

Plan for Biodiversity Management and Sustainable Development around Turks & Caicos Ramsar Site

Version 1.00



This plan is an output from the Darwin Initiative project “Developing Biodiversity Management Capacity Around the Ramsar Site in Turks & Caicos Islands”. The Darwin Initiative, which part-funded the work, is run by the UK Department of Environment, Food and Rural Affairs.

The organisations running the project were:

Turks & Caicos National Trust

UK Overseas Territories Conservation Forum

CABI Bioscience

The project was undertaken under a Memorandum of Understanding between the project partner organisations and the Government of the Turks & Caicos Islands



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0.2. Summary

Plan for Biodiversity Management and Sustainable Development around Turks & Caicos Ramsar Site

0.2.1. Part 1: Introduction

0.2.1.1. Background

The Turks & Caicos Islands are rich in environmental and historic treasures on which a thriving tourism business is being built, but we must find a way to continue to build the industry without destroying the resources on which it is based. This plan, which covers the Ramsar Convention Wetland of International Importance in North, Middle and East Caicos with adjacent areas, lays out the means to develop an appropriate-scale eco-tourism industry which will preserve both the environmental resources and the human communities which have lived there for the last two centuries.

This plan results from a joint project between the local communities, the Turks and Caicos National Trust, the UK Overseas Territories Conservation Forum, and one of the Forum's member organisations, CABI Bioscience. The work was carried out under a Memorandum of Understanding with the Turks and Caicos Islands Government, and with financial support from UK Government and others.

The purpose is to provide means by which the internationally important biodiversity and cultural heritage of the Caicos Islands can be treasured by local people and experienced by visitors, without damage. The plan works through wide-ranging co-operative action with the local people, local Government and other institutional stakeholders, and deploys biodiversity and other heritage information for the long-term benefit of the Islands and their inhabitants. This will enable the local people to protect the area by generating sustainable usage involving eco-tourism-based activities, as well as education. This will be accomplished through (1) this shared, regularly reviewed management plan; (2) trained local personnel working as wardens, guides and educators; and (3) integrated programmes to develop tourism resources such as trails, hides, an eco-centre, displays, courses, booklets etc.

Implementation of this plan would fulfil many of the UK & TCI Government commitments under the Ramsar Convention, the Convention on Biological Diversity and the Environmental Charter.

The wishes of the local community have been sought and integrated throughout the development of this plan; this will continue in the implementation phase. The central theme which came out in every community meeting was sustainable management and the conservation of environmental resources in a way that enhances the lives of the people



living there, and that is what implementation of this plan will achieve.

0.2.1.2. Objectives

To provide a practicable means to conserve the rich biodiversity and cultural integrity of the Caicos Islands, including the Ramsar Wetland of International Importance, through enabling the local people to protect the area by generating sustainable usage involving eco-tourism-based activities, as well as educating both visitors and the next generation of citizens.

More specifically:

1. To provide a means by which the rich biodiversity and cultural heritage of the area can be treasured by local people and experienced by visitors without damage to these internationally important ecosystems
2. To facilitate the development of the capacity of local people to establish small businesses based on eco-tourism and traditional crafts, so as both to provide the economic incentive for item 1 above and employment for local people so that they no longer need to leave the islands to find work, thereby maintaining the communities and cultural integrity.
3. To provide means of coordinating the work, educating local children (and where appropriate adults) and visitors and integrating the work into the National Physical Plan and the implementation of the Environmental Charter.
4. To use this experimental approach to provide an example to the widely spread small island communities which are searching for ways of maintaining biodiversity and local culture while generating an income so that these can be maintained rather than surrendering to intensive development models imposed and driven by external investment replacing local culture and control by North American/European systems.

0.2.1.3. Structure of this plan

The plan is divided into four main parts: (1) an introduction; (2) a detailed description of what the site contains in terms of flora, fauna, geology, etc, which will serve as a baseline against which to measure change in future; (3) an assessment of the most significant elements of the site and the features which provide opportunities for meeting the plan's objectives; and (4) the actual management plan which lays out all the activities and projects which will be employed in managing this site.

0.2.2. Part 2: Description

This summary will not cover section 2, as it is largely a compilation of the scientific research, and the key findings are covered in the summary of Part 3, below. Part 2 summarises the main results of the Darwin Initiative project studies, together with a collation of relevant material from other sources. This serves to describe the main features of the area, as a basis for later parts, which analyse the work needed. Analysis of much of the Darwin Initiative material continues, and future editions of the Plan will incorporate this and other material as it becomes available.

An accurate map showing the distribution of different habitats and ecosystems within a site is fundamental to effective management planning. The Darwin Initiative project produced such a map for the Turks & Caicos Islands Darwin Project, and this is used throughout the Plan. The starting point was a satellite image, which was classified and ground-truthed. Roads, trails and boundaries were added subsequently.

0.2.3. Part 3: Assessment of Opportunities and Threats

The plan lists sites, cultural features, certain flora and fauna within the plan area which provide opportunities for meeting the plan's objectives:

0.2.3.1. Flora and Fauna

0.2.3.1.1. Plants

Processing of the plant material collected under the Darwin Initiative project continues, and the botanical data compiled to date cannot be regarded as comprehensive. However, even on the basis of the specimens and observations collected thus far, a number of priorities for sensitive conservation management are becoming apparent. A number of individual species recorded by the Darwin Initiative study (or reported elsewhere as occurring in the Turks & Caicos) are worthy of particular attention. For example, the status of the palm *Pseudophoenix sargentii* should be evaluated and studied; this has been recorded in cultivation, but if an indigenous population could be located, this would be important in conservation terms. The orchid *Encyclia caicensis* is also notable, as an apparent Turks & Caicos endemic; biosystematic work is required to clarify the taxonomic status of this species. As well as species-level interest, the habitats of the Turks & Caicos are also of conservation importance in botanical terms. The presence of disjunct pineland of *Pinus caribea* var. *bahamensis* (Griseb.) is notable; the Gallery forest adjacent to Wade's Green Plantation (North Caicos) is also a botanically interesting area, worthy of further investigation; and the limited fresh water habitats support locally rare botanical communities, the value of which should be recognised in conservation planning.



