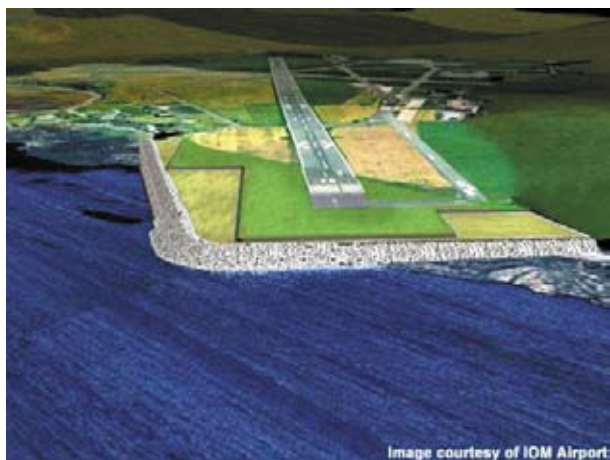
Government has now published a Code of Practice for public consultation (see Annex 4). If only there was a similar code for all internal government consultations.



The requirement for Environmental Impact Assessments (EIAs) is written into the Strategic Plan for certain listed types of development. From a wildlife point of view, it is often the sites not just the type of developments which should decide if an EIA is required. However, the Planning Office may ask for an "appropriate assessment" of the impacts of smaller developments on advice from us. I would be interested to hear how territories embed EIAs in their planning systems.



A planning issue: extension to the main runway at the Isle of Man Airport. The shadings on the map above relate to vegetation classification mapping. Below: an impression from the east of the extended runway.



At the moment we send the digitised boundaries for new protected sites to the departments which may need them. It would be more efficient if our government computer services provider could add the designations layer to everyone's mapping system. Then there will be no excuse for not knowing where protected sites are.

Distribution maps of invasives and scarce species can be an excellent tool to provide the persuasive facts to back up conservation arguments.

As part of the Marine Spatial Planning and Marine Protected Area projects, we need to establish a corporate mapping project for the marine environ-

IT and GIS

Our island-wide corporate mapping project and aerial photography have huge potential in assisting with joining-up government. Every government officer is able to have this on their PCs. In addition, DAFF have developed an integrated biological database on *Recorder* and digitised habitat maps for the whole island (*ARCView*).

An example of a map of upland wetlands produced by the integrated GIS system.



ment. It will be helpful for marine pollution contingency planning too.

How are other territories tackling the challenge of marine mapping with substantially larger territorial waters?

The value of GIS is something covered in another of the conference papers (later in this Section).

Cross departmental partnerships

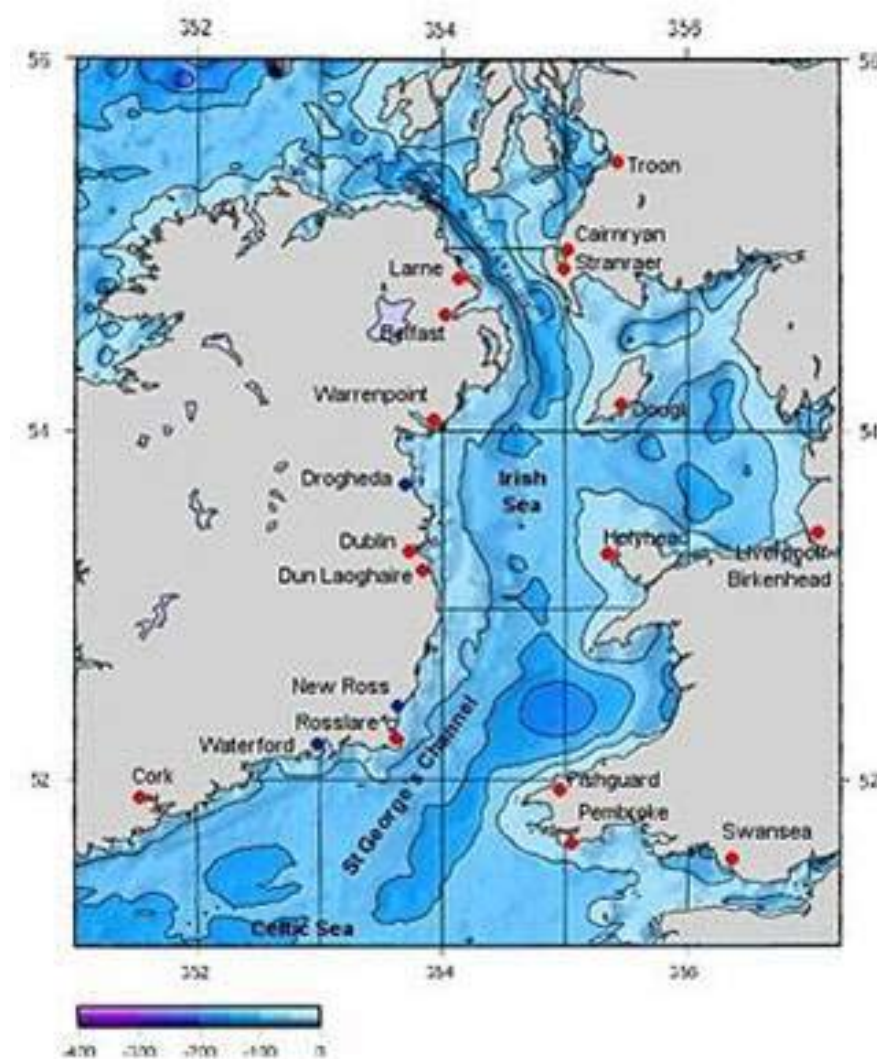
There are several examples of cross-department partnerships, including two particularly important ones: the watercourses officer partnership; and the marine spatial planning project. Others also include NGOs.

I would like to spend a little longer explaining the marine spatial planning project, which involves partnerships within the Isle of Man Government and extends to our neighbours around the Irish Sea.

Marine spatial planning (MSP) is the equivalent to the planning process on land but rather more difficult! It is a relatively new “science” and the UK Marine and Coastal Access Bill which is still being debated, will pave the way for MSP in the UK.

The coincidence of timing of various events and DAFF projects conspired to bring forward the project. The permission for the new runway extension into the sea was agreed. It needed infill material, and use of our own marine aggregates was proposed. There was considerable opposition to this proposal (not least from DAFF). However aggregates prospecting took place. (No extracting has yet been licensed.)

At the same time, we were invited to join an Irish Sea Project (which led to the establishment of the Irish Sea Regional Platform). This was bidding for inter-regional money from the EU, and this included a marine spatial planning work package. We were also developing our marine nature reserve project at this time.



The solution to the potential conflicts in the marine environment will be to develop a marine spatial plan. This requires a partnership of government departments.

DAFF brought together three other departments, the Planning Office of the Department of local Government and the Environment, the Ports and Harbours Division of the Department of Transport (who own the seabed), and Department of Trade and Industry (who deal with minerals and offshore energy).

The partnership agreement is laid out in a Memorandum of Understanding (MOU - see Annex 3). There are terms of reference for the steering group and clear reporting structures up to the Ministerial level. Now we are recruiting for a 3-year project officer, jointly funded by these departments.

The project will deliver a marine spatial planning document and revised legislation, both of which have been fully consulted on. It is an ambitious project and will require considerable management and joined-up support. It will be challenging, as applications to use the sea bed are likely to come in before the process is complete.



Orchids at airport

NGO/Government partnerships

An example of a government/NGO partnership is the *Wildflowers of Mann* project. *Wildflowers of Mann* was established as a result of a proposal from the Department of Tourism and Leisure. It began with the aim of raising awareness of native plants and growing them to enhance our countryside for visitors. Now, it covers rare plant propagation work, seed harvesting from key sites, selling seeds and establishing new species-rich grasslands. It has been running for 10 years. It is a partnership between Departments of Transport, Tourism and Agriculture, the Manx Wildlife Trust, the Manx National Heritage, the Friends of the Earth and the Manx National Farmers Union. This is also the subject of an MOU.

This is a situation when an MOU is helpful, but there are others where it is too weak an instrument. We have had an MOU with an aggregates company and the Manx Birdlife (bird NGO) since we established a worked-out gravel pit as a bird sanctuary. It was intended that we would work together for

the restoration of the gravel pit as a bird reserve. This did not prevent a waste site being proposed by the aggregates company in one corner and getting planning permission. An MOU cannot shore up weak legislation or other conflicting government policies.

We have very important relationships with the many wildlife NGOs. There is a symbiosis between government and NGOs, which needs to be maintained in balance. We can provide financial support for various projects which further conservation and add value to our work, but NGOs still need to be able to feel they can speak out and lobby government.

Some of our partnership funding is for surveys, data collection (whale and dolphin sightings) and research (basking shark tagging). These all provide valuable data to support our Department's land and marine management policies and planning decisions. Some NGOs also undertake the impact assessments and surveys of other Department's capital projects. This can be an uncomfortable location to sit in small places, when - in the virtual absence of outside funding bodies - NGOs are heavily dependent on government for their survival.



Chough

We used to have regular liaison meetings with individual organisations. The Minister recently set up a local Conservation Forum in order to consult NGOs at an early stage of policy development. A forum is easier to consult than a multitude of bodies. DAFF is increasingly open to NGO views and values the government/NGO partnership. We started by asking people to identify their conservation priorities. Becoming signatory to the CBD and designating a marine nature reserve were at the top of the list. We plan to use this as the forum for developing biodiversity strategies and plans should we be successful in getting support for signing the CBD.

Convention on Biological Diversity

The Conference Framework Document for joined-up government highlights the CBD and the important impetus this gives for integration. Meeting the requirements of being a CBD signatory and the Environmental Charter should both assist in our joined up-ness. The three particular articles laying out what contracting parties shall do are:

- Article 6 (b): integrate biodiversity into sectoral and cross-sectoral plans, programmes and policies;
- Article 14 (1 and 2): introduce environmental impact assessment, to avoid and minimise adverse impacts (with public participation);
- Article 18 (1): promote international technical and scientific co-operation.

I see becoming party to the CBD as a major part of the solution to the Isle of Man's open seams. We are hoping to get agreement on signing up this year. This requires the formalisation of the duty to take account of biodiversity and building its consideration into all government plans, programmes and policies, just the kind of joined-upness we are seeking.

Challenges and obstacles

The challenges and obstacles to joined-upness include:

- Effectively explaining (to politicians and government officers, as well as the public) why biodiversity conservation is important;
- Mismatch of short-term nature of politics with the long term agenda for conservation;
- Identifying key people to influence and key people to take policies forward (key role of our political members and the Chief Secretary's Office);
- Fragmentation of environmental responsibility between departments (both in IOM and UK);
- Conservation sharing the same Department, budget and Minister as powerful economic sectors (agriculture and fisheries);
- Turnover of officers and lack of continuity this creates (in parts of IOM government and UK government, especially Defra). We suffer from frequent changes of politicians responsible for wildlife too (changing every 8-9 months currently).
- Lack of resources, particularly time (leading to poor consultation and weak cross-government

committees). (This has worsened considerably since the conference, with the 25% cut in revenue expected between 2010 and 2011.)

- Climate change and energy issues eclipsing biodiversity work, and the connection not being apparent;
- Economic crisis eclipsing environmental issues.

Conclusions

For successful statutory conservation, it is critical that the right people have the right information and advice at the right time. We need to get conservation information into the decision-making process as early as possible. Biological records need to be comprehensive, up to date, and accessible.



Lesser twayblade, newly found in 2009 after 128 years thought extinct on the Island (with Isle of Man coin as scale)

We need to work towards other government Departments taking responsibility for their impact on biodiversity. It cannot all be done by a small team of ecologists in a bull-shed (although soon to be joined-up with the rest of our Department in a new environmentally-sound office).

Biodiversity safeguards need to be written into legislation, procedures and policies. There needs to be effective and active processes for public involve-

ment and consultation.

We are always looking for examples of established best practice and learning from other places, especially other small places. Our government needs to be aware of the widely accepted best practice elsewhere. This is why coming to UKOTCF conferences is so valuable. So, on this final point, I will thank the Forum for inviting me, in my government capacity, to contribute to the conference.



Some examples of policies, clauses from legislation and partnership documents are annexed below.

Annex 1: from *The Isle of Man Strategic Plan - Towards a sustainable island*

Relevant environmental policies:

General Policy 3:

Development will not be permitted outside of those areas which are zoned for development on the appropriate Area Plan with the exception of:

- (g) development recognised to be of overriding national need in land use planning terms and

for which there is no reasonable and acceptable alternative; and

- (h) buildings or works required for interpretation of the countryside, its wildlife or heritage.

Environment Policy 1:

The countryside and its ecology will be protected for its own sake. For the purposes of this policy, the countryside comprises all land which is outside the settlements (defined in Appendix 3 at A.3.6) or which is not designated for future development on an Area Plan. Development which would adversely affect the countryside will not be permitted unless there is an over-riding national need in land use planning terms which outweighs the requirement to protect these areas and for which there is no reasonable and acceptable alternative.

Environment Policy 3:

Development will not be permitted where it would result in the unacceptable loss of or damage to woodland areas, especially ancient, natural and semi-natural woodlands, which have public amenity or conservation value.

Environment Policy 4:

Development will not be permitted which would adversely affect:

- (a) species and habitats of international importance:
 - (i) protected species of international importance or their habitats; or
 - (ii) proposed or designated Ramsar and Emerald Sites or other internationally important sites.
- (b) species and habitats of national importance:
 - (i) protected species of national importance or their habitats;
 - (ii) proposed or designated National Nature Reserves, or Areas of Special Scientific Interest; or
 - (iii) Marine Nature Reserves; or
 - (iv) National Trust Land.

- (c) species and habitats of local importance such as Wildlife Sites, local nature reserves, priority habitats or species identified in any Manx Biodiversity Action Plan which do not already benefit from statutory protection, Areas of Special Protection and Bird Sanctuaries and landscape features of importance to wild flora and fauna by reason of their continuous nature or function as a corridor between habitats.

Some areas to which this policy applies are identified as Areas of Ecological Importance or Interest on extant Local or Area Plans, but others, whose importance was not evident at the time of the adoption of the relevant Local or Area Plan, are not, particularly where that plan has been in place for many years. In these circumstances, the Department will seek site specific advice from the Department of Agriculture, Fisheries and Forestry if development proposals are brought forward.

Environment Policy 5:

In exceptional circumstances where development is allowed which could adversely affect a site recognised under Environmental Policy 4, conditions will be imposed and/or Planning Agreements sought to:

- (a) minimise disturbance;
- (b) conserve and manage its ecological interest as far as possible; and
- (c) where damage is unavoidable, provide new or replacement habitats so that the loss to the total ecological resource is mitigated.

Environment Policy 7:

Development which would cause demonstrable harm to a watercourse, wetland, pond or dub, and which could not be overcome by mitigation measures will not be permitted. Where development is proposed which would affect a watercourse, planning applications must comply with the following criteria:

- (a) all watercourses in the vicinity of the site must be identified on plans accompanying a planning application and include an adequate risk assessment to demonstrate that works will not cause long term deterioration in water quality;
- (b) details of pollution and alleviation measures must be submitted;
- (c) all engineering works proposed must be phased in an appropriate manner in order to avoid a reduction in water quality in any adjacent watercourse; and
- (d) development will not normally be allowed within 8 metres of any watercourse in order to protect the aquatic and bankside habitats and species.

Environment Policy 12:

New coastal defence works must not have an unacceptable impact on the character, appearance, ecology, archaeology or natural processes of the coastal environment.

Environment Policy 24:

Development which is likely to have a significant effect on the environment will be required:

- i) to be accompanied by an Environmental Impact Assessment in certain cases; and
- ii) to be accompanied by suitable supporting environmental information in all other cases.

Environment Policy 27:

The Department will seek to enhance the natural environment, including sites contaminated by former mine workings, along with other Government Departments, local communities, the private sector and all appropriate agencies in order to ensure the appropriate reclamation, water management, planting of appropriate tree species, the management of special habitats including aquatic habitats and the removal of eyesores.

The full document is available on the following link <http://www.gov.im/lib/docs/dlge/planning/plan/strategicplanfinalversiontoty.pdf>

Annex 2: Extracts from Laws

From *Wildlife Act 1990 (Isle of Man)*

36 Duty to have regard to environment etc.

(1) In regard to any functions of the Department which may affect the physical environment, the Department shall, so far as may be consistent with the proper discharge of such functions, endeavour to secure a reasonable balance between-

- (a) the promotion and maintenance of a stable and efficient agricultural industry; and
- (b) the conservation and enhancement of the natural beauty and amenity of the countryside, the protection of wildlife habitat, and the conservation of flora and fauna and geological or physiographical features of interest.

(2) Without prejudice to subsection (1), in the exercise of any functions which may affect the physical environment, a department, statutory board or local authority shall, so far as may be consistent with the proper discharge of those

functions, have regard to the matters specified in subsection (1)(b).

From *Nature Conservation (Scotland) Act 2004*

Section 1. Duty to further the conservation of biodiversity

(1) It is the duty of every public body and office-holder, in exercising any functions, to further the conservation of biodiversity so far as is consistent with the proper exercise of those functions.

(2) In complying with the duty imposed by subsection (1) a body or office-holder must have regard to—

- (a) any strategy designated under section 2(1), and
- (b) the United Nations Environmental Programme Convention on Biological Diversity of 5 June 1992 as amended from time to time (or any United Nations Convention replacing that Convention).

Found on website

http://www.opsi.gov.uk/legislation/scotland/acts2004/pdf/asp_20040006_en.pdf

Annex 4: Joining-up the public and government requires good quality consultation.

Isle of Man Government Consultation code: http://www.gov.im/lib/docs/cso/consultations/code_of_practice_on_consultation_200.pdf

Annex 3: Memorandum of Understanding headings

- Shared vision
- Roles of each organisation/party
- Objectives of the MOU
- What each organisation will bring to the MOU
- How often it will be discussed or reviewed.

A Memorandum of Understanding or MOU is a written agreement put in place to establish a clear understanding of how an arrangement will practically function and each party's role and responsibilities.

The MOU allows all involved to concretely see that they are agreeing to the same thing and to be a tangible reference to review should, heaven forbid, any troubles arise during the arrangement.

From <http://www.moutemplates.com>

This website includes a detailed list of aspects to include.

A Governor's role in environmental issues in a UK Overseas Territory

Michael Gore (former UKOT Governor; former Council Member of UKOTCF & Chairman of the Wider Caribbean Working Group; Wildlife Photographer)



Gore, M. 2010. A Governor's role in environmental issues in a UK Overseas Territory. pp 343-345 in *Making the Right Connections: a conference on conservation in UK Overseas Territories, Crown Dependencies and other small island communities, Grand Cayman 30th May to 5th June 2009* (ed. by M. Pienkowski, O. Cheesman, C. Quick & A. Pienkowski). UK Overseas Territories Conservation Forum, www.ukotcf.org

Until quite recently, environmental issues took a back seat so far as HMG was concerned. In the 1980s, the new Foreign Secretary, referring to his priorities, spoke of: dealing with the cold war, international obligations, Anglo-American relations, Europe.....“and less important subjects such as the environment.” As recently as the early 1990s, Governors about to be appointed to the Overseas Territories received no briefing on what was required of them with regard to environmental issues. That has to some degree changed largely as a result of efforts made by the UKOTCF in persuading the Foreign and Commonwealth Office that the Overseas Territories contain some of the most diverse and endangered species for which HMG is responsible, and the Governor is expected to take an active role in protecting the environment. But the instructions to Governors are still rather vague: the Governor and his FCO staff are responsible for security and good governance and one of his aims is to “improve the environment” of the Territory for which he is responsible. Rather a general instruction! HMG is, of course, primarily concerned with good governance and avoiding political problems in the territory which could adversely affect the well-being of the local people or create problems for HMG either internally or internationally.

Michael Gore, michaelgore@ntlworld.com

The UK Overseas Territories comprise a far more diverse range of habitats and species than is found in the United Kingdom itself. Covering a range of habitats from the Antarctic to sub-tropical and temperate climates, the variety is immense. And it really is the responsibility of Her Majesty's Government to ensure that everything is done to conserve and protect all that needs to be protected, both for the world as a whole and in particular for the people and for future generations of the Territories.

That said, Her Majesty's Government is not really able to do a great deal about it. Responsibility for environmental issues in the Overseas Territories has been evolved to the Governments of the individual territories.

The Governors for the Territories are responsible for overall supervision, to ensure good governance by the elected Ministers and representatives but, frankly, there is not really much that a Governor

can do to ensure, for example, that development of a site – a new hotel complex or a housing development – which should be left pristine does not go ahead. He can advise, but it is not in his power to stop it.

Much of course, rightly or wrongly, depends on an individual Governor's interest in conservation, wildlife, flora etc. A Governor who is personally dedicated to the conservation of nature – in the widest sense of the meaning – will inevitably take a closer interest in protecting the environment, and, although he cannot personally decide on issues affecting the environment of the Territory for which he is responsible, he can use his diplomatic skills – and Governors today all come through the ranks of HM Diplomatic Service - to persuade his local elected members and ministers to follow a conservation line. The same is, of course, true of Governors who have other interests – golf, fishing or whatever; naturally they will pursue their inter-

est and will almost certainly try to persuade the local government to act in the best interest of their pastime or hobby. This may not be strictly right, but I think it is inevitable.

Because I had been involved in environmental issues in a number of countries where I served - Malaysia, Korea, Uruguay, The Gambia, Kenya, Malawi, Liberia and the Bahamas - before I came to Cayman as Governor, I was well versed in the problems facing developing countries where a small number of enthusiasts were fighting to preserve their wildlife and natural habitats.

In my spare time, I had written books on the birds of Korea, Uruguay and The Gambia, and a general introduction to the National Parks and Reserves of Kenya. And I had been on the committee of environmental organisations in all these countries. So I came to Cayman with a strong background in the environment. I had visited all the Overseas Territories in the Caribbean, the Falklands and Antarctica, the Channel Islands, Gibraltar and the British Sovereign Bases in Cyprus, and had photographed mainly birds but also all groups of wildlife in each of them.

One of my first sorties into environmental protection in Cayman was to set up *The Governor's Fund for Nature* to raise money primarily to protect habitat. We purchased some building plots at Spotts, just outside Georgetown, and created a small bird sanctuary; I was greatly honoured when I was asked by the management committee if they could name it after me. The *Fund* contributed also to the cost of constructing the path across the mountain through the Mastic Reserve, the Visitor Centre at the Booby Ramsar site on Little Cayman and to several National Trust projects

Of course, all this can reflect against a Governor who is perhaps too keen on a particular subject. I recall, when I was Governor of these Islands, my good friend and long-time Member of the Legislative Assembly, Haig Bodden, speaking in the House in favour of some development project, said of me "The Governor is more interested in the birds than the people of these islands". A little unfair, but he was a politician making a point in a debate and we continued to remain friends. Indeed, it was my pleasure and honour to present him with the badge of a Member of the Most Excellent Order of the British Empire (MBE) shortly before he passed away in 1994.

That aside, a Governor can help the conservation lobby in his Territory. And much has happened in

the past 15 years or so. When I came to Cayman, there was no department responsible for environmental issues. "Environment" came under the Department of Agriculture and Public Works - not subjects which fall comfortably with environmental issues. Anyway, on the occasion of Earth Day 1993, we established the Department of the Environment. This now flourishes, and has flourished for the past 15 years, under the leadership of Gina Ebanks.

I suspect that the situation was not very different in most of the other Overseas Territories in the early 1990s. But today things are rather different, though it is often difficult to persuade the Overseas Territories Governments to focus on environmental issues; it is here that Governors have a major role to play. It is essential that Environmental Impact Assessments are carried out on all new developments to ensure that the development does not have a negative impact on the environment. And, whenever practical, all new construction should be sustainable, using renewable energy and energy-efficient appliances. One way a Governor can have a major impact is to ensure that governments do not ride roughshod over an Environmental Impact Assessment, as has happened in the past.

No Overseas Territory Government wants to be seen to be failing in its responsibility to protect the environment. But there are often many local constraints to be overcome. Not the least of these is finance. In these cash-strapped times, money is difficult to come by and local people are mostly only concerned with their own well-being in the short term. Things, like climate change, preserving an endangered species, establishing a wildlife reserve, are for the future and have no immediate bearing on the life of a local voter. And, as we all know, it is local voters caring about local issues which are of immediate concern to him or her, who politicians listen to - because, if they do not, they will not be re-elected. And this is no different in a small Overseas Territory than as it is in the United Kingdom or indeed any other large, free country. So what does HMG do to help Overseas Territories governments to deal with environmental issues? The British Department for Environment, Food and Rural Affairs (DEFRA) is the lead department in London on environmental issues in the Overseas Territories. And Governors are encouraged to emphasise the importance that Her Majesty's Government attaches to environmental issues in the Overseas Territories. Also, to signal the British Government's commitment to work with the Territories in their efforts to safeguard and protect their

natural environment; and to persuade the political leaders in each of the Territories to focus on the impact of climate change.

This last is a subject which few had focussed on when I retired as Governor in 1995, but today it is one of the most important issues which must be of concern to all the Overseas Territories. Most are low-lying and will (and I mean will, not may) be affected by rising sea-levels as the world temperature starts to rise and glaciers melt. Watching a programme on television the other evening, I was horrified to see a Peruvian guide pointing to a glacier as it is today and then pointing hundreds of feet lower down where he remembered it as a child.

Everyone attending this conference from outside Cayman will already have become aware of the devastation which would result from even a slight rising of the sea level in the Caribbean. It will have been obvious to all that most Caymanians live just a few feet above sea-level; the highest point on Grand Cayman – The Mountain – is just 70 feet high! Another example, even more extreme is the British Indian Ocean Territory, the Chagos Islands. These comprise more than 50 tiny coral islands, which provide an oasis for marine species, including more than 220 species of coral, 1000 species of fish, at least 33 different seabirds. and the largest coral atoll in the world. The Chagos Conservation Trust has pointed out that the archipelago is by far Britain's greatest area of marine biodiversity and has recommended that a conservation area should cover the whole archipelago. We would all support this, but the dry land of the archipelago will almost certainly disappear if the seas around it rise by just a few feet.

Indeed, climate change will have a huge impact on most Overseas Territories. It is probably this subject which will require Governors to become most involved. Living in small communities on idyllic islands, it is difficult for local people to be overly concerned about climate change *per se*, through rising sea-levels and more frequent and more devastating hurricanes may well concentrate minds in some territories. But few are likely to consider reducing their carbon footprints. They look at the damage being done to our planet's climate by the industrial nations and believe that they have little to offer in a way of reducing their input. Governors will, I know, be making the point that everyone must make an effort on this front; to quote Britain's largest supermarket "every little helps"!

Other speakers will be talking about the Overseas

Territories Environment Programme, a joint Foreign and Commonwealth Office and Department for International Development funded programme which was established in 2003 to help the Overseas Territories implement their Environment Charters, signed in 2001, and to fund a range of environmental projects. This programme is promoted by the Governor's office and here, in particular, the Governor can have a direct say in issues affecting the environment

Current funding of OTEP is £1 million per annum, split equally between the FCO and DFID. The Environment Charters were signed in 2001 and comprise a list of commitments by HMG and each of the Overseas Territory Governments to take forward to protect and safeguard the environment of the Overseas Territories. And the implementation of most, if not all, need to be brought up to date to include, in particular, climate change, to which there was little reference when the Charters were drafted in the 1990s. Some of the Territories do not have either the manpower or financial wherewithal to progress with this process and here the Governors have a major role to play, liaising with the Foreign and Commonwealth Office as well as partner organisations, including NGOs, to provide assistance.

