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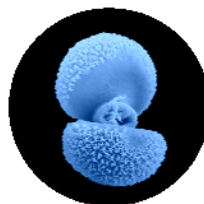
Final Report

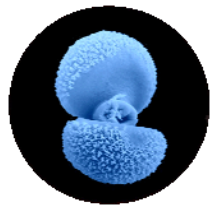
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Developing biodiversity management capacity around the Ramsar site in the Turks & Caicos Islands

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Darwin Initiative for the Survival of Species

Final Report

Developing biodiversity management capacity around the Ramsar site in the Turks & Caicos Islands (Project No. 162/8/164)

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Darwin Initiative for the Survival of Species

Final Report

1. Darwin Project Information

Project title: Developing biodiversity management capacity around the Ramsar site in the Turks & Caicos Islands

Country(ies): Turks & Caicos Islands

Contractor: CABI Bioscience / UK Overseas Territories Conservation Forum

Project Reference No.: 162/8/164

Grant Value: GB£132,100 in total

Start/Finishing dates: October 1999 – March 2002

2. Project Background/Rationale

The Turks & Caicos Islands (TCI), constituting one of the UK's Overseas Territories, are located at the southern end of the Bahamas, approximately 150 km north of Hispaniola, and 300 km northeast of the eastern end of Cuba. The country consists of eight major islands, and numerous smaller islands and cays, in two main groups. A substantial Ramsar site (wetland habitat of international importance) occurs within TCI, centred on the island of Middle Caicos. The terrestrial habitats in this area support a fascinating range of species, many of which are poorly documented. Middle Caicos is, as yet, largely untouched by major tourist developments, and the small local population (c.250 people, mostly in the three villages/settlements of Conch Bar, Bambarra and Lorimers) are keen to protect the assets of their natural environment and their quality of life, but need work for their young people. The project has concentrated its activities in Middle Caicos, but with due consideration to the neighbouring islands (North Caicos and East Caicos) parts of which also fall within the Ramsar site. The project was not limited to the Ramsar site but included adjacent areas.

Although it is a relatively recent phenomenon here, tourism is an important part of the economy on certain islands in TCI. It has the potential to impact significantly across the whole island chain. Whilst the economic benefits of tourism are to be welcomed, potential damage to the environment, heritage sites and local culture is a concern within TCI (and further afield). The project aimed to provide resources (biological data, a draft management plan, and enhanced local capacity) that would facilitate a sustainable approach to the development of a tourism infrastructure, particularly on Middle Caicos. These resources would also assist both the UK and TCI Governments to fulfil their commitments under the Ramsar Convention and the Convention on Biological Diversity. Subsequently (September 2001), the TCI Government (and other UK OT Governments) have signed an Environmental Charter with the

UK Government, and the resources provided by this project will also contribute to the fulfilment of commitments under this agreement.

The need for the project was identified by the Turks & Caicos National Trust (TCNT, the local project partners), through their work with the local community, particularly on Middle Caicos. That the need for work of this kind was first recognised locally, and that members of the local community have actively participated throughout the project, is evidence of both local demand and commitment. The TCNT, which exists to “...safeguard the cultural, historical and natural heritage of the Turks & Caicos Islands” is the only local NGO concerned with such a wide-ranging and integrated conservation agenda. Its commitment to protecting terrestrial biodiversity, in particular, in TCI was a crucial foundation stone for this project. The TCNT’s role in the implementation of the management plan arising from this project is also crucial, for example, in providing a strong, locally-based link between the TCI Government and local communities. As such, the elements of the project which aimed to build capacity within the TCNT were consistent with the achievement of longer-term, overall aspirations of the project in relation to tackling the “problems” outlined above.

3. Project Summary

Project purpose : Through technical inputs and capacity building, to enable the local people of TCI to develop a biodiversity management plan and to initiate a viable sustainable programme of development based on eco-tourism.

Project objectives : To collect baseline biodiversity data; to provide training for local people, in scientific background (to enable them to manage the biodiversity of the habitats), the biodiversity management planning process, and in raising awareness (through environmental education) of the importance of their natural resources; to develop a draft management plan with the local community; to build capacity in a local NGO (the Turks & Caicos National Trust).