0.2.3.1.2. Insects

At present, we have more information on butterflies than any other insects. There are four butterflies, subspecies of which are endemic to the TCI and Southern Bahamas: the Turk Island Leaf Butterfly *Memphis intermedia intermedia*, Chamberlain's sulphur *Eurema chamberlaini mariguanae*, Thomas' Blue *Cyclargus thomasi clenchi*, the Dusky Swallowtail *Heracleides aristodemus bjorndalae*. In addition, a skipper *Wallengrenia* sp. may also show this limited pattern of distribution. Most importantly, a subspecies of Drury's Hairstreak *Strymon acis leucosticha* (pictured), is found in the TCI only. Preservation of endemic species is a high conservation priority, and the area in Middle Caicos between Conch Bar Village and the northern shore has been identified as important habitat for this endemic butterfly, giving that area higher conservation value than previously understood.

0.2.3.1.3. Reptiles and amphibians

The Turks & Caicos appear to support no indigenous amphibians, but reptile surveys indicate that the Islands support one endemic species of snake (Caicos Islands Trope Boa *Tropidophis greenwayi*) and four endemic species of lizard (Curly Tail *Leiocephalus psammodromus*, Caicos Islands Reef Gecko *Sphaerodactylus caicosensis*, pygmy gecko *Sphaerodactylus underwoodi* and the gecko *Aristelliger hechti*). The last of these was thought to be extinct until it was rediscovered by the Darwin Initiative project. In addition, three further lizards (Turks & Caicos Bark Anole *Anolis scriptus scriptus*, Turks & Caicos Rock Iguana *Cyclura carinata carinata* and Mabuya Skink *Mabouya mabouya sloanei*) and one snake (Bahaman Rainbow Boa *Epicrates chrysogaster chrysogaster*) represent Turks & Caicos endemic sub-





species. Certain reptiles, whilst not confined to the Turks & Caicos, are very narrowly distributed. For example, the only subspecies of *Cyclura carinata* found outside the Turks & Caicos Islands is confined to the small island of Booby Cay off nearby Mayaguana, and *Sphaerodactylus mariguanae* is also restricted to Mayaguana and the Turks & Caicos. A number of Turks & Caicos reptiles are protected, or have recognised conservation status, internationally. Reptiles occur throughout the scrub habitats of the Islands, but moist microsites within these areas are particularly important for these animals.

0.2.3.1.4 Bats

Four species were found in caves (one of them also occurs in small rock shelters and houses). Of these, the Big-eared Bat *Macrotus waterhousii* feeds on large insects, such as

cockroaches and katydids and even the giant Erebus moth; the bat lives singly or in small groups near the entrance to the caves or in disused houses. The Buffy Flower Bat *Erophylla sezekorni* and Leach's Long-tongued Bat *Monophyllus redmani* form larger groups deeper into the cave, and both have long noses and tongues to feed on nectar from flowers; both species will also eat pollen and some insects. The fourth cave species, the Cuban Fruit-eating Bat *Brachyphylla nana* feeds mainly on fruit. The latter three species are all endemic to the Caribbean and are probably very important for the pollination and seed dispersal of many plants. The fruit-eating bat has quite a restricted range and the large colony on Middle Caicos marks the northern limit of its distribution. These bats have been recorded in TCI before, but a fifth species (initially heard on a bat detector, and finally trapped with a mist-net) proved to be a new record for the islands: the Red Bat *Lasiurus borealis*. This species feeds on small insects. Four further species have been recorded from TCI, two from fossil material, and two from Providenciales (a widespread species seen there in the 1970s, and a single record of a well-known North American migrant).



0.2.3.1.5. Birds

The area covered by this plan is vitally important to a wide variety of both native and migrant birds. It has long been known that the wetlands are extremely important for the continued survival of several migrant and native species.



Birds move around more freely than most animals. It is often thought that they can go somewhere else if something goes wrong with their habitat in a particular place. However, recent ecological studies indicate that bird populations survive only because the birds have a network of habitats available to them – none of these is surplus to their requirements. Fieldwork on wetland birds before and during the Darwin Project has shown that the TCI study area is very important to waterbirds and that usage is very variable. This variability is seasonal and year-to-year, and probably relates largely to weather conditions. It is important that human intervention does not make things yet more complicated. West Indian species of waterfowl (ducks, flamingos, herons, and

shorebirds) are also losing habitat as tourism-related development expands in the region. Among species of particular concern that are found in the Turks and Caicos are the Reddish Egret, West Indian Whistling Duck and American Flamingo. Recent study shows that the dry woodlands are far more important to both native and migratory birds than previously known (including the provision of wintering grounds for one of the rarest song-birds breeding in USA); they should be accorded much higher conservation priority.

0.2.3.2. Habitats

0.2.3.2.1. Wetlands

The habitats of TCI have especially great value because in many cases they are as close to the natural state as any to be found on similar island systems in the American tropics. Within the wetlands, coastal mangroves are now recognised as one of the most productive systems in the world, providing rich nursery grounds for many commercial species. The important local fisheries for conch, lobster and bonefish depend on organic food material produced in mangrove areas. Mangrove swamps and salt-ponds also serve to reduce flooding and trap sediments which would otherwise enter the coastal waters during heavy rainfall, and smother corals and seagrass beds that depend on clear water. Mangroves also serve to protect coastlines against erosion especially during heavy storms.

Freshwater formations make up 10% of the wetlands on the islands and represent the watershed system of the Turks and Caicos Islands. They thus form a vital resource which, if degraded, affects every sphere of land use, especially in this dry climate. Pollution or depletion of the watershed can affect agriculture and water supplies linked through the porous limestone rock, and can eventually affect offshore marine habitats such as coral reefs.



