**Topic 8: Environmental Education and the UKOTs**

**Session Organisers: Ann Pienkowski (teacher & conservationist) and Dr Juliet Rose (UKOTCF Council, and the Eden Project)**

**Introduction to the session**

Education is important - We are living in critical times and facing huge changes.

Environmental Education has a critical role to play in broadening people’s understanding of some of the complicated issues we face and encouraging our engagement and participation in the decision making processes.

We know that it is important that environmental education reaches everyone: children, parents, tourists, businesses, governments, everybody. However, this is a vast topic area - so the majority of this session has a schools focus, but we can discuss these other areas after the presentations if people would like to.

We know that there is some great work going on in the Overseas Territories and Crown Dependencies, and we know that Environmental Education is a real strength - so this an opportunity to share experiences and approaches of all this good work.

As part of this session we would like to explore the possibility of developing a shared learning resource to further encourage the exchange of ideas.

Examples of these types of shared resources already exist such as the Science across the world project which is a resource for teachers to develop and explore science topics locally and then share their insights globally. Bermuda, Cayman, Falklands and Gibraltar are already signed up to this.

Another example is the Gardens for Life project – co-ordinated from the Eden project – a schools gardens initiative running in several different countries, integrated into the national curriculum. It encourages the exchange of materials and ideas through its website.

So, with this in mind, we would like to get your feedback on developing a ‘portfolio of possibilities’ for environmental education in the Overseas Territories and Crown Dependencies – to encourage the dissemination of all our good practice and help us to continue to develop good projects.

We would also like to draw your attention to the posters and other material, with some examples of some of the work by various participants and their colleagues, before turning to the discussion paper, circulated earlier.

We are very pleased that this conference, for the first time, has a group of local students taking part. They gained their sponsored places by demonstrating an interest in, and commitment to, environmental issues. They have already impressed us with their enthusiasm, and their eagerness to learn. (In addition to participating in the conference sessions, in the closing session the student team jointly produced a short presentation of their impression, and also supplied some notes. Some of their impressions of the conference are included at the end of this Topic section.)
Good Practice for environmental education projects in the UK Overseas Territories: a draft paper for consideration by participants

Ann Pienkowski (teacher & conservationist) and Dr Juliet Rose (UKOTCF Council, and the Eden Project)


There have been many environmental education projects in the UKOTs, of a high standard. However, their impact and usefulness often remains fairly localised. In this introduction we attempt to summarise key points which make environmental education programmes effective, and discuss issues and challenges. Following these discussions, we hope that future environmental education projects can benefit from experiences gained from previous programmes.

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Introduction

To date the standard of environmental education projects in the UK Overseas Territories has been extremely high. The UK Overseas Territories represent a unique resource for environmental education through their exceptional environmental and cultural heritage. In addition small islands have the potential to act as models for sustainability for a much wider regional and global audience. Environmental education in the UK Overseas Territories is key to establishing a positive legacy for the environment within territory but is also critical in raising awareness of the importance of the UK Overseas Territories in UK and elsewhere.

Can we identify good practice approaches to environmental education projects in the UK Overseas Territories?

Can we start to develop a series of case studies

Unique resources in exceptional environments

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from each of the overseas territories that demonstrates what we mean by good practice?

Can we use these case studies to help us identify gaps in knowledge, resources, policies and curriculum frameworks?

Can we increase the impact of UK Overseas Territories environmental education projects?

What do we mean by good practice?

Some initial thoughts:

1) Uses a range of partners

Definition: teachers, education departments, NGOs, local businesses, tourist offices, local government environment departments, overseas partners.

Why?

• increase resources,
• offers additional viewpoints,
• spreads the workload……..

Discussion points:

For existing projects:
How were partnerships established?
For future projects:  
What types of partnerships should be involved?  

Challenges: too many partners can be counter-productive  

2) Local community participation  

Definition: Parents, community officers, local businesses, local community groups e.g. rotary, church, guides and scouts, kids clubs etc.  

Why?  
• involving parents can motivate both the children and themselves (changing attitudes)  
• involving the local community can increase resources available  

Discussion points:  
For existing projects:  
What type of community engagement took place?  
For future projects:  
What type of community engagement should take place during the project?  
How should this engagement be carried out? At what point of the project should the community become involved?  

Challenges: Apathy, lack of awareness ……  

3) Access to a wide range of resources available  

Definition: Physical resources and media, study sites e.g. resources that make use of the local environment, human and financial.  

Why:  
• increase motivation of students  
• increase understanding  
• increase the project’s impact  

Discussion points:  
For existing projects:  
What resources were identified which could contribute to the success of the project?  
Were any resource constraints identified?  
If so, what activities were identified to overcome these?  
For future projects:  
What types of resources would be needed?  
What kind of ‘in kind’ support is possible?  
What resources are available to maintain the project’s legacy?  
What kind of training and support should be given to establish the project?  

Challenges: isolation, capacity — multiple responsibilities……  

4) Supportive teaching framework  

Definition: curriculum links  

Why?  
• clear and easily accessible framework allows a wider range and number of people to make use of it  

Discussion points:  
For existing projects:  
Was it felt that curriculum links were important? If not, why? If yes, how were these achieved?  
For future projects  
Does the existing curriculum create any incentives or disincentives to carrying out these types of projects?  

Are new syllabuses needed?
Challenges:
Involving over-stretched education departments and teachers.

5) Long-term viability
Definition: Project materials and activities can continue to be used in the long-term

Why?
• Environmental issues are not a short term fix / they span generations

Discussion points:
For existing projects:
How will the outputs of the project be sustained (ie updated) and continue to be of use in the long term?

For future projects:
What systems need to be considered at the planning stage to ensure that these types of project are viable in the long-term?

Challenges: consistency, changing staff, short-lived resources

6) Creativity
Definition: interactive learning, inspirational techniques, harnessing children’s enthusiasm for technology.

Why?
• increase understanding, enjoyment and involvement

Discussion points:
For existing projects:
What can be gleaned from other projects that can be used to motivate children and adults?