I cannot finish without paying tribute to the Cayman Islands National Trust and to similar organisations in the other Territories. The Cayman Trust came into being in 1987 and, before the Department of the Environment was established, was the only voice to be heard supporting the protection of Cayman's natural and historic sites. I can say the same of similar voluntary organisations in the other Territories. During my ten years as Chairman of the Wider Caribbean Group of the UKOTCF, I had many dealings with these organisations in each of the Territories which came under the umbrella of the Wider Caribbean group. They continue to do sterling work, nudging governments to take action on conservation issues which civil servants are not able to do. For anyone who does not know, the Wider Caribbean name arose because it was convenient to include Bermuda in this group and Bermuda is a long way from the Caribbean – but it was convenient!

Well ladies and gentlemen, I hope that what I have said provides an insight into what a Governor can and cannot do in promoting the welfare of the environment in the Territory to which he is appointed. Thank you

Ascension Environmental Information Operations Utility (AEIOU): Integrated Information Management for Joined up Environmental Custodianship

Alan P. Mills & Edsel B. Daniel (consultants)



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Provision of timely information is key to decision making in resource assessment, environmental monitoring, management and planning, and underpins many of the guiding principles and commitments in the UKOT Environment Charters. Geographical Information Systems (GIS) are an appropriate technology to provide an integrative framework for data from diverse sources and types, and provide querying, analytical and presentational tools. However, GIS need significant start-up investment, organisation and technical knowledge to be successful. This paper shows how, through seed funding from OTEP for a particular application, on-island cooperation and international support, use of GIS technology is not out of reach of UKOT environmental management. Focusing on Ascension Island, but also drawing on experiences in British Virgin Islands, Anguilla and St Helena, it shows the components put in place to make the system function; a structured database, meta-database, user interface, educational webmap browser, support and protocols. As important, it shows how the approach to development (user needs identification, willingness to share information, establishing responsibilities for maintaining data, streamlining fieldwork recording, mapping protocols, multi-level training) helps embed the system in daily work routines. With the correct balance of inputs, GIS can aid not only mapping of single environmental factors (e.g. monitoring seabirds) but also facilitate joined-up management that ensures that the environment is considered closely in strategic planning and development application processes. Also, the paper reviews how AEIOU has evolved since its conception, with changes of staff, new data and potential applications, what lessons have been learned and how a continued debate is needed to keep abreast of the new environmental challenges and newer, more affordable technologies.

Keywords: GIS, UK Overseas Territories, Ascension Island, Information Management, Conservation, Environmental Management, Planning, Education.

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Introduction

Effective environmental management needs to be provided with timely and accurate information at all stages in the process. Good quality information is needed in terms of understanding one's resources

(both their extent and quality), in being able to monitor changes in populations and health, in managing limited resources to conserve and maintain those populations, protecting them by establishing jurisdictions and awareness-raising of environmental assets through education and the planning

process. In so many cases, this information can be spatially located, and geographical analysis aids evaluation and management decision making, so Geographical Information Systems (GIS) make a useful framework for its organisation and access.

Many UK Overseas Territories (UKOTs) make use of GIS in particular projects, and several are building national systems to manage land ownership, planning and infrastructure. There has been some hesitancy to adopt a widescale use of GIS in environmental management, as it is perceived as an expensive add-on (Tomlinson 2003) and technically out of the reach of agencies with stretched human capital (Mills *et al.* 2001). This paper seeks to show how, with planned interventions, the cost can be kept down and GIS can become central to environmental management - and help in joined-up decision-making across all environmental stakeholders and wider civil society. It shows how sharing of data and other resources can bring down costs and spread the burden.

Provision of timely information underpins many aspects of the Environment Charters, which contain a series of guiding principles and then agreed commitments by both the UK and the UKOT concerned. The following examples illustrate how GIS can assist Ascension with adopting these principles and meeting its commitments (Ascension Island Government 2001).

GIS can assist directly with improving the range, quality, and availability of baseline data for natural resources and biodiversity (Ascension's Commitment 7), and indirectly provide information for fora integrating views from government departments, representatives of local industry and commerce, environment and heritage organisations, and the Governor's Office (or Administrator's Office), individual environmental champions and other community representatives (Commitment 1). It can consolidate information for Environmental Impact Assessment and other assessment instruments (Commitment 4). It can provide jurisdiction maps for a protected areas policy and assist in mapping the extent of invasive species (Commitment 2). Information from built and green environment can be placed within the planning process (Commitment 5). Having quantitative and spatial information publicised through educational and other portals (websites, computer applications, newspaper articles) allows both open decision making (Commitment 5 again) and raising of public awareness (Commitment 9). Finally, the

information sets can be used to monitor and evaluate how effectively the Territory is meeting the principles of the Rio Declaration on Environment and Development and working towards meeting International Development Targets on the environment (Commitment 11).

Within the UK commitments, the application of GIS to environmental management in the Territory can also be supported, as the UK can help build capacity by seeding GIS planning and data collection (Commitment 1), build up the institutional capacity to manage information more effectively (Commitment 5) and, through conduits such as this paper at this conference and elsewhere, promote better cooperation and sharing of experience between UKOTs with similar problems and capital (Commitment 6).

GIS

Geographical Information Systems (GIS) provide environments in which to solve spatial problems, such as: determining what exists at some place; indicating where features of a particular place can be found; examining spatial conflicts; looking at changes in conditions and where they have effects. They are designed to capture geographical data from a variety of sources, store them efficiently and allow them to be queried, analysed and presented in several media, and provide the integrative framework within which all these data and tools can be managed effectively (Burrough 1998).

GIS needs five basic components to work properly, and attention needs to be given to all five to make the system functional.

1. Hardware – a platform on which GIS can sit; a suitable computer or network set-up, backup facilities and other peripherals to assist in inputting and outputting information; digitising tablets, scanners, plotters and printers. Global Positioning Systems (GPS) and Personal Digital Assistants (PDA) are also improving mobile GIS and integrating field data more simply.
2. Software – both a stable operating system and the specialist GIS software. There are a number of different types of packages available that suit different levels of usage, sophistication and functionality. They range from free “browsers” such as ArcExplorer, through a range of desktop and professional packages

(Arcview, MapInfo, Manifold, IDRISI, ArcInfo) into Internet Mapping and global systems such as Google Earth and Microsoft Virtual Earth. Specialist software for image processing, integrating survey data and converting GPS data are also available.

3. Data – no GIS can be effective without good quality, timely data and this can come from many sources: aerial photography or satellite images, existing paper maps, fieldwork, sketch maps, verbal reporting or detailed survey. The data should contain attributes: extra descriptive data for each feature which can be qualitative, quantitative and time-related.
4. Application – the GIS should have a specific use defined, rather than being an expensive data repository. A whole body of geographical knowledge, principles and models are available to assist the analysis and modelling of data.
5. People – an oft-neglected part of the equation, but consideration must be given to how people interact with the GIS. As well as expert analyst and GIS practitioners, there are data-inputters, data-owners, users of GIS and its outputs, and GIS trainers, management and support.

To put in place these components takes significant start up investment, a large degree of planning, organisation and good technical knowledge to choose appropriate structures and tools to address the problems. Often the return on investment will not occur for up to ten years or more (Tomlinson 2003). It needs a lot of strategic support from heads of department, and maybe a champion within the Executive or Legislative Council, not just to initialise the process, but to remain supportive throughout the development period.

Often the best approach is to think of stepwise progression; while having a long term vision to integrate all environmental information, focus on a few areas and perhaps have some single issue that you can use as a pilot development. With this, you can put in place the framework. However, do not overload it with applications, so you can test all the procedures, the networking and whether the product can be used. Then, widen the brief to cover a series of issues across all stakeholders; these can be pulled together incrementally and iteratively into the one system. Many GIS applications that environmental stakeholders have are similar, so can be categorised and tackled in generic ways.

From experience, these have been seen as:

1. Mapping existing datasets for visualisation – this is where the only action is to show a series of layers on one map. An example of this might be showing where the proposed and existing protected areas occur.
2. Mapping a single parameter – showing data from a monitoring database where the user has chosen a period of time and wants to view a particular subset of data, and symbolise it according to either category or some quantity. An example of this could be mapping the status (egg, chick, fledgling) of masked booby nests for November 2008.
3. Mapping multiple parameters – this is where you might want to compare a series of data over a chosen period of time. An example of this is to show the number of turtle tracks detected at beaches for each year between 1999 and 2009.
4. Local Area Analysis – this is where users are interested in all the resources, biodiversity and activity in a particular area, and the GIS can be used to “cookie-cut” the relevant information in that area for further visualisation, statistical analysis and output.

GIS in environmental management and on small islands are often developed on a project-by-project basis, but several major problems emerge. First, the consolidation of a lot of information is time consuming. Second, the maintenance of software and hardware for project GIS is expensive and often neglected, leading to no forward planning and an unused system that has archived the project’s findings but is not an active tool. Third, several agencies who have not had projects with GIS components cannot take advantage of the tools and data. And there is no sense of joined-up custodianship of information; that means data maintenance is expensive or ignored, and awareness of what information is available is low. Finally, any new project has to spend a lot of time searching for existing datasets, and results are locked away, fragmented across the Territory’s agencies or simply lost. In many cases duplications can occur and some projects may have to capture data themselves - which is also expensive, time consuming and prone to errors.

This kind of fragmented approach to GIS use is

difficult enough to manage for the largest and best resourced of organisations; conservation groups often have difficulty justifying the start-up expense. Putting start-up expense and fragmentation of data together on small islands, there appears to be a challenge to even start to think about using GIS as a tool, let alone widen the stakeholders and manage an enterprise style GIS.

With the support of seed funding from OTEP, the Ascension Environmental Information Operations Utility (AEIOU) was designed and developed to overcome fragmentary project-driven GIS, and provide an organised framework that supports targeted applications for Ascension Island Government (AIG), in particular the Conservation Department (CD). AIG was able to bring together information from a series of existing projects and invest in adequate software, hardware and training.

AEIOU - Formulation

AEIOU was designed to tackle each of the five major components of GIS listed above. The starting points were determining the applications. Surrounding the whole GIS was the detailing of how it would operate, both technically and within the existing work practices of the users.

Stakeholder collaboration

The key stakeholders identified were the CD, Health Department, Administrator's Office, Operational Services, Environmental Health, Technical Services and Two Boats School.

The Conservation Department, as lead agency, was instrumental in building support for the system amongst these agencies. Spending time with these agencies helped to understand existing work loadings, data-collection and priorities, essential in building suitable GIS to ensure it is not seen as a time consuming and expensive add-on, but integrated within daily working.

Presentations were given to AIG and meetings held with each agency to consider any potential applications, and what current data they collected. From these, fifty seven priority applications were identified, but of these, several could not be realised due to security issues, lack of resources or lack of proper conceptualisation by the stakeholders. Eventually, thirty four of these were created, most could be grouped into one of the four application categories described above.

Once the applications were decided on, the required datasets were identified, including in particular any monitoring databases which needed designing. Ian Fisher (RSPB) had helped AIG with creating a series of databases (not just birds, but hawksbill turtles and plants) which needed only a modicum of adaptation to ensure they were ready for the AEIOU interface (i.e. converting latitude and longitude to UTM coordinates, and creating a series of queries that could consolidate data into GIS-ready form). Several new databases were created to cope with the large quantities of green turtle nesting and land crab data.

A trawl of existing data was conducted on computers in stakeholder agencies, and staff were requested to explain their data collection process and methods. In some cases, piles of forms (paper format) were presented from lever arch files or filing cabinets, or directly from notebooks. These data were examined and, in several cases, transformed into digital GIS-ready format. Although basic principles of GIS data seem simple, many mistakes are made in its storage. It may look OK at first sight, but it may not be useful for performing quantitative summarisation or creating statistics, grouping features of similar types together, or for mapping. A significant part of the AEIOU development is centred on standardising the way data are entered and correctly formatted, and correcting spelling mistakes that routinely occur in spreadsheets.

Once all existing data were collected and catalogued, new datasets were sought. In particular, no complete topographical datasets had been completed, so a tranche of data were digitised from the 1:25 000 Department of Overseas Surveys Map by Geosense Ltd. Quickbird satellite imagery was purchased. From these datasets, several other datasets were derived, including the first comprehensive digitising of the Mexican thorn trees. Some data were collected by CD staff themselves. Although the monitoring of a cat eradication project was drawing to a close, the Conservation Department collected GPS locations of the cat baiting sites and tracked the series of walks they repeated to cover the whole island.

The datasets and Microsoft Access databases were put into the context of working arrangements by designing associated forms that were both practical for field survey routines and similar to the database interfaces for ease of entry. Training was given,

where necessary, in filling in forms in the field, GPS waypoint and track collection and entering data.

Hardware and software

Most GIS desktop application can run satisfactorily on good specification office machines; the need for very expensive workstations has long gone. The AEIOU project coincided with procurement for the Conservation Department generally, so hardware was purchased through AIG funds. A server was also purchased, as there were clear benefits from centralising data: namely distributing it amongst many users, rather than having it stand alone on a single desktop; making updates easier; and reducing duplication, as well as making storage more secure and easier to backup.

AEIOU was developed using ESRI's ArcView GIS 9.2 software. The major software purchase through the OTEP funding was a 3-seat concurrent license. A license manager was installed on the server while ArcView itself was installed on multiple desktops. While more expensive than single-user licenses, it allows software to be distributed across a large number of desktops and, as the name suggests, up to three people can use it at the same time. This meant that the server could supply all the Conservation Department networks and two workstations in the Technical Services Department, down the hallway, and the Environmental Health Department, across Georgetown. This also meant that other copies of ArcView already purchased could be redistributed. By sharing resources, the overall costs of software were kept to a minimum.

Metadatabase

The metadatabase is a central part of the system; metadata (information about data) in AEIOU comes in two forms. First, for each dataset, there is an XML file associated with it. This documents the dataset's descriptive information (abstract, purpose, title, responsibility), geographical information (projection, extent), its digital description (type of file, size) and attributes. Data from all the XMLs are combined into a single Access database, so that complete lists of available data can be given, as well as queries for the most recent data.

The other part of the metadatabase documents products or applications in the interface, and how monitoring databases and data layers interact with this information. Duplication of effort is

minimised, as metadata from the XML are automatically imported. The use of this metadatabase means that the GIS manager on island can add new applications and datasets to the AEIOU interface without coming back to the developers. The metadatabase can also be used by the GIS manager to control which datasets can be seen by general users (to allow separation of sensitive or private datasets from public view).

By establishing metadata in XML format using ArcView ArcCatalog, AIG are conforming closely with International Standards for metadata (ISO 191117). Establishing these during the project means that, with little adaptation, the AEIOU environmental information system can be transformed into an all encompassing territory-wide GIS.

Interfaces

Two interfaces were created: one a desktop system using ArcGIS, and the second a webmapping utility for children and the wider public to access.

The desktop application was built using ArcView, which offers a development environment for customising menus and tools within its standard interface. By creating a new menu and tools within the interface, new users can be guided quickly to the most useful and easier tools, while retaining the functionality of the bought software. A five item menu was created:

1. A management menu allows users to set up how they want to open the system and where to store files that they create.
2. Navigate map – some simple tools to zoom to a particular named place at a user-defined scale or zoom to the extent of the island. Although the wider range of zoom and pan tools are available, this is a useful function for people who do not know the geography of the island very well.
3. An 'Add Files to View' menu allows users to select data from the metadata catalogue and add them to the view. The use of the metadatabase means that users do not have to be concerned with file formats (which often need different handling inside the system). Instead the metadata picks up the file, decides how to add it to the view. and then draws with predetermined symbology and labelling (stored in ready made layer files). This simplifies both the process of adding data to a map and how to interact with it. This menu also allows a placename gazetteer of over 200 places (head-

lands, hills, settlements etc) to be mapped in a hierarchical fashion. You can also quickly remove any data from the map.

4. An Analyse menu allows users to conduct querying and analysis on the data in the view. This splits into two major themes, generic programmes to conduct single parameter mapping and local area analysis (LAA), as described above, but also an interface which allows users to select one of the 35 applications, choose different parameters, thresholds and options from drop-down menus and selections, then map their data very quickly. Simple tools to navigate the user towards such useful functions as recalculating the area of polygons, charting results, summarising data and renaming new layers are also accessed from here.
5. Within this analysis menu, you can also Output Results from your interface to a map layout with title, scale bar, logos, grids and legends, a process which is semi-automated. This means that good quality cartographical products can be achieved simply by non-specialists for inclusion in reports, powerpoints, brochures or posters.

The second portal is the AEIOU web-interface or Educational Webmap Browser, developed using Internet GIS technology (ASPMAP software) for the Two Boats students and teachers, and the general public. This requires a web browser (e.g., Internet Explorer) and offers an interface similar to Google Maps for viewing and querying the AEIOU datasets. This is currently a subset of existing AEIOU layers (e.g. roads, contours, beaches) and new layers generated from monitoring databases to show annual traffic accidents, bird colony numbers, turtle numbers by season, cetaceans sightings, and endemic plants.

The browser also has an archive of photos, taken by students and other individuals of various places on the island which can be maintained and updated by teachers and students. Users need few special skills to learn to use specialised GIS software. The Browser was installed at the Two Boats School and several teachers received training on how to utilise the Browser in their classes. The general public also can access and use the Browser on a computer at the Conservation Department, guided if needs be by the available online help.

Training

Training was conducted at a series of levels, as

certain products needed explanation to particular subgroups of stakeholders. At a basic level, seminars are supremely important to get the public and wider government staff interested in using maps, realising that the AEIOU resource exists, and publicising its potential.

Then a series of stakeholders who had expressed interest in learning about GIS and assisted in designing products were invited to attend both general GIS and ArcView training and specific training in using the AEIOU desktop interface. While the AEIOU can provide many tools for routine work, the project did not want to lose the opportunity to expand GIS knowledge on island and give some technical tips, so general training in GIS was also provided. On a one-on-one basis, and particularly with field staff, training in individual applications was given. This included ensuring field collection techniques were properly followed, GPS usage was satisfactory, data-entry was quality controlled, and standardising the output maps from the AEIOU. In particular, training at the Conservation Department focused on bird-nesting mapping, turtle-nesting counts and endemic plant-mapping, and in Environmental Health on rat baiting counts.

More detailed and extensive training for management and support was given to the GIS Manager (Conservation Officer) and Metadatabase Manager (Natasha Williams) and a couple of others, specifically on how to catalogue new datasets, system backup, the support to the AEIOU interfaces and how to manage the system steerage. Additionally, support training and awareness was given to the IT support for government (currently under contract to the local Cable and Wireless company).

For the AEIOU Educational Webmap Browser, Two Boats teachers, Years 10/11 students and Conservation staff received training. Both teachers and students were able to explore the data layers, and print out their own maps, showing areas of interest. A couple of teachers were given some administration background.

Protocols and Procedures

To clarify how the GIS will operate in a multi-user, multi-data provider environment, protocol and procedural documents were written including aims of the GIS, the terms of reference for any system steerage and management, standards for data handling, metadata, projection, and template documents for Memoranda of Understanding and

working with outside bodies. The scope also exists for protecting sensitive data and charging for data services to external agencies. User manuals for the desktop interface, metadatabase management, and webmap interface and network management were created and run through with relevant stakeholders.

These strands of activities were conducted in parallel and, in many cases, advancement could be made in some areas independent of activity elsewhere. That model is important for the running of the system itself, as it means that a lack of progress in one area does not generally impede other activities or a functioning system.

Approaches

The technical inputs, training and establishment of framework and protocols are not the only elements that make the system operate. As important is the approach to how a GIS is designed and implemented, ensuring a focus on real applications that take into account use of outputs from the GIS in daily workings. Looking for real uses of the GIS, such as the monthly maps of bird monitoring, the annual plant survey, total turtle tracks at each beach year-on-year, all help the users to focus carefully on good quality fieldwork, data entry and output. The GIS management and operation has tried to be integrated within the every-day work programme of the conservation staff.

To feed applications successfully with relevant data, developing the concept of resource sharing has been crucial. Some GIS look for a market or cost-recovery pricing structure on individual datasets between agencies, even intra-governmentally. The approach in Ascension is more bartering: that different agencies can share various datasets and gain other benefits in return. The reason a Road Traffic Accident (RTA) application exists in AEIOU is because the St Helena Police give the Conservation Department a copy of their visitors database to help the Department gauge usage of tourist sites (such as Green Mountain). In return, an RTA database was developed, and the GIS assisted the Police in persuading the Administrator to put up better signage at a dangerous intersection.

A useful by-product of AEIOU, but by no means the main purpose, is a consolidation, documentation and publication of the list of available data. This has been helpful for new projects, and visiting scientists, who can search the catalogue for exist-

ing data and, at the end of the project, integrate their findings with the overall GIS. A Memorandum of Understanding template helps to negotiate the arrangement for data-sharing with external parties. While there are still issues over how data can be exchanged, as AIG get used to being more open with their data, it is another useful step forward in information sharing.

Making these data accessible more widely is helping to raise awareness of the island's geography and environment. It was interesting that residents were fascinated by the historical sites on island, especially the way a 1922 map could be faded in and out over the top of the current topographic map. This matured into more use by the Conservation Department to demonstrate the changing status of creatures. Most successful has been the monthly maps sent round with monthly reports of bird nesting, but the extent and mapping of endemic plants is also conducted annually and maps of turtle nesting have been used in the annual reports. Several researchers have used and extended the databases to explore behaviours and habitats for turtles and land-crabs, and data from AEIOU is regularly used to train students on the University of Exeter's Conservation and Ecology MSc in GIS principles and application. Many applications have not been used, despite encouragement, training and having a strong purpose. The major reason for these failures has been a lack of strategic understanding of the need for space to gather data and how the results can integrate in daily and longer term decision making.

There have been several opportunities for the consultants to revisit the island, and this has given valuable feedback in which elements of the AEIOU have been used, what needed refinement and what could be dropped. The metadatabase has expanded slightly since the first visit, as researchers are developing new datasets, as well as the massive expansion done by Conservation Department's fieldworkers in all the biodiversity databases. These include particularly Jaqui Ellick's turtle database, Ray Benjamin's and Nathan Fowler's bird database, and Stedson Stroud's plant database. The plant database has also been redesigned with a view to integration with Kew's taxonomic database (BRAHMs).

These datasets, integrated by an on-island GIS, can be used by international agencies for summarising the information, but more data collection standardisation across the territories is needed. Martin Hamilton, at RBG Kew, has done much to help

this in plant collection, taxonomy, invasive species identification and habitats. Ways of looking at RSPB's connections to the World Bird Database should be encouraged, and standardising methods for turtle data collection (if you do not want to subscribe the expensive WIDECAS network) could continue, as long as local needs for data are respected.

Ascension can also take advantage of new initiatives, and ensure data are made available to project participants and any new data integrated with AEIOU. Most recently, the EU South Atlantic Invasive Species project has started to develop an incredible resource for Ascension, St Helena and the Falkland Islands in comprehensively mapping the distribution of plant species on a 1-km grid basis. Although this may sound a coarse scale, it gives a fantastic spatial pattern of endemic, native and invasive species. It is hoped the data can be integrated with AEIOU, continuing to apply the same principles that guided the original AEIOU project: that a set of data created for a particular purpose may have much wider application.

AEIOU is not only an environmental system, but is also available to the Technical Services Department, Environmental Health Services, and the Ports Authority (part of the Operational Services Department) have access to marine maps. The AEIOU data and interface should be giving Ascension a good forum for encouraging discussion.

The output maps are helping stakeholders demonstrate their work and environmental monitoring, but the potential of the system for more strategic planning is under-utilised at present. One application used was to determine some areas of land that could be fenced off as a donkey reserve; with measurements of area and perimeter (for fencing lengths) given. The initiative was dismissed but the GIS was useful in putting forward the proposal.

Experience and the Future

Ascension is not the only UKOT which has used this model, but it is the most developed towards conservation efforts.

The Anguilla Coastal Resource Assessment, Monitoring and Management (ACRAMAM) system (Erni *et al.* 2006) was more geared towards assessment of marine resource: coral reef, seagrass and soft coral extents. Planning was heavily involved

there in management and use of the system for offshore resource assessment.

In St Helena, the Legal, Lands and Planning Department (LLPD) were the central coordinators and, although conservation and natural resources are highly thought of, the St Helena Environmental Information System (SHEIS) has always been seen as a prototype for a wider national GIS, which is now being built by LLPD, despite refusal to fund from FCO and DFID. SHEIS is the best developed of these systems because of the enthusiasm and dynamism of its central coordinating team in Len Coleman, Ayla Phillips and high profile management by Gavin George. AEIOU is a much smaller system and their achievements on Ascension are more modest. But continued commitment by the Conservation Department staff over several years in all aspects of information management is producing a valuable archive of data, and good products. And the aspects of AEIOU, which may be under-utilised at the moment, are securely stored, structured and available if future conservation management and research moves in new directions.

This is not the only model. In the Cayman Islands, BVI and Bermuda, GIS has been strongly driven from the cadastre and planning regimes. The establishment of NGIS units (or their equivalents) gives the basic framework so that other, less intensive, applications (such as those in the environmental realm) have an easier route into services, but often on a cost-recovery basis. Smaller, less wealthy territories cannot necessarily operate on this model, and need to look at a more bartering, sharing form of cooperation to make GIS more inclusive and diversely applied.

In Montserrat, they also have an enthusiastic GIS manager, Lavern Rogers-Ryan, and several GIS projects in Conservation and Planning benefit from using GIS. Durrell Wildlife Conservation Trust, with RBG Gardens Kew and RSPB, among others, have been researching the biodiversity of the Centre Hills. Some progress has been made to make similarly styled databases that can link in with GIS for mapping monitoring trends. However, the development work needed for the over-arching framework and better conduits for distributing outputs has not had the on-island stakeholder support or the seed-funding which has been so useful in other cases. The Falkland Islands Government and Falklands Conservation are also taking the first tentative steps to unify information management for environmental management and planning.

In all these cases, although the five major components of data, software, hardware, people and applications remain the same, the method of organisation and the applications can vary in degree and range. The crucial factors are to be sensitive to the capacity of the territory stakeholders, and be appropriate to their immediate and future needs for information. Staff have changed in the period since implementation, and there has been some shifting of work priorities, most notably in the adaptation of the plants database to be more inclusive. But the data archive, documentation and wider awareness of GIS should help sustain its use for many years.

Conclusions

Ascension's AEIOU is by no means perfect and, for people who do not use GIS regularly, there is still a high level of awareness that needs to be kept alive - awareness that can drop if the system is not used and refresher training not given. However, this is no different from so many other skills, like chainsaw management, turtle DNA sampling, or plant management. And there are certain areas of AIG decision-making that ignores its existence, particularly in planning. For example, the recent proposal for a power station to have wind turbines would have benefited from local area analysis, documenting whether there were impacts on local bird and turtle nesting sites.