In addition, the areas already given protection, the wetland areas covered by this plan which are of the highest conservation priority under the Ramsar Convention are:

- Nanny Pond & Trail
- Long Bay, Middle Caicos

- The creeks and flats at Lorimers and Increase, Middle Caicos
- Duck Pond, Middle Caicos
- Turnup & Montpeller Ponds, Middle Caicos
- Joe Grant's Cay and the adjacent channels
- English Pond, Middle Caicos
- Jack Pond, Middle Caicos
- East Caicos flats and marshes
- Fish Ponds/ Blowing Hole / Juniper Hole, Middle Caicos
- East Caicos ponds
- Small cays for iguanas etc
- The reef off the north & east shore of East Caicos
- The reef off the north shore of Middle Caicos
- East Caicos caves

0.2.3.2.2. Terrestrial areas

Whilst the importance of the wetlands is increasingly well known, the terrestrial areas had not previously been surveyed systematically. Some key terrestrial areas (for reasons indicated later) are:

- Woodland and scrub areas between Lorimers and Bambarra
- Crossing Place Trail west of Conch Bar, Middle Caicos
- North-western woodlands, North Caicos



0.2.3.3. Historical and archaeological sites

Long-term archaeological work has been carried out on the Arawak sites within the area. A site (MC6, or *Ia góra*), within the Ramsar site on the south side of Middle Caicos, is considered to have been a major regional centre of pre-Columbian society, as were the caves on both Middle and East Caicos. Several other Lucayan settlement sites on the north shore of Middle Caicos have also been excavated, with important finds.

The Trust and the National Museum have both worked on the historic plantations, and this material will also be incorporated in trails and displays. Some of the more important plantation features include:

- Wades Green, North Caicos
- Haulover Plantation Ruins and Field, Middle Caicos
- Dusty Plantation Ruins, Middle Caicos
- Dr John Lorimers tomb & surrounds, Middle Caicos
- Jacksonville ruins, East Caicos

All of these sites are both important elements of the TCI national heritage and potentially valuable educational and eco-tourism resources for which this plan proposes various uses.

0.2.3.4. Field Roads

These are the traditional paths across the islands, most of which have fallen into disuse in the last few years, subsequently becoming overgrown and impassable. Because they link interesting places, through valuable habitat, which allows demonstration of wildlife, culturally important plants, and historic features, these field-roads are potentially valuable bases for interpreted and guided trails.

0.2.3.5. Traditional Crafts

One of the most positive aspects of the traditional crafts of the Turks and Caicos Islands is that the undertaking of the majority of them are sustainable practices. “Straw” craft products, made of fanner grass and palmetto fronds are especially important, and both materials are traditionally collected in a sustainable manner. Local materials are also used in potentially important craft areas such as building Caicos sloops. These crafts, if done in the traditional sustainable manner, have great potential for income to the residents of these islands.



0.2.3.6. Bush-medicine (or Ethnobotany)

Many plants which occur in the study area have medicinal uses, and given that 80% of the world’s medicines are plant-derived, the study of traditional “bush medicine” is highly relevant today.

0.2.3.7. Local food production

Middle and North Caicos were once intensively farmed, but that has largely stopped. The farming operations at the prison in Grand Turk have provided fresh and wholesome food for that island, and an increase in farming activity in the study area would provide similar benefits. The land, when treated appropriately, can yield a great deal. Fishing continues to be of great importance to the local diet and economy. Good conservation practices on land and in the wetlands are essential to the health of the local fisheries.

0.2.3.8. Small business development

A recent TCI Government-commissioned study of poverty highlights the urgent needs of these islands. The Trust and the TCI Government are working to address these needs. The Trust, with part funding from CANARI Caribbean Natural Resources Institute, has been conducting a series of well-received small business workshops in Middle Caicos. The TCI Government’s agency TCInvest has established, with UNDP assistance, projects on the Development of Small-scale Enterprises for Income and employment Creation, and The Small Enterprise Development Centre. There is close contact between the Trust and TCInvest, and this integrated approach will be developed further in this project.

0.2.3.9. Native plants in landscaping

The TCI Government is concerned about the disappearing scrub forest, and wishes to work with the Trust and other botanical authorities to draw up guidelines for the replacement of native vegetation on sites cleared for development. Currently, native plants are used by some of the landscapers because they are adapted to the climate: they need little or no irrigation; they do not interrupt the low profile of the scrub forest; and they have countless benefits to the native fauna. Unfortunately, the majority of the “native” species sold and used here are imported from South Florida, where the native plant industry is thriving. This, of course, creates the problem of the inadvertent introduction of non-native animals and possibly harmful weed species. Foreign snails, lizards, amphibians, and insects have been introduced to the islands in this manner.

The Trust could use its already established native plant nursery to train interested people in native plant propagation,

which would create opportunities for agricultural professions. The Trust is also working towards labelling plant specimens at its sites so that visiting residents can make selections of native plants for their own properties based on what they see in these settings.

0.2.3.10. Institutions

0.2.3.10.1. The National Trust

The Trust was created by ordinance in 1992, and given special powers to enable it to carry out conservation of TCI's historic and environmental heritage. The Trust Ordinance enables the Trust to own conservation properties and make them inalienable, so that they will be protected and held in trust for the people of the TCI forever. It also gives the protection of the criminal law to all Trust properties. These special powers make the Trust an ideal organisation to manage conservation lands, and its partnership with the Forum gives it an international resource base on which to draw.



0.2.3.10.2. The Department of Environmental & Coastal Resources and the Coastal Resources Management Project

The Department of Environmental & Coastal Resources (DECR), within the Ministry of Natural Resources, is the TCI Government Department responsible for nature conservation, fisheries and related matters. Limited resources had prevented much progress on the management of protected areas by official bodies. Because of this, UK's Department for International Development (DFID) have funded for several years a project (CRMP) with TCI Government to develop and implement management plans for three of TCI's marine National Parks, in the seas adjacent to Providenciales and West Caicos, as well as building an environment centre on Providenciales and funding some interpretative work. (In TCI usage, National Parks implies a strong element of recreational activity in the protected area.) With the ending of the project, CRMP is developing into a protected areas department within DECR. It is to be hoped that this official protected areas service will be able successfully to implement these three plans and extend to other TCI marine national parks and some other protected areas.