In place of a logical framework (which was never required/developed for this project), the table of Project Outputs and Implementation Timetable agreed under the Project Schedule are attached here as Appendices V and VI respectively.

The overall objectives and proposed operational plan were not significantly modified during implementation, although specific aspects of the project (timetable, outputs – see elsewhere in this report) were adapted in response to prevailing circumstances.

Two particular administrative issues required discussion with the Darwin Secretariat:

- For reasons outside the control of the project partners (related to unpredictable changes in TCI Government salary levels), a difficulty arose over the salary available for the Project Officer. This would have made it difficult to recruit and retain a good candidate, and was resolved by the generous agreement of the Darwin Initiative to increase available funding (see correspondence with Darwin Secretariat).
- The departure of Val Brown from CABI Bioscience early during the project period should be noted, although this has had no impact on the implementation of the project. However, it did result in a minor adjustment to the allocation of work and funds for project staff (see correspondence with Darwin Secretariat).

The Articles of the Convention on Biological Diversity to which the project made the greatest contributions were: 7 (Identification and Monitoring); 8 (In Situ Conservation); 10 (Sustainable Use); 6 (General Measures for Conservation and Sustainable Use); 11 (Incentive Measures); 12 (Research and Training); 13 (Public Education and Awareness). See Section 5 and Appendix 1.

Overall, the project has been very successful in meeting its ambitious objectives. The development of a high quality habitat map of the study area was a major contribution to the collection of baseline biodiversity data, as well as important in fulfilling UK's commitment to supply a map of the Ramsar site to the Convention Secretariat. Survey work at the species level within the target taxa (plants, insects, bats, birds and herpetiles) was, predictably, most comprehensive for the least speciose groups (bats and herpetiles). Very valuable survey results were nonetheless obtained for the other taxa. Challenges were encountered in relation to training (see below), although activities in this area were effective overall, particularly in relation to awareness raising and the biodiversity management planning process. The contribution of the project towards capacity building in the TCNT was significant (particularly through the employment by TCNT of a locally-based Project Officer, Bryan Manco), as was development of local environmental democracy and important networks for on-going co-operative working. The draft management plan (see Appendix VIII) is undoubtedly the most substantial tangible output of the project. This document pulls together technical data collected by the project and the indigenous knowledge of the local community, and provides an assessment of opportunities and threats, as well as specific management recommendations.

4. Scientific, Training, and Technical Assessment

Research

Two phases of species-level biodiversity survey work were planned under the project (see Appendix VI). These were conducted in a number of rounds, according to appropriate seasonal timing and the availability of the relevant taxonomic specialists and local accommodation. Participating specialists were drawn from a range of institutions in the UK, the US (where knowledge of Caribbean biodiversity in relation to certain taxa is concentrated), and elsewhere (see Section 8). In line with the proposal, almost all of the time of these specialists was given as an in-kind contribution to the project. This contributed significantly to the exceptional value for money that the project provided (see Section 13). However, it has reduced the ability of the project to "chase" most of the specialists for reports, given that their other (funded) activities have necessarily taken priority in their busy schedules.

A number of logistic challenges had to be overcome in order to facilitate effective survey work. Notable amongst these were difficulties in obtaining and maintaining a suitable vehicle(s) for use by the Project Officer and visiting scientists on Middle Caicos. Although the island is relatively small (approximately 15 x 5 miles), and most sites are not directly accessible by road, the absence of reliable transport undoubtedly impeded the coverage of the first phase of biodiversity surveys and other work by the Project Officer. A succession of sub-optimal vehicles, including a somewhat dilapidated former police car (kindly provided by the TCI Government) and a Kawasaki "Mule" (essentially, a golf cart with attitude), caused amusement and frustration in almost equal measure. However, the transport problem was overcome in advance of the second survey phase, with the generous provision of a brand new vehicle by the TCI Government. General subsistence costs, and accommodation costs in particular, proved to be higher than anticipated, placing a strain on the project budget. This limited the opportunities for extended visits by scientific specialists, and made it difficult to accommodate additional personnel (including trainees). At one stage, it was hoped that the acquisition of the former Bambarra School (see Section 11) would provide a solution, but it did not prove possible to make this

building habitable within the lifetime of the project. However, generous provision of *gratis* accommodation by the Norbellis Foundation (see Section 11) was invaluable in the later stages of the biodiversity survey work.