As important, it shows how the approach to development (user needs identification, willingness to share information, establishing responsibilities for maintaining data, streamlining fieldwork recording, mapping protocols, multi-level training) helps embed the system in daily working. There is a danger that GIS can be perceived as an expensive add-on which increases the pressure from an already difficult and diverse workload, and so gets ignored. Also, there is pressure on the central coordination to manage the system, and tools which minimise this effort are more effective. Having identifiable outputs in a set timetable also assists. In Ascension's case, the management is kept at a minimum and the major investment is in data collection and entry: tasks which were already essential in the work routine.

With the correct balance of inputs, GIS can aid not only mapping of single environmental factors (e.g. monitoring seabirds) but also facilitate joined-up

management that ensures that the environment is considered closely in strategic planning and development application processes.

Many lessons have been learnt. Some elements of AEIOU, despite the sensitivity, have proved too complicated or onerous for the small staff. And the level of outside stakeholder assistance has waned after each consultant input due to "other priorities". To sustain the system in the widest sense, proper steerage is needed, both at the user/technical level and at a higher level within government. Both groups can define what the GIS should be used for and where to allocate resources within the existing procedures. And external partners, such as RSPB, can continue to integrate their own developments in information gathering and management with the wider GIS framework provided by AEIOU.

GIS in Ascension has not yet satisfied all the relevant commitments under the Environment Charter, nor is joined-up management using GIS routinely. But this is a long-term project, like any conservation effort, and needs to be incrementally and iteratively installed. It also needs a lot of patience and sustained commitment by both the local and international stakeholders. But already, AEIOU has shown that GIS can be used efficiently on these territories, provides an organised archive of valuable environmental and geographical analysis and a framework on which future information can be hung.

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Mechanisms for information/data sharing cross-Territory: UKOTCF database

Mike Pienkowski (UKOTCF Chairman)



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The various elements of the UKOTCF web-site and its integrated databases are outlined, and recent developments and some opportunities noted.

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Background to the presentation

Some talks are doomed never to happen.

As anyone who has organised a major conference will know well, it is very difficult for a conference organiser also to present a major presentation. Accordingly, the core conference organising team had avoided this in planning, although they did take on the co-ordination of some sessions. It had been planned originally that a colleague, not involved in the conference organisation, would give this presentation on the UKOTCF website and its expanded capabilities. Furthermore, he would have based in, in part, on interactions that he would have had with participants during the earlier parts of this conference. This was not to be, because our colleague had an accident just before the conference. I am pleased to say that a full recovery is expected, but not in time for him to attend the conference.

Frankly, the rest of our team have been too stretched to prepare a formal talk, because they are already working up to 20-hour days running the conference - again something that will be familiar to others who have run major conferences. So, our next plan was to give you a live demonstration of a few aspects, especially new ones, of the web-site; after all, that is how web-sites are best introduced. However, a short while ago, it turned out that our projection computer has stopped communicating with the internet - so that's off too.

So, with many apologies and against my better judgement, I am going to give a short presentation, after all. In this, I will try to outline the UKOTCF website, recent changes and others that we are planning. I have little doubt that, for the reasons

explained above concerning lack of preparation, it will be one of the worst talks in the conference (even though outsiders seem to rate our website pretty highly), but at least the talk will be short! We will try to fill it out in the proceedings.

www.ukotcf.org

One could view many websites, including ours, as having a range of functions. These include:

1. supplying information that changes only slowly, needing occasional up-dating;
2. drawing attention to announcements, news etc - which tends to be topical;
3. providing the opportunity to interact with colleagues;
4. allowing systematic searching for information on a particular topic whenever the information may have been lodged in the database.

This is not an exclusive list. Furthermore, often the same piece of information needs to be accessible in several of the above forms - initially as a topical announcement, possibly for further discussion, and certainly to be able in the long term to answer queries. We try progressively to improve the functionality of our already well used web-site to meet more of these needs, as resources allow.

In these changes, we have been both hindered by the changes in the internet service provider business, and encouraged to make improvements, while addressing these problems.

We have found that small internet service providers have tended to be the best at both hosting our site and providing the facilities which we need to run it. Unfortunately, the industry has been dominated

by take-overs resulting in ever larger companies, clearly interested in volume, rather than quality of service. The excellent small company which we originally used has been subject to four successive take-overs in the last 10 years. By two years ago, some crucial aspects of the system were effectively non-functional. We tried initially a solution using third-party technical intervention, but this was not satisfactory. Therefore, we decided to migrate our web-site to a new provider and re-write large parts of the underlying software to make this compatible with a better service. In doing this, we were constrained by:

- the need to keep the system available to users while the transfer and replacement occurred progressively; ideally the users should not even notice the change, except where there were enhancements;
- the availability of funding for those programming aspects that we needed to pay for
- the volunteer time availability of key UKOTCF personnel to guide the programmers.

We are very pleased to report that, by the time that the Proceedings are published, the transfer and reprogramming will be near completion. One relatively small element remains on the old server (accessible but not updateable) simply because we want to make some basic functional design improvements before implementing at some point in 2010.

In updating the website, we have deliberately avoided the dunning-down which has plagued so many websites lately, sadly including those of some government departments. One of these (which had better remain nameless) has filled its site, and particularly its home-page with ephemeral material at the cost of being able to access important reference material - some of which has actually been removed from the site altogether. It is not alone.

Although, to meet popular demand, we have added to the www.ukotcf.org home-page recent announcements (under “What’s New”) and, more recently, more general Recent News items, we have retained a brief paragraph about UKOTCF, a link to the OTEP pages (which UKOTCF hosts, by agreement with DFID and FCO) and - most crucially - a menu linking to the rest of the site. The first few, and several other main menu items fall into the category of reference material, which changes relatively slowly. These menu items include:

- UKOT Friends (the individual subscribers);
- About UKOTCF;

- The Territories;
- Environment Charters (including background, the Charters themselves; examples of strategies for implementation and their development; reviews of progress in implementation; etc);
- Member Organisations and Other Links (the latter being a current expansion);
- Contact Us.

Another group of main menu items relate to subjects which are initially topical but become reference items. These include:

- Conferences (which link initially to announcements and booking details, and later to reports and proceedings);
- Forum News (current and back issues; we are aiming to include earlier issues eventually);
- Annual Reports;
- Publications (there are a range of items that UKOTCF itself has published or made available on-line for others, such as a range of Management Plans; many are listed here; some others require a database search - see below);
- Announcements (this is where old What’s New items can be tracked down).

The Discussions main menu item links to discussion groups, aimed primarily at young people but open to all. Anyone can read the discussion but, to contribute, one needs to register through a simple procedure explained on the site. Some of the young people involved have established also linked social media sites, which are also linked from the discussions.

This Discussions section is one of a 3-part development relating to environmental education across the Territories, and resulting directly from a demand from participants in the Jersey Conference 2006. This generated a project proposal which received funding from OTEP.

The second of these three parts is also already active, a database of environmental education resources (see the notes on the UKOTCF Database below).

The third part consists of a “virtual tour” around the Territories. This is to meet the expressed needs both for people in one Territory to know more about natural and cultural heritage and environmental issues in others, and people in UK (and elsewhere) to know more about all. This is in progress (and will be completed by voluntary effort). At present, the pilot (or computer people

would probably call it the “beta-version)” for one territory is available at www.ukotcf.org/1_vTours/tourSelect.cfm. Although this appears to allow one to select any Territory, only the TCI pilot is available at present. Over coming months more will be added, the system checked, and a more accessible link will be added.

The UKOTCF Database is the main menu item which links to the database modules which allow structured searches. At present, there are the following modules, all but one of which have recently been structurally improved and for which data-entry continues:

- Environmental Education (see above; this means that teachers do not have to re-invent the wheel if they can find something here which can be modified for use in their Territory);
- Projects (which allows for project tracking at various stages from an idea looking for partners or funding, to reporting after completion; at present it is used mainly for projects from the funded stage onwards);
- Sites & Topics (allowing location of both site-specific information and of common topics across sites);
- Conservation Priorities (based originally on the views from Territories preceding the Environment Charters and, in some cases, updated around the time of the Charters, this module is the next - and last - to rewrite allowing further updating);
- General Information (anything that does not fit into the other existing modules).

There was previously, a Funding Sources module, but UKOTCF was never able to secure the resources to populate this. Such funding has now been supplied to JNCC, and UKOTCF has made this module inactive at present, to avoid confusion.

The final item on the main Menu to mention is the newly implemented Search facility. This is designed to search the “static” pages of the website (i.e. those which are not part of the UKOTCF Database described in the immediately preceding paragraphs). This search facility is, by definition, less structured than a search within the Database, but may be complementary to it.

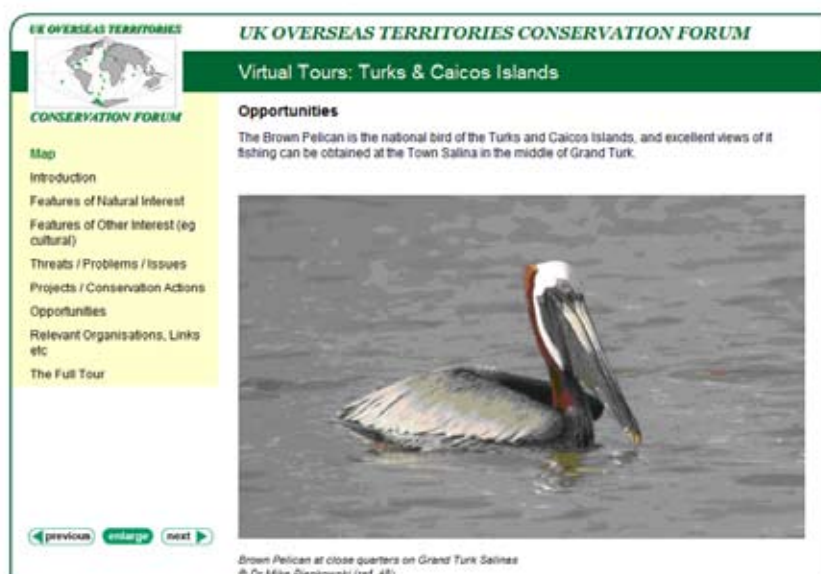
As mentioned earlier, the OTEP pages are hosted on the UKOTCF website. In fact, although some of these pages are static, they use other aspects of the UKOTCF site, including the Announcements section to publicise the call for bids, and the Database to keep details of successful projects and record their outputs.

In this context, it is worth repeating the request to those running OTEP (and other projects) to make electronic copies of outputs (or links to these) available to UKOTCF. This will allow the OTEP pages to reflect more fully the productivity of the Programme, and also make results available more widely.

We should note also that the UKOTCF Database was a pioneer in the field of allowing wide input (in this case from the Territories, UKOTCF Member Organisations and others) of their material, with UKOTCF having a moderator role. With personnel turnover in many organisations, this facility is used less than it was, but we would welcome an increase in this. Please contact m@pienkowski.org or cquick@ukotcf.org if you wish to explore this.

UKOTCF will continue to expand both database modules and other aspects of the website as demand and resources indicate. The feedback at this conference and other situations is welcome.

The website and its contents are the result of work by a wide network of persons in UKOTCF and its Member and Associate organisations and other partners. For recent developments, I would like to acknowledge John Wheeler (web-designer), Ann Pienkowski (for Environmental Education across Territories) and Catherine Quick (many aspects).



Example page from pilot Virtual Tour

Linking with other (non-UK) territories - Introduction

Colin Hindmarch (UKOTCF)



Hindmarch, C. 2010. Linking with other (non-UK) territories - Introduction. p 358 in *Making the Right Connections: a conference on conservation in UK Overseas Territories, Crown Dependencies and other small island communities, Grand Cayman 30th May to 5th June 2009* (ed. by M. Pienkowski, O. Cheesman, C. Quick & A. Pienkowski). UK Overseas Territories Conservation Forum, www.ukotcf.org

As well as promoting and facilitating stronger links between the UKOTs, and between the Territories and the UK, UKOTCF has long sought to encourage the development of wider networks. A particular focus has been the “overseas entities” (mostly small islands, like the UKOTs) of European Union (EU) Member States other than the UK, and conservation co-ordinating bodies concerned with these. Such entities and co-ordinating bodies have, for example, often been represented at the conferences that UKOTCF has organised on a roughly 3-yearly basis.

This has been productive, both in sharing experience and in influencing European Union institutions in favour of environmental conservation in overseas entities of EU Member States. Much of this influencing has been achieved via the linking of UKOTCF, the Dutch Caribbean Nature Association (DCNA), French partners (linked by the French National Committee of IUCN) and others in the Bioverseas grouping. Amongst its other achievements, Bioverseas originally put to the European Commission the idea of support for the involvement of overseas entities in a voluntary version of the European Union’s Natura 2000 initiative; this is currently being pursued by the Commission as the BEST initiative.

A current collaborative initiative funded by the European Commission is NET-BIOME, a project to gather information on existing biodiversity research in tropical and sub-tropical overseas entities of EU Member States, and to help focus and encourage resourcing of future efforts in this area. The project broke new ground in being the first to embrace both Outermost Regions (overseas entities which are part of the EU Member State) and Overseas Countries and Territories (such as UKOTs). With such a range of cultures and previous approaches, there have been many challenges to overcome. In the following paper, some of the elements of NET-BIOME will be addressed in the context of looking to future developments.

Colin Hindmarch (UKOTCF), colinhindmarch@talktalk.net

Linking with other territories - NET-BIOME: Perspective from the Canary Islands

Marimar G. Villagarcia (Instituto Canario de Ciencias Marinas, Canary Islands, Spain)



(Photo: Ann Pienkowski)

Villagarcia, M.G. 2010. Linking with other territories - NET-BIOME: Perspective from the Canary Islands. pp 359-364 in *Making the Right Connections: a conference on conservation in UK Overseas Territories, Crown Dependencies and other small island communities, Grand Cayman 30th May to 5th June 2009* (ed. by M. Pienkowski, O. Cheesman, C. Quick & A. Pienkowski). UK Overseas Territories Conservation Forum, www.ukotcf.org

The EU approved in 2007 the ERA-NET project NET-BIOME, the only project in the programme relating to EU overseas entities, embracing most of the tropical and subtropical regions and territories of EU Member States. This initiative will provide the grounds for future collaborations between the partners, and with third parties. Currently, the project is mapping research activities, using a questionnaire addressed to organisations and teams involved in biodiversity projects to support sustainable development in these areas. The project is also collating information on biodiversity policy in the relevant regions and territories, and on how biodiversity work is funded. All this information will go into a database, which will allow the production of regional inventories and various reports; they will be the basis for developing joint strategies. Some expected outcomes are specific proposals for future collaboration, and the suggestion of a funding call for research bids to fill the gaps detected in the issue of tropical and subtropical biodiversity. A permanent forum to discuss tropical and subtropical biodiversity is also foreseen.

Some information on, and views from, the Canary Islands on the opportunities that the project has created are presented. Further information from all the relevant UK Territories is requested.

Marimar G. Villagarcia, Instituto Canario de Ciencias Marinas (ICCM), Regional Government of the Canary Islands, Spain. Marimar@iccm.rcanaria.es

NET-BIOME stands for: **NET**working tropical and subtropical **B**iodiversity research in the **OuterMost** regions and territories of **E**urope in support of sustainable development. It is contract no. 51872 in the ERA-NET initiative of the European Commission Framework VI Programme. It lasts for four years (March 2007 – February 2011). Its website is www.netbiome.org.

ERA-NET

European Research Area (ERA) comprises three concepts:

- creation of an “internal market” in research (the free movement of knowledge, researchers

and technology)

- restructuring of European research (to improve the coordination of national research policies and activities)
- development of a European research policy (taking into account other national and EU policies).

(Those in Overseas Countries and Territories (OCTs) - including UKOTs - should remember that the Outermost Regions (ORs) are actually part of the European Union, and so EU policies apply directly to ORs.)

For some context, it is worth noting that coordination and integration of public research in the ERA operates at several levels:

- Political Level
Open methods of coordination
Mapping, references, etc.
Legislation
- Programme Level
ERA-NET
- Project Level
Framework VII Programme (FP7), or other funding schemes

Thus, ERA-NET:

1. Operates at the programme level linking policy and research projects;
2. Collects partner information on the chosen issue to facilitate collaboration;
3. Compares results, searching for joint research opportunities;
4. Identifies common priorities to suggest future EU calls or other alternatives.

In other words, the support from the European Commission under ERA-NET does not fund projects directly, but supports programme co-ordination - which should facilitate project funding.

ERA-NET project NET-BIOME

The Objective is to build a partnership between most ORs and OCTs of European Union Member States, for applied research on tropical and

subtropical biodiversity in support of sustainable development.

It recognises the need for coordination between the ORs and OCTs, and within a regional scope. It is the only ERA-NET project that is exclusively regional.

The NET-BIOME Partners include:

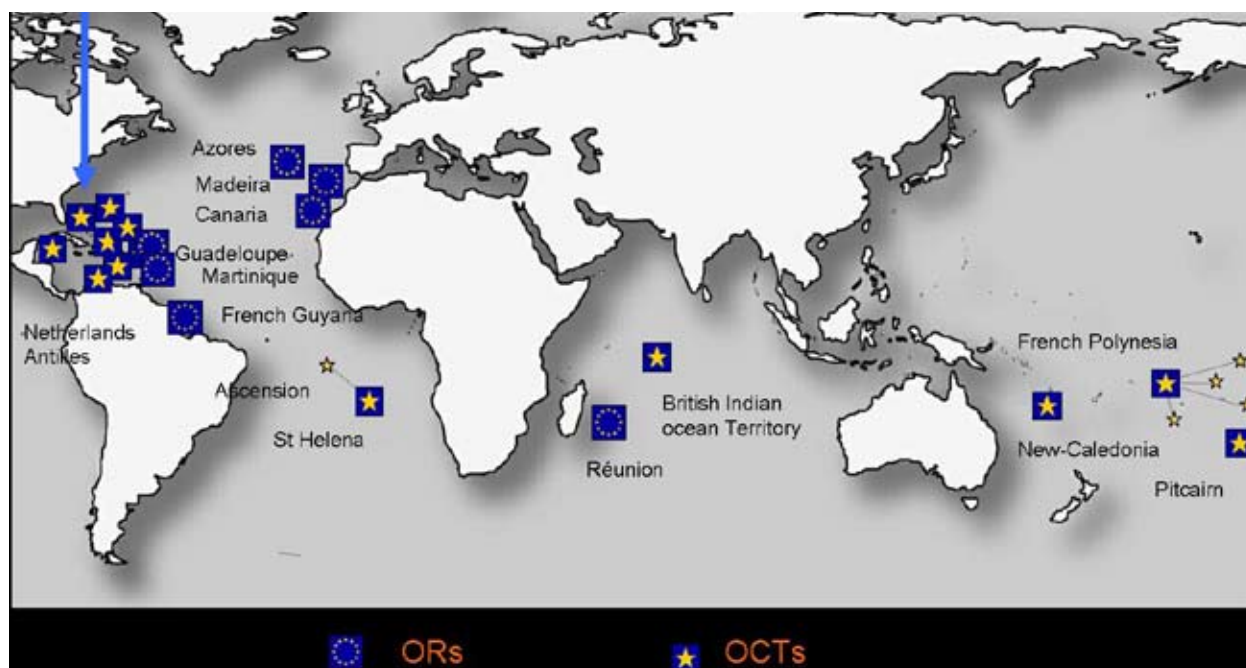
In the western Atlantic Ocean: the Netherlands Antilles, Guadeloupe, Martinique, French Guyane;

In the eastern Atlantic Ocean: Azores, Madeira, Canary Islands;

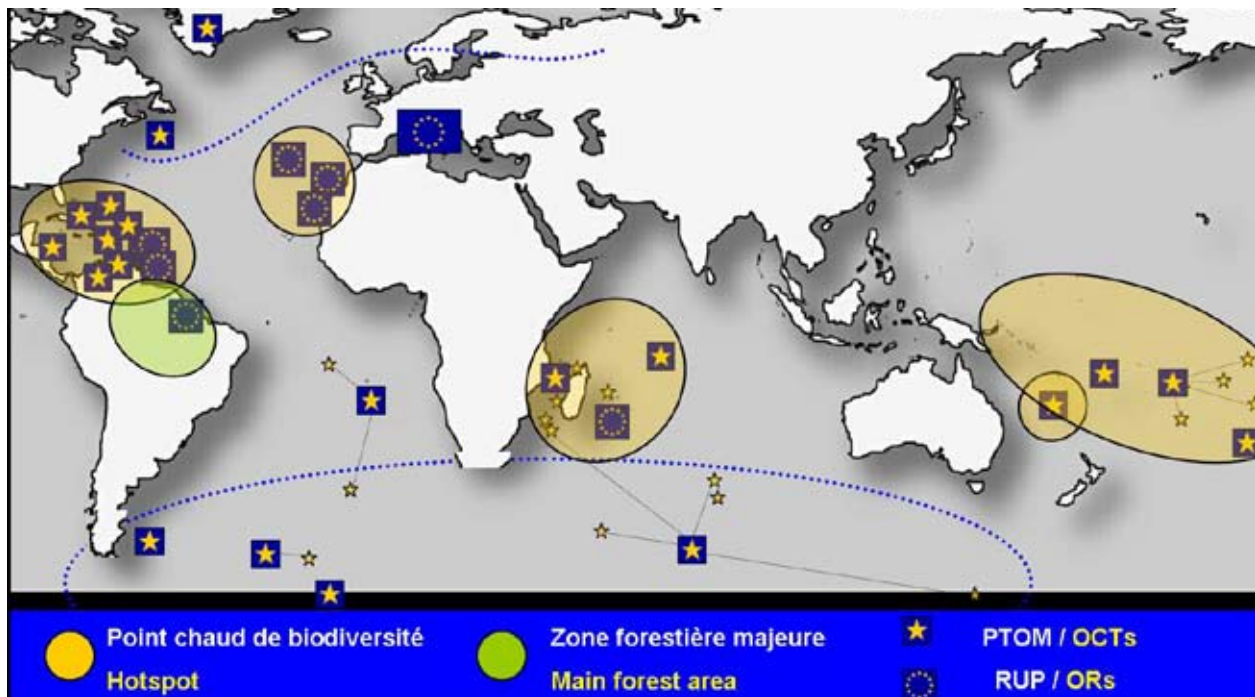
In the Pacific Ocean: New Caledonia, French Polynesia;

In the Indian Ocean: Reunion Island;

and, in several Oceans: UKOTCF acting as a linkage to some of the UK Overseas Territories (Anguilla, Turks & Caicos Islands, British Virgin Islands, Cayman Islands, Montserrat, Ascension Island, St Helena, British Indian Ocean Territory, Pitcairn Islands).



The Outermost Regions and Overseas Countries and Territories within the scope of the tropical and sub-tropical project. The arrow points to the five Caribbean UKOTs, whose names could not be fitted into the illustration: Anguilla, British Virgin Islands, Cayman Islands, Montserrat, Turks & Caicos Islands. Note that: Bermuda opts not to be classified as an OCT; Gibraltar is within the EU but is not an OR; Cyprus Sovereign Base Areas is not within the EU but matches its laws to the Republic of Cyprus which is in the EU. There are also some complications with other OCTs of other Member States.



ORs and OCTs of Europe: a great regional responsibility

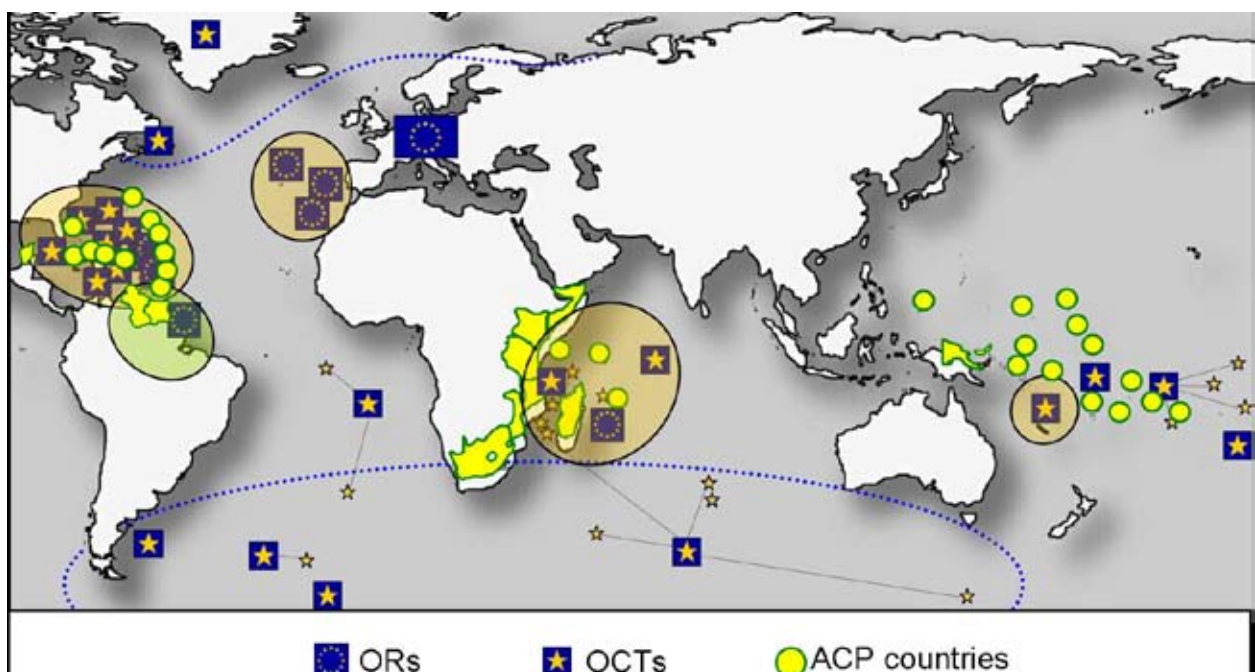
The ORs and OCTs are exceptionally rich in biodiversity. As one illustration (above), they are located in or adjacent to biodiversity hotspots and (shown by the dotted line) the biologically rich area of the southern oceans.

They are mainly islands, very fragile environmentally and threatened by climate change, invasive species, major natural disasters, human activities, etc (as we have seen earlier in this conference).

This represents a significant part of the world's

natural heritage. It also has considerable potential for the economic, social and cultural development of our regions and territories.

It is worth noting also the considerable potential for regional co-operation. The map below adds the ACP countries in the same regions as the ORs and OCTs within the scope of NET-BIOME. ACP (African, Caribbean, Pacific) countries are essentially those which formerly had constitutional links with EU Member States, and for which the EU has programmes of support, with some similarities to those for OCTs.



NET-BIOME activities

NET-BIOME aims to:

1. Link tropical and subtropical biodiversity policy plans to promote future collaborative projects;
2. Collect partner information into a database on tropical and subtropical biodiversity to support sustainable development;
3. Make an inventory including reports for each partner, extracting information from the database and comparing results to reach jointly needed strategies;
4. Agree common priorities to choose for a future EU call, and create a permanent forum.

The main approaches to implementation are:

1. To collate information on each partner's research:
 - Who, where, in what and how is funded to carry out biodiversity research in your OR/OCT?
 - Do you cooperate with other regions, countries or territories?
 - What gaps do you think that need to be filled in biodiversity research in your OR/OCT?
 - What facilities, infrastructures, human resources are available at each OR/OCT?