This work is complementary to TCNT's expertise in terrestrial and wetland conservation, and the management of nature reserves and historic sites. There is considerable potential for collaboration and sharing of the major needs for conservation work in TCI.

0.2.3.10.3. The Conservation Fund

The TCI benefits from having a newly established Conservation Fund, funded by a 1% addition to the existing 8% tax on visitors, charged mainly on accommodation and meals. This Fund provides a mechanism for ongoing funding for management of protected areas. The ways of implementing these intentions are still being developed, and it is crucial that, as guidelines for the uses of this fund are developed, it be used to protect the most critically important environmental and historic resources of the TCI. Access to this fund for carrying out elements of this management plan is essential.

0.2.4. Part 4: The Plan

This plan is a work-in-progress, and should continue to be so for the duration of the management programme. It details in specific terms the elements that could be developed to allow access to these areas while affording protection to the environment.

Several factors need to be taken into account in developing a system of facilities for experiencing the heritage of the Caicos Islands. These include:

- The development of the system should be modular, so that some elements can become fully operational at an early stage.
- Even though modular, the scheme should fit a wider plan, so that the various elements will be integrated at later stages when more are in place.
- Trails and hides should cover a range of ecosystems and other interests.
- Wherever possible, historical and cultural features should be included as well as biological ones.
- Trails should incorporate a range of distances and challenges.
- Throughout, damage to the biological, historic and cultural heritage should be avoided. Indeed, the object is to conserve these.
- Usage should be monitored.
- Schemes to generate income should be implemented as early as possible, so as to support maintenance of existing facilities and the addition of more modules (following the example of TCNT's successful Little Water Cay trails).
- Wherever possible, facilities should be related to Information Centres or other TCNT facilities, so as to enhance interpretation, aid supervision and provide a range of opportunities for visitors.

0.2.4.1. Field Roads (Trails) and trips

The plan identifies the following trails, boat trips, and other sites which have potential for visitors, describes each and details the work needed to make each usable or to improve usage:

- Crossing Place Trail (Middle Caicos)
- Haulover Plantation Field Road (Middle Caicos)
- Nanny Pond Field Road (Middle Caicos)
- Field Road from Lorimers to Big Pond (Middle Caicos)
- Increase Road (Middle Caicos)
- Armstrong Pond Field Road (Middle Caicos)
- Duck Pond Field Road (Middle Caicos)
- Washing Pond and Corry Pond Field Road (Middle Caicos)
- Old Road (sometimes called King Road) (Middle Caicos)
- Short field roads in Bambarra/Flamingo Pond area (Middle Caicos)
- Buttonwood Pond Field Road (Middle Caicos)
- Boat trip to East Caicos
- Boat trip to Man o' War Bush and Ocean Hole
- Cottage Pond (North Caicos)
- Wade's Green (North Caicos)
- North Caicos Dump Field Road (North Caicos)
- Flamingo Pond (North Caicos)
- Pineyards Field Road (North Caicos)



0.2.4.2. Hides/Blinds, viewing platforms, etc

The plan details how such facilities are used and built, what considerations guide the choice of facilities and locations, and the benefits to both visitors and the environment of such facilities. It describes fourteen sites at which such facilities could be used and the conditions and concerns of each. Although priorities have not been decided, the current stage of knowledge and of related interpretative developments suggest that the following might be the most appropriate priorities in the short-term:

- Hides at Village Pond, Nanny Pond, Turnup Pond and, if trails are developed, at Duck Pond and Corry Pond;
- Platform at Flamingo Pond, Middle Caicos;
- Repairs and interpretation at shelters at Flamingo Pond, North Caicos.

0.2.4.3. Publications

A variety of publications have been created, are in process or should be considered to help visitors understand the environment that they are experiencing:

0.2.4.3.1. Interpretation for field roads etc

It is planned to develop and implement a programme of integrated leaflets, signs and displays matched to the opening of each trail or facility.

It is envisaged that signage for field-roads will normally consist of a prominent entrance sign with logo(s), together with numbered feature posts. This will minimise costs and intrusion, while allowing changes to be made relatively easily and cost-effectively to the information content. It is anticipated that the guide leaflet to each field-road will serve as the ticket. The basic concept for format would be a single sheet printed on both sides, and incorporating sketch map, notes on numbered locations, illustrations and notes on the natural, historical and cultural features. Notes on mobile species likely to be seen will need to be worked into the text. It is planned that the sheet be laminated or be produced of a comparable standard.

0.2.4.3.2. Birds

The Darwin Initiative project was pleased to collaborate in the production of a major new book by Richard Ground, *The Birds of the Turks and Caicos Islands*, published by the Trust. It serves both to identify the birds and to make the reader aware of the beautiful habitat in which they are found.

In addition, Forum member organisation the RSPB is seeking funding for a series of plastic cards which would illustrate the birds a visitor is likely to see. The cards will be organised around the habitats, so the visitor would take the card on woodland birds down a woodland trail, and perhaps the card on shore birds for a boat trip.

0.2.4.3.3. Butterflies and other animals

The extensive research on butterflies carried out for this plan is in process of being turned into a small book. Dr. Oliver Cheesman is writing the book, and it will be illustrated by Richard Ground, who did the book on birds. One or more booklets on bats, reptiles and amphibians will probably follow.

0.2.4.3.4. Plants

We understand that Kathleen Wood has nearly completed a book to be published by Macmillan Press on the plants of these islands. It is expected to be comprehensive and authoritative, and will be of great use to visitors.

0.2.4.4. Information Centres

0.2.4.4.1. Middle Caicos Eco-centre

The TCI Government has donated the old school building at Bambarra, Middle Caicos, and its land to the Trust for the development of an eco-centre. Plans are at an early stage, but the plans include exhibits such as:

- outdoor exhibits dealing with traditional farming, medicinal plants, heirloom crops, ornamental displays of native plants, heirloom livestock exhibits, traditional building techniques, and traditional outdoor cooking demonstrations.