For future projects:
How can we be innovative?

7) Transferability / generic models and approaches
Definition: Develop models that can be populated with relevant local examples

Why?
• increase the project’s impact
• will allow others to build on the project’s successes
• raise awareness
• generic issues such as climate change are becoming more important

Discussion points:
For existing projects:
How do you find out what’s already happening – eg Web resources that can inform other places e.g. UK education institutions – can this help us establish partnerships (eg US migratory bird project) Are there any examples where project ideas and structures have been used in different situations?

For future projects:
How can we establish and keep networks and links.

Challenges:
• isolation – not reinventing the wheel
• access to information and contacts

8) Wide communication and consultation
Definition: disseminating information to a wide audience, influencing decision makers, informing parents and the local community

Why?
• awareness raising
• increase project impacts
Discussion points:

For existing projects:
How are public made aware of projects? Who funds this? Which established networks do you use?

For future projects:
Should wider public awareness be part of the planning stage?
Are new networks needed? If yes, what is needed and how can this be achieved?

Challenges:

• resources and technology

Points to consider regarding recommendations for the future

Can we agree a ‘Good Practice for Environmental Education projects in the UK Overseas Territories’ paper?

Can we suggest some key issues for future projects to try to address?

For example:

• Climate change issues
• Conservation of Biodiversity
• The role of education in helping to implement the Environment Charters
• Sustainable Development
• What else ......?

There is a lot at stake!

Raise awareness and understanding

Biodiversity

Climate change
British Virgin Islands Environmental CD Atlas and Teaching Resource

Nancy K. Woodfield-Pascoe, British Virgin Islands National Parks Trust, Mark Hayward, BVI Conservation and Fisheries Department, and Bob McKay, Dougal Thornton Associates


The BVI is comprised of over 60 islands and cays, yet the majority of the population resides on Tortola, with schools of varying sizes on three of the sister islands: Virgin Gorda, Anegada and Jost Van Dyke. School visits to the sister islands are not included within the curriculum, so many students never visit the other islands in the BVI and as a result have extremely limited knowledge of the BVI’s natural environment. Additionally the teaching of geographic components of social sciences and environmental awareness in BVI schools has relied upon the use of regional and international atlases, which have minimal relevance to the BVI.

Developed as a locally implemented initiative, an informational CD Atlas has been created by the NGIS TSC as a resource for schools and the general public to engender a comprehensive understanding of the environments of the BVI and we are now seeking funding to publish and launch this product. By using an interactive atlas, a series of maps, charts, diagrams, tables, photographs, text and internet links, a dynamic web based CD allows students to explore the real world distribution of the environments of the BVI.

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Introduction

The British Virgin Islands (BVI) are comprised of over 60 islands and cays, yet over 80% of the population reside on Tortola, with schools of varying sizes on three of the sister islands: Virgin Gorda, Anegada and Jost Van Dyke. School visits to the sister islands are not included within the curriculum, so many students never visit the other islands in the BVI and as a result have limited knowledge of the BVI’s natural environment. Additionally the teaching of geographic components of social sciences and environmental awareness in BVI schools has relied upon the use of regional and international atlases, which have minimal relevance to the BVI which has a total land area of 153.67 km² (59 square miles).

Developed as a locally implemented initiative, an informational Environmental Atlas has been

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atlas, a series of maps, charts, diagrams, tables, photographs, text and internet links, a dynamic web based CD allows students to explore the real world distribution of the environments of the BVI.

**Context of Atlas Development**

The teaching of environmental issues in BVI schools has thus far relied mainly upon the use of regional and international atlases. Whilst it is very important to understand the relative location of the BVI within this wider context, especially in the case of small island systems that rely upon international sources of revenue and resources, the need for greater awareness and ownership of the local environment are critical for sustainable national development. Therefore the BVI Environmental Atlas project aims to provide factual and current information about the environments of the different islands in a format that will encourage learning and increase overall awareness of the BVI’s environments within the classroom of every school throughout the BVI.

Although the atlas was originally created with an environmental focus, the opportunity existed to expand it to include other topics commonly found within a traditional school atlas. Therefore students will now be provided with information on such topics within physical geography such as topography, vegetation, geology, soils, marine habitats, climate, meteorology, biogeography, the environment, in addition to topics within human geography such as cultural, historical, social and infrastructural resources.

The presentation of the BVI Environmental Atlas on a CD and printed format rather than a web-based system evolved as only a few schools within the BVI have access to the Internet. Background research with BVI students and teachers over a period of four years revealed a great demand for teacher resources to compliment the social studies curriculum which has been recently revised. Support was also sought from the Ministry of Education and Culture, and the Department of Education for the development of the BVI Environmental Atlas.

Primary and secondary level students will be the main users of the BVI Environmental Atlas, and students in class 4, aged 10 years old will instantly benefit as it is during this year that students are first taught BVI social sciences, environmental and historical awareness. Whilst all secondary and tertiary level students will benefit from the BVI Environmental Atlas as a critical reference tool for environmental studies projects that will provide access to information to students throughout the territory, particularly those students and teachers on the sister islands who cannot visit the Government Departments responsible for environmental and cultural issues.

The National Parks Trust and the Department of Conservation and Fisheries are continuously approached by students searching for information on topics ranging from marine resources, flora

![Tropicbird nesting](image1)

![Hawksbill turtle](image2)
and fauna of the BVI and its cultural resources, yet there are no comprehensive printed materials available at either of these departments that cover all of these topics. It is anticipated that the BVI Environmental Atlas will empower students to independently research projects and be provided with a wide array of technical information which was previously widely dispersed throughout many Government Departments, unpublished reports and unite them in one central location. The BVI Environmental Atlas will more than fill this existing void in educational materials and will present all aspects of the BVI’s environmental, social and cultural resources in a user-friendly format. The BVI Environmental Atlas has united all of the National Geographic Information Systems (GIS) data, maps, images, and environmental descriptions into one interactive location that can be easily updated with the addition of new data and information.