Questionnaires have been sent to different entities, to collect information on biodiversity research at organisation, team and project levels; I hope you have received it.

2. To know each partner's policy for funding biodiversity research locally:
 - Does your OR/OCT have a specific policy for biodiversity? If not, how is biodiversity funded locally?
 - What are the main barriers for cooperation? Which prioritised research areas are funded locally? Identification of good practices. Potential for interdisciplinary work?

Questionnaires sent to policy makers in charge of environment for each partner OR/OCT.

3. Mixing policies and objectives in a jointly developed strategy, leading to the development of joint activities (facilities, infrastructures, human experts, courses, EU call for projects, forum)

4. Develop synergies with the EU. (This is part of Work Package 6, being co-ordinated by UKOTCF, and has already involved visits to Brussels to meet four different Directorates-General to present the project. The "kick-off" meeting to establish most of the programme for this WP6 is 16-19 June in the Canary Islands.
5. The project is co-ordinated by three Boards, Executive, Governing and Advisory.



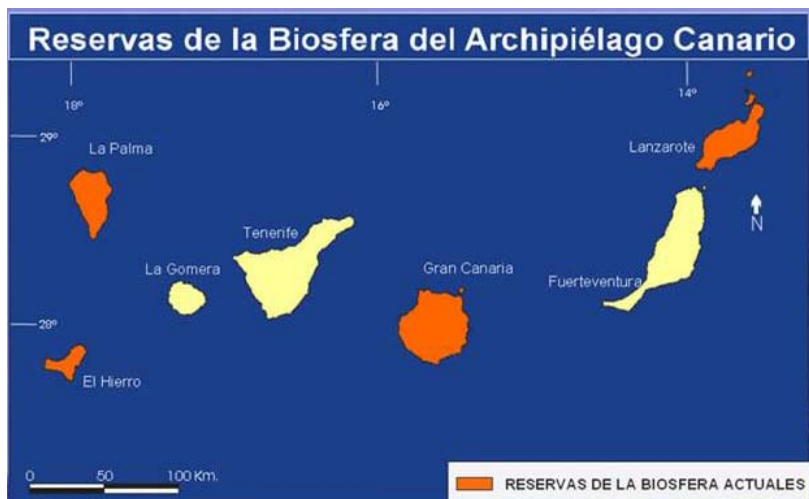
The Executive Board

The Canary Islands

I would now like to say a little about the Canary Islands. These are an Autonomous Region, of which there are a total of 17 in Spain. The area is 7447 km², and the human population is 2 million. The Region is only 1.5% of the total area of Spain, and has 280 inhabitants per km² (the 8th highest density in the country). There are 10 million tourist visitors per year.

The islands are bounded by the co-ordinates: 27°38' N - 29°24' N; 18°09' W - 13° 19' W. The distance to the coast of mainland Spain is 1000 km.





The Canary Islands archipelago has four Biosphere Reserves.

The Canaries are volcanic islands, with the highest peak at 3718m. They are subtropical, with a mild climate, due to the NE trade winds. They are in the proximity of the upwelling area off the African coast, leading to rich pelagic fisheries. The ocean water is colder than expected, because of the south-bound Canaries Current. There are Saharan dust episodes crossing the Atlantic (known as *Calima* - see satellite image below), leading to health issues).



In terms of biodiversity, the Canary Islands hold 17,893 recorded species, of which 3,736 are endemic. 12,661 are terrestrial (T) and 5,231 marine (M).

Fauna include: 7,939 Arthropods (6,843 T & 1,096 M) (5,668 of these are Insects); 1,416 Molluscs (246 T & 1,170 M); and 840 Vertebrates (including 686 fish and 19 reptiles).

Flora include 50% of the endemic taxa of vascular flora in Spain. There are: 1935 known species of vascular plants (>511 are endemic); 63 of ferns (2 endemic); 468 algae (30 endemic); 1294 lichen

(26 endemic); 464 bryophytes (10 endemic); and 1634 fungi (100 endemic).

Two species have recovery plans: *Gallotia simonyi machadoi*; and



Chlamydotis undulata fuertaventurae; and 12 species have conservation programmes

(including *Fringilla teydea*).



70 spp. of flora and 17 spp. of fauna are in danger of extinction; a further 1 of flora and 6 of fauna

sensitive to habitat alteration; 16 of fauna Vulnerable; and 61 of fauna of special interest. Invasive species include 1434 spp. of flora and fauna.

Why NET-BIOME is important for the Canary Islands

NET-BIOME provides a mechanism to project to the outside the biodiversity values of the region(s) as a European value. Many ORs and OCTs together have greater value than individually. We become a global perspective, and hence have a better presence worldwide.

We can use this global value to obtain help in our local, regional or territorial responsibilities. Each region or territory is responsible for caring about its biodiversity, including conservation, promotion and research studies. However, if we coordinate among ourselves, we will give it an added value.

In the same way you have a UKOT linkage through the UKOTCF, it is also vital to coordinate with other countries to enhance our joint presence internationally. We believe it is a projection from the regions and territories outwards; we need to be visible to be recognised!

Discussion

We are grateful to Steve Cheeseman for taking a note of this session. These notes have been consolidated below into the structure that they fell most naturally.

Information Management Tools and Databases

Alan Mills had suggested that information management tools should be of use to various agencies, in an integrated manner for all users, but with a simplified interface developed for non-specialist users. In the light of the number of systems being used in UKOTs, the question was posed as to whether there is a capacity for cross-support using shared expertise. It was felt that this would be a good way forward. What would help would be regular or planned opportunities (such as a workshop or conference) where data and ideas could be exchanged.

Modelling was mentioned as a tool for specialist tasks, but this might be something which many UKOTs currently did not have either the human or financial resources to deal with. However, its value, for example regarding sea-level rise, was acknowledged. However, any modelling system would need good original data, and this might also be lacking for many UKOTs.

A particular point was made about the paucity of information on insects, both baseline data and surveys. Some studies had been done. For example the Darwin Initiative project work from 2000 onwards in TCI, which UKOTCF had managed, had included insect survey, but only four weeks of intensive work. This information was available on the UKOTCF website.

There was also masses of data locked away in museums, but resources were needed to make this information available. Therefore, two elements of work were needed, collating and making accessible existing information, and also new surveys. It was agreed that this was a very important area, and funding for this work should be sought.

A request was also made that an inventory of existing databases for the UKOTs should be compiled, as these could also provide a basis for further research, and would fit well within the UKOTCF web-database approach.

Pooling expertise – widening the partnership and opportunities through NET-BIOME

The NET-BIOME project was another important development geared towards sharing information, as well as investigating joint fund-raising. In this regard, it was asked whether NET-BIOME was likely to be in a position to make a contribution to the Conference of the Parties for the Convention on Biodiversity in 2010. This is something which NET-BIOME will be discussing.

Several questions were asked of the database which NET-BIOME is developing. There were some concerns about how up-to-date the information was, and a general feeling of uncertainty about the value of entering data. Some people had experienced problems with the website, and needed assurance that this had been sorted out before they tried to enter further data. NET-BIOME representatives explained that they too had been concerned about this, and the matter had already been addressed. This would be followed up further with the NET-BIOME website manager.

It was explained that staffing problems had caused these difficulties, but these had been rectified. The point was made that this was a ground-breaking project and, like all such new initiatives involving many partners, there had been teething problems. However, this project had real prospects of obtaining more and longer term funding for UKOTs (and other OCTs and ORs), and should therefore be supported. Participants were encouraged to support and contribute to the database.

It was agreed that the NET-BIOME concept is very good, but would benefit from some clarification of its purposes. Those seeking further clarification were initially referred back to the presentation by Marimar Villagarcia, but one purpose noted was that it joined all OCTs and ORs together, with the aim of securing funding from various sources to support needed biodiversity research. In answer to a follow-up question about whether NET-BIOME would be able to fund individual projects in UKOTs, it was explained that NET-BIOME's initial purpose was to create a working group with a long life, and it did indeed involve a leap of faith, and there were difficulties to overcome. However, it presented a real opportunity for long-term funding, and should be supported.

A question was raised on the representation from the UKOTs in steering the NET-BIOME project. In answer, reference was made to the articles on the project in *Forum News*. To summarise these, it was explained that this project had been initiated by the French ORs, bringing in other ORs. They had found, at a very late stage, that they could expand it to include the OCTs. UKOTCF had been approached, and had advised the project to approach the UKOTs individually. However, the EU deadlines had not allowed this, and the project had asked UKOTCF to provide that link. This was not ideal, and UKOTCF was reluctant to accept, as it expected criticism - which it has certainly received. However, if UKOTCF had not been prepared to do this, then UKOTs would have been excluded. The choice was not between using UKOTCF or the UKOTs directly, but between using UKOTCF or having no potential involvement of the UKOTs. It was the only option at the time to get UKOTs involved in this important project. Throughout, UKOTCF has tried to make the links to the UKOTs work, for example through contacts with UKOTA, involvement (at their suggestion) of Gerard Gray from Montserrat on the NET-BIOME Advisory Board, many communication from UKOTCF and as many requests for input as was thought reasonable to impose on busy people in the UKOTs.



Participants in this discussion session

Section 11: UK Minister's speech and Conference closing

As noted in the introduction to Section 10, for timetabling reasons concerned with the Minister's flights, the first part of the Section reported here took place between the sessions of Section 10, and the second part after that Session.

The Session started with brief summaries of the preceding sessions, emphasising the conclusions. These are given in the introductory section of these proceedings. These were followed by the presentation of the conference statement (below), which conference participants had decided the previous afternoon to develop.

Mr Huw Irranca-Davies MP (Minister for the Natural and Marine Environment, Wildlife and Rural Affairs, UK Government) then gave his address. He then kindly continued through part of the lunch break to answer questions, with the support of officials from Defra, FCO and DFID. The Minister's speech and the ensuing discussion is included below.

The final session started by some of the student participants giving their individual impressions of the Conference, maintaining a tradition started at the preceding conference in Jersey. This was followed by UKOTCF's Chairman, Mike Pienkowski, closing the conference, with thanks to those who had helped make it happen. This was followed by the marine ecosystems visit by boat, on the way to the closing dinner.



From left: Mr Eric Blencowe (Head, Biodiversity Policy Unit, Defra), Mr Huw Irranca-Davies (UK Minister for the Natural and Marine Environment, Wildlife and Rural Affairs, Defra), and Dr Mike Pienkowski (UKOTCF Chairman).

(Photographs of conference participants in this section by Thomas Hadjikyriakou unless otherwise indicated)

Statement agreed by conference participants

Statement to Huw Irranca-Davies MP, UK Minister for the Natural and Marine Environment, Wildlife and Rural Affairs

This statement comes from the conference, “Making the Right Connections”, on conservation in UK Overseas Territories, Crown Dependencies and other small island communities, Grand Cayman, 30th May to 5th June 2009.

The conference warmly welcomes the presence of a UK biodiversity minister for the first time at a conference on conservation in the UK Overseas Territories and Crown Dependencies, which we anticipate as a sign of a deepening commitment to the UK Overseas Territories and Crown Dependencies.

The vast majority of the unique biodiversity for which the UK is responsible is found in the UK Overseas Territories. Indeed, the UK Overseas Territories are the key to HMG meeting many of its international environmental treaty obligations. We note the Commitments made under the Environment Charters, which the UK Overseas Territories are striving to implement.

We applaud the recent recommendations from the House of Commons Foreign Affairs and Environmental Audit Committees.

We appreciate valuable assistance already received from the UK Government.

However, in line with the recommendations of the parliamentary select committees, we urge HMG:

- to recognise and deliver its own Commitments to the UK Overseas Territories under the Environment Charters;
- to identify a lead department for environmental conservation in the UK Overseas Territories and Crown Dependencies; and
- to provide dedicated resources in order to enable sustained programmes that address pressing conservation needs.

We are committed to continue working together to achieve the highest level of environmental conservation in the UK Overseas Territories and Crown Dependencies.

These concerns come from those participants who are representatives of Territory and UK NGOs, technical personnel of Territory Government Departments, and other delegates.

Grand Cayman, 4th June 2009



The conference listens to the Minister's speech.

Speech by Huw Irranca-Davies at the UKOTCF Conference on Biodiversity in the UK's Overseas Territories and Crown Dependencies: Making the Right Connections: Thursday 4th June 2009



I am delighted to be here to attend this conference, and to meet so many people from regions of the world that are often so distant from the UK, but so close to so many of our hearts and minds. I want to assure you, by my presence and by my words today, that you are never far from our thoughts and actions

We've come a long way from London. I don't mean the thousands of miles travelled. The first such conference – this is the fifth – was in London in 1999. Since then we've seen considerable progress in some areas, and you'll have heard Eric [Blencowe]¹ expounding about the Gyps vulture and human-elephant conflict. But these don't have anything to do with small islands, and it's here

¹ Items in square parentheses [] have been inserted (with permission) to clarify a few items for a wider audience and to refer to a section (on joined-up-ness) where the Minister added to his speech as drafted.

where it's more difficult to identify such clear examples of progress. And we need to do so. [The project here in Cayman]¹, "In Ivan's Wake", is an example, and I saw the evidence for myself yesterday. But there needs to be more.

So here we are again, joined together again to chart progress, to roll out those charts and map the way ahead.

I understand that this is the first time a Defra Minister has attended the conference, and so it is an honour for me to be the Minister doing so, especially on such a beautiful island with so much biodiversity here. I am also very grateful to the organisers, both here on Grand Cayman and in the UK Overseas Territories Conservation Forum, for all the arrangements that have made my attendance possible, and for the immense hospitality and kindness shown in my short but busy visit.

This is also an island and a region which itself encapsulates the raging debate over how best to conserve the best, how to keep beauty beautiful, to protect biodiversity in all its myriad diversity. The UK's Overseas Territories collectively host the most precious, endangered and unique biodiversity to which the UK can lay claim. So halting the loss of biodiversity is of particular importance to us and it represents one of the greatest challenges we face today. Globally 10-30% of all mammals, birds and amphibians are currently threatened with extinction. Over the past 50 years humans have changed ecosystems faster and more extensively than in any period in human history resulting in a substantial and largely irreversible loss in the diversity of life on Earth. And it has been projected that we could lose a further 11% of biodiversity on land worldwide between 2000 and 2050. More than a tenth of biodiversity to disappear in the next 40 years!

We cannot let this happen. Biodiversity is important not just because we value it - and the membership numbers of wildlife groups, as well as attendance at this conference are testament to that - but because we depend on it for our survival. It matters not as a fringe issue for polite discussion at

dinner parties or on the academic campus. It matters for its own sake, but for our sake too.

Not only do the myriad of species that make up life on earth have intrinsic value. But together in their habitats they provide us with the very essentials of life. They supply food and fuel, clean our air and water, and help regulate our climate. In short they provide us with a huge range of services - ecosystem services - on which our well being and livelihoods as humanity depend.

One quote you will have heard before sums this up: 'Biodiversity is not the luxury of the rich; it is the treasury of the poor.' The richness of healthy and abundant biodiversity is a treasure trove for all, but once gone, once squandered, there is no bringing it back.

Properly valuing the contribution of environmental resources to the economy is vital. I am pleased to say there is a lot of work underway in this area. At the forefront is Pavan Sukhdev's work on The Economics of Ecosystems and Biodiversity which we are proud to support, among other ways by giving one hundred thousand pounds last year to assist with funding the study. It has real value, and often real scarcity. But unlike a global economic crisis where one solution is quantitative easing - the printing of money in my non-economist terms - you can't reproduce nature when it's gone. There is no National Bank for nature. We have to treasure it now; give it value.

Of course all this illustrates that it is more important than ever for us to halt the current rate of biodiversity loss. At a global level. At a regional level. And at a national level.

And at this level the Government remains fully committed to taking action to address the loss of biodiversity both in metropolitan UK and in our Overseas Territories.

But what are we doing about it?

The UK Government agrees that more effective and better integrated support is needed for the UK's Overseas Territories in order to halt the loss of their biodiversity. Although environmental management of the Overseas Territories is principally and rightly the responsibility of the individual Territories, we recognise that many of the Territories do not have the sufficient financial or personnel capacity to ensure the protection and

safeguarding of the local environment and therefore need support.

My Department has committed a further two hundred thousand pounds to biodiversity in the Overseas Territories in 2008/09, to fund baseline survey work, enhance research capacity in the Territories, and support small conservation projects identified as priorities by Territory governments. This adds to the extra funding of fifty thousand pounds Defra had already committed for 2008/09 through the Flagship Species Fund, the added priority given to the Overseas Territories under the Darwin Initiative (and I shall turn to this in a moment), the extension of Defra's commitment to give extra support through the Agreement on the Conservation of Albatrosses and Petrels, amounting to twenty thousand pounds, and Defra's continuing funding through JNCC, which came to two hundred thousand pounds in the year 2008-2009.

Funding from FCO and DfID continues through the Overseas Territories Environment Programme (OTEP). OTEP supports the implementation of the Environment Charters, and environmental management more generally, in the UK Overseas Territories, but has tended to focus on biodiversity conservation given the Territories' significance for biodiversity. FCO and DfID have each committed £3m to OTEP for the period 2004-10, and they are committed to continuing their support.

By the way, DFID are also providing three hundred thousand pounds for Caribbean Overseas Territories to participate in a regional climate-change adaptation programme.

In addition, we established the Inter-Departmental Ministerial Group on biodiversity (IDMGB) in 2004, which comprises Ministers from DEFRA, FCO and DfID and the chair of the Joint Nature Conservation Committee (JNCC); in addition, Ministers from other Government Departments can be invited for specific matters. While the Group's remit covers international biodiversity as a whole, biodiversity conservation in the Overseas Territories is currently its main focus as we saw in its most recent meeting only 3 weeks ago.

Through the IDMGB the Government is developing a strategy for biodiversity conservation in the Overseas Territories, building on a recent assessment of priorities for biodiversity conservation action carried out by JNCC and a similar assessment carried out by RSPB. This strategy will need to be

underpinned by an urgent analysis of the costs – as well as the benefits – it would bring, together with confirmation of priorities for immediate action.

In short, joined up cross Government support for Overseas Territories is a reality.

We will also consider the potential to tap into other funding streams - both governmental and non-governmental – to help support biodiversity conservation in the Overseas Territories. DfID has provided JNCC with funding of thirty-five thousand pounds to investigate alternative sources of funding for environmental management in the Overseas Territories. This is expected to conclude in the summer. But there needs to be an holistic approach for each of the Territories, taking account of their diversity, needs, wishes and own identified priorities, as well as the availability of funding.

There is a need for more comprehensive information on the status of ecosystems, as well as current and future threats, in the Overseas Territories. Baseline environmental information is available for all the Territories but the scope and quality of this information is variable, and in many cases it falls short of a full ecosystem assessment. Data on the marine environment is often poor. The most important gaps in data have been identified as part of JNCC's recent assessment of priorities for conservation action in the Overseas Territories. This assessment will guide future work. And we have provided a quarter of a million pounds towards this research.

We must also recall the important initiative of the European Commission, in following up the IUCN's landmark conference in Réunion last summer, bringing together all the European Union's Overseas Countries and Territories and Outermost Regions to discuss the issue of climate change and biodiversity in the context of these states. I think all who attended that conference, no matter where they came from, realised that on these issues we share a common goal. We must conserve our biodiversity and we must look at ways of mitigating and adapting to the effects of climate change. In this year where we commemorate the birth of that pre-eminent evolutionist Charles Darwin, and the publication of the *Origin of Species*, it is right to remember he wrote, with incredible foresight: "It is not the strongest of species that survives, nor the most intelligent. Rather, it is the one that is most adaptable to change."

The Caribbean Overseas Territories have borne

personal and traumatic witness to an increase in tropical storms; but also to temperature fluctuations, and erratic rainfall. All of these have had dramatic effects on the local environment. The autumn of 2005 when the Caribbean experienced one of the most devastating coral-bleaching events on record while hurricanes battered the Gulf of Mexico is still raw in the collective memory of the people, and the region, and the world.

Since the conference the European Commission has been developing a possible light-touch system whereby OCTs and ORs may obtain a more streamlined access to EU funding. It's early days but the BEST system (Biodiversity and Ecosystem Services in the Overseas Territories) may provide significant support for the future.

I've already given a name-drop to Charles Darwin. I think he'd be proud of what we're doing with the Darwin Initiative. The Darwin Initiative is a significant component of our international conservation work. By providing funding to support the collaboration between biodiversity experts in the UK and local partners in developing countries, as well as in our Overseas Territories, it helps countries rich in wildlife but poor in financial resources take conservation action.

I have had the opportunity to see the benefits of the Darwin Initiative here. [Many Darwin projects provide examples, at the on-the-ground project scale of joined-up-ness – and, at a policy level, Departments are actively working in the same direction.] 1 The Botanic park in particular has proved to be a paragon of the principles of the Darwin Initiative, especially in that it has been used by other small islands as an exemplar for them to use in developing their own Biodiversity Strategies and Action Plans.

The Darwin Initiative must count as one of the most successful initiatives that my Department has in its portfolio. And it is a major source of pride for me, the staff involved and the wider Darwin community, and as I said before, probably Charles Darwin is looking down on us here and smiling. Since its launch in 1992 the Darwin Initiative has committed more than seventy million pounds to over 640 projects in more than 140 countries. In that time it has committed over one point five million pounds towards projects in the Overseas Territories.

Results for the latest funding round were announced by Hilary Benn when he was in Nairobi in

February for the UNEP Governing Council. At that time he announced that forty-three projects across the developing world will receive over eight million pounds over the next three years- two of the projects are in our Overseas Territories.

The first project is a so-called main project – lasting three years from this year. It aims at building civil society capacity for participation in biodiversity conservation in the Territories. It is a joint project across Anguilla, Bermuda, the British Virgin Islands, here in Cayman, Montserrat, and Turks and Caicos. I think it's really appropriate to the substance of this conference, too, as it will really aim to "make the right connections".

And, like the former Cayman Project "In Ivan's Wake" the Darwin project I visited yesterday, I hope that this new project will be successful and provide material for other countries in the Caribbean and further afield to use.

The second project is a so-called "post-project". Building on previous Darwin projects in the Centre Hills in Montserrat, it aims to set up a sustainable, locally managed programme to minimise the destructive impacts of feral livestock in and around the Centre Hills. The final components of this year's funding round comprise twenty-five new scoping award grants, to support the development of future Darwin Initiative applications. Three of these are in our Overseas Territories. These are going to take place in Bermuda, St Helena and the Falkland Islands. It's difficult to imagine a wider scope of work being considered here.

And we are also funding four new fellowship awards, to further the development of the most promising project members in developing countries. Together these grants total over 135,000 pounds.

I have decided that Darwin funding for conservation projects in the UK Overseas Territories should account for a much larger proportion of the annual Darwin budget of seven million pounds, to reflect the importance we ascribe to biodiversity in our Overseas Territories.

But, regardless of all this good news, I wouldn't want to have come all the way here today without anything new to say.

So I am very pleased to announce here today, that when I bring forward the new round of Darwin funding, Round 17, which I hope to do later this

month, I shall also announce that Round 17 will see potentially over one-and-a-half million pounds being earmarked for Darwin projects in the Overseas Territories.

I shall also announce the creation of a new Overseas Territories Challenge Fund within the Darwin Initiative. This fund will be devoted to projects designed to prepare for main projects. But they will be much more than the so-called Scoping Projects already under Darwin, which last for only weeks and have a ceiling cost of three thousand pounds. And they will be just for Overseas Territories. The Challenge Fund will enable new projects to develop over a longer timescale, and commit a much larger amount of money, and probably around twenty-five thousand pounds for each project.

The Fund is intended actively to recognise the specific geographic and resource constraints affecting the UK's Overseas Territories. It is also aimed at giving Overseas Territories the best chance to secure a significant share of the substantial funding available under the Darwin Initiative.

And this is a Challenge Fund, because the challenge is now yours, to develop the project proposals and relationships with UK institutions in order to access this fund.

Beyond Darwin, our international work is focussed around the major biodiversity conventions. 2010 will see the formal assessment of whether the global and EU targets to reduce and halt the loss of biodiversity have been met. All countries, including the UK, have recently been preparing their reports to the Convention on Biological Diversity which meets in its tenth conference of the Parties next year, setting out actions taken and progress made. We submitted our report, into which many of you provided valuable input, just two weeks ago, and it has now been published on the CBD website.

We must continue to play a proactive role internationally - through the Darwin Initiative and our work around the major biodiversity conventions. The next Darwin funding round will be announced later this month, and this will continue to enhance our contribution to biodiversity work in countries where it is most needed, but where the available resources are insufficient to address the issues involved. And, as I've just made clear, this will include greater emphasis on welcoming proposals from our Overseas Territories.

The next critical issue is to secure a new global biodiversity target post 2010. This may take the form of a new target, or possibly a framework incorporating a series of targets. But what is important is that the momentum generated by the current target is not lost at the end of 2010, and that we redouble our efforts to achieve a halt in biodiversity loss.

International agreement on a successor to the 2010 biodiversity target must be secured. The existing target has galvanised action across the world by Governments and NGOs to tackle the most urgent problems. We cannot afford to lose this momentum and must all redouble our efforts to achieve a halt in biodiversity loss.

It is clear that further progress is essential. We are committed to taking action to achieve this. We

recognise the challenge, and the consequences if we fail are great. We believe our approach to international biodiversity work, including the Darwin Initiative, is making a significant contribution to biodiversity conservation abroad and in the UK. But overall there is still much more to do. Agreement to a post 2010 target should represent a call to arms to redouble our efforts at home and abroad to this end.

In closing, I would make reference to John Muir, the naturalist, writer and conservationist, who said: "When we try to pick out anything by itself, we find it hitched to everything else in the Universe." We have to recognise that the challenges you face are challenges that are common to us all.

Thank you.



*(Photo:
Dr Colin Clubbe)*

Discussion

Dr Mike Pienkowski (MWP): Well, thank you very much indeed Minister. Obviously, thank you personally for taking the time in a busy schedule to come - which is much appreciated - and also for the signal that it gives.

I am sure that everybody here will be particularly pleased with the comments you have made on many aspects. I suspect that they will be particularly drawn to those in relation to the very interesting announcements about Darwin, including the ear-marking and related measures there, as well as the commitments from your fellow departments to maintain the OTEP programme. These are excellent. I am sure we all look forward very much to working with you on these aspects, particularly relating to the targets after 2010. The Territories will clearly be a most important component of the UK's involvement in this respect. I don't want to hog the time, much as I would love to; I think this is a chance for people to ask the Minister and his colleagues questions, so the floor is open.

Andrew Casebow: Firstly, thank you very much for coming. I am Andrew Casebow from the Channel Islands, so actually I'm not directly affected by the funding arrangements that you were talking about. I was just wondering, to get things started, how do you, in a time of very difficult funding for almost everything, not only set the priorities, but actually say, well it can be £25,000 for this? These seem quite small amounts of money, but very useful.