- indoor exhibits with information about traditional crafts, showing the materials “from Bush to Basket” and the entire process of producing the fanner-grass and palmetto baskets and hats, animals and plants in ecosystems.
- a comprehensive trail map
- display cases holding items of cultural, natural, and historical interest.
- a mangrove aquarium
- a reptile exhibit

0.2.4.4.2. Middle Caicos Eco-centre Native Plants Nursery

The Turks and Caicos National Trust aims to encourage the use of native plants for landscaping ventures, while creating a locally produced stock of such plants for sale and distribution around the islands. The proposed native plant nursery is to be situated on the former Bambarra School grounds. The plan details the benefits of such a nursery and the costs of setting it up.

0.2.4.4.3. Wade’s Green

Government is in the process of transferring this historic site, probably the most important plantation in the country, to the Trust. It is being developed as a premier eco-tourism resource and will complement the activities within the area covered by this plan. Initial work has been done on trails and ruins, and the current activity is the development of a working farm, to demonstrate the small-scale swidden agriculture used in the TCI, and to display an heirloom breed of fowl, introduced by the Loyalists.

0.2.4.4.4. Cheshire Hall

Whilst its development is not directly within the programme of work for North, Middle and East Caicos, the historic site of Cheshire Hall Plantation, Providenciales, relates closely to this conservation project because it will provide an important first point of contact in the major population and visitor island in TCI.

0.2.4.4.5. Equipping and manning centres

This will be phased, partly in accordance with the rate of fund-raising. The first phase will be the Bambarra Centre, for which partial funding has already been secured. The timing of the other two phases will be adjusted during the project. For each centre, an analysis will be made of user needs. The Bambarra Centre will probably house an office, basic accommodation for researchers, the national herbarium, the information database on biological resources in the islands, a visitor centre including displays, locally produced refreshments, gift shop promoting local craft products and native plants, and a base for trails and outdoor educational and visitor activities. Wades Green will provide a comparable centre for North Caicos with additional complementary specialisms.

0.2.4.5. Training and Environmental Education

Training will be organised for personnel recruited in a phased manner relating to resources available to implement those elements of the plan requiring staffing. This will involve identifying the nature and level of skills required, evaluating existing competencies of recruits, assessing training needed to reach required levels, and organising this. In addition, there is a need to identify training needs of existing local tour guides and develop in consultation with them integration of these into the system. A register of guides currently trained and approved for operating in each Trust facility should be maintained.



More general environmental education work will centre on expanding the highly successful modular curriculum course in environmental education *Our Land, Our Sea, Our People*, developed by the Trust in consultation with the TCI Education Department. Subject to resourcing, this will be

developed further using the nature reserves as living class-rooms. Trust-managed sites will be made available as living class-rooms for school-children throughout Turks & Caicos. Junior conservation programmes will be developed for school-children to participate in conservation work in their communities. The potential for post-school education will be explored with the developing Community College curriculum.

Training will be provided for local people in skills needed to support this work, including trail-management, guide work, and the establishment and operation of small businesses compatible with, and supportive of, maintenance of the heritage and way of life. This will build on previous programmes run by the Trust and TCInvest, and collaboration will be explored further.

0.2.4.6. Specific sites

The plan lays out detailed management criteria for a few sites within the plan area:



0.2.4.6.1. Conch Bar Caves

A complete management plan for Conch Bar Caves National Park has been developed which gives detailed guidelines for allowing access to the Caves while protecting the delicate geological features as well as the bat colonies. It entails limiting access to the caves only to people who are in the company of a trained, certified guide, making certain areas within the caves “off-limits”. The plan details the physical improvements needed, and recommends that the designation be changed to Nature Reserve, and that it be transferred into conservation ownership to prevent any future development of the site.

0.2.4.6.2. Other caves

The plan lays out in general terms the things to be taken into consideration for management of the other cave systems in the plan area, Indian Cave and other smaller systems in both Middle and East Caicos.

0.2.4.6.3. Middle Caicos Woodland

A major result of the 1999-2002 Darwin Initiative project has been the identification of the importance of some of the woodland and scrubland areas, especially between Lorimers and Bambarra. The importance of this has been somewhat undervalued in the past as conservation and other interest in the wildlife centred first on the coral reef areas and more recently also on the more terrestrial wetlands. Although the woodlands include many wetland habitats, little of it was included in the Ramsar site, nor indeed the other protected areas, many of which resulted from a survey of wetlands only. This group of habitats therefore remains under-represented in areas of statutory or other protection. Some aspects of the importance include:

- Vital wintering and migration habitat for some North American breeding populations, including one of the rarest song-birds breeding in North America
- Small pools with breeding records of the West Indian whistling duck, a vulnerable species, for which major conservation efforts are required internationally.
- Extremely high densities of characteristic local birds, some widespread but others found in no or few other places
- Important habitat for certain bats
- One of the most important habitats for reptiles.
- One of the areas in which re-establishment of woodland towards forest has moved furthest in places, so that there is a good range of scrub and woodland types represented.
- Correspondingly wide range of invertebrate and plant species.

- Additionally there are some important plantation ruins in this area.
- It is also an important area for plants still used for traditional purposes; this is important both for local people using these resources and for the potential interest to visitors.

This great importance and interest is reflected in the fact that several of the field-roads re-opened by the Trust for development of interpretative trails run through these areas. Many parts of this area are in private ownership, and it is recommended that the Trust enter negotiations with appropriate owners to ensure awareness of the value of these areas, their conservation, and appropriate access for visitors. Some parts of this area are in Crown ownership. It is recommended that suitable parts of this important area be transferred to conservation ownership and management as soon as possible.

0.2.4.6.4. Crossing Place Trail

Crossing Place Trail is the traditional route along the Caicos Islands, in particular the Middle Caicos section. As such, it is of great cultural importance. The trail is also of great scenic value, and along its route are important sites for wildlife, such as breeding tropic-birds and a range of herons and egrets in the western part, as well as an endemic butterfly.

The Trust, in conjunction with the local community, have re-established the trail, with a programme of signage, interpretation and publicity. Not surprisingly, this is rapidly becoming a major tourism feature for the islands. However, the site lacks effective protection. This needs to be put in place in order to ensure the conservation of this important natural and cultural heritage, and its availability as an essential resource in support of the developing eco-tourism economy. The plan follows the route of the Trail and details ownership, development and other problems, with recommendations that as much as possible of the trail be transferred to conservation ownership.