Additionally, the BVI Environmental Atlas will be distributed to every journalist within the BVI, every Government Department with linkages to the natural and built environment, every library in the BVI, decision makers, and environmental educators in the UK Overseas Territories in an effort to provide a comprehensive source of reference on the BVI environment and broaden public awareness locally and internationally.

**Compilation Process**

The BVI National Parks Trust and the Conservation and Fisheries Departments have acquired an extensive image library and information on the BVI’s marine and terrestrial resources as a result of the many years of collaborative projects funded by the Darwin Initiative, the Foreign and Commonwealth Office and the Overseas Territories Environment Programme. Consequently the main requirement was the compilation and creation of text for each section within the atlas and the assessment of images within the existing photo archives and the acquisition of additional photographs as the project evolved. Content for sections was either created by area experts or drafted by the project managers and edited by area experts so that accuracy was ensured. Video clips were also acquired by the project managers, in addition to clips copied with permission from Dr Peter Mumby of Exeter University from his web site entitled Reef Vid which allows for the downloading of free video clips for education benefit (www.reefvid.org).

An interactive glossary was also created by the project managers that would allow technical terms to be used in context within the relevant sections and expose students to the correct terminology. This would have resulted in the text exceeding the understanding of the primary target audience if a glossary had not been created as a reference tool. Consequently the glossary evolved into a resource containing over two hundred words which have an interactive link to the text so that the user clicks on the word as they are reading the section and the glossary appears.

The project managers’ major goal was to ensure that the BVI Environmental Atlas was a very interactive resource that would be easy to use and enjoyed by all ages. This required the development of computer-aided graphics such as Flash animation.

**Financial Implications**

The primary expenses for the BVI Environmental Atlas include the graphics, computer animation using Flash software, Dream weaver internet software, design and layout of the CD in addition to the design, layout and production of the printed version. The BVI National Parks Trust and the Conservation and Fisheries Department provided
CD Technical Specifications

Due to the nature of the project and the large amount of information, photos, video and audio clips involved, a tool was developed to help manage the data. This ‘tool’ was the creation of a control panel which was produced as an online application so that multiple people could access it simultaneously. This meant that content for the BVI Environmental Atlas did not need to be emailed backwards and forwards between the project managers. The data from the control panel is then exported ready for use on the CD.

The Information Systems Unit of the BVI Government was consulted to determine the screen size and resolution used on the PCs in the public schools. This was determined to be 1024 Pixels wide by 800 pixels high and so the BVI Environmental Atlas was formatted with this in mind.

Processor Power

The speed at which the animation and video clips work is linked to the manner in which the BVI Environmental Atlas has been programmed, so that it compensates for slower computers by automatically lowering the visual quality, keeping the same content visible. To maximise the usage and access to the BVI Environmental Atlas in CD format it was developed in Macromedia Flash as this is a cross platform which can run on Windows based PCs but also on Apple Macintosh computers.

Due to the strict limitation on storage space on a CD (700mb of raw space), all of the data is formatted to save space, with all video clips and photos being compressed. An alternative was to use a DVD as the storage medium but at the present time, this is far too restrictive and would restrict the number of people able to easily access the BVI Environmental Atlas.
The BVI Environmental Atlas was developed in Macromedia Flash version 8 which is the most recent version of the Flash development tools. Users will not be required to have the “Flash Player” installed on their computer to be able to run the BVI Environmental Atlas as it has been pre-compiled with the atlas.

Wider Project Significance

The BVI Environmental Atlas is a regional example of how beneficial a national integrated GIS can be, and how it can be utilized for student education of environmental issues. The most important aspect of this project is its collaborative nature, with environmental data and maps freely supplied by a number of government departments, local area experts and scientists for the direct benefit of all educational institutions and the major distributors of public information, the media.

The BVI has already been commended within the region for its extensive GIS database, which allows the production of maps to visually show the current state of the BVI’s environment and the change over time. This is key to the education of students who have no knowledge of the BVI’s historical environmental resources and are only witnesses to its current state. Understanding the changes in the natural environment and viewing these through digital maps and images will ensure that a clear perspective is always maintained. These are important lessons for all small island systems and developing countries with limited financial resources, widely distributed populations, but a wealth of environmental resources.

The Department of Education has been involved in this project since its inception in 2002 ensuring that the BVI Environmental Atlas would compliment the revised social studies curriculum and they will continue to be a key collaborator, with primary assistance of the organisation of the teacher seminar which aims to introduce teachers to the products and assist them in understanding how they can be used.

The BVI Environmental Atlas is anticipated to become a critical resource for teachers and students, hence the production of CDs and printed versions for individuals that are not computer literate and would prefer a hard copy. The cost limitations of printing restrict the amount of information that can be included in the printed version but it will be a very useful reference tool that is visually appealing with many images, maps and tables.

Long Term Project Goals

The economy of the BVI is largely dependent upon its natural environment. Unsustainable development practices could lead to environmental catastrophe. The accessibility and comprehensive scope of the environmental information that will be provided in the BVI Environmental Atlas will greatly contribute to the overall teaching and awareness raising of environmental issues throughout the territory as this information will be freely available and in a central location so teachers will not be

Red mangrove
required to travel unnecessarily from the sister islands in their search for educational resources and they will be more effective in their delivery of the national curriculum. Ultimately, this project will ensure that every child in the BVI is exposed to environmental information that will influence their behavior and attitude towards the development of the BVI as they become adults and the decision makers of the future.

This project will ensure that students are educated about the natural and cultural environments from a young age, which may lead to an increase in the number of students that pursue science based vocations required for effective environmental management. The BVI is currently challenged by a lack of trained BVIlanders to fill the positions at the Conservation and Fisheries Department and the National Parks Trust, as many high school students are attracted to the high profile offshore finance industry in the BVI. Additionally, the use of GIS and other modern technologies will introduce students to the variety of tools utilised for environmental management.