Minister: It's a very good question because we all know that we have globally limited resources, and we are never going to have everything that we want. So, it is a question of making what we have got go furthest, certainly within the UK. I've seen in other fields now that we have great deal of expertise in making our own judgements on where, in crude terms, you get the biggest value for your buck. Also, we have international obligations that we need to satisfy; we are very keenly aware of these in the territories where actions can impact very significantly on biodiversity loss and turn it round. In the UK mainland, with issues such as what do we do to counter biodiversity loss through set-aside, we are able to define and monitor this with bird indices and so on. Important as these are, I feel a big case can be done in the Overseas Territories as well. So I have, if you like, ministerially in the back of my mind, a set of targets that help

me in setting my priorities. That's important to the scientific community and the NGOs, and we have very strong relationships. Not only with JNCC and the agencies like that, but also the RSPB, the Forum and others, who had important points as well. But I have to say - and I make this point quite deliberately - that it is imperative that the priorities are shared with you yourselves. It has to be determined by the capacity on the ground to deliver projects. Building up capacity sometimes provides worthwhile projects within themselves. It has to be determined by the network on the ground and also by the local government. I have seen here in the Caymans in a short few days, the immense body of local knowledge that there is here. So, there is a wide range that we can turn into priorities and, in terms of the Darwin Initiative itself, a significant source of funding, I am glad to say, as a Minister, I have no direct input into granting decisions for that; that is done by a panel of experts with a wide range of expertise. It's one of the jobs that can be influenced from yourselves as well.

Rob Thomas: Rob Thomas, from the Royal Zoological Society of Scotland, although I am half Welsh, you will be pleased to know. I particularly applaud the ring-fencing of the Darwin Initiative. I think that is very important indeed. But I have also been intrigued as to any decisions in terms of the eligibility of territory-based organisations to apply directly to the Darwin funding, rather than go through a UK institution

Minister: I'm conferring with my friend - it's like *University Challenge*. I am told by Eric that we have the ability to consider direct applications as well, should the Minister decide. Eric?

Eric Blencoe, Defra (EB): There is absolutely no reason why you shouldn't so decide on this Minister. If I may, just to come back to one point about ring-fencing. We deliberately did not use the word ring-fencing; we used the word ear-marking. The purpose of that is what I call a sort of osmotic wall. This is because the projects will be considered at the same meetings as general Darwin projects so, if we don't have enough appropriate UKOT projects, then the money can be reabsorbed. Otherwise, of course, the risk is that we might have to surrender it. That's why we will not be ring-fencing it, only ear-marking. But it's just a fine point of detail.

Minister: Yes. And on that point, it is also important that we use this time from the starting point today, to make sure we have the quality of projects and proposals coming forward. That's the important thing.

Mark July: Minister, I am very interested in the proposal to ask the JNCC to produce a biodiversity strategy for the collective UKOTs, which I think you referred to. I wonder if you see this as a really important opportunity for the subject to draw in the governments of these UKOTs, not just the environment departments, but to use the exercise to really engage in a two-way process, with the senior government members of all the UKOTs in a matter of this importance.

Minister: Yes, thank you. This is actually making quite a lot of progress already, and it is essentially an internally driven. It emanated out of the Interdepartmental Group on Biodiversity, so its very much an HMG-driven one. It doesn't go to the extent of actually sitting down with all the governments of the Overseas Territories, although I take your point in that there is an issue here of trying to inform the agenda politically as well. But this isn't the actual vehicle to do that. What this report will do is give a quite evidence-based analysis to Ministers and to decision-makers about how we should take forward biodiversity. Stripping out the elements of politics - and there is sometimes a good reason to do that - that will allow us the stepping-stone then for myself to come forward with further proposals on the back of that report. And it is quite imminent, we are looking at within weeks, in the summer. So it's almost upon us. It's not the right vehicle for what you suggested, but I do see it as a stepping-stone to advance on the evidence-based case how we need to progress in the overseas territories.

Darren Christie: I was very heartened to hear the recognition from the Minister as to the value of the Overseas Territories. I think that's fantastic. I am also very heartened to hear about the new Challenge Fund, I think that's a real step in the right direction. My concerns arise, however, because there seems to be a real discrepancy between the actual sums of money needed to tackle some of the projects which have been identified in the territories and what is actually available and provided by the UK Government. Providing as an example, the £2½ million roughly that is required to on Gough Island to deal with the introduced mice, it seems there is no real avenue for getting those large sums of money. I come from the Government of South

Georgia. Some of the projects we are looking at in South Georgia would require tens or twenties of millions of pounds to do, and I wonder if there is any comment on where we can turn for those kinds of sums of money.

Minister: Yes, thank you. It's a good point. Some of the discussions that we have been having around the fringes of the conference here, and I think touched upon in some of the themes within the statement which Gina just spoke upon, address the issue of how much HMG provides, not only in terms of project funding, but in terms of longer term funding, and how much should be the role and responsibility of the Overseas Territories governments. (When I say HMG, this is HMG collectively, because it is not only Defra; there is significant funding coming from DFID and FCO as well, through OTEP funding and elsewhere.) Now that's an interesting question, because you and I know that one cannot get away from the fact that there are different capacity in different Overseas Territories to deliver resources. But what I would say in response is that we are collectively setting the agenda around biodiversity, knowing how far we have to go. The project funding that we give clearly delivers, for a relatively small amount of money, quite significant impacts on the ground. Mention was made earlier on of the blue iguana project. What's notable about that is it developed a momentum of its own. And it developed a momentum that goes way beyond the iguana, important as that is. It takes it into preservation of a large tract of habitat and potentially other species, but also changes the whole political climate and possibly the legislative climate that underpins it. I think that's a good example of where, from an HMG perspective, I would like to see, recognising the differences between UKOTs and their capacity to deliver funding and resources, with our support, with Kew Gardens, with JNCC, the Forum and others, getting directly involved: that they take on the long-term ownership of this, because it is a collective issue. We will never back away, because we know how much needs to be done. But I honestly think, and this is perhaps a political ideology I have as well as where I speak in the department, that you can get governments across all areas to step up to the mark and pitch in, small or large, to a greater or lesser extent, the fact becomes clear that they own it - and, not only the government but the fact that the private sector values it is important because, when we talk about conservation, sometimes it becomes conservation versus developers. Actually, I take the Marine Bill that was mentioned earlier on. The

new Marine Bill in the UK is predicated on the idea that you bring people together and get them to own not only the problem but the solution to the problem. So, it's not only about what the territorial governments put in, but also what the private sector put in, what can be brought in with expertise and funding from NGOs and other organisations out there as well. But that doesn't walk away from our commitment. Our commitment, as I hope I made clear for all Departments, is there and it is long standing. But we want to work with governments in order to encourage governments as well, to take this on themselves.

MWP: Thank you Minister. While we are moving on to the next questioner, perhaps I can ask you a question. As you will be aware, our UK Overseas Territories Conservation Forum is, at base, a federation of NGOs in the territories and those supporting them, although through its activities, like this conference, obviously we are trying to serve everybody, governmental and non-governmental - we are non discriminatory in that regard. Also, I reflect that one of the core values in the Environment Charters, and indeed many related things, is about inclusiveness and civil society and so on. I may have misunderstood slightly but I thought there was an allusion to most of the reviews of needs being governmentally based. I hope there will be a place for our UKOTCF network that we can pull together to be able to contribute to that

Minster: Yes, absolutely. It's a very straight yes.

MWP: I am most impressed to get a 'yes' from a politician in such a clear way. Thank you, sir.

Joseph Smith-Abbott: Building on the point that was made just before, I think that there is an issue that we need at some point to address, which is the issue of large-scale funding available to the overseas territories over and above what may be perhaps available both UK from our local governments because of the fact that these are restricted. We are hindered from approaching international finance, such as Global Environment Facility funding. Such funding would allow for some of these larger types of activities that clearly are required, and which will be identified by any reasonable review of priorities in discussion with various sectors of our communities. There is a need for the implementation of larger scale, and certainly capital-intensive activities, that clearly may be beyond the scope of what our local governments are able to achieve with some of their funding

resources. We have tried to access these international programmes, when we have been told that we should have access at least to their small grants programme. However, because of our status as UKOTs, we were told that we cannot access them. Eventually, it was made clear that, in practice, even small and medium sized, and certainly the large-scale, international funding schemes are not available to us in UKOTs, even though HMG is a major contributor to these funds. So I think there is a gap when it comes to implementing much broader, larger scale project activities.

Minister: Thank you very much for that question. This is very much why the JNCC project looking at additional sources of funding was set up, to try and identify where funding can be pulled together to deal with quite very different circumstances on the ground. OTEP funding is still out there; the flagship species fund is still out there. But, we are very keen to continue to work with you to try and identify additional sources of funding, and perhaps JNCC will identify some ways forward on this. That analysis will be coming forward sometime in the summer. So, hopefully, it could be of help to you.

Mat Cottam: Can I just start by saying it's great news to hear about the earmarking of funds for the UKOTs. That is something that was mooted, or wished for, earlier in the week, when we had discussions, by several people. However, even if those funds are earmarked, at the end of the day, we as individual UKOTs will still be competing against each other for those funds. So, we will be in a position that, on the ground, the most biodiverse parts of the UK will be competing with each other for this limited pot. This might be a very dim question, but I don't know how things work in the high levels of government, how all these departments and organisations join together. Is there any mechanism for reporting 'bang for the buck' that those ring-fenced funds might return to the UK, and to compare them with the 'bang for the buck' that similar initiatives actually within the UK bring back, as for as biodiversity preservation goes. If the UKOTs do turn out to be good 'bang for the buck', which I think they probably will, would there be any sort of mechanism that might move more funds to where they make the most difference.

Minister: I have spoken too long. Like any magician, I've got three glamorous assistants along beside me. I am going to pass this to Eric.

EB: A few points there, I think. On the last point first, I think it is pretty clear to us, having been here this week, and having seen the projects yesterday that the Overseas Territories deliver a 'bang for the buck', similar to what they deliver in developing countries, in the sense that they deliver a hell of a lot more than what was put in. I would strongly suspect that domestic UK projects don't deliver as much because of the costs involved and so on. But I don't know. And the two budgets are entirely separated. So, I think when we are looking at the national budget or international funds that we do provide, that's it really; we are not really going to be able to increase them at the moment. What we are trying to do is to make sure that they stay as they are, and are secured for as long as possible in the current climate.

Now, turning to the point on overseas territories competing with one another: in one sense, it's not overseas territories competing; it's actually project leaders. I accept the point that some come from stronger overseas territories, and some come from less well resourced overseas territories, but there are various options. There is a project that is just starting now, with Sarah Mackintosh dealing with it, and involving five overseas territories together for capacity building. There is no reason why other

regional projects shouldn't continue; in fact they probably are, under different funding streams. But also, just because there is this ear-marking doesn't mean to say that project leaders from the overseas territories can't apply for the other side of Darwin Funding, the main project funding. Were we to get an enormous number of very high quality proposals, then we would probably end up not funding very many in the developing countries at all. Then we would be asking ourselves why we have set up this discrete fund because all the Darwin Fund is being used in overseas territories. So, in a sense, they can compete against all of the projects, as well as having their own earmarked section. I hope that helps.

Anna Ballance (DFID): I just wanted to add a couple of points about less project-based funds. I want to point out that, for the Territories which receive budgetary aid from DFID, that can be used as another source of funding for ongoing work: for capacity, or for postings. It's up to the territory themselves to set priorities. If there is environmental work that can be included into their core budget, that's another vehicle for some longer term funding. There is also EU funding, both thematic and development funding. The South Atlantic Invasive Species project is a really good example of



From left: Ms Anna Ballance (DFID), Ms Heather Christie (FCO), Mr Eric Blencowe (Defra), Dr Mike Pienkowski (UKOTCF) and Minister Mr Huw Irranca-Davies MP

using EU funding to get regional projects on a high priority issue. It's been really successful. Just one other point about capacity, because I think somebody mentioned earlier volunteers to fill capacity gaps: DFID is working with the voluntary service overseas (VSO) to try to establish a programme of support matching VSO volunteers with posts in territories.

Paul Keetch (Member of Parliament for Hereford): Huw, I couldn't let this go because, as a friend of this organisation, I thank you for coming and thank you for the announcement. It is very well received, I am sure. I would not want you to go away without the memory, as I know you have, that one of the biggest threats to the environment in the Overseas Territories comes from human development. It comes from developments like the one we are sitting in now. And very often they rip up mangrove swamps and allow other development in the marine habitat. But it is human-led. Now, in many of the territories, environmental impact assessments are not required; they are not mandatory. Indeed, in some of the territories, as we know, developments occur as a result of blatant corruption. I appreciate it is not directly in your line of view but the reality is that, unless we actually impose - if necessary from London - on some of the territories the need to look at the environment when development happens, then we will continue to lose very very important parts of these territories. The Chief Minister of Gibraltar said just yesterday that it was nothing to do with the UK what happens in the environment in Gibraltar. I am very glad to see here today that you have actually acknowledged that it is something to do with us and that we will take that responsibility very very seriously, and I am very pleased about that.

Minister: Thank you Paul. I take this seriously as well. This is, I have to say, part of a long process. It's not simply the politics of the moment. It is the chain that is required, both on a society level and a mental level, and also the legislation that underpins that as well. And we are still developing within the UK itself. We have some landmark legislation coming forward that's been sitting around for six years waiting to happen. But noticeably it was a significant manifesto commitment of at least a couple of the parties and we are now agreed on it, to take it forward, so it's a process. We have just had a session including the role of governors. I was a Wales Office Minister for quite some time, not to say that the Wales Office is in any way a colonial governor or anything like that! However, it was

interesting that the Wales Office very much portrayed itself as the voice of Wales in Westminster and the voice of Westminster in Wales. It does, sort of, cut both ways - and that is helpful in the sense of trying to encourage diplomatically and persuade. It is absolutely logical, as we see the increasing pressures on some of our most fragile habitats, to realise that, if you do it the right way, you can actually not only mitigate some of the environmental aspect but you can find compatible uses in some areas as well. It is a long business. There are areas that, you can have a virtual no-go on activities, and in some you can have other activities alongside each other.

Stephen Mendes: Good-day, I am Stephen Mendes from Montserrat. This is just a statement, really. On the joined-up Government scenario, I think that it would be wise if that could be put in place, because of our peculiar situation in that we are funded by DFID on both ends, both for biodiversity and also for physical development. It would be good if something at the administrative level in the UK is put in place to prevent conflict occurring between DFID, OTEP, and the Darwin Fund for biodiversity and other UK funding. In other words, these being severely impacted by development projects funded primarily by DFID which actually negate the biodiversity efforts and, in some cases, actually contravene current established legislation in the UKOT territory.

Minister: OK, thank you. That's a useful comment. Certainly the Interdepartmental Group, I think, is very much the way forward on that - when you have the minister from the FCO, from DFID, myself and others sitting down and working through these issues. I don't think it is a question of simply saying try and identify one individual minister or one department that should do everything. That can actually undermine some of the very good partnership work that does go on between different departments, and on the ground with NGOs and with territorial governments as well. It is a question, as you rightly point out, of every day of every week trying to improve how effective we are at joining up our thought processes, because certainly you will see examples where OTEP-funded projects have kicked into another gear on the back of Darwin money, and so on and so forth. Now, if we can get more thinking going like that, both on the ground and in Westminster, that would be a great help and we are very keen to do that.

MWP (after consulting the Minister): OK, I can

see three or four hands. We will be going to take a couple of extra minutes, so keep your questions as concise as you could please

Noeleen Smyth: I am representing here Pitcairn Island. Just thinking of the really small capacity of Pitcairn, even to apply for funds and do all the long term things, maybe small islands with small populations should have a special consideration as well, and maybe they shouldn't be put into the same pot for larger projects.

EB: Thanks Noeleen. I think this is where the partnership actually comes in with a UK institution. Obviously, as said earlier, this isn't absolutely necessary but, in the case of Pitcairn, probably is necessary, as happened before with other projects, and very successfully. But it is also an opportunity that you can use, particularly DFID and FCO and Defra contacts that you have to try to make better contact and assist further. Then, these UK institutions can do those jobs for you, e.g. applications, because they are very techie. My colleague (Heather Christie, FCO) is saying that is exactly what the Governor's Office did with Pitcairn before.

Chris Bates: Chris Bates, Tristan da Cunha. I must admit I was very concerned to hear the Minister refer to the involvement of the private sector in ambitions for work with biodiversity conservation. In our own case, on Tristan, great things are being achieved by partnerships between the three government departments, OTEP, and NGOs, in particular the RSPB. However, none of that is going to get away from the fact that huge sums of government money will be needed for projects such as the elimination of the so-called "supermice" on Gough Island, which threaten almost immediately the extinction of species such as the Tristan Albatross. I feel a sense of concern that, in the end, no government commitment to expenditure on the scale that is necessary is going to lead to an environmental disaster there, from which the world will not recover. Without wishing to sound alarmist, I would welcome the minister's comments and thoughts on that.

Minister: Involvement of the private sector, where appropriate, is absolutely imperative. It is horses for courses. There are going to be some areas, that we know of already, predominantly driven by either legislation or development funding, or collaborative funding and so on. But, in the long term, I have to say the ownership - and I say this quite unashamedly - the ownership of these problems

and these challenges that confront us, including over things like climate change and rising sea levels as well as biodiversity, have to be shared. If we leave it purely to the green lobby and government to get on with doing it, then it allows others to abdicate their common responsibility to it as well. And I say quite unashamedly from any platform that I am on. I have to say that. In some parts of the world and in some projects, we see cases where indeed the primary commercial centre is really on-board with this idea, because they see the benefits. They see the benefits, not only in terms of what it means to them their employees and so on, they see benefits as means for actually protecting their own businesses - whether it's sea invasion or alternatively from eradication of species that might actually be of benefit to them in future prosperity. Now, you know I sat in a meeting the other day with the representative from the chamber of commerce here, talking about issues on this island, talking about the possibility of the impending conservation legislation, and was absolutely amazed at the passion that was there to move ahead with this. So again, in that case you need, like the green NGOs, like some of the organisations here today, to also be putting those views strongly forward at every opportunity to keep people informed. So I am not saying that that is to the exclusion of all government; I am saying everybody has got a part to play in this.

[Short break in the record]

Question on funding of larger projects.

EB: ...for a period of a few years, we have begun to examine that. We don't even know actually who would do these projects, but you know it's not simple. In the current climate, you are not going to get what we would actually like to see, which would be a new fund for big projects. I mean that is what I would like to see, but it is not going to happen. We are going to have to hope that we can retain what we've got. So that is not a helpful response. I mean species are going extinct all the time. I would hate to see the loss of the Tristan Albatross or any of the others, having seen them myself. They are fantastic creatures; it would be awful. But there's not a simple answer to this question. So I am sorry I can't be more helpful than that.

MWP: The Minister has kindly said that he will take the two questions waiting provided, I say, that they are concise ones: but Sarah and then Iain.

Sarah Mackintosh: Yes: a quick question/comment. I am Sarah Mackintosh, from the Caribbean Natural Resources Institute, local partner in the Caribbean Darwin Initiative project, and therefore obviously very appreciative of, and excited about, this project. But I wanted to go back a little bit to the comment that Joseph Smith-Abbott made earlier about being in a limbo situation between where you can access funding. We also have regional projects on forests funded by the EU and FAO, but we can't include the Overseas Territories because their pots of money even within the EU and FAO are different. I do wonder whether there isn't the scope for two things. One would possibly be to have some earmarked funding (sort of matching funding) within UK government funding to enable UKOTs to participate in regional projects, because I think we would all benefit from that. The second would be for FCO or others who could make this case to some of the UN agencies, and the other financial agencies that are doing large projects in some of these regions, for Overseas Territories to be part of it. This would be on the grounds that, in many ways, issues of biodiversity, particularly marine biodiversity, don't respect political boundaries.

Ian Orr: Iain Orr on the UK Overseas Territories Conservation Forum Council. I wanted to mention, and to welcome particularly warmly, one other aspect of your address to us. That was your very strong emphasis on the UK presence at meetings in the next year of the Convention on Biological Diversity. My request would be: we are making connections across Government Departments, between Government Departments and NGOs. It would be wonderful to make a really big splash for the Overseas Territories and the Crown Dependencies at that COP (Conference of the Parties) next year, and I'm sure all the member organisations in the Forum, those in the Territories, those in the UK would work very closely with Eric and other colleagues to really make an impact for the world to see that the UK is very strongly committed to the huge amount of biodiversity in the Overseas Territories.

Minister: Well thank you for those two. Sarah, I note your comments. We'll take those thoughts away, have a look at them try and get them fed into other JNCC projects as well, just trying to look at some lateral thinking on funding streams. Mention must be made of course of the European Union funding as well. That is an area that we haven't tapped into sufficiently. But all of these are complex areas, the nature of the beasts.

Iain, we intend to push hard on that. I take your thoughts away as well.

Despite the complexity of some of these issues and the challenges that we are faced with, I just want to give the assurance, not only from Defra but from DFID and FCO and others, that we will continue to be there to try to work through these issues – some extremely challenging issues, big projects, small projects, capacity and resourcing, capabilities on the ground - in order to get the maximum benefit that we can, both for you individually, but also for us as the UK Government. If we can do that, we end up with a complete win-win situation. So we just need to keep on talking through this and actually working together on it. That has to be the way forward on this, not least since I have to say what quite challenging economic times we are in, not only for the UK, not only for the territories, but globally as well. So how do we keep this going? It's actually more important than ever right now to keep this message going, and to keep the projects going, and to keep changing the whole cultural agenda of this. So, collectively we need to work on this and keep on talking about how we do it.

I am going to have to go Mike, I'm afraid.

MWP: Thank you Minister, so much for giving up extra time on this one, and missing your lunch. I hope they are not going to starve you in the process. But I am sure we would all like to thank the Minister and his team for their kind answers to our questions.

Student views on conference topics

Following the tradition established at the Jersey Conference, the student participants had been invited to give brief views on their experience of this Conference. The comments of those who accepted the invitation are given below. UKOTCF would also like to record thanks to Piers Sangan, the student from Jersey who participated also in the present conference. His transfer of experience to the student participants this time was of great value in enhancing continuity, and making best value of the experience.

Tashara Lewis (University College of Cayman Islands, Brac Campus)



Firstly, I would like to start off by saying that I am very nervous, so please bear with me. My name is Tashara and I am a student at the Cayman Brac Campus. I am majoring in Natural Sciences. I was

actually chosen randomly by my teacher to come to this conference to take notes and report back. I am proud to say that I have been glad to have this opportunity. I have found this conference to be interesting, eye-opening and extremely informative. This conference for me has meant a great deal. And I've learnt a lot of information I can take back and share with my class and my community. I really enjoyed all of the presentations, especially the ones on Invasive Species because, as you may know, we have a lot of invasive species in the Cayman Islands. One recent one on the Brac has been the Lionfish. Dr DaCosta-Cottam in his presentation

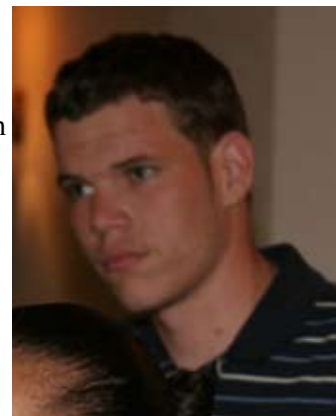
said that it is hard to stop or control the invasive species because the community will sometimes go as far as they can to prevent the destruction of invasive species because they do not know the damage they can and will cause. They only think that the species are magnificent and beautiful, but they need to become aware of the many damages they cause. With this aim I just need to help to get my community aware of the invasive species and the many damages they cause. Yes, invasive species may be beautiful and mind blowing species. but with their beauty comes tremendous damages. Also, throughout this conference, it was said that parents play a tremendous part in children's lives. Parents should be the primary example for assisting in and becoming involved in environmental activities and encourage children and other people to become part of the solution rather than being part of the problem. With parents being involved this will help the community achieve much more.

So with all of that said, thank you for allowing me to be here and thank you for providing me with useful information.

Dustin Bodden (University College of Cayman Islands, Brac Campus)

Some of you might actually know me by now. I'm the annoying student that posed the really tricky questions of some of the presenters. My name is Dustin Bodden and I'm actually a student from the Brac. I attend the Brac Branch of the UCCI which is the University College of the Cayman Islands and for me this conference has probably been one of the most life-changing experiences I have ever attended. It is filled with some extremely extraordinary people, I mean, some of you are mind-blowing, the things that you do. But I would like

to comment on environmental education, where that it is not really pushed in the high schools. I think that is a little bit disappointing, seeing that high school students really influence the lower students. They are becoming, or starting to become, part of the



control generation which are making the decisions and becoming policy makers. They may also become conservationists, like yourselves, or even just members of the general public. In twenty years, we will be where you are right now. So we really need the education, and the experience that all of you can give us. I thought of a solution to this, of promoting clubs for high schools, just maybe in the lower years of high school, but also going on into A levels, - but this is hard with the exams. There should be clubs for teaching the children about the environment and just involving them, even, in some of the research that you do. I mean, just involve students, pointing out what you do. They will pick up on what you do because most of them are actually quite smart. And they're extremely resourceful and will actually tend to help you. I mean they'll come home and go to the yard and even involve parents and they'll educate others and their

parents about these things. Getting back onto my point, of making the right connections, I've made a lot of connections in this conference. I've met a lot of amazing people as I said. And this should actually help to push for a more green generation.

I would really like to thank all the organisers who helped me and my fellow students here involved in this life-changing event. As I've come to see from this conference a lot of you are actually like super-heroes. Not that you are all perfect in everything you do, but the amazing feats that some of you have achieved with the moderate resources that you have. I would like to again thank you. And I would really like to wish all of you a safe trip home, or to whatever extraordinary adventure you are off to next.

Jodiann Jackson (University College of Cayman Islands, Grand Cayman)



Good Afternoon.

I will be speaking on behalf of UCCI students and myself. It was a privilege for us to get to attend this conference even though we did get out of class. Writing our conference reports was the catch (there is always a catch) but we got to broaden our horizon on the conservation

of UKOTs which was a life learning opportunity. In my opinion you can always teach the lesson on biodiversity and conservation but it is not everyday you get to be with great people who have a patience for the environment and discuss about real life issues and solutions.

Over the week we got to learn about the UKOTs themselves and hear about island biodiversity and population we didn't even know about.

Some students got to go on the field visits which was their first time at the Botanic Park. They were very enthused and really enjoyed themselves. Another student and I got to go to the Mission House

for the first time and enjoyed with you a taste of Cayman culture and watch the bats come out - which continued to inspire someone I spoke with to build bat houses in their islands. This just shows the domino effect of information and sources being shared. I personally enjoyed the session on invasive species and now know that there are approximately 120 non-native species. One or two are the monk parrot and the green iguana which I find very amusing that they are protected and are also used as a tourism symbol. It struck me as well to know that we shouldn't blame the invasive species for being there but to know that it is humans who are the cause.

It was very nice to see and hear from past governors of the Cayman Islands. I found Michael Gore on the role of the governor in environmental issues topic very interesting.

It is great to know that there are a lot of people who are making the right connection in the UKOTs to find a balance with the environment and humans. After all it was the flora and fauna that populated the earth now the human population is increasing and we are continuing to think of new ways to conserve. Through this conference we UCCI students are very inspired and have personally enjoyed meeting with you. We want to thank you for opening our eyes and letting us know what opportunities there are to do with our environment. Thank you once again.