The detailed results of species-level surveys thus far collated are given in the draft management plan (Appendix VIII), and are summarised below. As noted above, the most complete information was obtained for the least speciose target taxa (bats and herpetiles). At the other end of the scale, it was never likely that comprehensive data for insects or plants would be collected during the lifetime of this project, given the sheer number of species involved in either case. Nonetheless, good progress was made, particularly in relation to selected taxa within these highly species rich groups. Further analyses of the collected material is continuing (outside Darwin funding).

Bat surveys

Co-ordinating specialists: Tony Hutson (UK) and Tim McCarthy (Carnegie Museum, USA)

Studies centred on Middle Caicos indicated that the current known TCI bat fauna comprises the big-eared bat *Macrotus waterhousii*, the Cuban fruit-eating bat *Brachyphylla nana*, the buffy flower bat *Erophylla sezekorni*, Leach's long-tongued bat *Monophyllus redmani* (all cave-dwelling members of family Phyllostomidae) and the red bat *Lasiurus borealis* (Vespertilionidae). In addition, *Artibeus jamaicensis* and *Lasionycteris noctivagans* have been recorded in recent times; *Natalus stramineus* and *Tadarida brasiliensis* are recorded from fossil material only; *Brachyphylla cavernarum* had been recorded in error.

Of the five species of bat confirmed from TCI, three are restricted in their distribution to parts of the Greater Antilles and the Bahamian Archipelago. According to the IUCN Red List, a quarter of the world's bat species are threatened, and a further quarter are near threatened. One of the TCI species (*B. nana*) falls into this latter category.

Apart from the species mentioned above, there is the possibility or likelihood of some other species being found on TCI. These include other species of *Natalus* (Natalidae), *Eptesicus fuscus* (Vespertilionidae) and possibly *Molossus molossus* (Molossidae). It is even possible that the fishing bat *Noctilio leporinus* (Noctilionidae) may occur.

Herpetile surveys

Co-ordinating specialists: Glenn Gerber and Tandora Grant (San Diego Zoo, USA)

Studies centred on Middle Caicos indicated that the current known TCI herpetile fauna comprises the following lizards: the Turks & Caicos bark anole *Anolis scriptus*; a gecko *Aristelliger hechti*; the Turks & Caicos rock iguana *Cyclura carinata*; a house gecko *Hemidactylus mabouia*; the curly tail *Leiocephalus psammmodromus*; the Mabuya skink *Mabuya mabouya*; the Caicos Islands reef gecko *Sphaerodactylus caicosensis*; and the pygmy geckos *Sphaerodactylus mariguanae* and *S. underwoodi*. In addition, three snakes occur: the Bahaman rainbow boa *Epicrates chrysogaster*; the Caicos Islands trope boa *Tropidophis greenwayi*; and a blind snake *Typhlops richardi*. Two frogs (native to the Caribbean, but introduced to TCI) are also recorded: the greenhouse frog *Elutherodactylus planirostris* and the Cuban treefrog *Osteopilus septentrionalis*. The freshwater turtle (pond slider) *Trachemys terrapen* is also reported to have established small, introduced populations on Pine Cay. Although marine turtles were not within the remit of this project, work by others (including the TCI

Government's Department of Environmental and Coastal Resources) has demonstrated the importance of TCI sites for nesting of the important and vulnerable species *Chelonia midas*, *Eretmochelys imbricata* and *Caretta caretta*.