0.2.4.6.5. Fish Ponds

Fish Ponds comprise some of the most important wetlands in the area not included within the Ramsar site. The area is rich in fish and invertebrate life and provides habitat for a range of conservation-sensitive birds including herons, egrets (including reddish), terns, gulls, flamingos and shorebirds – in some cases and seasons in large numbers.

Recent construction has caused flow problems which are damaging the wildlife in Fish Ponds, and the plan offers a simple solution. Notwithstanding this problem, the Ponds retain high value, and would benefit from transfer to conservation ownership.

0.2.4.6.6. Other ponds

The plan lists all the ponds on Middle Caicos, notes that only a few of them have environmental protection, and makes recommendations for that.

0.2.4.6.7. Man o'War Bush

Man o'War Bush is a mangrove bush on Caicos Bank a few metres off the southern peninsula of mangroves on Middle Caicos. It is within the Ramsar site and is an important and well-known breeding colony for magnificent frigatebirds. Visits are made by boats owned by local boatman/guides. No harm has been identified from these visits, but it would be sensible to monitor bird numbers, especially if human visits increase, and consider a minimum limit on approach distance.



0.2.4.6.8. Flamingo Pond, North Caicos

Flamingo Pond of North Caicos is a very large pond complex forming part of the Ramsar site. It is well known for its flamingo flock and is important also for other waterfowl. Local residents have drawn attention to their concerns about certain problems including low aircraft approaches and some shooting activity. They considered that the presence of a warden would improve the situation considerably, and this is planned in the current proposals from the Trust when funds allow.

0.2.4.6.9. Western woodlands, North Caicos

There is increasing evidence that the woodland in the general vicinity of Wades Green and other parts of north-western North Caicos may be of particular importance to rare and vulnerable species of a wide range of taxa. Further investigation is needed, and has commenced. This has shown that this area hold the best example of tall dry tropical forest.

0.2.4.6.10. East Caicos

The East Caicos/Middle Caicos/North Caicos wetland forms probably the best example of its type in the Caribbean and also perhaps the most natural wetland amongst the 160+ wetlands listed under the Ramsar Convention by the UK Government. A core unspoilt area is East Caicos. This is a superb complex of natural coral reefs, tidal flats, mangroves and marshlands which provide a haven for wildlife, as well as the natural basis of the fisheries and tourism industries. It is clear to us that the whole of this uninhabited island should be included in the Ramsar site.

However, there is currently a proposal for one of the largest cruise-liner ports in the world, able to take 660 cruise liner visits and 1.6 million tourists a year. This would take most of the uninhabited island of East Caicos, including its many natural lakes and marshes, as well as potentially having major effects on the Ramsar site, the coral reefs and the fisheries. The scheme, backed by a Canadian property developer, would lead to nearly half of the island being turned into docks, roads, leisure centres, shops, golf courses, hotels and luxury flats for wealthy North American and European visitors. An eight-mile main road and bridge would link East Caicos with South Caicos. This would bring in low-paid staff and workers to the port and complex, most of them from Haiti and the Dominican Republic, as the number of workers required would equate to about half of TCI's existing population. Visitors could outnumber the local population in TCI.

The importance of East Caicos as the most unspoilt wetland complex in the region seems to be completely undervalued. This has huge potential for the future development of TCI by local people but would become impossible if the massive port and real estate development proceeded. For the last few years, this has been prevented by the inability of the developer to secure investment funds in this risky venture.

0.2.4.6.11. Extensions to the Ramsar site

The original report which proposed the Ramsar site based its approach on the inclusion of representative samples of a range of wetland habitat types. Since that time, a strong emphasis has developed on protection of functional units, particularly where the wetland is in a natural or near-natural state. It has also been recognised that tropical wetland types, particularly coral systems, mangrove systems and sea-grass beds, are severely under-represented and should have the highest conservation priority.

With this in mind, we recommend extending the boundaries of the Ramsar site. Ideally all of East Caicos would be included (see 0.1.4.6.10 above). Additionally, we recommend adding:

- The area of East Caicos south of the development area
- Joe Grant's Cay, Long Bay beach, and the adjacent channels and reef
- The Creeks and flats at Lorimers and Increase
- The reefs off the north shores of East Caicos and Middle Caicos.

Protection of these areas would be of major importance for several reasons, including:

- Nesting beaches for turtles, threatened species, particularly important because most other turtle beaches in TCI are now developed or have proposals for developments.
- Reef areas, which are surprisingly under-represented within the Ramsar site – and also under-represented in Ramsar sites across the world.
- Undeveloped beach areas are rapidly disappearing from TCI.
- Creek complexes across the bank through the islands are not well represented.

0.2.4.6.12. Other sites of historic and cultural importance

A survey of other historical sites is required. Some of those noted as of potential importance include: Increase Plantation, Dusty Plantation, School House in Lorimers, Dr John Lorimer’s tomb on Middle Caicos, and on East Caicos, the former cotton and sisal plantation, Jacksonville.

The Trust’s network of volunteers, combined with TC National Museum personnel and high-school students, could be organised to survey the historical and cultural resource, to identify further sites, buildings, historic trails, fields and artefacts. Initial work has established basic information on a number of sites, and more detailed research is in progress on selected ones.

0.2.4.6.13. Safeguarding the Ramsar site itself

This wetland complex is probably the most natural such area in the Caribbean – an asset of tremendous potential to TCI which is largely unappreciated. As outlined in this plan, there would be great potential benefits in raising awareness of this site, including employment and economic benefits to the local population. However, introducing substantial visiting to the Ramsar site for the first time could also introduce the risks of damaging the fragile ecology of the site as well as the communities of Middle and North Caicos. For this reason, it is strongly recommended that the National Trust continue to take the lead, in conjunction with the local communities, in developing the tourism opportunities relating to the Ramsar site. This would ensure a measure of control, so that the priority remains conservation and that tourism is supportive of that – rather than the reverse.