**Technical Challenges**

The compilation of the BVI Environmental Atlas required considerable software development and trouble-shooting – which continues. Experience was developed in the process, and there is now effectively a framework which can be used by others wishing to undertake a similar project. Details and contacts are available through BVINPT.
High Schools Native Plant Nursery Project in the Turks & Caicos Islands

Ethlyn Gibbs Williams and Bryan Naqqi Manco, Turks and Caicos National Trust

The Turks & Caicos National Trust Conservation and Education staff collaborated in writing two model proposals for high school projects from which the faculty could select to submit to the Turks & Caicos Islands’ (TCI’s) Conservation Fund (funded by a tax on tourist accommodation and restaurants). One of the model proposals was for the development of a school herbarium, the other for a school native plant nursery. The National Trust, in cooperation with Clement Howell High School on Providenciales, was awarded a project proposal to create a native plant nursery on the high school grounds for the environmental group in the student biology club. The Turks & Caicos Conservation Fund awarded this grant in May 2006. The project is underway now, and includes the construction of a fenced nursery yard and shade lath with potting benches, purchase of supplies and books, native plant propagation training by National Trust staff and volunteer horticulturists and landscapers, and field trips to find plant materials for propagation, focusing on land scheduled to be cleared for development.

Successes in this programme have included the collaboration of high school faculty (specifically the principal and head science teacher) with National Trust staff, and pro bono advice from government engineers, private architects, horticulturists, and landscapers.

Difficulties encountered have mainly been from the prohibitive cost of materials and labour for construction in the Turks & Caicos Islands, and the difficulty of locating a contractor that can devote a team to the project full time due to the high degree of well-funded tourism construction occurring now.

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A new concept has been born here in Jersey in 2006 that will run and run, but why?

Question. How do you go about involving 30 schools, over 200 teachers, 5000 students and coordinate 100 school visits in one week in June? Read on.

For long term success one must look at why some projects and initiatives fail to succeed after optimistic starts. Financial constraints, lack of planning or resources and poor communication between interested parties all create a growing number of restraining forces that hinder change, creativity and innovation.

Jersey Environment Week had Guiding principles and clear Targets.

Guiding principles:
Conservation and Protection
Sustainable Development
Community Involvement
Citizenship, looking after our environment

Target 1:
Involve 75% of primary school children in environmental based school visits to sites of local ecological interest

Target 2:
Every school to examine energy / water conser-
vation within their school, and the recycling of materials

Target 3:
All schools to establish a productive link with an environmental interest group
( Island ecology group/ International / National environmental group)

Target 4:
Every school to actively promote environment week with parents & local community culminating in a school-based environment week display

Jersey Environment Week has managed to harness the support of interest groups and sites, creativity
of teachers and imagination of pupils. Put together these made for a successful recipe for environmental education where learning is relevant, meaningful and enjoyable. Jersey Environment Week was built around a clear strategic plan to engage as many schools, teachers and pupils in positive experiences IN, FOR and ABOUT the unique environment of Jersey. Working to a short 6 month time frame funding was secured through private and state partnership to a total of £25,000. This funding was also secured for three consecutive years.

At the start of the initiative, research was undertaken to engage with all partners in the Jersey Environment Week strategy. Headteachers were personally consulted and a ‘school support package’ produced including a short DVD movie for staff meetings, a wide range of useful ideas for environmental projects, useful websites, 50 local venues to visit along with details on funding to support longer term environmental projects and school visits in June. A website was also established to offer schools easy access to information and to improve communication with all partners. www.jerseyenvironmentweek.je

Thirty schools were involved in Jersey Environment Week 2006. Seventeen applications were received for funds to support longer-term school-based projects. Nine schools received between them £6000. £4,400 was awarded to six schools
Approximately 180 - 200 teachers were involved in environmental activities. Nearly 100 (99) environmental school visits were made 12-16th June 2006.

Jersey Environment Week has been extremely well received and well publicised. Evaluations and feedback from all partners has been outstanding. Plans for Jersey Environment Week 2007 are already underway. Next year we hope that 50 schools will take up the challenge involving over 7000 pupils and 300 teachers (a conservative estimate based upon the success of our experiences this year).

Tell me and I’ll forget. Show me, and I may not remember. Involve me, and I’ll understand.
Environmental Education Programme (including education packs) for the Falkland Islands and Ascension Island
Ali Liddle & Grant Munro, Falklands Conservation and Tara Pelembe, Conservation Centre, Ascension Island


There are four areas covered during the short presentation:
1. Reasons for the project. This will introduce the rationale behind the project and why it was felt to be vital for the schools in the Falkland Islands and Ascension Island to have access to locally focused environmental education resources.
2. Main objectives of the project. The main objectives were set out in the OTEP application and subsequent work plan. This will just highlight the main objectives of the environmental education project.
3. Main outputs of the project. Again these outputs were highlighted in the OTEP application to give focus and direction to the project and ensure there was a relevant end-product.
4. The project so far. This will outline the work completed during the first 12 months of the project and other areas for future development.

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Introduction

I am going to begin by giving a short introduction to the Environmental Education Programme with Falklands Conservation.

The project is just part of a larger project entitled Community Environmental Awareness and Citizen Science Programme that is currently underway in the Falkland Islands. The educational side of things is an 18 month joint project run between Falklands Conservation and the Conservation Department on Ascension Island and is headed by Ali Liddle, a Primary School teacher based in the Falkland Islands.

Funding for the project has been received from OTEP (Overseas Territories Environment Programme), FIG (Falkland Islands Government), Edinburgh Zoo and Falklands Conservation.

I will be covering four main areas during this short presentation:
1. Reasons for the project
2. Main objectives of the project
3. Main outputs of the project
4. The project so far.

Reasons for the project

“Everybody knows that children would rather be out than in.” Quote from Growing Schools website. This quote applies to adults as well as children! First-hand experiences of the natural
environment are the most valuable tool available to teachers to ensure that children develop their knowledge and understanding of the world around them. The main reason for developing environmental education resources for the schools in the Falkland Islands and on Ascension Island was to give a local focus to some areas of the curriculum being taught. Students in both locations follow the National Curriculum for England and Wales. As a result, the teaching focus and commercially available teaching resources are all UK-based. It was hoped that by producing material with a local focus students would develop a greater understanding of the environment around them and the species living there, whilst still fulfilling the requirements of the National Curriculum.