There is a high degree of endemism amongst the TCI herpetile fauna. Four lizards and one snake are endemic at the species level. Another snake and three lizards are endemic at the subspecies level. One of the latter, and the one remaining lizard, are near endemics at the species level, being confined to TCI and adjacent southern Bahamian islands. These restricted distributions are reflected, to some extent, in the international conservation status of TCI herpetiles. For example, three of the reptiles listed above are protected under Appendices of the Convention on International Trade in Endangered Species (CITES), and one was recently listed as *Critically Endangered* by the IUCN.

Bird surveys

Co-ordinating specialist: Mike Pienkowski (UK Overseas Territories Conservation Forum, UK)

Bird surveys benefited from an existing preliminary checklist, Patricia Bradley's (1995) *Birds of the Turks & Caicos Islands – the official checklist*, published by the TCNT. Nonetheless, work conducted under the Darwin project generated a good deal of new and useful information, and will contribute significantly to an *Important Bird Areas* analysis, currently underway for TCI. The current bird list for TCI comprises 200 species, representing 44 families.

Of immediate significance is the importance of the islands for water birds (native and migratory). TCI offers unusually large areas of undisturbed wetland habitat for such species, and the islands regularly support internationally important (sub)populations of the following: the Caribbean population of the brown pelican *Pelecanus occidentalis*; the nominate subspecies of the reddish egret *Egretta rufescens*; the "Cuban/Bahaman" population of the West Indian flamingo *Phoenicoptera ruber*; the white-cheeked (or Bahama) pintail *Anas bahamensis*; possibly non-breeding black-bellied plover *Pluvialis squatarola cynosurae*; possibly non-breeding lesser yellowlegs *Tringa flavipes*; the Caribbean subspecies of the gull-billed tern *Sterna nilotica aranea*; and the West Indian whistling duck *Dendrocyhna arborea*. This last species is listed as *Vulnerable* by the IUCN.

Work under the Darwin project has demonstrated that TCI is also much more important for dry-land species than had been appreciated. The dry forest and shrublands that occupy much of the higher ground, inland on Middle Caicos (and other islands), support important breeding populations of endemic and near endemic birds. These include: the Cuban crow *Corvus nasicus* (restricted to Cuba and the Caicos islands); a subspecies of the thick-billed vireo *Vireo crassirostris stalagmum* (endemic to the Caicos islands); and a subspecies of the Greater Antillean bullfinch *Loxigilla violacea ofella* (endemic to Middle and East Caicos). A number of other species are restricted to TCI and the Bahamas. In addition, the dry shrublands provide important wintering areas for birds that breed in North America, notably Kirtland's warbler *Dendroica kirtlandii*. This species, listed as *Vulnerable* by the IUCN, is one of the most threatened bird species of the region, with a world population of only about 3000 individuals.

Plant surveys

Co-ordinating specialists: Gerald “Stinger” Guala and Jimi Sadle (Fairchild Tropical Gardens, USA)

The plants of TCI have attracted some previous attention, notably during the compilation of Correll & Correll’s seminal (1982) work, *Flora of the Bahama Archipelgo*. Nonetheless, earlier botanical surveys here were far from complete. As expected, however, botanical studies conducted under the Darwin project suggested a TCI flora that is essentially Bahamian in character, with relatively little influence from the nearest Greater Antillean island, Hispaniola. This reflects the biogeographical, geological and climatic similarities between TCI and neighbouring islands of the southern Bahamas.

Work is still on-going to process and identify botanical specimens collected under this project (and during subsequent fieldwork conducted by the Fairchild Tropical Gardens, see Section 11). Much effort has been directed at the botanical characterisation of habitat types (see below). Specimens of around 200 species have been mounted and processed for herbarium storage. These include a number of new records for TCI, such as *Malaxis spicata*, *Oldenlandia callitrichioides*, *Ponthieva racemosa* and *Psychotria nervosa*. Botanical records of particular interest include the palm, *Pseudophoenix sargentii*. This has been seen in cultivation, but if an indigenous population could be located it would represent an important discovery. The orchid, *Encyclia caicensis* is also of particular note, as an apparent TCI endemic. Further taxonomic work is required to clarify the status of this species. Some of the plant material collected by the project can be viewed in a “virtual herbarium” established by Fairchild Tropical Gardens (<http://www.virtualherbarium.org/lf/tci/tci.html>).