Jessica Ebanks (University College of Cayman Islands, Grand Cayman)

I was only able to make it to the conference on Monday June 1st for an hour and a half but what I learned in that short period of time was astonishing! In that session of the conference, they were discussing the impacts and adaptations of the climate change. I found this very interesting because this is an extremely important topic relating to our Islands.

The characteristics which made the Cayman Islands (and most other islands) vulnerable to climate change are: their small physical size, high ratio of coastal length to land area, limited natural resources, prone to natural disasters, relative isolation and having high population densities concentrated in low-lying coastal areas. These characteristics limit the capacity of small islands to mitigate and adapt to future climate change.

Key climate change issues for the territories like ours (small islands) are: sea-level rise, changes in precipitation patterns, increasing effects on flora and fauna, air temperatures, sea surface temperatures and extreme weather including increasing intensity and (possibly) frequency of hurricanes.

Climate change is not something we just have to worry about in the future, we need to start worrying about it and try to prevent as much of it as we can now! When I was at the conference a presentation was given by a gentleman from an island called Guernsey, which is off the coast of France. In his presentation he was talking about how climate change was affecting Guernsey and even though we live nowhere near there it was very interesting to hear what he had to say because Guernsey is an island as well so it has similarities with our islands. From studies done he pointed out that sea level has risen 120 meters in 20,000 years! Also over the years there has been less rainfall. This means it will be harder for plants to survive leading to fewer plants worldwide.

Overall, I've learned so much from this conference in such a short period of time and I'm very grateful for the information provided to me from all the persons I got to hear speak as well as information leaflets I picked up. The leaflets have tons of useful information and extraordinary, eye-opening facts in them. I won't repeat all the great facts they have in them because that will take me days! But they're definitely worth reading!



*From left: Piers Sangan, Jodian Jackson, Dr Mike Pienkowski, Tashara Lewis, and Dustin Bodden
(Photo: Rob Thomas)*

Conference Closing

In closing the conference, UKOTCF's Chairman, Dr Mike Pienkowski, said:

On behalf of all participants, I would like to thank the following for the main resourcing of the conference: the UK Department for International Development (DFID) via the Overseas Territories Environment Programme (OTEP), its joint initiative with the UK Foreign & Commonwealth Office (FCO); the Cayman Islands Government, especially its Department of Environment; and the UK Overseas Territories Conservation Forum (UKOTCF) and its volunteers.

I would like to thank also the people of the Cayman Islands, who have made us so welcome.

The Governor, His Excellency Stuart Jack, gave us an excellent launch via the opening reception on Sunday evening – many thanks to him and all his staff, especially staff officer, Andy Holbrook, for much help throughout the planning. We are very grateful also to the Cayman Islands Leader of Government Business, The Hon. W. McKeever Bush, and the Minister of Environment, The Hon. Mark Scotland, for finding time just a few days after the General Election and their taking up of office to join us and formally to open the conference.

It was a really great pleasure also to be able to welcome Mr Huw Irranca-Davies MP, UK Minister for the Natural and Marine Environment, Wildlife and Rural Affairs. For a UK environment Minister to participate for the first time in one of our conferences is a major signal of developing support, which is much appreciated, as are his announcements. As some of you know, the Minister had originally planned to be present on Thursday with visits to local projects on Friday. Unfortunately, it became necessary for him to be back in London on Friday, and we thought that he might have to cancel. However, his commitment was so great that he arranged to reschedule his visit for a day earlier. (This accounts for some of the curious programming yesterday and today.) We are very grateful for this, and we should note also how much we enjoyed working with his supportive officials, especially Eric Blencowe, to make all this possible.

The conference centres on discussion and exchange of ideas and experience. However, it is difficult to generate this from nothing. Therefore, we

are particularly appreciative of the speakers. It is a difficult task to select 15-minutes worth of relevant material from the riches of information that could be presented, and we are most grateful to those who achieved it without over-running and thereby reducing discussion time or slots available for later speakers. We want to link this to thanks also for the display exhibitors, who again have a challenge in getting so many key points into such a small space.

For both of those groups, we thank those who have supplied their texts and illustrations for the proceedings – and offer more thanks in anticipation for those who will help to reduce our work and stress by supplying theirs soon! By that means, we should avoid holding up publication of the contributions of others.

We should not forget that the various presentations and other inputs to the conference are based on the work of many people, often volunteers, in the various organisations represented by those attending. These include UKOTCF Member and Associate organisations, UK Overseas Territory, Crown Dependency and UK official bodies, and other participating institutions. We are grateful to them all.

I would like to thank especially the students and their lecturers – maintaining the fine tradition from the Jersey conference – and Ann Pienkowski, who has spent many months organising this involvement.

Lots of people are needed to make a conference go reasonably smoothly – and if it is going well, they remain pretty unnoticed. I notice them – because I would be in real difficulty without them! These include the session coordinators and chairpersons, the rapporteurs, those athletes like Stedson Stroud and Catherine Quick who have sprinted around with the roving microphone, Oliver Cheesman and colleagues who have juggled with computer projection of the speakers' presentations. (Oliver tells me that he is amazed to be entrusted with a role with electronic equipment – but I have assured him that it is a matter of training and career development.) Thanks to the various photographers who volunteered to capture images of the event – and a reminder to make sure that they let the organisers have copies of their photographs please, as soon as possible. Most of you have not seen the conference

office, where we have tried to confine the more chaotic elements. We are grateful to Steve Cheesman who has reprised his work in the underground pipework of TCI's Middle Caicos Conservation Centre by helping to reinforce our local partners in fighting our office network and printer.

We got off to an excellent start on Sunday, with the tours and initial discussions taking place in very pleasant surroundings. Thank you to the guides and drivers, caterers, tent company, the folk at Pedro St James and, of course, the Botanic Gardens, as well as Fred Burton and his Blue Iguana Team – with guest appearance by Tootsie, the gender-challenged dragon.

We are grateful for the escape, on Tuesday, from conventional conference sessions, provided by UKOTCF Associate organisation, the National Trust for the Cayman Islands. We thank particularly: Roger Corbin, Chairman; Denise Bodden, Historic Programs Manager; and Frank Balderamos, General Manager (who had to be off-island). We would like to thank also: Caybrew for donating the local beer; Jacques Scott Group for donating the wine; Welly's Cool Spot, Elrita Seymour and Zelmalee Ebanks for preparing and serving the local food – a very important part of culture. We are very grateful also for music from the North Side Kitchen Band, piano in Mission House by Katie Moore (NT volunteer), Mission House Tours by Arthurlyn Pedley, Aida D'Angelo and others. And, of course, we thank performers Denise Bodden, Pirate Darvin Ebanks, Rita Estavanovich, David Whitefield, Michael McLaughlin, Erica Daniel, Chris Bowring, Pastor Alson Ebanks, Carmen Comolly, Kem Jackson, Jerilo Rankine and Stuart Mailer. Please pass on our thanks to those who are not here, and thanks to all of that team for the generous provision of their time and effort.

We hope to be able to thank soon the team from Red Sail who will look after us on the catamarans and, at dinner this evening, Kaibo.

We are grateful to the Westin hotel staff, especially our primary contact, Amanda Jay, who has been amazingly helpful in sorting out all our problems – for example, finding a meeting room for the Ministers' team last night, literally at less than a minutes' notice. I would also like to thank the team from Banquets, who are the ones who look after these meeting rooms and provide the lunches and break-time refreshments. They describe themselves as the team from Goa, in India, which is where many of

them come from. So I guess that the hospitality in Goa must be particularly good too.

For some reasons, which we are still trying to work out, this conference has taken more organising than most previous ones. It is something to do with the amount of individual attention needed for most participants – but it is nice to be wanted! I would like to give a special thanks to my colleagues in the conference core team, Catherine Quick, Oliver Cheesman and Ann Pienkowski.

I have probably missed some, for which I apologise – but there is one group that I have left to the end, because they have been so key to it all: the local organising team from the Department of Environment. We are indebted to Director, Gina Ebanks-Petrie, for huge support and for arranging that her staff and equipment be made available, while maintaining the busy schedules of their main work. We know that this has been well beyond the demands of duty. Many staff at the DoE have helped, and we thank them all. Lead roles have been played by Tim Austin and Mat Cottam. One unique resource though has been a particular person. Nothing has been insoluble to him – and we have thrown him some amazing challenges.

Occasionally though, I have seen a grimace cross the unflappably cheerful face of the man they know as the Commander: John Bothwell. Thanks so much, John, and to all your colleagues.



Commander John Bothwell, in his natural habitat, speaks with Fred Burton.

(Photo: Dr Mike Pienkowski)



*Marine ecosystems tour in North Sound and its mangrove areas, and pre-conference dinner informal discussions
(Photos: Dr Mike Pienkowski)*

Section 12: Appendices

This section contains the following items:

Appendix 1. Final programme for the conference, with published amendments

Appendix 2. List of Posters and Displays

Appendix 3. List of Participants and their Organisations

Appendix 4. Feedback from Participants

Appendix 5. Friends of the UK Overseas Territories - the individual subscriber option for UKOTCF.



*The conference in formal session and at the National Trust for the Cayman Islands event
(Photos in this section by Thomas Hadjikyriakou unless otherwise indicated)*



Appendix 1. Final programme for the conference, with published amendments

Making the Right Connections: a conference on conservation in UK Overseas Territories, Crown Dependencies and other small island communities – Grand Cayman, 30th May to 5th June 2009

Organised by:

**UK Overseas Territories Conservation Forum,
with the support of the Overseas Territories Environment Programme,
and hosted by the Cayman Islands conservation bodies**

Aim: Drawing on similarities and differences in experience across the territories, to provide insights into common challenges, leaving participants better equipped to address local needs

PROGRAMME

Please note: all content and timings subject to change

All main programme sessions include time for discussion. This time is not for speakers to expand into.

For example, if there is a 20-minute slot, the speaker has only 15 minutes for his or her own use, allowing 5 minutes for questions on the presentation (in addition to the general session discussion).

We are trying to have a participatory conference, with presentations being in large part to inform and stimulate discussion.

Saturday 30 May	Arrivals & Registration
Until 7pm	Setting-up of posters – please use only spaces allocated to particular exhibitors
	Self-organised dinner
Sunday 31 May	Session A: Opening and introduction to Cayman experience
7am - 8am	Buffet breakfast
8am	Field visits to terrestrial ecosystems in Grand Cayman, incorporating a presentation on current Cayman issues, etc. Will split into separate groups (see notes for participants).
12 noon	All groups meet at Botanic Gardens for lunch, followed by presentation on Cayman conservation issues, by Gina Ebanks-Petrie and Fred Burton
2pm	Possible opportunity for brief further walk in park
3pm	Coaches depart for hotel
4pm – 6pm	Further opportunity for setting-up of posters (in allocated spaces only)
4.30 - 5.30pm	Briefing meeting for student participants
5pm - 6pm	Darwin Initiative - open discussion with Eric Blencowe, Defra

6.30pm – 9pm	Opening of Conference , at a Reception at the Residence of the Governor, H.E. Mr Stuart Jack
	Self-organised dinner
Monday 1 June	
7am - 8am	Buffet breakfast
8.15am – 12.30pm	Maintaining momentum - setting the scene and reporting progress since the Jersey conference
8.45 - 10.15am	(Short) Session B. Progress on Environment Charter implementation <u>Co-ordinator</u> : Mike Pienkowski (UKOTCF Chairman)
8.45 - 9.05 am	Updating of the UKOTCF-coordinated review of progress on implementing the Environment Charters. Catherine Quick (UKOTCF Co-ordinator)
9.05 - 9.20 am	Some lessons learnt in implementing a strategy for the Environment Charter: an example from St Helena. Isabel Peters (Environmental Coordinator, St Helena Government)
9.20 - 10.15 am	Discussion , taking account of recent developments and remaining challenges
10.15 - 10.45 am	Break
10.45 am - 12.30 pm	(Short) Session C. Environmental Education <u>Co-ordinators</u> : Ann Pienkowski (UKOTCF Environmental Education Co-ordinator) & Clive Baker (Cayman Education Department)
10.30 - 10.45 am	Introduction (including output from Jersey, OTEP project, student input to this and later sessions and summary of draft document on development of an integrated curriculum for environmental education). Ann Pienkowski Followed by short presentations (see below) each ideally highlighting approaches that have worked and remaining challenges.
10.45 - 10.50 am	Questions
10.50 - 11.05 am	The Marvellous Mangroves programme, and its place in the Cayman Islands National Curriculum. Martin Keeley (University College of the Cayman Islands)
11.05 - 11.10 am	Questions
11.10 - 11.25 am	The Akrotiri Environmental Education and Information Centre as an example of co-operation and joint working. Thomas Hadjikyriakou (Akrotiri Environmental Education and Information Centre Manager, Cyprus Sovereign Base Area)
11.25 - 11.30 am	Questions
11.30 - 11.45 am	Student comments on experiences of environmental education
11.45 - 11.50 am	Questions

11.50 am -12.30pm	Guided discussion What is needed for the future? Facilitators: Ann Pienkowski (UKOTCF Environmental Education Co-ordinator), Clive Baker (Cayman Education Department) & Edgar Howell (Deputy Director of Education, Turks & Caicos Islands)
12.30 -1.30 pm	Lunch

1.30 - 4.30 pm	Session D: Climate change – impacts and adaptation <u>Co-ordinators:</u> Bruce Dinwiddy (UKOTCF Council) & Deborah Procter (Climate Change Advisor, JNCC)
1.30 - 1.33 pm	Introduction. Bruce Dinwiddy (UKOTCF Council)
1.33 - 1.55 pm	Climate change and biodiversity conservation - impacts and adaptation Deborah Procter (Climate Change Advisor, JNCC)
1.55 - 2.00 pm	Questions
2.00 - 2.15 pm	South Georgia: Threats posed by climate change, and options for adaptation and mitigation. Darren Christie (Environment Officer, Government of South Georgia and the South Sandwich Islands)
2.15 - 2.20 pm	Questions
2.20 - 2.35 pm	Climate Change: A Case Study in Guernsey. Andrew Casebow (States of Guernsey)
2.35 - 2.40 pm	Questions
2.40 - 2.55 pm	A Cayman perspective. Lisa-Anne Hurlston (Cayman Islands Department of Environment)
2.55 - 3.00 pm	Questions
3.00 - 3.15 pm	Break
3.15 - 4.30 pm	Discussion
4.30 - 5.30 pm	Session E: Poster Reception Session Posters will be on display throughout the conference. However, poster exhibitors are invited to be present in this session so that they may discuss their posters with those viewing them. Drinks will be provided.
5.30 - 7.30 pm	Session F: UKOTCF Wider Caribbean Working Group meeting <u>Organisers:</u> Bruce Dinwiddy (WCWG Chairman) & Oliver Cheesman (WCWG Secretary)
7.30 pm	Free for self organised dinner and ad-hoc meetings

Tuesday 2 June	
7.00 - 8.00 am	Buffet breakfast

8.15 am – 12.30 pm	Session G: Spatial Planning, Protected Areas and International Standards – assets or liabilities? <u>Co-ordinators:</u> Colin Hindmarch (UKOTCF Council) & John Cooper (CORE Initiatives, Rondebosch, South Africa) <u>Part 1 – Planning and Protected Areas – why bother?</u>
8.15 for 8.30 - 8.55 am	Introduction/Overview: Protected areas: a new context and a sustainable future. Colin Hindmarch (UKOTCF Council)
8.55 - 9.00 am	Questions
9.00 - 9.15 am	The role of environmental democracy. Euwonka Selver (Turks & Caicos Islands)
9.15 - 9.20 am	Questions
9.20 - 9.35 am	The Marine Perspective on Spatial Planning, Protected Areas and International Standards. Fiona Gell (Senior Wildlife and Conservation Officer – Marine, Wildlife and Conservation Division, Isle of Man)
9.35 - 9.40 am	Questions
	The Chagos Archipelago: Its Nature and Future. John Turner (Chagos Conservation Trust & Bangor University, Wales, UK)
9.40 - 10.10 am	Discussion
10.10 - 10.30 am	Break (and conference photograph)
	<u>Part 2 – Planning and Protected Areas in practice</u>
10.30 -10.55 am	Declaring international protected areas in UK Crown Dependencies and Overseas Territories: the role of the Ramsar and World Heritage Conventions. John Cooper (CORE Initiatives and Animal Demography Unit, University of Cape Town, South Africa)
10.55 - 11.00 am	Questions
11.00 - 11.15 am	Montserrat Centre Hills Plan: an example of planning and implementing protected areas at a site scale. Stephen Mendes (Montserrat Department of Environment)
11.15 - 11.20 am	Questions
11.20 - 11.35 am	Challenges for a small isolated island group - progress on the Pitcairn Islands environment management plan, designated protected areas and sustainable development. Noeleen Smyth (National Botanic Gardens, Dublin, Ireland; for Pitcairn Islands Council)
11.35 - 11.40 am	Questions
11.40 - 11.55 am	BVI's Systems Plan: an example of planning and implementing protected areas at a national scale. Joseph Smith Abbott (Director, British Virgin Islands National Parks Trust)
11.55 am - 1200 noon	Questions

12.00 noon - 12.30 pm	Discussion
12.30 - 1.30 pm	Lunch

1.30 - 4.45 pm	Session H: Raising our profile - engaging policy makers and the public <u>Co-ordinators:</u> Bill Samuel (UKOTCF Council) & John Cortes (Gibraltar Ornithological & Natural History Society and UKOTCF Council) <u>Part 1 – Engaging policy makers</u>
1.30 - 1.35 pm	Introduction
1.35 - 1.50 pm	Economic valuation (as a tool for engaging policy makers): Total Economic Value of Bermuda’s Coral Reefs. Samia Sarkis (Department of Conservation Services, Bermuda)
1.50 - 1.55 pm	Questions
1.55 - 2.15 pm	Raising the Profile of the UKOTs in the UK Parliament. Paul Keetch (MP and House of Commons Foreign Affairs Committee)
2.15 - 2.20 pm	Questions
2.15 - 2.30 pm	The Environment as an Election Issue: The Virgin Islands Experience. Bertrand Lettsome (Dept of Fisheries & Conservation, British Virgin Islands)
2.30 - 2.35 pm	Questions
2.35 - 3.00 pm	Discussion
3.00 - 3.20 pm	Break
	<u>Part 2 – Engaging the public</u>
3.20 - 3.35 pm	Campaigning - Buy Back Bermuda. Jennifer Gray (Bermuda National Trust & Bermuda Audubon Society)
3.35 - 3.40 pm	Questions
3.40 - 3.55 pm	How long a reprieve for the Grand Cayman Ironwood Forest? Lilian Hayball (University College of the Cayman Islands)
3.55 - 4.00 pm	Questions
4.00 - 4.15 pm	The Church as an Advocate for Conservation. Rev. M. Alson Ebanks, Cert. Hon. (Cayman Islands)
4.15 - 4.20 pm	Questions
4.20 - 4.45 pm	Discussion

4.45 - 5.00 pm	Break - to get people out of session, to rooms and reassemble for trip.
5.00 pm	Coaches depart from Westin for: Session I: outside evening event National Trust for the Cayman Islands to host dinner at one of their sites (probably the Mission House)
8.30 pm	Coaches depart to return to Westin, arriving back about 9.00 pm

Wednesday 3 June	
6.30 - 8.00 am	Buffet breakfast
7.30 - 9.30 am (Take early breakfast!)	Session J: UKOTCF Southern Oceans Working Group meeting <u>Co-ordinators</u> : Iain Orr (SOWG Chairman) & Catherine Quick (SOWG Secretary)
9.30 - 10.00 am	Break
10.00 am - 1.00 pm	Session K: Invasive species <u>Co-ordinators</u> : Oliver Cheesman (UKOTCF Development Director) & Karen Varnham (University of Bristol and UKOTCF Council)
10.00 - 10.10 am	Introduction
10.10 - 10.30 am	The South Atlantic Invasive Species (SAIS) Project. Andrew Darlow (St Helena SAIS Project Officer, RSPB)
10.30 - 10.35 am	Questions
10.35 - 10.50 am	Lessons from the Caicos Pine Scale. Bryan Naqqi Manco (Senior Conservation Officer, Turks & Caicos National Trust)
10.50 - 10.55 am	Questions
10.55 - 11.10 am	Invasive species in the UKOTs and CDs – What’s new? Karen Varnham (University of Bristol) and Tara Pelembe (JNCC)
11.10 - 11.15 am	Questions
11.15 - 11.30 am	Invasive species: awareness-raising and education – getting rid of stuff that people like, with little or no money. Mat Cottam (Cayman Islands Department of Environment)
11.30 - 11.35 am	Questions
11.35 am - 1.00 pm	Guided discussion What is needed for the future? Facilitators: Oliver Cheesman (UKOTCF Development Director) & Karen Varnham (University of Bristol)
1.00 - 2.00 pm	Lunch

2.00 - 5.00 pm	Session L: Enhancing capacity - how on earth are we going to cope with the workload? <u>Co-ordinators:</u> Dace Ground (Bermuda National Trust and UKOTCF Council) & Mat Cottam (Cayman Islands Department of Environment)
2.00 - 2.05 pm	Introduction - format of the session, Dace Ground
2.05 - 2.20 pm	Introduction: Enhancing capacity - how on earth are we going to cope with the workload? Frederic J. Burton, (Director, Blue Iguana Recovery Programme, Grand Cayman)
2.20 - 2.30 pm	Bottlenecks in implementing action plans. Colin Clubbe (Royal Botanic Gardens, Kew)
2.30 - 2.45 pm	Discussion
2.45 - 3.00 pm	JNCC Overseas Territories and Crown Dependencies Programme - Fundraising. Nikki Chapman (Joint Nature Conservation Committee)
3.00 - 3.20 pm	Discussion
3.20 - 3.35 pm	Mobilising local volunteers in support of environmental work: a Falklands Conservation Case Study. Pierre Pistorius (Conservation Officer, Falklands Conservation)
	Volunteers on Ascension. Stedson Stroud, Ascension Island Government
3.35 - 3.50 pm	The UKOTCF approach to volunteers. Dace Ground
	Notes from a non-traditional UKOTCF volunteer. Steve Cheeseman
3.50 - 4.00 pm	Summary of Member organisations' responses to the UKOTCF consultation re capacity building. Oliver Cheesman
4.00 - 5.00 pm	Discussion - What do we need? How can the Forum help?
5.00 - 5.30 pm	Break
5.30 - 7.30 pm	Session M: UKOTCF Europe Territories Working Group meeting <u>Co-ordinators:</u> Liz Charter (ETWG Chairman) & Colin Hindmarch (ETWG Secretary)
7.30 pm	Free for self-organised dinner and ad-hoc meetings

Thursday 4 June	
7.00 - 8.00 am	Buffet breakfast
08.15 for 08.30 am – 3.10 pm	Session N: Joined-up thinking – institutional arrangements for environmental management How do key government and NGO players work together, engage with other stakeholders and manage their information base? <u>Co-ordinators:</u> Liz Charter (Chief Wildlife & Conservation Officer, Isle of Man), Farah Mukhida (Executive Director, Anguilla National Trust) and Mike Pienkowski (UKOTCF Chairman)

8.30 - 8.40 am	Introduction
	<u>Part 1 – Joined-up government and government-NGO co-operation</u>
8.40 – 8.55 am	Government/NGO partnerships - successes and failures in Cayman. Gina Ebanks-Petrie (Director, Department of Environment, Cayman Islands Government)
8.55 – 9.00 am	Questions
9.00 – 9.15am	Working together for biodiversity on the Isle of Man. Liz Charter (Chief Wildlife & Conservation Officer, Isle of Man Government and UKOTCF Council)
9.15 – 9.20 am	Questions
9.20 – 9.35 am	The role of a Governor in environmental issues in the UK Overseas Territories. Michael Gore (former UKOT Governor; former Council Member of UKOTCF & Chairman of the Wider Caribbean Working Group; Wildlife Photographer)
9.35 – 9.40 am	Questions
9.40 – 10.10 am	Round-up/discussion on Part 1 of session
10.10 – 10.40 am	Break
	<u>Part 2 – Joining up the conference conclusions and address by the UK Minister for Biodiversity</u>
10.40 – 11.30 am	Summary of conference outputs
11.30 – 11.50 am	Address by Huw Irranca-Davies MP (Minister for the Natural and Marine Environment, Wildlife and Rural Affairs, UK Government)
11.50 am – 12.20 pm	Questions
12.20 – 1.30 pm	Lunch
	<u>Part 3 – Information sharing</u>
1.30 – 1.45 pm	Mechanism for information/data sharing in-Territory: Ascension Environmental Information Operations Utility (AEIOU): Integrated Information Management for Joined up Environmental Custodianship Alan Mills (consultant)
1.45 – 1.50 pm	Questions
1.50 – 2.05 pm	Mechanisms for information/data sharing cross-Territory: UKOTCF database.
2.05 – 2.10 pm	Questions
2.10 – 2.25 pm	Linking with other territories. Short introduction from Dr Colin Hindmarh (UKOTCF) and presentation on NET-BIOME by Marimar Villagarcia (Instituto Canario de Ciencias Marinas, Canary Islands, Spain)
2.25 – 2.30 pm	Questions

2.30 – 3.10 pm	Round-up/discussion on part 3 of the session
3.10 – 10.30 pm	Session O: Conference closing
3.10 – 3.25 pm	Student view on conference topics
3.25 – 4.00 pm	Closing comments
4.00 – 4.45 pm	Break
4.45 pm	Short coach transfer to dock. Load conference participants on to 2 large catamarans for evening cruise to marine ecosystems (viewed from boat): North Sound sandbanks (stingray city) and mangroves; and on to closing conference dinner near NE shore of North Sound.
7.00pm	Conference closing dinner (Kaibo)
9.00pm	Catamarans depart from dinner location
10.30pm (approx)	Return to hotel from catamarans via short coach transfer
Friday 5 June	
7.00 - 8.00 am	Buffet breakfast
	Departures



*The conference's youngest "participant,"
Isla Wensink, the daughter of UKOTCF Co-ordinator,
Catherine Quick*

Appendix 2. List of Posters and Displays

Planet Guernsey

Andrew Casebow, States of Jersey

Fundraising sources for Overseas Territories Nature Conservation Projects

Nikki Chapman, Joint Nature Conservation Committee

Conservation work of Isle of Man Government

Liz Charter, Isle of Man Government

Fourth Albatross and Petrel Conference (August 2008)

John Cooper, University of Cape Town

Gibraltar Ornithological and Natural History Society

John Cortes, Gibraltar Ornithological and Natural History Society

Community conservation of basking sharks in the Isle of Man, British Isles

Fiona Gell, Isle of Man Government

Marine Conservation in the Isle of Man

Fiona Gell, Isle of Man Government

Plant Ecology on Ascension Island

Alan Gray, Centre for Ecology and Hydrology

Opportunities for collaborative projects: The Centre for Ecology and Hydrology

Alan Gray, Centre for Ecology and Hydrology

Plant Conservation in the UK Overseas Territories

Martin Hamilton, Royal Botanical Gardens, Kew

Caicos Pine Recovery Project

Bryan Naqqi Manco, Turks and Caicos National Trust

Introducing the International National Trust Organisation

Oliver Maurice, International National Trust Organisation

JNCC Overseas Territories and Crown Dependencies Programme

Tara Pelembe, Deborah Proctor & Deanna Donovan, Joint Nature Conservation Committee

Invertebrate Conservation in the UK Overseas Territories

Jamie Roberts, Buglife - Invertebrate Conservation Trust

Globally Threatened Birds of the UK Overseas Territories

Sarah Sanders, Royal Society for the Protection of Birds

Economic Valuation of Bermuda's Coral Reefs

Samia Sarkis, Government of Bermuda

The endemic plants of the Pitcairn Islands

Noeleen Smyth, Trinity College, Dublin

Pitcairn Islands Environment Management Plan

Noeleen Smyth, Trinity College, Dublin

South Atlantic Invasives Project

Clare Stringer, Royal Society for the Protection of Birds

The Chagos Archipelago: Its Nature and the Future

John Turner, University of Bangor

Jost van Dykes' Community-based Programme Advancing Environmental Protection and Sustainable Development

Susan Zaluski, Jost van Dykes Preservation Society

The Gough mouse eradication programme

John Cooper

Posters from the University College of the Cayman Islands:

The Ironwood Forest by Lilian Hayball - aerial views, map, fauna and flora photos

The Ironwood Forest - fauna and flora - by Ann Stafford - "each one teach one" plant posters of Cayman Ironwood Forest.