**Main objectives of the project**

The main objectives stated in the project are to:

a. Provide environmental teaching resources for use in Falkland Island and Ascension Island schools;
b. Provide environmental education support and opportunities for hands on involvement in conservation activities for all ages and all sectors of the community.

**Main outputs of the project**

The main outputs of the project are:

a. Environmental resources provided for Falkland Islands and Ascension Island teachers and youth group leaders;
b. Children informed of and interested in the environment around them, developing a lifelong respect and responsibility for their local natural heritage;
c. A conservation group for 13 – 16 year olds tackling practical conservation issues and assisting with basic scientific research.

**The project so far**

The project so far has resulted in a number of ‘teaching packs’ to be used in school. These teaching packs are based on some of the units of work set out in the QCA National Curriculum for Science and Geography.

11 Science units have been targeted ranging from a Year 2 (age 6-7 years) unit entitled Plants and Animals in the Local Environment to a Year 9 (age 13-14 years) unit covering aspects of Inheritance and Selection.

In Geography so far there have been 3 units resourced and completed in the Primary curriculum and 5 units of work of the Secondary curriculum are currently being developed.

The ‘teaching packs’ for the Primary sector include things such as:

a. Lesson plans for teachers based on the learning objectives set out in the QCA units of work;
b. Details of activities to complete both in the classroom and out ‘in the field’;
c. Locally based teaching resources and materials to enable teachers to complete successfully the activities and deliver the lessons and so fulfil the requirements of the National Curriculum. Resources include ID fact sheets for local species, which can be used in a variety of activities throughout the age range, posters and worksheets to name but a few.
d. Packs have been produced in such as way as to ensure that there are enough activity packs for a class of 25 – 30 students to work in small groups to complete the tasks. This means that there is minimal teacher preparation time required for the sessions.

In the secondary sector the packs are a slightly different format. The subject teachers involved have been provided with a range of resources that could be used to achieve the learning objectives set out in the QCA documents but there is a little more flexibility in order for them to plan their own specific lessons and activities. This is rather like giving them the tools but with the freedom to use them as they wish. Things, such as these ID fact-sheets (see two examples on following page), can again be used throughout the secondary age range in a variety of activities.

Identification fact sheets form the basis for many different activities and have been completed for birds, mammals, plants, invertebrates and marine species. They include details such as a description, breeding information and habitat information. Young children can complete simple sorting activities such as grouping species according to their features or the habitat in which they live. They can be used to build simple food chains or more...
complicated food webs. Older students can use the fact sheets for extended classification of families and sub-species.

These have been completed for species in both the Falkland Islands and on Ascension Island (example

King Penguin.
_Aptenodytes patagonicus_

**Description:** Black head, blue-grey back, white chest, black tail. Distinctive orange ear patch fading to yellow on chest. Brown eyes, black legs. Chicks have long, thick, brown down and a black bill.

**Habitat:** Main colony is at Volunteer Point on the North coast. Colonies found near sandy beaches on coastal green habitats. Often seen in Gentoo colonies.

**Height/Size:** Maximum height 95 cm. Maximum weight 14kg.

**Food:** Fish and krill.

**Predators:** Southern Sea Lion, Orea (Killer Whales)

**Breeding Information:** Breeds in 2 out of every 3 years. Eggs are laid between November and April. The large white egg is incubated on the adult's feet under a brood pouch. Incubation period is 30-40 days.

**Environmental Threats:** Marine debris, pollution and human disturbance.

Commerson’s Dolphin.
_Cephalorhynchus commersonii_

"Puffing Pig"

**Description:** Distinctive black and white colouration. Black head, dorsal fin, flippers and tail. White flanks and belly. Rounded flippers and dorsal fin.

**Length:** Maximum length 1.7m.

**Habitat:** Fairly common around Falkland Island coastal areas particularly in sheltered bays, inlets and areas with kelp beds.

**Food:** Squid, fish, small crustaceans and krill.

**Predators:** Orcas (Killer Whales) parasites. Dolphins are particularly susceptible to parasites.

**Behaviour:** A relatively fast swimmer occurring in pods of 3-9 animals although pods of 30+ animals have been seen at times. Quite acrobatic and can be seen breaching, bow riding boats and surfing waves.

**Environmental Threats:** Commercial fishing - dolphins are often caught in fishing nets. They are also hunted for use as bait in crab traps. Marine debris and pollution are also threats.
Photo posters have been produced to use as teaching aids and as a stimulus for learning. For example the posters (below and next page) show the different habitats in the Falkland Islands and on
Ascension Island and the most common species you would expect to find in those habitats.

These habitat posters have been completed for both the Falkland Islands and Ascension Island. Children can see the habitat location and quickly identify the most common species they are likely to find there.

Posters (example below) showing classification of species using species found locally have been designed so that students can focus on the local species rather than those found in the UK. Badgers, squirrels and foxes living in British woodland areas are great but not entirely relevant at times!

The posters have been completed to include mammals (next page), reptiles and insects etc.

Other resources that have been produced include photos guides to species in various local areas, posters, photo-copiable worksheets, jigsaw puzzles, and slide show presentations with accompanying notes. For students in Year 6 studying a unit entitled Investigating Coasts there are posters showing local examples of coastal features and an...
explanation of their formation rather than using examples from the UK. Students on Ascension Island now have posters showing local volcanic rock formations to support the Year 3 unit studying Rocks and Soils and a Year 7 Geography unit entitled A Restless Earth. There are many more areas of the curriculum now supported in this way.

There are photo guides to the birds and plants you might expect to find in some of the specific locations to be visited by the students. These field studies are supported by photocopiable worksheet resources that can be used in the classroom as a follow-up to the fieldwork.

Photo posters have been produced to use as teaching aids and as a stimulus for learning. For example posters showing explanations about the process of plant reproduction and photosynthesis have been designed using photographs of plants found locally.