As well as species-level interest, the habitats of TCI are also of conservation relevance in botanical terms. The presence of disjunct pineland of *Pinus caribea* var. *bahamensis* (see under **Seasonally flooded Pinus woodland** below) is notable. The gallery forest adjacent to Wade’s Green Plantation (North Caicos) has been identified as being of particular interest, and worthy of further investigation. In addition, the limited freshwater habitats appear to support locally rare botanical communities, the value of which should be recognised in conservation planning.

Insect surveys

Co-ordinating specialists: Oliver Cheesman (CABI Bioscience, UK) and Roger Booth (British Museum (Natural History), UK)

The massive diversity and abundance of insects, and the limited taxonomic expertise available for many of the less-studied groups, makes a comprehensive characterisation of the insect fauna of even a limited area impractical under most circumstances. The resources and underlying objectives of the Darwin project required that a selective approach be adopted to insect biodiversity survey work. Consequently, two insect groups were selected for particular attention, the butterflies (a highly visible and attractive group, with flagship potential and likely appeal to eco-tourists) and the beetles (the single most diverse insect group, numerically and ecologically). Although data and observations were collected in relation to other insect groups, the most detailed work was conducted on these two. As with plants, early indications suggested a TCI insect fauna that was essentially Bahamian in character, although this judgement was easier to make in relation to butterflies (for which there was some background information) than for beetles (which had attracted very little previous work).

It has been possible to compile a preliminary checklist for TCI, containing 47 butterflies. Not all of these would be expected to be extant in TCI at any one time (local extinction and recolonisation is probably a feature of the ecology of certain species here). The checklist contains the following

representation at family level: 3 Monarchs and Milkweeds (Danaiidae); 9 Emperors, Fritillaries, etc. (Nymphalidae); 1 Heliconia (Heliconiidae); 10 Blues and Hairstreaks (Lycaenidae); 12 Whites and Sulphurs (Pieridae); 3 Swallowtails (Papilionidae); 9 Skippers (Hesperiidae). Of particular local importance is a subspecies of Drury's hairstreak *Strymon acis leucosticha*, which appears to be endemic to TCI. A further five butterflies are confined to TCI and the immediately adjacent islands of the southern Bahamas: a subspecies of the Turk Island leaf butterfly *Memphis intermedia intermedia*; a subspecies of Chamberlain's sulphur *Eurema chamberlaini mariguanae*; a subspecies of Thomas's blue *Cyclargus thomasi clenchi*; a subspecies of the dusky swallowtail *Heraclides aristodemus bjoerndalae*; and a (sub)species of skipper *Wallengrenia* sp.

As noted above, background information on the beetles of TCI is almost non-existent. Consequently, the work conducted under the Darwin project by Roger Booth represents the first attempt to characterise the islands' beetle fauna. Material processed to date comprises a total of 137 species across 38 families. Amongst these, species with a range of distributions and ecologies are represented. For example, amongst the coccinellid (ladybird) beetles, are found *Cycloneda sanguinea* (a widespread, New World, aphid predator), *Diomus rosecollis* (a likely scale insect predator with a Caribbean distribution) and *Psyllobora schwarzi* (a likely mould-feeder, known from Cuba, Hispaniola, the Bahamas, Grand Cayman and South Caicos – making it one of the few beetles previously recorded from the Turks & Caicos Islands). Amongst the bostrichid beetles (which typically feed in dry, dead wood) are *Xylomeira tridens* and *Tetrapriocera longicornis*, both of which are relatively widespread in the Caribbean. Widespread species tend, not surprisingly, to be more easily identified to species during an initial sorting of material. Species with more restricted distributions are more challenging, as they may not be represented in reference collections (or may not have been collected before, requiring a formal description of the new species to be drawn up).