The Ironwood Forest edge at UCCI - photos by Martin Royer and Alicia Connolly

Cayman QE II Botanic Park by Vanessa Holness - her own individual plant photos

Cayman QE II Botanic Park by Jessica Hurlston - covering Park ecosystems

Bats of the Cayman Islands by Shari Walters

Cayman Mangroves by Doris de la Cruz

Study of a Wetland [on Cayman] by Jhaneille Ennis

Observations in the Brac by Shari Walton

Coral Reefs in Crisis [around Cayman] by Athena Gregg

Little Sound [Cayman] ecology by Joseph Watler

Botanical Park colour gardens [Cayman] by Maria Aguayo

Botanical Park Fauna and Flora by Omar Clarke

The Woodland Trail [Cayman] by Sharissa McGloughlin

MAPS:

World topography showing location of Cayman.

Map of Cayman showing 'Tests of pH around Cayman soils' - by Bio101 students

Map of Grand Cayman 1773, Admiralty Collection copy



*Some of the places in the conference venue that the conferences organisers never reached
(Photos: Dr Oliver Cheesman - from a distance)*



*The closing session on the
catamaran at sunset
(Photo: Catherine Quick)*

Appendix 3. Participants

Surname	First Name	Title	Organisation	Position
Allen	Sushein	Ms	University College of the Cayman Islands, Grand Cayman	student
Arthur	Steve	Mr	UK Department for International Development	Programme Manager
Austin	Timothy J	Mr	Department of Environment, Cayman Islands	Assistant Director - Research and Assessment
Ballance	Anna	Ms	UK Department for International Development	Environment Advisor
Baker	Clive	Mr	Cayman Islands Department of Education	Head of Curriculum Services
Bates	Chris	Mr	Government of Tristan da Cunha	UK Representative
Bates	Julie	Mrs	UK	
Bensusan	Keith	Dr	Gibraltar Ornithological & Natural History Society	
Blake	Damarrow	Mr	University College of the Cayman Islands, Grand Cayman	student
Blencowe	Eric	Mr	DEFRA	Head, International Biodiversity Policy Unit
Bodden	Alexis	Mr	University College of the Cayman Islands, Grand Cayman	student
Bodden	Dustin	Mr	University College of the Cayman Islands, Cayman Brac	student
Bothwell	John	Mr	Department of Environment, Cayman Islands	
Burton	Frederic J	Mr	Blue Iguana Project, Cayman	Director
Byrne	James	Mr	The Nature Conservancy, USA	
Casebow	Andrew	Dr	States of Guernsey	States Agriculture and Environment Advisor
Chapman	Nikki	Dr	Joint Nature Conservation Committee	Overseas Territories Fund raising officer
Charter	Elizabeth	Ms	Department of Agriculture Fisheries and Forestry	Chief Wildlife and Conservation Officer
Cheeseman	Mary	Mrs	UKOTCF volunteer in UKOTs	
Cheeseman	Stephen	Mr	UKOTCF volunteer in UKOTs	
Cheesman	Oliver	Dr	UKOTCF	Development Director
Christie	Darren	Mr	Government of South Georgia and South Sandwich Is	South Georgia Environment Officer
Christie	Pippa	Mrs	South Georgia	
Christie	Heather	Ms	Foreign and Commonwealth Office	Desk Officer Env. & Climate Change OTs Directorate
Clarke	Byron	Mr	University College of the Cayman Islands, Grand Cayman	staff
Clubbe	Colin	Dr	Royal Botanical Gardens, Kew	Head, Conservation Team
Coleman	Natalie	Ms	Cayman National Gallery	Director

Surname	First Name	Title	Organisation	Position
Cooper	John	Dr	CORE Initiatives	
Corbin	Roger	Mr	National Trust for the Cayman Islands	Chairman
Cortes	John	Dr	Gibraltar Ornithological & Natural History Society	General Secretary
DaCosta-Cottam	Mat	Dr	Department of Environment, Cayman Islands	
Darlow	Andrew	Mr	Royal Society for the Protection of Birds	SAIS Project Officer Ascension & St Helena
David	Charles	Dr	La Société Guernesiaise	Immediate Past President
Dequito	Manuel	Mr	Dart Nursery & Arboretum, Grand Cayman	
Dinwiddy	Bruce	Mr	UKOTCF	Chairman of WCWG, Council Member
Donovan	Deanna	Dr	Joint Nature Conservation Committee	Environmental Economist
Ebanks	Alson	Rev	Cayman Islands	
Ebanks	Aston	Mr	Cayman Islands	artist
Ebanks-Petrie	Gina	Ms	Department of Environment, Cayman Islands	Director
Fergus	Eudora	Lady	Montserrat National Trust	Director
Feuer	Elke	Ms	Dart Nursery & Arboretum, Grand Cayman	
Freeman	Mike	Mr	States of Jersey Environmental Division	Principle Ecologist
Gell	Fiona	Dr	Isle of Man Government, Wildlife & Conservation Div	Snr Wildlife and Conservation Officer, Marine
Gibbs-Williams	Ethlyn	Ms	Turks & Caicos National Trust	Executive Director
Gore	Michael	Mr	Wild Photographer	
Gray	Alan	Dr	Centre for Ecology & Hydrology, UK	
Gray	Jennifer	Ms	Bermuda National Trust	Executive Director
Green	Michelle	Ms	Dart Nursery & Arboretum, Grand Cayman	
Ground	Dace	Mrs	Bermuda National Trust/UKOTCF Council	Council Member of both
Hadjikyriakou	Thomas	Mr	Akrotiri Education and Information Centre	Manager
Hamilton	Martin	Dr	Royal Botanical Gardens, Kew	UKOTs Programme Coordinator
Hayball-Clarke	Lilian	Mrs	University College of the Cayman Islands	Associate Professor Science
Hindmarch	Colin	Dr	UKOTCF	Council Member
Howell	Edgar	Mr	Department of Education, TCI	Deputy Director of Education
Irranca-Davies	Huw	Mr	UK Government	MP & Minister for Biodiversity
Jackson	Jodiann	Ms	University College of the Cayman Islands, Grand Cayman	student

Surname	First Name	Title	Organisation	Position
July	Mark	Mr	Natural England	Senior Specialist Government and Communities
Jurn	Katrina	Ms	University of Cambridge	PhD Student
Keetch	Paul	Mr	House of Commons, UK	MP for Hereford
Keeley	Martin	Mr	University College of the Cayman Islands	Director Cayman Brac Campus
Laing	Marnie	Ms	University College of the Cayman Islands	
Lalor	Pauline	Mrs	UK	
Lettsome	Bertrand	Mr	British Virgin Islands Government	Chief Conservation & Fisheries Officer
Lewis	Tashara	Ms	University College of the Cayman Islands, Cayman Brac	student
Manco	Bryan Naqqi	Mr	Turks and Caicos National Trust	Senior Conservation Officer
Manoosingh	Jasmin	Ms	John Gray High School, Grand Cayman	
Maurice	Oliver	Mr	International National Trusts Organisation	Honorary Director
McIntosh	Sarah	Ms	Caribbean Natural Resources Institute (CANARI)	Executive Director
McClean	Alwyn	Mr	University College of the Cayman Islands, Grand Cayman	student
Mendes	Stephen	Mr	Department of Environment	Environment Education Officer
Mills	Alan	Mr	Alan Mills Consulting Ltd	Director
Minto	Maureen	Ms	University College of the Cayman Islands, Grand Cayman	student
Mukhida	Farah	Ms	Anguilla National Trust	Executive Director
Nickelson	Stephen	Mr	Cayman national Gallery	Intern
Orr	Iain	Mr	UKOTCF	Chair, Southern Oceans Working Group
Pelembe	Tara	Mrs	Joint Nature Conservation Committee	Overseas Territories Officer
Peters	Isabel	Ms	St Helena Government	Environment Coordinator
Pienkowski	Ann	Mrs	UKOTCF	Environmental Education Coordinator
Pienkowski	Mike	Dr	UKOTCF	Chairman
Pinel	John	Mr	States of Jersey Environmental Department; and Société Jersiaise	Head of Countryside Management
Pistorius	Pierre	Dr	Falklands Conservation	Conservation Officer/ Acting CEO
Procter	Deborah	Ms	Joint Nature Conservation Committee	Climate Change Advisor
Quick	Catherine	Miss	UKOTCF	Forum Coordinator
Roberts	Jamie	Mr	St Helena National Trust	Executive Director Designate
Samuel	William	Mr	UKOTCF	Council Member

Surname	First Name	Title	Organisation	Position
Sanders	Sarah	Ms	RSPB	International Officer
Sangan	Piers	Mr	Plymouth University, UK	student
Sarkis	Samia	Dr	Department of Conservation Services, Bermuda	Protected Species Coordinator
Schulterbrandt	Sheila	Mrs	Virgin Islands Environment Council	President
Selver	Euwonka	Ms	Turks & Caicos Islands	
Shereves	Kevin R	Mr	Cayman Net News	Staff Writer
Smith	Noel	Mr	University College of the Cayman Islands, Grand Cayman	student
Smith	Shandi	Ms	University College of the Cayman Islands, Grand Cayman	student
Smith-Abbott	Joseph	Mr	British Virgin Islands National Parks Trust	Director
Smyth	Noeleen	Dr	Rep for Pitcairn Islands, Trinity College, Dublin	Conservation Botanist
Stringer	Clare	Mrs	RSPB	South Atlantic Project Manager
Stroud	Stedson	Mr	Ascension Island Government	Assistant Conservation Officer
Thomas	Rob	Mr	Royal Zoological Society Scotland	Conservation and Research Manager
Turnbull	Lindsey	Mrs	The Cayman Islands Journal	Editor
Turner	John	Dr	Chagos Conservation Trust/Bangor University	Executive Committee Member/Senior Lecturer
Tydeman	Chris	Mr	The Herpetological Conservation Trust	Chair
Vamham	Karen	Ms	Bristol University	Postgraduate Student; UKOTCF Council
Villagarcia	Marimar	Dra	Instituto Canario de Ciencias Marinas (ICCM)	Researcher
Watler	Lakeisha	Ms	University College of the Cayman Islands, Grand Cayman	student
Whorms-Harvey	Amanda	Ms	University College of the Cayman Islands, Grand Cayman	student
Zaluski	Susan	Ms	Jost van Dyke Preservation Society	Programme Director

Appendix 4. Feedback from participants

We heard from you !

Conference participants were asked to complete a feedback form, which could be anonymous or otherwise, as the participant preferred. The preamble to the feedback form said:

“This conference depends on a substantial amount of funding from the sponsoring bodies, the time (both paid and very largely volunteer) of organizers, and certainly not least the time and effort of all the participants. We are anxious to assess how useful this was and any lessons that can be learnt. We also want to capture any ideas that you have for future priorities for our joint efforts in relation to conservation in the UK Overseas Territories & Crown Dependencies and related countries. We would be grateful for your views. To help you in recalling aspects and to help us analyse the results, we have included some questions here, but do not feel the need to answer all of them, and please feel free to add any other points.”

Most participants responded, and we are grateful to them for their comments. These responses are summarized below, with the original questions given as the section headings. In a few cases, the comments have been moved to the sections to which they better relate.

It is worth noting first several general points that affect the analysis:

1. Most comments ask for more content, but few say what could be dropped. Although presenting a difficulty in respect of budgeting for any future conference, this seems to indicate that most elements were valued.
2. Many suggestions effectively commit time of other people which may simply not be available.
3. Some comments were based on assumptions about how funds were deployed which were not correct.
4. Some comments were internally contradictory. For example, one respondent asked, at one point in the questionnaire, for more structure within the programme, but complained that it was too structured at another point in the same document.

Generally, these points do not affect the summary conclusions below.

1. Please indicate, for any of the following sessions, any aspects that you found useful for your work (especially if you think that they will change how you approach aspects of it). Please indicate also any parts of the sessions that you thought were of little value to you.

A) Posters and displays

The most common phrases used were: “excellent, good selection, good space, interesting, well arranged”.

The student posters were very popular and some thought that they should have had a greater prominence in the room and more widely encouraged from all Territories. The JNCC display boards were admired as were the UKOTCF posters in the plenary room. The posters were seen by some as a really useful way of learning how things are done in other territories, what their problems are, and how they are being overcome.

As many commented on the value of being able to take material away, the suggestion of a “project fair” instead of (or as well as) posters could be valuable. This could help to encourage sharing of outputs of OTEP and other projects. Often results and outputs such as field guides are not widely disseminated across the UKOTs, despite the offer from, and efforts of, the UKOTCF web-site to help in this regard. The conference is an excellent additional opportunity to do so.

Here are some of the other thoughts:

“[The] poster room wasn’t ideal for session due to dining tables, but perhaps unavoidable.”

“It was all of interest and much of it was directly useful, especially house mouse removal from Tristan”.

“The UKOTs [were] very interesting. [The] government agencies [were] less so as too familiar”.

“As with previous conference, poster/display area seemed like an afterthought and didn’t provide for a nice experience for presenters or audience”.

[The situation was actually the reverse; a great deal of planning and effort went into this. The real problem lay in that relatively few poster-presenters responded in full to the organizers’ repeated requests for details of the space they needed.]

[At the end, those posters available were taken

by Stedson Stroud, Conservation Officer Ascension Island, for the new OTEP project on Green Mountain where they will be used to educate local children about the UKOTs.]

B) Introduction to Cayman experience and conference initiation by field visit

All delegates thought there was a good choice of trips (Pedro St James, Botanic Gardens and the Mastic Trail) and they were clever ice-breakers. Those hiking the Mastic Trail thought it was excellent. The helpers and guides were very knowledgeable, which enhanced the experience and while being educational it was also very enjoyable.

Some felt that they would have liked to have heard more about island economics, infrastructure, rubbish, water supply, social issues, waste management, power etc, as a case study, rather than the questions-and-answer session - which, although a good session, a few felt ran into time spent at the gardens and pressed the two speakers unnecessarily. Others felt that this constituted one of the best discussion sessions of the conference. (Previous experience by the conference organisers, working both with UKOTCF and other organisations, has indicated that discussions in field situations can be very successful. They are, however, very difficult to orchestrate.)

Here are some of the other thoughts:

"[It was] good to re-visit some sites to see progress made since my last visit and to learn of programmes working successfully".

"I felt a bit rushed".

"Enjoyed and found useful; Cayman conservation presentation was excellent; lunch in Botanic Gardens meeting Blue Iguana was magical illustrating the importance of conservation".

"It was a nice walk for a Sunday morning and will never forget the cannibalistic racers. I came away feeling very knowledgeable about the immediacy of the Trail but ignorant of the wider on-the-ground issues facing Cayman. Perhaps that would have been unrealistic".

"As a National Trust member, I was particularly impressed with the apparent strength of the Cayman Trust. I would like to establish links with this Trust to aid in our local Trust's identification / management and marketing of own UKOT heritage product."

"[The coach tour was a] very useful introduction to the island and its history at Pedro St James. [I] had a very valuable discussion about selling black

coral and CITES. This could have been included in the day as a formal element before people bought earrings as gifts for family".

C) Short session on Progress on Environment Charter implementation

Overall, the participants thought that this was a useful and informative session with a clear summary. While several mention that there could have been better way of communicating the progress instead of reeling off data, others thought that the presentation of detail in the conference handbook, with a brief spoken summary, was very effective. Generally, the case study was thought to be excellent and a model for other UKOTs to work from.

One suggestion for follow-up was that perhaps an information paper or memo could be sent to UKOT's governments reminding them of their responsibilities, but at the same time confirming UK Government's commitment (financially and otherwise) to the cause. However, this would need the same commitment from UKG, which is not generally thought to be the case.

Another was that, for countries like Montserrat and Anguilla which are also party to agreements on a regional level, the charter should be re-examined in order for the country to service both agreements, but at the same time avoid double reporting requirements. (This has been discussed at previous conferences, with general agreement that simple "translation" lists between the two forms of agreement should be easy, so that the benefits of both agreements could be enjoyed, without lots of effort into extra reporting. UKOTCF has previously indicated its willingness to help with this on an individual UKOT basis if that would be helpful.)

Here are some of the other comments:

"This does make a valuable yardstick for CDs as well as UKOTs. Yes we will get this up to date. We will also be working on an IOM Environment Charter".

"It may have been more useful if the group could have been split so that individuals could discuss gaps/filling them in".

"A mechanistic, measuring inputs approach (number of publications, number of plans etc) without any weighting of which indicators are the most important, does not seem the best way of assessing progress against a broad set of aspirations. Apart from putting a lot of red squares against TCI, I don't think that a clear analysis of overall

trends (or their causes) in each UKOT can be derived from this."

[Such an exercise is inevitably a compromise between the obtaining of the best information and the practicability of doing so. UKOTCF held a wide consultation over many months before settling on the measures used. There is no suggestion of attempting to develop a single indicator score.]

"Interesting, as it highlights the fact that not all reports are to be taken seriously as they do not always capture situations as they really are".

"All charters [this probably should read strategies or plans to implement the Charters] should contain within them the human financial resources needs for them to succeed and be audited against actual capacity".

Several have mentioned the need for a mechanism to be put in place where funding can be made available to fulfil directly obligations under the charter. Other mechanisms should also consider long-term capacity-building in order to sustain effectively viable management of the environment.

D) Short session on Environmental Education

Participants thought this session was: "useful, well-organised, important".

Several participants mention that it would have been a useful extra to have some form of round-up and general buy-in to what happens next among all the territories. One suggestion was to have more demonstrations rather than lectures (which would have been the case if time for a full session had been available). Another initiative could be to produce a (How To) handbook for environmental education in the UKOTs. This could include a comprehensive communication strategy that covers all sectors of society to include class sessions, public meetings, policy briefs, organising lunches, dinner or cocktail session furthermore a strategy for TV/ radio spots.

Here are some of the other thoughts:

"The most important part for me since is my field of work. It was great to see examples from other territories, identifying opportunities for networking".

"Very useful session; received quite a number of interests from persons regarding Turks and Caicos National Trust's summer camp. It is always good to share successful programmes and projects with others as there could be opportunities to adapt ideas and implement new approaches to improve

services".

"Student involvement really made the conference".

"Useful and interesting to see what is being done but feel there is still too much reinventing the wheel" [to overcome which is why the new UKOTCF web-database module on Environmental Education resources has been developed].

E) Climate change – impacts and adaptation .

The most frequent comments were: "too familiar, general, interesting, fascinating".

Most thought that the presentations were very good, but that the discussion never took-off. Most acknowledged that much needs to be done in this area in all territories.

Some suggestions are that a hand-book could be developed to assist in identifying various adaptation initiatives that could be employed in the UKOTs/CDs. This could link UKOTs to developers/firms that offer alternate energy solutions. Generally, participants felt that, for small territories, "overcoming the potential dangers (such as sea changes, storm, fires, etc) are too great and expensive to be taken by islands only." A regional approach to this problem is essential and the EU-funded South Atlantic Invasives project should be taken as a model.

Here are some other thoughts:

"I would like to have seen updates on adaptations from each territory on where they are with their national adaptation plans".

"[I] appreciated the emphasis of cost effective adaptations".

"As this subject would have been very familiar to most, a workshop to build on this knowledge would have been more useful".

"[This is] something we can't go on ignoring on [our island; it is] especially relevant in relation to invasives. [It was] useful to hear Guernsey's paper".

F) Spatial Planning, Protected Areas and International Standards – assets or liabilities?

Some of the phrases used here were "passionate, thought-provoking".

The thoughts from this session were very mixed. Whilst some thought the presentations were interesting, relevant and helpful, others thought that this session could have been more coordinated and bet-

ter prepared with clear conclusions and outcomes. One suggestion was that a future session might attempt to “compare and contrast” the different issues in site protection between those parts of/ territories with inhabitants and those with none by comparing for example: Falklands with SGSSI; Caribbean with BIOT and within UKOTs: Tristan with Gough; Pitcairn with Henderson. This could be in a format more like a debate.

Another is that, as papers are sent some time prior to the conference, perhaps some feedback to the authors would help cater to the overall theme of the sessions. (The organisers note that there is great difficulty in getting papers in advance.)

Some other thoughts were:

“Some presentations too long and so discussions could not take off”. [This was due to some speakers greatly exceeding the agreed time, and chairpersons failing to stop them.]

“Good UKOT presentations – would be great to have a database of good UKOT examples as suggested but should check first to see if more appropriate to include in already existing databases.

“[Some of the young people] were compelling speakers, and I hope their talent can be nurtured”.

“[This session] highlighted the wealth of information that can be shared to make informed decision making. There is a need here to build capacity in this area, identify data deficiencies and promote the use of spatial planning throughout all sectors. Recommendations need to be forwarded to local Governments in order for strict data collection and protocols to be followed, and possibly explore ways this can become a revenue making service”.

“Excellent session could have made this a whole day, given its importance for the future. [This could, of course, be said of all topics – and, indeed, largely was. Equally, there was enormous pressure to include more topics – but the two demands are incompatible.]

“[This] really needed a facility approach”.

G) Raising our profile - engaging policy makers and the public

Some of the most used phrases were: “worthwhile, inspiring and valuable”.

It was suggested that this session should be a feature of future conferences (but this conflicts with the popular demand before the conference that priority be given to those topics not addressed at the immediately preceding conference).

Here are some other thoughts:

“Appreciate time spent on governor’s role and their limits, and they are still influential if interested in doing so.”

“A workshop might have generated more ideas on how to deal with this important area.”

“A handbook for dummies could be published to best address how one should negotiate / engage policy makers and the public. It is critical here to identify someone within the hierarchy of the HMG / The Crown / entertainment industry and the press to assist to champion the cause.” Another suggestion was a summarising paper to join all six presentations together.

“ [The] economic evaluation of natural resources is a good way to raise appreciation for the natural heritage and influencing decisions”.

“[I] value the session with Paul Keetch adding useful and stimulating Westminster dimension”.

“Some ideas will be well worth implementing at home”.

“Inspirational stuff from Bermuda in particular”.

“I believe this is very strategic issue for the territories; island people are very proud of their local/ regional landscape, flora and fauna and this fact can be used to engage the locals into key matters affecting land conservation, biodiversity, invasive species”.

“This session brought out the need for UKOTs to be more united and to speak with one voice to be able to make a lasting impression on HMG”.

H) NTCI evening event

Overall, the participants all enjoyed this event and paid tribute to the warm welcome by the National Trust and for all their hard work that had gone into its preparation. Most described it as “excellent, lovely, enjoyable, and wonderful”.

A few expressed concern over the environmental impact of the event and felt that this should have been taken into consideration, given the subject matter discussed during the day.

A suggestion made by some of the participants was that this type of event should be a feature of all conferences, given the success of the hosts in communicating their history and character. Furthermore, an exchange programme could be set-up for territories to learn from each other and use the Cayman Islands as a good example.

Here are some other thoughts:

“[I] should have had a doggy bag to collect more

fluffy dumplings!”

“[I] enjoyed the cultural feel. Stimulated new ideas for our cultural awareness and preservation programme. Appropriate for National Trust representatives to experience cultural heritage of Grand Cayman as well as conversations during the sessions. Personal commendation on Chairman, staff, volunteers for an excellent display of culture and keep up the good work”.

“[I] enjoyed the charmingly produced play and meeting local people. [It was] also great to see bat emergence and nighthawk.

I) Enhancing capacity - how on earth are we going to cope with the workload?

Most participants thought that, while trying to cover many topics, the presentations from the territories were excellent.

Most agreed that it was good to see different approaches to a volunteering programme in several territories. One suggestion was to create volunteer policy for territories to use so that they have objectives, and goals are managed and have an understanding of protocol and guidelines. One idea is that this session should be made at the highest levels to convince policy makers of its importance.

Here are some other thoughts:

“Other capacity options could have been included such as sponsorship and secondments.” [UKOTCF is actually including these in its current considerations about taking this forward.]

“We look forward to UKOTCF further developing the volunteer coordination system.”

“Some guidance should have been given on which funding sources are most promising sources.”

“Makes me realise how behind we are in local capacity on human resources management”.

“One of the sessions where “Making the right connections” lived up to its billing”.

“Colin Clubbe’s presentation on “how to make a good plan” was also strong and practical”.

“More could have been made of Mat DaCosta-Cottam’s framework document “The goose that laid the golden eggs” which was rather buried away in the conference pack, and not discussed in plenary”.

“ [It] didn’t necessarily tackle the problem of living within a non-volunteer culture”.

J) Invasive species

Most of the comments were “excellent, useful,

progress, relevant”.

Many believe that much more work needs to be carried out in this field but that significant progress has been made through the EU-funded SA Invasives project. One suggestion was that this session could have been used to create some concrete outputs such as a “Top 10 invasives” for each of the territories.

Here are some other thoughts:

“The comment from Martin Hamilton regarding invasive species and native plant nurseries encouraged me to stay on course in trying to establish a nursery on Providenciales and gave me ideas for public awareness activities”.

“[This] brought about a lively discussion, particularly about the image of invasives and how to market eradication programmes to the public”.

“[I] was left feeling very positive about the new OTEP funded-Invasives databases and awareness-project”.

“[This is] clearly something that is developing at a regional level with UKOTs and has a degree of momentum although threatened by a lack of resources”.

“[It had an] excellent breadth of material. More costed remediation evidence and cost/benefit studies could inform this subject”.

K) Regional Working Group meetings

Most participants thought that the working group meetings are a unique opportunity for territory representative to meet face-to-face, and to form plans on how to work together.

However, a few felt disappointed with the venue, as it was not intimate or inclusive, and some sessions were unproductive as too many formal procedures were followed. One suggestion was that an informal regional discussion could take place earlier in the week, with a more formal working group meeting later on. Another was that the session could have been used to fine-tune project proposals that are identified beforehand. Another was that a one-page note on goals, previous conclusions, structure of group within the forum, council, and the role of the UK etc on screen at beginning of session to give some background. What certainly became clear was that, for some organisations involved in UKOTCF Working Groups, their regular representatives need to do more to disseminate discussions within their organisations. UKOTCF will consider ways in which it might help repre-

sentatives to do that.