Other resources include slide shows available on CD, along with supporting notes showing some of the most common animals and plants found in the local environment. Students will now have access to a photo database of locally found animals and plants to use in a variety of projects.

Jigsaw puzzles depicting local wildlife and scenes have been printed and are in the primary schools and Camp Education. These are available as 30, 60, and 150 piece puzzles and are designed to support the units of work to be completed within the relevant age groups.

The pictures on the following pages show children working in the outdoors – the hands on approach since the project has been running, classes at the Infant and Junior School in the Falkland Islands have been out on a number of new field trips in their local area. Reception class, age 4 and 5 went pond dipping (see picture at top of next page) and collected a variety of freshwater invertebrates.
when they completed a topic about water. They used fact sheets and guides to identify the species they found.

Year 2, age 6 and 7, carried out a survey (above) of plants and animals in two contrasting local environments, which was then followed up in the classroom with a number of different activities using the ID cards and Habitat Posters.

Year 4, age 8 and 9, have to complete a unit of work entitled Habitats so they studied and recorded the species found in coastal tussock habitat (above) and along the nearby shoreline and compared this to what they found in an inland Heathland area.

Year 6, age 10 and 11, as part of a study Investigating Coasts (above) recorded the coastal features of Gypsy Cove and then in pairs produced Walking Guides to the area containing directions, maps and photos they had taken themselves. They identified some of the coastal features to be seen, highlighted where they could be viewed from and wrote explanations as to how they had been formed.

On Ascension Island members of the youth group the Ascension Explorers went on a trip to see the Sooty Terns while they were breeding (above).
The visit to the Sooty Tern colony was then followed by a slide show about Falkland Islands wildlife (picture at bottom of previous page). This gave many children an insight into the species found living and breeding in a very different environment.

“Their are our future”
To conclude it is hoped that the main outcome of the project will be that all children in both the Falkland Islands and on Ascension Island will have the opportunity to develop a valuable understanding about their local environment, the wildlife they share it with and the relationships involved. It is hoped that as they grow up this knowledge and understanding will develop into a responsibility for their islands, which should ensure that the future of the environment is in safe hands.
Recommendations from the Environmental Education Session

Lynda Varlack, Ann Pienkowski and Juliet Rose


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Discussion following presentations in the Environmental Education Session

The following points were made in discussion following the presentations, which resulted in the four recommendations given below.

There was agreement for a good practice structure for environmental education projects and initiatives.

A mechanism was clearly needed to enable sharing of resources, and exchange of ideas and approaches, more easily. In addition to locally based and developed resources, there was now a number of very good websites offering environmental education ideas and resources. Making people aware of these would be a valuable way of supporting educators delivering environmental education programmes. Some examples given were ‘Science across the world’, ‘Gardens for life’, ‘Roots and shoots programme – Jane Goodall’, but there are many more which could be made good use of by busy teachers.

Education programmes should be developed which made use of local environments. This would be helped if local syllabuses supported this, or could be amended to facilitate this. This would require targeting of government education departments, principals, and teachers, with appropriate professional development. These were most effective if local educators were involved in creating locally applicable materials using generic models. A good example was the education packs developed for Falkland and Ascension Islands, where a clear curriculum framework could be populated with local materials. Another key point here is that local studies within a clear curriculum framework, especially one based on the National Curriculum for England and Wales, could be assessed and graded fairly in the UK. It was often easier to take material developed elsewhere and adapt it to local needs. It was also considered important that correct terminology should be used throughout, with appropriate glossaries to make the material understandable and useable for a wide audience. This had been a key point in the development of the BVI CD Atlas.

It was important for the built environment to be included in locally-based environmental education. There were several good examples to demonstrate this, including the St Helena National Trust education packs about local history, developed from source material found in the archives. These are now available in electronic form. These were valuable resources for cross-curricular work, as was the BVI CD Atlas. It was important that environmental education encouraged wider understanding of the
whole environment, and its place in a global sense.

Wider public awareness and understanding could be fostered using stamp series, with supplementary interpretative information, such as the good example from Cayman which celebrated local species. This had enabled direct targeting of specific audiences, and good community participation.

Other suggestions for how a wider global perspective could be obtained for the value of small, often quite isolated, UKOTs were the exchange of postcards, artefacts, photos, messages etc (as in the Postcards around the World project). There were also networking programmes involving linking schools, for example along the migratory routes of certain species of migratory birds. This contribution developed into the idea of establishing an on-line discussion forum to enable communication of issues and solutions. Another idea was the integrating of current science research projects into the education curriculum, for example satellite tracking programmes of turtles, and other animals. This would help raise awareness also of global diversity, similarities and differences.

A key point to think about addressing was educating students inside the UK about the UKOTs. Royal Botanic Gardens Kew and the Eden Project are both trying to raise awareness of the UKOTs with displays from each of the UKOTs. So far these had been done for BVI and St Helena. There should be continuing efforts to develop links and exhibits with UK NGOs to raise awareness of UKOTs, e.g. at zoos in the UK. Geography has been identified as the worst-taught subject in the UK for 12-14 year-olds, so developing a curriculum based on the UKOTs would actually be very beneficial. There was a suggestion that funding (e.g. OTEP) should be sought for the development of such a module.

The discussion highlighted also the important point of raising political awareness of environmental issues, especially with reference to good governance and the decision-making process. Governments and developers need to understand that the environment on which their tourism development depends has to be protected and managed sustainably. Linking with this, environmental education should be focused on a broad audience, including tourists and local businesses. Environmental education should also be about cultural identity, language and global citizenship. Therefore, there was a need to develop information packs and leaflets for this wider audience. The Education and Public Awareness Raising commitment in the Environment Charters was also noted, as a mechanism to be used to increase funding and resources for environmental education. It was suggested that every UKOT and CD should have an environmental education coordinator, as part of the education department.

**Recommendations from the Environmental Education Session**

1. Develop a mechanism for being able to share resources and exchange ideas and approaches more easily. Establish an education section on the UKOTCF website which will provide reciprocal links with territories and other global resources and education sites. This will grow over time.