Habitat surveys

Co-ordinating specialists: Fred Burton (Cayman Islands), Mike Pienkowski (UK Overseas Territories Conservation Forum, UK) and Fairchild Tropical Gardens botanists (see above)

In conjunction with species-level survey work, the importance of mapping habitat types across the study area became apparent at an early stage. This work provided essential (and previously lacking) baseline information on distribution of habitats themselves – crucial for effective management planning. It also allowed more efficient, stratified, species-level surveys to be conducted for the target taxa. Fred Burton (formerly Programme Director of the Cayman Islands National Trust) co-ordinated the production of a habitat map for the project. A provisional habitat map (based on satellite imagery obtained from the National Remote Sensing Centre, Farnborough, UK) was prepared initially, and this was subjected to “ground truthing” over subsequent months. This work was labour intensive and time consuming, given the difficulties in accessing (and moving through) a number of the habitat types encountered. Again, the detailed outputs of the habitat mapping exercise are given in the draft management plan, where the habitat classification developed under this project is also related to that used under the Ramsar Convention. A set of detailed habitat maps is also included here as Appendix IX. In summary, the major habitat types recorded were as follows:

(Marine open) water

Marine systems were not within the remit of the project, and a number of open seawater habitats were combined for the purposes of this mapping exercise: those over sand banks, and in channels between them; reef/lagoon habitats; flooded tidal flats over unvegetated sand/silt substrates.

Exposed intertidal mud

Exposed, unvegetated sand/silt substrates.

Salicornia-Batis-Portulaca saltmarsh

A succulent herbaceous salt marsh community, on a flat calcareous silt substrate. Dominated by *Salicornia virginica*, *Salicornia bigelovii*, *Batis maritima*, and *Portulaca rubricaulis*. *Lycium tweedianum*, *Chamaesyce vaginulatum*, *Sporobolus virginicus*, and scattered *Avicennia germinans* shrubs may be present.

Distichlis / Sporobolus saltmarsh

A grass-dominated salt marsh community, on a flat calcareous silt substrate. Dominated by *Sporobolus virginicus* and *Distichlis spicata* in varying proportions. *Borrchia frutescens*, *Salicornia virginica*, *Salicornia bigelovii*, *Lycium tweedianum*, *Portulaca rubricaulis*, with *Conocarpus erectus* as isolated shrubs or trees, may be present.

Mixed saltmarsh with sparse silver Conocarpus

Scattered *Conocarpus erectus* var. *seriacea* shrubs and trees forming up to 20% cover on a calcareous silt substrate with emergent limestone bedrock. *Sporobolus virginicus*, *Salicornia virginica*, *Rhachicallis americana*, *Borrchia frutescens*, *Portulaca rubricaulis*, *Salicornia bigelovii*, *Fimbristylis ferruginea*, and *Batis maritima* form a partial ground cover in varying combinations. *Avicennia germinans* may be present as a rare emergent shrub or tree.

Rhizophora & Avicennia mangrove shrublands

Mangrove shrubland communities 1 metre tall, forming 40% - 60% cover on soft calcareous mud covered with a thick algal turf, and a network of tidal creeks. Ranging from monospecific *Avicennia germinans* at the landward extreme of the community, through mixed *Avicennia germinans* – *Rhizophora mangle*, to monospecific *Rhizophora mangle* towards the seaward edge. (*Rhizophora*, *Avicennia* and *Laguncularia racemosa* shrublands also occur in more inland sites, associated with *Conocarpus erectus* and succulent halophytes on pond fringes and in seasonal floodwater channels.)

Ponds

Shallow brackish to hypersaline ponds, usually narrowly fringed by mangroves and succulent halophytes and otherwise unvegetated. Water levels fluctuate seasonally and many ponds may dry out periodically or seasonally.

Unvegetated rock & mud flats

Rock pavements and dark calcareous silt flooded by seasonal/intermittent expansion of natural brine pans. Virtually devoid of higher plants due to extremely high salinity. Slightly raised rock areas may rarely support a few prostrate *Conocarpus erectus*, severely stunted *Avicennia germinans*, *Salicornia virginica* or *Rhachicallis americana*.