Here are some other remarks:

"[The session] was disorganised;

"The opportunity to capture issues rather than report on them was wasted".

"WCWG was useful... though I always think it is a shame that these group meetings seem to be slotted in at the end of the day when folk are feeling tired – I think more time could be made for these meetings".

L) Joined-up thinking – institutional arrangements for environmental management

Participants thought this session gave an excellent account of the arrangements in the Cayman Islands. One suggestion was to hand over the entire session to the host to chair, as well as to share experiences, as this would have given them more time to explore the relationships and give more guidance as an example to other UKOTs. (However, this idea does not really recognise the heavy loading already on host organisations.)

Here are some thoughts:

"It would have been good to have a workshop for the EU-funded Net-Biome project where further explanation could have been given and guidance on how to complete the questionnaire."

"I didn't feel that much came out of these sessions, possibly because many people were preoccupied with the Ministerial session to come. The lesson being - put the Minister first on the bill next time." [Sadly, this suggestion is impracticable; we have to fit in with Ministerial diaries; we cannot set them.]

"[This was an] interesting concept. [It was] very necessary for smaller countries where resources are limited."

"This approach could particularly assist Montserrat in creating a centralised Lab/ research station that could be patronised by various organisations".

"[It was] particularly relevant and interesting for comparing and contrasting between UKOTs and guiding practice".

M) Cruise to view marine ecosystems from boat: North Sound sand-banks and mangroves; and on to closing conference dinner

Although most participants would have liked to have seen more of the ecosystems and heard more from the locals regarding the challenges facing the Cayman Islands, they thought the event was "per-

fect, brilliant and a great experience". The informal closing helped to forge and strengthen relationships and overall a great networking opportunity.

Here are some other thoughts:

"Magical and wonderfully self-indulgent"

"Wonderful.....nuff said!!"

"After hearing about mangrove swamps and the destruction by man for human purposes for many years, the chance to see this in reality was somewhat exhilarating, and these swamps definitely need to be conserved for future generations".

N) Other elements (e.g. Opening, Conclusions session, informal meetings, etc)

Aside from the "excellent organisation", the most popular comment was that the informal meetings were the most important thing that came from the conference and more time was needed as they help to form the working relationships. To this end the conference may have helped in "making the right connections".

Suggestions were to reduce the content of the sessions to allow for this and not all lecture style. (This, of course, conflicts with many other suggestions, reported above, for longer sessions. Also, it is important to note that workshop-style sessions - whilst undoubtedly valuable in many situations - generally take more time than discussions triggered by presentations. The series of conferences has varied its style continually, but the organisers recognise that perfection is impossible because of constraints of time, funding etc. They will keep trying.)

Some other comments:

"Some UKOT participants were barely 'used' by the meeting." [In fact, a lot of effort was put into making sure that Territory speakers (and in other roles) were the majority, and from as wide a spread as possible. Where necessary, the conference organizers provided help with their preparation.] *"Break up the sessions with an informal day [as] discussion sessions improved as the conference went on, because more people felt at ease expressing themselves".* [This was one reason why the organisers held the informal day at the start, and reinforced it, a couple of days later, by the evening hosted by the National Trust of the Cayman Islands.]

"The Minister's presence was important with an encouraging speech albeit against a very uncertain political backdrop."

Several participants would have liked to have seen the students more involved and included by the chair in every session as *“their questions are likely to be honest and searching without the political baggage most of us carry”*. [Something nearer this had been originally planned, but local constraints on the students themselves limited the sessions in which they could be involved, and also prevented the planned involvement of a small number of students from other Caribbean UKOTs.]

Many participants thought that the availability of the internet was a good thing; however *“having it in the conference room meant that some people were checking emails rather than listening to talks/ taking part in discussions”*. [It is quite clear, from previous experience and the range of comments, that internet access is highly valued, and worth the considerable effort that the organisers put into providing it. It is probably wrong to assume that persons working on laptops during the sessions were necessarily checking their emails, rather than, for example, taking notes. Even if they were checking emails, the organisers do not see it as their role as monitoring the way participants organise their work, except where that is disruptive to others.]

“For the conclusions, a slide of each session really summarising may have been more constructive than reading them out.” [The organisers agree – but, in practice, the task of preparing these summaries was difficult enough for the people doing them, without imposing additional constraints.]

A few participants expressed an interest in receiving a participant list, with contact details. (There are, unfortunately in some ways, now legal constraints on publishing contact details. Participant lists were provided in the conference handbook and updates supplied to participants at registration, and are in these proceedings.)

2. The choice of session topics was the result of a wide consultation around those working in conservation in the UKOTs and similar areas as to which topics they would find most useful. We tried to accommodate as many of these topics as possible (combining them under broader themes, where appropriate) but could not include them all. If another conference were organized, what topics would you like to see addressed (whether included this time or not)?

Here are some initial suggestions for future topics :

- Creative fundraising for conservation thinking outside of the box
- Climate change
- Conflicts of infrastructure with/complements environmental conservation
- Economic crisis. How will UKOTs cope with a new UK Government?
- Economic Valuation
- Environmental Audits
- Environmental Education
- Grant Applications
- HMG and Environment Charters
- Invasive Species
- NGO human resourcing; motivating staff on extremely low salaries; keeping up moral and protecting staff from poverty also general human rights issues in staffing.
- Power generation (maybe private sector involvement).
- Protected area management (marine and terrestrial)
- Software training (economic valuation, spatial planning, geo-referencing competition)
- Spatial Planning: Dealing with the drip-drip of routine development planning/ application/ control and its impacts (e.g. soil erosion)
- Territory Standards
- Training opportunities; workshops, associates, MSc's, Post-docs, scholarships, short courses, leadership, project management, HRM
- Volunteerism the key to success and the value of gifts for time.
- Waste management

(This will continue to be explored in the interim before any future conference.)

3. At the Jersey conference (2006), we experimented with parallel sessions. Feedback strongly suggested that delegates preferred not to have parallel sessions, which were consequently not a feature of the Cayman conference. What are your views on parallel sessions in a conference of this type?

Most participants were against the idea of parallel session as they can be “confusing” and they mean that delegates miss certain sessions and the group become fragmented. However, a few suggested that workshops would be more helpful to facilitate productive discussions. A combination might be ideal but in a way where if someone wants to attend all sessions/workshops then they can. (The

conference made it clear to session co-ordinators at an early stage that the session format was not fixed, and various formats have been used in different sessions in previous conferences. Most session co-ordinators have tended to conform with the participant view repeated this time that using the whole group as a big workshop is desirable.)

A few have suggested additional regional meetings for example in the Caribbean, Oceans and Europe.

4. Did you make any important links in previous conferences that have aided your own work? If so how do you think they have helped?

Overall, participants report that these conferences organised by UKOTCF have helped to “foster and maintain” relationships which have “immensely aided work”. The links help to provide technical support for projects funding to attend workshops which provide new ideas and contacts to enhance and strengthen programmes.

Here are some general comments:

“[The] knowledge and new contacts will be helpful, especially as I work on my own. Suspect many of the benefits become evident over the next few months”.

“I make good links at every UKOTCF conference. In Jersey I met Soggy from CSL, and we worked together on a pilot cat eradication project in Little Cayman as a result”.

“As a result of past conferences, Montserrat was able to make links and move forward with the economic valuation of the Centre Hills. We were also able to make significant linkages to strengthen planning for an upcoming invasive species project.”

“This is my second conference of this type, and I found it very interesting and useful this time. It has helped not only in direct contacts for work, but also in further understanding the UK’s role in the UKOT’s [with regards to] environment, and has generated several ideas on how to implement some of the work required in our territory with collaboration from UK groups. Thank you for inviting me, and I believe this will create a push forward for us.”

“[There are] too many to list. The face-to-face with UKOTs personnel is invaluable, especially as many of the territories are so remote and still lack good communication”.

5. Do you think that a conference of this nature is sufficiently useful that another might be organized somewhere and, if so, after how many years’ interval? Or do you think that the resources would be better deployed in another way? (Although it cannot be guaranteed, of course, that funds not used for a conference would actually be available for other conservation uses)

Overall, participants felt that these conferences are extremely important and useful and that if funding can be sought then they should take place at 2-3 year intervals to allow continuity.

Here are some comments:

“Another conference is useful. It would be wise to have Ministerial representation as best as possible from the UK EU and UKOTs present so they have a better understanding of our needs”.

“Definitely worth repeating in 2012.”

“I have found them very useful. Please continue these conferences”.

“To have conference in 3 years time would be useful.”

“The conference is useful as an opportunity for Territory practitioners to meet each other and their UK equivalents.”

“I think that such conferences are good and should be continued as long as the resources are available. It is a good forum to catch up with friends and colleagues, to exchange successes and challenges, to learn from each other and to hear of new approaches to problems, new funding sources, training etc.”

“Conferences should be held every two years ideal for continuity.”

“Three-year interval seems good, so 2012”.

“Conferences should continue to happen but think it might be worth exploring regional conferences at 18 month intervals (e.g. Caribbean in 18 months and then South Oceans 18 months later. Would cut size and distance of travel and possibly mean more participation from UKOTs”.

“I welcome the opportunity to be around similar minded people and experience the ideas raised and discussed.”

“It was evidently very valuable to bring OT people together to share experiences and understanding.”

“Three year intervals are good since you could amass enough new experiences and information to make the sessions meaningful.”

“It is very valuable to get together with other territories. I would certainly welcome another confer-

ence. Every 3 years is just right."

"I believe the possibility of seeing faces and being able to have interact directly, provides better opportunities to have a good feeling of what is going on in the different UK Territories and Crown Dependencies."

"Yes. Three years. I think the conference is worth the expenditure."

"I think it right that the Forum should meet every three years in a different Territory so that members sharing similar interests and concerns can meet to discuss them."

"Value [of the conference] lies in forging a community of island conservationists."

"Three years is a good time frame".

"[Conferences held every] three years is ideal."

"[Conference is useful] in three year intervals."

"To have a conference like this one that brings all territories together whether the representatives have good or bad stories to tell has got to be a way forward. [We are able to] share problems with other territories for answers."

"A conference every 2 years I believe that would be more efficient, allowing better continuity of persons and issues."

"These conferences still have several useful functions: stock take and planning, sharing experience and focusing a unique voice for UKOT environmental matters so it is important to hold them every three years."

6. What would be the most helpful things that the UK Overseas Territories Conservation Forum could try to do to help its Member and Associate organisations, and other conservation partners (including governments), in the UK Overseas Territories and Crown Dependencies?

Some suggestions include:

- Advocate for improved policies and resources at UK level in a consultative fashion – e.g. by assisting Member and Associate organisations to respond to consultations.
- Develop and implement the ideas for a volunteers system already piloted to some extent, as outlined in the conference.
- Assist with grant applications and project support.
- Collate information on professionals who might form a pool of expertise that could be utilised by the UKOTs.
- Continue to make good links to assist with

funding and communicating to the UK government.

- Continue lobbying EU/UK Gov department's information and experience sharing.
- Encourage funding applications to be simplified.
- Encourage more networking between territories directly.
- Encourage skills-sharing – mentor local/Territory people in relation to chairing/facilitating, and reporting back. Raise awareness of biodiversity value of UKOTs. Raise awareness of CBD "bang-for-buck" of biodiversity conservation in UKOTs.
- Further develop its communication with its Member and Associate organisations but also more regular contact with island councils. This can be done in several ways: developing the website and blogs.
- Identify a funding stream of an institution willing to support a person to obtain a degree/postgraduate study in an area relevant to biodiversity conservation/management.
- Identify human resources that can be shared in the UKOTs.
- Lobby for an MP in parliament that will represent the overseas territories and ask questions in parliament.
- More initiatives to raise public and business awareness.
- Promote UK Gov facilitation of spatial planning development control and legislative fundamentals for common standards across UKOTs.
- Provide a more direct channel for funding from donor agencies
- Support channelling of more funds from UK to UKOTs.
- Try to facilitate more face-to-face and virtual communication between neighbouring territories.

Here are some additional thoughts:

"Promote reduced competition between UKOTs for limited funds – otherwise the most biodiverse and threatened will continue to compete against the most biodiverse and threatened. UKOTs should compete against the UK not each other". [On the other hand, most approved the idea of ear-marked funds for UKOT work.]

"[We need] help with links to government agencies, as Guernsey has no links with JNCC in particular".

"If emails are not getting a response – call someone and talk about the issues".

7. What would be the most helpful things that the UK Government could try to do to help environmental NGOs and other stakeholders (including governments) in the UK Overseas Territories and Crown Dependencies?

Some ideas were:

- Allocate sufficient resources on a programmatic rather than a project basis
- Apply pressure to local governments on various issues such as waste management
- Make better use of the expertise and network of UKOTCF as a resource
- Assist Governors with knowledge of environmental matters and best use of funds
- Assist with regional linkages
- Create a channel for direct two-way communication for NGOs to report concerns to the government.
- Enable OTs representation in UK parliament with own MP
- Encourage NGOs/ Stakeholders and local Gov. to sign MOUs
- Ensure good governance and serious and active policing of local government function to be sure funds are allocated and reach their destinations and land transfers happen
- Extend legislation and provide support to implement
- Facilitate international site nominations
- Fulfilment of obligations under the Environment Charters
- Greater commitment based on recognition of UKOTs biodiversity importance and resource constraints
- Improve departmental responsibilities with a clear single lead department
- Increase maritime patrols, e.g. Tristan da Cunha.
- Increase visible tangible support to stakeholders/NGOs and support action plans
- Press the local Governments to recognise importance of and actively save the environment
- Promote/aid take-up of standards across the UKOTs
- Provide assistance in financial management/ project management to strengthen NGO capacity
- Provide funding for large projects (e.g. mouse eradication on Gough)
- Provide resources that are readily accessible to the UKOTs and effective representation
- Provide key posts dedicated to long term programs such as the Charters.
- Provide training from UK (e.g. scientists)
- Recognize extra support needed by small UKOTs (Pitcairn, Tristan da Cunha)
- Recognise the UKOTs as “jewels of the crown” and provide more direct participation and funding
- Thorough knowledge of the constraints faced by very remote UKOTs with small populations

8. Has the conference given you ideas and inspiration in order to deal more effectively with challenges in your work? If so, what were they? What do you think that you will do differently as a result of attending this conference?

Overall, participants have made important and strong links and a deeper understanding of the issues at the Cayman Conference, as well as previous UKOTCF-organised conferences attended.

Some of the ideas that participants will follow up are: formalising volunteer assignments; linking with volunteer coordination by UKOTCF; increasing volunteer involvement; raise public awareness and further heritage conservation; fundraising; work towards a “pay back to the environment” and use fees to support conservation; further networking cooperation between groups; argue strongly for an increased educational role.

One participant listed personal outcomes from the conference:

“Launched the OTEP invasives species databases and awareness project, received requests for copies of Cayman’s Biodiversity Action Plan from other UKOTs, received project suggestions towards reaching specific NBAP targets (for Ghost Orchid), seen the results of a cross-territories GSPC initiative in which we partnered with Kew, received the offer of expert assistance to establish a National Collection of insects, met with partners to advance the UKOT regional ENTRP EU bid, obtained exposure for my book.”

Here are some further comments:

“I think it may be a little difficult for government entities to revolutionise their way of thinking overnight, but certainly for NGOs, they could be inspired to be more proactive”.

“[I] am inspired to press for more volunteer workers obviously this will be difficult also to look into new options for fundraising (the QEII Botanic Park nursery does over 100k in annual sales)”.

“Conferences such as this are useful networking

opportunities. I feel the conference did allow a platform for some local issues to be aired; it allowed me to expand my network of contacts."

"[The conference] was very useful for a non-specialist to get to know professional colleagues from around the UK as well as UKOTs. [I have a] deeper understanding of the challenges facing the UKOTs and the quality of local personnel wrestling with them. [I have] renewed conviction that UKO-TCF has a uniquely important role."

"[Following the conferences I have] kept up with international partners".

"[The conference has helped aid own work] as seeing how other countries approach problems. I will follow up various things to do with Red Data books and biodiversity strategies. I find these conferences useful in meeting people from small islands many of whom face similar problems to [mine] even though the political set-up is different. Individual pieces of work I have found out about at the conferences, often not on the programme, have influenced the way I work."

"The knowledge and new contacts will be helpful especially as I work on my own. [I] suspect many of the benefits will become evident over the next few months. [I have a] greater awareness of [the] need for all to work together."

"The linkages/connections have been thought provoking. I am prepared to challenge the powers more often".

"[I have made several links in previous conferences] to aid in technical support for projects and funding to attend workshops which provide new ideas and contacts to enhance and strengthen programmes."

"Useful discussions with delegates only previously known through correspondence, e.g. Martin Hamilton from Kew. [There was] an advantage in meeting UKOT experts and inhabitants".

"[Important links were made] through information sharing. I will argue strongly for an increased educational role of our department. [I will also] develop and formalise contacts with other NGOs and Government departments. [The conference] was invigorating and inspiring. It can be quite isolating working in conservation in small islands and it has been great to realise that there is actually a network of people in similar situations."

"I have made some important links at this conference. [I have gained] knowledge of projects and work elsewhere and especially key people involved. [I] will work with wider groups of people [and I have seen] opportunities for collaborations."

"Relationships continue to be fostered and matured through various conferences which have immensely

aided our work."

"[I have made] Too many [links] to list. The face-to-face with UKOTs personnel is invaluable, especially as many of the territories are so remote and still lack good communication."

"As [in previous conferences] learning about how common problems are handled. [I] recognised the value of education and the need to enhance it."

"[The conference enables] good links and good cooperation. I have made a lot of links in the OT island community."

"[I now have a] greater understanding of challenges and key contact individuals."

"This is my second conference of this type, and I found it very interesting and useful this time. It has helped not only in direct contacts for work, but also in further understanding the UK's role in the UKOT's with regards to environment, and has generated several ideas on how to implement some of the work required in our territory with collaboration from UK groups."

"[I made] contacts with direct participants in our Darwin project and their government partners will help to inform the design. [The] commitment and advice from organisations which will be part of our Steering Committee [was] also very valuable."

"The networking at these conferences is just as important as the conference themselves."

"Much background knowledge gained and many inspiring people met. Both will directly inform my day to day programme management work."

9. If you attended the Jersey conference, what did you do differently as a result? If you can remember, was it what you said in answer to the previous question last time?

Most participants who had attended the previous conferences have reported that, through the meetings, they have established international partners and they offer an opportunity to meet and discuss future activities and develop proposals.

Some interesting remarks:

"I would say that I don't do things differently as a result of the conference – I do things which I could not do at all before – e.g. the cat control project. Before Jersey, I did not know how to do this so I did not do it - at Jersey I networked to find someone who could help. With low capacity, things which I cannot do I tend not to do at all, rather than try to do them badly. As such the conference helps me do more rather than do better."

"I have become more aware of some of the restric-

tive systems that certain organisations have to work with. I do hope that by the next conference, the NGOs in Montserrat would have a greater support base, as they have the mandate to protect, and conserve the environment and heritage for future generations.”

10. Any other comments

These included:

- Increase the number of microphones (some of discussion inaudible).
- More student involvement (sponsorship for students from all UKOTs to attend). (See above for comment that there was a lot of effort put into this for this conference, but local constraints on the students eventually limited this. That will not stop future attempts.)
- Attract more environmental stakeholders by invitation.
- Avoid thick paper reports except for records. (This is already done for Proceedings. It was considered for conference papers but, unfortunately, many participants are not yet able to deal with this format.)
- Utilise more sound bites, blogs, YouTube, Facebook and Twitter.
- More direct contact and dialogue is needed.
- Be sure to capture student testimonials as they will be useful for fundraising to raise support for “youth forum”. (See elsewhere in these proceedings.)
- Need to try harder again next time to make sure speakers stick to allocated time and consider allocated/targeted questions between presentations. (This is a continual problem for conference organisers, and one whose implementation makes them very unpopular! In fact, this conference was much better in this respect from some earlier ones, but we will continue to strive.)
- Was excellent that the Minister was there. Hope follow up with dialogue will result.
- Transparent accountancy- carbon off-setting etc. (The organisers sought information pre-conference from UK Government agencies as to whether currently available off-setting programmes really do offset, rather than be either ineffective or environmentally damaging, but these bodies were unable to confirm that.)
- Shorter sessions – more time to mingle with colleagues.
- Longer sessions to cover the topics more fully.
- Side-meetings need to happen, and are gener-

ally seen as the most valuable part of these large meetings.

- It would be great to use a venue with more “green” credentials next time. [The organisers agree. The problem is that those venues with the facilities to host a conference tend to be the “up-market” ones. If one follows the option of separating the accommodation and the meeting location, extra costs (in terms of money, time and energy usage) come into play, so that the conference may become less cost-effective, rather than more.)
- Field visits could be used to help important conservation work in the future, a positive way forward. e.g. endemic plant census, monitoring, clearing invasive species animals and plants etc. (This has been done in previous conferences, and is always borne in mind in the planning, although it is not always appropriate.)

Finally a big thank you to all those that made the conference possible!



“I’m sure that we can get this projector to work...!”
(Photo: Rob Thomas)

Appendix 5. Friends of the UK Overseas Territories

Friends of the UKOTs is the way that individuals can subscribe to, and support, UKOTCF and its network of conservation bodies. A membership form is on the following page.

Friends of the UK Overseas Territories

Four good reasons to become a Friend:

1. You know how valuable and vulnerable are the environmental treasures held in the UK Overseas Territories.
2. You understand that the only way to guarantee their protection is to build local institutions and create environmental awareness in the countries where they are found.
3. You care about what is happening in the UK Overseas Territories and want to be kept up to date by regular copies of *Forum News* and the Forum's *Annual Report*.
4. You understand that the UK Overseas Territories are part of Britain, and therefore are not eligible for most international grant sources - but neither are they eligible for most domestic British ones, so help with fundraising is essential.

EITHER: I wish to become a Friend of the UK Overseas Territories at the annual support level: ☐ £15 ☐ £50 ☐ £100

☐ £.....

OR: I wish my company to be a Corporate Friend of the UK Overseas Territories at annual level: ☐ £150 ☐ £500 ☐ £1,000

☐ £.....

Name of individual Friend or contact person for Corporate Friend:

Company name of Corporate Friend (if relevant) :

Address:

Telephone: Fax: Email:

Please complete one of options 1 to 4 below. UK taxpayers are requested to complete section 5 also; this will allow UKOTCF to benefit from the tax you have paid, at no additional cost to you.

1. UK cheque: ☐ I enclose my UK cheque made out to UK Overseas Territories Conservation Forum for this amount.

2. Standing Order form: To: The Manager, Bank Name: Branch Sort-code:

Bank address: Bank postcode:

Please pay: UK Overseas Territories Conservation Forum at NatWest Bank, 9 Bank Court, Hemel Hempstead HP1 1FB Sort-code: 60-10-33 Account number 48226858 the sum of £..... now and a similar sum thereafter on this date annually.

My account number: Name:

Address: Postcode:

Signature: Date:

3. Standing Order instructions sent: I confirm that I have sent instructions directly to my bank for a standing order as per option 2 above. ☐

4. Credit or charge card: Please charge the amount indicated above to my card now *and thereafter on this date annually. [Delete the words after * if you wish to make only a single payment] (If you are based in another country, your card company will handle the exchange and include the equivalent in your own currency in your regular statement.)

☐ American Express, ☐ Delta, ☐ JCB, ☐ MasterCard, ☐ Solo, ☐ Switch/Maestro, ☐ Visa Expiry date: / (month/year)

Card number: Security number (3 digits, or 4 for Amex)

If used: Start date: / If used: Issue number: Signature: Date:

5. UK taxpayers are requested to sign the following section to allow UKOTCF to recover tax paid:
I want this charity to treat all donations that I make from the date of this declaration until I notify you otherwise as Gift Aid donations.

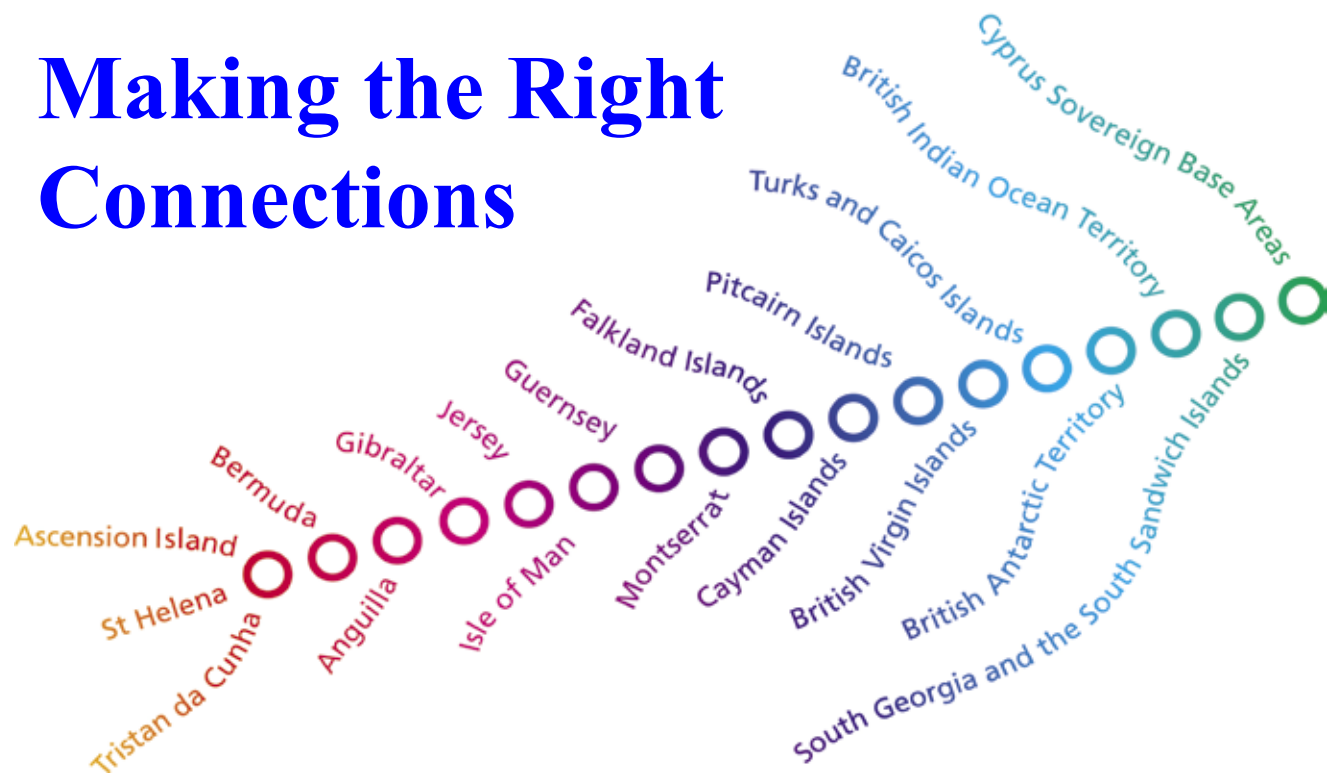
Signature: Date:

**Send to UKOTCF, Icknield Court, Back Street, Wendover, Bucks. HP22 6EB, UK;
if using options 3 or 4, you can fax to +44 2080 207217**

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