2. Continue to develop environmentally-focused academic programmes at all levels for students and teachers that apply emerging technologies, use local environments within a global context, and foster world-wide networking and professional development.

3. Raise political awareness and commitment towards solving environmental issues through good governance and accountability and transparency in the decision making process.

4. Through environmental education, raise public awareness, thus empowering communities and stakeholders to influence the decision making processes.
Student impressions of the Conference

Alain Baudains, Samantha Cropper, Katie Mason, Gemma Parlett, Sophie Pickup, Alex Pinel, Piers Sangan, Aimée Vibert and Emma Voak


Some of the views on the conference from the local students who participated.

Alain Baudains, Alexander Helier Pinel & Piers Robert Sangan, Victoria College, Jersey; Samantha Cropper, Katie Louise Mason, Sophie Emma Pickup & Emma Voak, Jersey College for Girls, Jersey; Gemma Parlett, Open University student, Jersey; Aimée Louise Vibert, Beaulieu Convent School, Jersey.

Student Speeches

In the closing session at the main conference venue, the nine members of the student team worked together to put together their first impressions. All spoke briefly, and those parts available from notes from several of the students are given below.

Out of the sessions we attended over the conference we especially enjoyed Sunday’s walk – wet feet and tired legs just added to the experience. Although already being familiar with Jersey’s Ramsar site I learnt a great deal more and now fully appreciate this amazing ecosystem that lies right on our doorstep.

We tried our best to understand various technical terms and were surprised at how much of the conference we could be a part of, and grasp.

The invasive species session I found particularly interesting – especially the Cayman Island case study on Hurricane Ivan, as I am currently studying hurricanes such as this in Geography.

The session on “Good Practice for Environmental Education projects in the UK Overseas Territories” was also extremely relevant to all the students here today. When going back into school for various lessons over the past few days we found both teachers and students showing great interest in what we had learned. We would also like to see if it is possible to have some sort of programme about the UK Overseas Territories so we can better understand them.

Overall we have all learnt a great deal about biodiversity across the Overseas Territories. As the first
set of students attending the Conference, we all felt that is was a very worthwhile experience, and we recommend that in years to come students from other Territories would be able to have the same opportunity.

We are looking forward to this afternoon’s visit to Durrell and anyone who has not had the chance to visit our Island’s Wildlife Conservation Trust is in for a great treat.

This has been a new experience for me, it has been highly informative and educational. The working group session this morning has ‘enlightened’ me on possible work experience possibilities. Covering invasive species again, the knowledge I have taken in is incredible. Before this conference, I was not aware that invasive alien species was such an issue.

St Helena has really struck a place with me in this conference. I have met new people and made new friends. I have spoken to Cathy Hopkins, about possible future involvement.

I have felt the past few days I have been pounded with new information which has been readily taken in. All I have left to say really is, thank you.

Finally, we hope that you have enjoyed your time here in our beautiful island of Jersey, and have a safe return home.

As well as contributing to the above speeches, several of the students also supplied, after the conference, short notes of their impressions. These are given below.

Emma Voak

Having not attended any conference before I had images of it being very formal and was quite apprehensive about what it would be like. As soon as I arrived on the Sunday morning however, I gained a very warm welcome realised that I was not only going to learn a great deal, but that it was also going to be a very sociable few days!

The walk was amazing and, although being a Jersey resident, I had never experienced it before; so this was a great treat. I also started to appreciate how large our tidal movements are in comparison to the rest of the world, as others on the conference seemed shocked by the speed and distance that the sea travelled every day, something that seemed normal to me here in Jersey. Being a student I think I can speak for all of us by saying how much we enjoyed the walk. Anything that can combine learning with being outdoors and active is definitely something we enjoy, and the walk did just this. We all slept well that evening!

On Monday I attended the “Marine, including fisheries” Session. I found the various strategies used to cut down on the numbers of Albatrosses from the Falklands and elsewhere killed in the Southern Ocean very interesting, and it was good to see how deaths had declined over the past few years.

“Dealing with invasive species” was another very interesting session, and I found the information on hurricane Ivan and its impacts on invasive species in the Cayman Islands particularly useful as I am currently studying hurricanes as part of my A2 Geography course.

The education session was particularly relevant to all the students attending the conference - we look forward to perhaps using the BVI’s CD Atlas as I believe a copy is being sent to one of our schools. It sounded a great idea and would be a really useful tool in any UKOT for students, to allow them to learn more about the island that they live in.

Overall I had a really interesting and stimulating time on the conference; meeting and chatting with people from places across the globe, who knew so much about the conservation issues that their islands face was an amazing opportunity. The visit to Durrell was a great way to end my time spent on the conference. It was a wonderful few days and I am extremely glad that I applied to attend; again a big thank you to everyone for making us feel so welcome and for making the student group feel such an integral part of the UKOTCF “Biodiversity that Matters” Conference 2006.

Aimée Vibert

I have to admit that, when I applied to attend the Conference, I knew very little about the Overseas Territories. They were all places I’d heard about but I had a very limited idea about their vast biodiversity. However, in the four days I sat in on sessions, I began to appreciate what these islands have to offer and I have nothing but admiration for the people working to preserve these islands.

I particularly enjoyed the walk on our Ramsar site because, even though it is somewhere I have been many times before, it is always changing and
the company really put a different perspective on it. To me, the vast tidal movement we experience twice a day is normal, but the walk reminded me how exclusive it really is!

On Monday I experienced a good dose of acronyms. Again, I was aware of the need for Environmental Charters and agreements, but knew very little about how they worked. I gained a deeper understanding from these sessions, even though some of it went right over my head!

The sessions relating to education had the greatest impact on me. They struck a cord because they are so relevant to people of my age. Education is fundamental to any conservation effort and I was privileged to be able to take part in the discussions on the formation of the Europe Territories Working Group.

I really enjoyed my time at the conference and it has left me with a lot to think about, now and for my future career.