Sparsely vegetated saline sand flats

Approximately 75% unvegetated sand with a thin algal crust, supporting local aggregations of *Avicennia germinans* shrubs, and the succulent halophytes *Portulaca rubricaulis*, *Salicornia virginica* and *Suaeda conferta*. Intermittently flooded by rain and/or tide. Old flamingo nests were observed in this habitat.

Natural brine pans

Depressed rock pavement areas, intermittently filled by high tides, becoming extremely hypersaline due to evaporation, forming crystalline salt at the margins. No vegetation.

Conocarpus shrubland on saltmarsh grasses

Conocarpus erectus, usually var. *seriacea*, forming a 1-3 metre seasonally flooded shrubland over a herbaceous community dominated by *Sporobolus virginicus* or occasionally *Distichlis spicata*. *Conocarpus erectus* var. *erectus* is often present as a prostrate shrub, with *Salicornia virginica*, *Portulaca rubricaulis*, *Borrchia*

frutescens, *Rhachicallis americana*, *Jacquinia keyensis*, *Rhynchospora colorata*, *Fimbristylis ferruginea*, *Agalinis maritima*, and occasionally *Rhizophora mangle* and/or *Avicennia germinans* as shrubs.

Conocarpus-Rhachicallis dwarf shrubland

A seasonally flooded, shrubland with most woody vegetation dwarfed, on calcareous silt with emergent limestone bedrock. Dominated by prostrate *Conocarpus erectus*, with *Rhachicallis americana*, *Rhizophora mangle*, *Jacquinia keyensis*, *Manilkara bahamensis*, *Thrinax morrisii*, *Borrchia frutescens*, *Coccoloba uvifera*, *Cladium jamaicense*, *Swietenia mahagoni*, *Gundlachia corymbosa*, *Strumpfia maritima*, *Crossopetalum rhacoma*, *Sophora tomentosa*, *Fimbristylis ferruginea*, and *Distichlis spicata*.

Seasonally flooded woodlands (various)

1). *Conocarpus erectus*, including var. *seriacea*, forms seasonally / intermittently flooded woodland communities on very slightly raised sand banks amid tidal flats. The tree layer may be monospecific, or may variously include *Pithecellobium keyense*, *Dodonea viscosa*, *Guapira discolor*, *Swietenia mahagoni*, *Maytenus phyllanthoides* and *Metopium toxiferum*. The shrub layer may include the endemic *Eupatorium lucayanum*, *Crossopetalum rhacoma*, *Borrchia frutescens*, *Thrinax morrisii*, *Coccoloba uvifera*, and *Erithalis fruticosa*, while the herbaceous layer typically includes *Sporobolus virginicus*, *Chamaesyce vaginulatum* and *Lycium tweedianum*.

2). *Sabal palmetto* palms form seasonally flooded woodlands in association with *Gundlachia corymbosa* where fresh to brackish floodwater accumulates during the rainy season. The two species are strongly co-dominant, with *Distichlis spicata* often also abundant.

Seasonally flooded Pinus woodland

Pinus caribaea woodland occurs in extensive stands intermingled with other seasonally flooded habitats. The limestone bedrock has very thin soils, and many seasonally flooded sinkholes: the entire habitat floods with fresh water during periods of intense rain. *Sabal palmetto* and *Cladium jamaicense* grow in the sinkholes. The shrub layer is usually sparse, with *Coccoloba uvifera*, *Thrinax morrisii*, *Randia aculeata*, *Tabebuia bahamensis*, *Cassia inaguensis*, *Byrsinomia lucida*, *Lysiloma latisiliquum*, *Savia erythroxyloides*, *Conocarpus erectus*, *Metopium toxiferum*, *Acacia choriophylla*, *Swietenia mahagoni*, *Ernodea serratifolia* and *Erithalis fruticosa*. Herbaceous species include *Rhynchospora colorata*, *Jacquemontia havanensis*, *Cassytha filiformis*, and the ground orchid *Spiranthes vernalis*.