Much of TCI is Crown land, and there is great cause for concern about the rate it is being allocated to commercial development. Of particular concern is the fact that sites which are meant to be protected are not: in some cases statutory Nature Reserves have been approved for development in breach of existing policies and legislation. One problem is that the Land Register does not indicate which sites are parts of the Protected Areas System established under the National Parks Ordinance and any land shown on the register as Crown Land is assumed to be available for development. This is true of most of the Ramsar site, which is all designated as Nature Reserve, but appears only as “Crown land”.

The legislation of the TCI provides two ways for the government to protect historically or environmentally important sites: designating them as parts of the Protected Areas System and transferring them to the National Trust. These may be used together or separately. The National Parks Ordinance provides for the designation of protected areas but does not provide within the Ordinance the means of management to make conservation effective. The National Trust Ordinance provides for the government to transfer publicly owned land to the National Trust; however, the Trust may not treat this as a disposable asset but must instead manage the land in trust for the nation. Both measures have been used in pilot work, and the Trust now has an excellent track record in managing conservation properties.

Given that all of the Ramsar site is designated as a Nature Reserve under the National Parks Ordinance, it is recommended that the TCIG transfer to the Trust those parts of the Ramsar site which are Crown Lands, as was envisaged at the Trust’s establishment by statute. Protection must also be afforded to the traditional walking routes, or field roads.

0.2.4.7. Socio-economic aspects, Awareness and Marketing

0.2.4.7.1. Enhancement for local people and their employment

There are considerable possibilities for local employment both in working directly for the Trust implementing and operating conservation and visitor facilities, and in related work providing for visitors. These latter jobs would be largely generated by small businesses of local people, and would be of higher quality than the sort of job generally available to local people if developments are driven by outside organisations. This kind of employment supports local communities and maintains their traditions and quality of life, rather than replacing this with a different (and, in many ways, unwanted) imported social system.

0.2.4.7.2. Small businesses

Increased tourism in Middle Caicos could mean more of a financial base upon which to open tourist-friendly small businesses such as craft shops, shops that sell film, souvenirs, and snack food, and facilities to rent bicycles or kayaks as well as guest houses and restaurants. Plenty of small businesses are already established on Middle Caicos, and they can easily be expanded and made more accessible to visitors without changing their basic nature. As discussed above, small business training has been well received in the local community, and the existing programmes should be expanded to help put local people in a position to take advantage of employment (or, where appropriate self-employment) opportunities provided directly or indirectly by this project's results as these unfold.

0.2.4.7.3. Tourism

One of the main objectives of this plan is the creation of high-quality, low-impact tourism. Aspects of this are already active, and it is important that growth is progressive, at a rate that the local capacity can manage without damaging the communities themselves or the cultural and natural heritage features that provide the interest. There is a need to develop an integrated marketing strategy incorporating input from biodiversity and cultural management plans and socio-economic study.

One key opportunity is the bird-watching tours market. Specialist-led excursions are taken to remote birding sites all over the world. It would be far better for the National Trust to enter this market as a key player than to allow the market to make the discovery on its own and make unsupervised visits to important wildlife sites. The National Trust is also the means through which birders may obtain Bradley's *Official Checklist* and Ground's *Birds of the Turks and Caicos Islands*, both published by the Trust.

0.2.4.7.4. Turks & Caicos National Trust: membership, awareness, imprint

Effective implementation of this plan depends heavily on the TC National Trust to manage the work and facilitate others, and to draw in the support of local civic society, the support as members of both residents and visitors, and the help of expertise from outside the islands. For these reasons, the promotion of the elements in this plan and of the Trust are mutually supportive. Therefore, signs, buildings, publications, trail leaflets etc should carry Trust logos. Trust membership leaflets etc should be widely available, and visitors to trails and centres should be invited to join the Trust.

0.2.4.7.4. Dissemination

The extensive network of the Forum will be used to pull in volunteer expertise and to facilitate the application of the results of this project to comparable situations worldwide. Apart from its practical benefit, this will enhance the reputation of TCI, its government and people. The example of this management exercise will be disseminated to other potential users by presentations led by the Trust at regional meetings and an even wider audience will be addressed by presentations via the Forum's network, including periodic international conferences, UK Government Foreign Office network, *Forum News*, the Forum web-site, Forum member organisations' networks (involving several million individual members), contacts with small island states and the Overseas Territories of other EU Member States. Presentation package, articles, web-pages, Working Group meetings will be developed.

0.2.4.7.6. Wetland awareness

In addition and in combination with the specific information about the Ramsar site and surrounding areas, it is important to use all opportunities to raise awareness about wetlands generally. This is because they are often wrongly thought to be wastelands, when in fact they are crucial, especially in areas such as the TCI. The plan details a number of specific means of conveying this information.

0.2.4.8. Other aspects

0.2.4.8.1. Input to national plan (Sustainable Development Planning Initiative)

The TCI Government has been working for some time on a physical development plan for the country. Previous meetings, especially with the then Director of Planning, staged around the onset of the Darwin Initiative project identified a need for biological and historical material to be incorporated into the planning process. To this end, the biodiversity surveys which form the basis for the management plan were aligned to be compatible with TCI Government information needs. It is anticipated that further information derived from this ongoing work will also be compatible so as to inform further the physical planning process.

As work on this draft of the plan neared completion, TCI's Departments of Planning and of Economic Planning and Statistics (DEPS) had commissioned the pilot stage of the Sustainable Development Planning Initiative (SDPI). Workshops to encourage comment on the draft plan were held within a few days of presentations on the draft ideas of the SDPI. At and around these workshops, staff of the Planning Department, DEPS, the SDPI consultants, staff of the Department of Environmental & Coastal Resources and of Lands & Surveys and others encouraged the development of further analyses to feed into SDPI. With the help of information from the Land Registry, this section is largely the result of that request. It takes this to various levels for different parts of the area, depending largely on the presently available information. It is envisaged that these analyses will be taken further, especially for areas with limited information at present, in future revisions of this management plan.