**Piers Sangan**

I must once again offer my thanks for being able to attend such a marvellous occasion and I am really glad that you allowed the students of Jersey to attend the conference.

The first evening was very interesting as the Bailiff of Jersey gave us a brief history of Jersey (some that I didn’t know and I live in Jersey) and welcomed the conference to Jersey.

Sunday morning we gathered at the hotel before starting out on our long (cold) trek out to one of Jersey’s Ramsar sites. Led by our Island’s expert guide, Andrew Syvret, we first hiked across the rocky landscape to Icho tower where we enjoyed a superb packed lunch. The less brave turned back to the safety of shore at this point, as the more adventurous people carried on to Seymour tower, enjoying the many rock pools left behind in the receding tidal wake. When we finally arrived back at land most people did the most natural thing after a long walk, went to the pub!

For me the most interesting part of the conference was the ‘Environmental Education’ section on the Tuesday afternoon. Here we listened to ways in which some of the territories are trying to educate people about the environment. I especially enjoyed listening to and seeing the program which the BVI has developed. I think that it would be fantastic if all of the territories produced a similar program to the BVI to make it a lot easier for people to access the information in the UK and in the Channel Islands.

I hope that all of your different programmes for helping, educating and protecting the environment work well, such as the St Helena airport which we had described to us during the terrestrial section of the conference on the Monday.

If I am to sum up the conference in one word it would be: ‘FANTASTIC’. This conference has opened my eyes to all of the problems faced in developing a strategy to conserve our environment. I do think that it was a brilliant idea to get students involved and I hope you will allow students to attend your next conference.

Thank you once again for this wonderful experience.

**Gemma Parlett**

Thank you very much again for allocating me a place on the ‘Biodiversity that matters’ conference; I truly appreciate it.

I have been very busy since the conference as I have started my ‘Discovering Science’ Open University course and it is taking up all of my spare time.

I enjoyed the ‘Conservation of the built Heritage in the Overseas Territory’ talk because I had never really known about the wonderful work that is done all over the world to restore all of those beautiful buildings.

I thoroughly enjoyed ‘A walk on the seabed: Jersey’s first Ramsar site’ with Andy Syvret. Although I had completed the two-tower walk in the past it is always interesting to do it again, to see whether Andrew had added anything new into his talk or to see if there were any parts I missed last time.

The walk also gave me time to wonder around talking to different people, finding out about where they live, work, studied etc and, in turn, people asked me questions and offered suggestions and support of my future plans, which was lovely. I also loved watching the reactions of other UKO-
TCF members, who hadn't visited Jersey before, to sea creatures they found on the beach.

The ‘Environmental Education and the UKOTs’ session was very interesting. I particularly enjoyed hearing the different speakers and the variety of worldwide work they are all doing. They are obviously all passionate about the wonderful work they do, which I found inspiring.

I just managed to catch ‘Examples of Durrell’s work in the UK Overseas Territories’, which I also enjoyed and found very interesting. It is a shame that I live on Island with only one ‘zoo’ and there is so much great work that they are doing, yet it is not known Island-wide.

Thank you again for inviting me to join you for the closing dinner; it was lovely and also gave me a chance to meet and talk with some more people from different countries.

I found the whole conference fascinating and I was just sorry I had to work and missed out on many of the other interesting sessions/talks. Thank you again Ann and Mike. I will continue to follow the work of UKOTCF and hopefully, when I have finished my studies, I will be able to attend another of your fascinating conferences.

Katie Mason

As a student coming to the conference early on a Sunday morning I have to say I was a little nervous. However, all of these initial nerves were eliminated by the warm welcome received from everyone who was taking part in the conference.

My most memorable experience was the walk through Jersey’s sea-bed to Seymour Tower. It was a great way to start the conference as it allowed everyone to get to know everyone. It was on this walk I met some friends from the British Virgin Islands of who I am still in touch with after the conference has closed.

During the whole experience I learnt a lot not only about current environmental issues and the world around me but also learnt vital communication and people skills.

I found the discussions on dealing with alien invasive species particularly interesting as it was something I could relate to my Geography A Level.

However, all the knowledge gained has proved useful, not only in Geography but also in team-building exercises and my other academic studies at school and I hope I will now be able to take these experiences with me in life after my studies into the workplace. Whilst broadening my experiences on this conference I have learnt a lot about islands I didn’t even know existed!

Another discussion I enjoyed was the ‘Education and raising awareness of conservation issues in the UKOT’s’ and we are currently looking at school to put into action some of the ideas we gained from this discussion, such as Jersey’s own Student Forum and a Jersey Encyclopaedia.

In my opinion, as one of the lucky first students to have been invited to the conference, I thought it was a great success and I hope students are continued to be invited to future conferences.

Samantha Cropper

I found the conference very interesting and extremely worthwhile. It was a great opportunity as I am interested in ecology. I am studying Biology and Geography for A Level so covered my subjects in an interesting way.

I found the Invasive Species Day the most interesting and informative as I did not know that much about this topic. I enjoyed the afternoon at the Durrell Wildlife Park especially as some delegates lived on the islands where the animals came from, thus enabling me to meet people from around the world. I also have learnt about islands which I had not heard of before the conference and found the conversations enlightening and managed to renew an old friendship with Mr Shaun Earl, whom I first met whilst living in Malawi.

The way the delegates from the many different islands are developing new learning resources to teach the students in schools and colleges are extremely important and should be a great success. The ideas are imaginative and interesting and hopefully will encourage and teach the new generations to become more aware of their ecological surroundings and to live more environmentally friendly.

Once again many thanks for the opportunity to have attended the conference.
At the end of the Environmental Education session, UKOTCF Chairman, Mike Pienkowski, (right) presents the first copy of The Natural History of Tristan da Cunha to Simon Glass, Tristan da Cunha Conservation Officer. The book, by Paul Tyler and Alison Rothwell, was produced to make the results of recent studies on the islands available for use by the local school. UKOTCF secured funding for this work, with the help of the Bryan Guinness Charitable Trust.