A striking feature indeed is the lack of dry-land protected areas. These are essentially small parts of the Ramsar site in southern Middle Caicos and northwestern East Caicos, and part of the Conch Bar Caves protected area. This emphasises the need for safeguarding of some of the key dry-land areas, with their important endemic and characteristic species and ecosystems.

The additional important areas identified so far in North Caicos are of two types. One group consists of the group of ponds in the northwest of the island. The other is the extremely important gallery woodland in the vicinity of Wades Green and Kew. This urgently needs survey and safeguarding. Further analysis of the situation and potential of North Caicos is inhibited in that digitised land parcel information is not yet available in the Government's programme. The project has only relatively recently been able to obtain paper copies of the land parcel maps and has not had time or resources to digitise them. It is envisaged that this work will be developed further (as for Middle Caicos below) when digitised land-parcel information is available via one of these routes.

On East Caicos, almost all the dry-land area has been included in the "project area" for the proposed major cruise-liner and related development (see section 4.5.14). This makes open, consultative planning on a zoning basis impracticable, at least while the proposed project remains theoretically current. Some of the important heritage areas have now been identified in East Caicos but this is not exhaustive.

It is striking how much of such an apparently unspoilt island as Middle Caicos is either built, scheduled for building or in private ownership. Most of the land between Conch Bar and Bambarra falls into this category, as does much between Bambarra and Conch Bar and south of the latter. The extent of actual or proposed development along the coast is alarming. This underlines a need to avoid sprawl development and to safeguard the potential for eco-tourism development by careful planning.

0.2.4.8.2. Enhancement for wildlife

The Trust is capable of emerging as a key wildlife advocate especially through the suggesting and drafting of new protective legislation. Along with its conservation education programmes, the Trust must be prepared to lobby for the legislative protection of the habitats and species of special concern. Endemic and critically endangered species are of foremost protection priority. Any animal or plant which exists exclusively in these islands should enjoy full protection against senseless destruction. The Trust is perhaps the most suitable agency to provide the link between the public and government, and is in the position to educate both of these audiences on the importance of conservation legislation.

0.2.4.9. Forward processes

0.2.4.9.1. Biological monitoring

The work of the Darwin Initiative project provided a baseline of information on a range of taxa. The more detailed results continue to be analysed by the volunteer specialists involved. If problems are subsequently revealed, adjustments to the management plan can be developed to address these. Biodiversity surveying and monitoring will use a combination of volunteer outside specialists, working with local people so as to produce the necessary information while also transferring skills. Monitoring techniques are being developed and will be incorporated in the revisions to this plan.

0.2.4.9.1. Evaluation and revision procedures

The basic information allowing monitoring of the biodiversity of the area will become available from the techniques being developed. The monitoring of the management work done and its outcomes will be achieved by means set out in the Logical Framework (Appendix 5). The main features include:

- Regular meetings and reports;
- Scientific survey and monitoring to ensure the safeguarding of biodiversity;
- The development of a long-term financial plan;
- Clear information on utilisation, from visitor centre records, tour fees and other ticket sales, records of school visits;
- Information on local businesses and demographics from TCI Government;
- Records of presentations, publications and web-visits;
- Formal project reporting.

The monitoring process will involve Trust staff, the Trust Executive Committee and Council and regular community meetings. An annual report for this project will be prepared each year.

0.2.4.9.3. Management

The responsible body leading the implementation of this plan will be the Trust. It is recognised that no governmental or non-governmental agency in TCI yet has the full capacity to manage a plan of this scale and nature. Accordingly, the Forum will continue to support and advise the Trust, drawing on its wide network of experts as appropriate. This collaborative arrangement has worked well in developing this plan, and we anticipate that it will continue to work well in the implementation of it.

The Trust Council has appointed a local committee to bring together the contributions of main interest groups, and inform the work of developing the integrated management planning and implementation. In particular, community meetings will continue to be used as a means of obtaining local wishes, ideas, experience and knowledge. In addition to other involvements by Government personnel, project personnel will hold meetings with relevant departments of TCI Government to maintain inputs, consultation and coordination.

If the full programme of work is resourced, it is envisaged that the following personnel will be required. Day-to-day management of the local work will be by a Conservation Officer, with a business manager later recruited to run the Bambarra centre. The Conservation Officer will be supported by a warden on each of the two main islands, Middle Caicos and North Caicos. It is envisaged that, by the end of the project, increasing income from project operations together with support from the Conservation Fund, and other income raised by the National Trust will take over the funding from external grants.

0.2.4.9.4. Implementing the Plan

Because of this working nature of the plan, at any one time different elements of the plan will be developed to different extents. Taking the section on trails for example, the actions needed to establish some trails are now quite well worked out. For others, more investigation is needed. For yet others, the likelihood of a suitable trail in the area is recognised, but research is needed even on its route. As work develops, these various components will also move to more filled-out plans at varying rates. Similar comments apply to other sections of the plan.

Wherever possible, the details of the Plan are written in terms that will readily identify which actions have actually been achieved at a later date. This should assist monitoring, reporting, selecting priorities for future periods, and in revising the Plan periodically.

It is not envisaged that the facilities outlined in the Plan should all be implemented immediately. This would be impracticable in terms of resourcing and managing. Rather, it is envisaged that annual and other work programmes will select appropriate priorities from the overall plan. Neither do the potential facilities below comprise the full range possible. It is envisaged that this management plan will be a working document, and appropriate additional elements will be added in revisions.

The results of the Darwin Initiative work, both scientific and based on local knowledge, lead to recommendations on particular sites appropriate for conservation/restoration activities, and integration with cultural heritage. Further such recommendations are likely to develop during the course of continuing work. The identification of particular sites does not indicate that other areas of North, Middle and East Caicos are without interest. Indeed, it is the fact that these islands still have throughout an important natural element and that management is still largely environmentally sustainable that makes the approach of sustainable development outlined in this plan feasible. The aim should be to maintain such environmentally sustainable approaches throughout the islands. The reason for addressing some particular sites within this is that these areas need some additional management to maintain their very particular special features. These features are important in their own right, as part of maintaining the quality of life of local people, and to provide the continuing basis for economic activity to sustain local human populations.