Dry shrublands

Diverse xerophytic mixed evergreen–deciduous shrublands, on limestone bedrock and thin soils. Species composition varies with elevation above ground water, and exposure to salt spray. Abundant tree species include *Lysiloma latisiliquum*, *Coccoloba diversifolia*, *Tabebuia bahamensis*, *Coccothrinax argentata*, *Thouinia discolor*, *Metopium toxiferum*, *Acacia choriophylla*, *Cephalocereus millspaughii*, *Guaicum sanctum* and *Thrinax morrisii*. Several orchid species in the genus *Encyclia* are also widespread and conspicuous in these habitats.

The draft management plan

The draft management plan (*Plan for Biodiversity Management and Sustainable Development around Turks & Caicos Ramsar Site Version 1.0 – Appendix VIII*) draws together species-level and habitat-level information (above), with ecological knowledge (and new observations) of the local flora and fauna, to produce meaningful information at a site scale. The plan also incorporates local knowledge, resulting from the close involvement of the local community throughout the project. Knowledge of the distribution of heritage sites, such as centres of Lucayan activity (c.750-1500AD) and Loyalist plantations (c.1780-1830AD) is also integrated. This has allowed particular sites of conservation value, and of particular potential interest to visitors, to be identified. Other technical work conducted under the project has involved the collation and interpretation of land ownership maps. This is important, as part of a process of determining potential vulnerability, or potential reserve status, of the sites identified as being of particular biodiversity value. Again, details are available in the management plan itself.

However, as examples, the following are amongst the trails identified as being of potential interest to visitors to Middle Caicos: Crossing Place Trail; Haulover Plantation Field-road; Nanny Pond Field-road; Armstrong Pond Field-road. A number of such trails are already maintained as passable tracks, whilst others require a degree of clearance. Other sites of particular biodiversity value and potential visitor interest on Middle Caicos include: Man O' War Bush and Ocean Hole (accessible by boat); Flamingo Pond; Washing Pond; Conch Bar Caves. The latter are of particular significance, for example, being the main roosting site for cave-dwelling bats on the island. Although already designated as a National Park, the conservation requirements (and eco-tourist potential) of this site required urgent consideration. The management plan provides this, with a detailed set of recommendations for the future management of the site. This provides a model for the type of site-specific management plan which can be developed for a range of trails and sites; generic recommendations for management, interpretation materials, stakeholder involvement, and so on, are already provided for other sites, as part of the overall management plan.

Training/capacity building

The training element of the project had to remain flexible in order to accommodate local circumstances. The anticipated training outputs fell under three headings: biodiversity survey (“technical”); environmental education; management planning. Such categories may remain distinct when training is delivered through formal courses, however, when (as here) it is delivered through a wide range of practical, participatory exercises, activities in respective categories tend to merge together. Despite a number of challenges (see below), the training element of the project has been a significant success, albeit difficult to report against the rather rigid, designated output headings. A substantial contribution to capacity building in the TCNT has been made by the project, and capacity building has extended beyond this important local NGO to the wider community. A particularly valuable additional element of capacity building has proved to be in participatory management and environmental democracy for the local community. This is being built upon now by other, on-going local initiatives.

The constituency of potential “technical” trainees within TCI is small, and mostly comprises professionals (government personnel, educationalists, etc) who found it difficult to reschedule their activities in order to participate whilst visiting specialists were present in TCI. Difficulties over transport and availability of affordable accommodation (see above) compounded these problems. There was, however, considerable interest in participation. There will be opportunities for the TCNT to respond to this in their future activities, by drawing on the increased capacity that the project has provided - TCNT staff were amongst those who were able more readily to take advantage of technical training opportunities. Bryan Manco, the Project Officer, in particular, was directly involved in all the visits by taxonomic specialists, and conducted a good deal of independent survey work. As a consequence of this training, Bryan was able to “mentor” a number of potential and in-coming TCNT personnel. For example, John “JR” Johnson from Middle Caicos, was able to take up a TCNT wardening post elsewhere in TCI, on the basis of the skills and knowledge that he had gained from Bryan. Similarly, Bruce Garland, Andrew Higgs and Allen-Ray Smith (all now working for TCNT), benefited greatly from relevant training that Bryan was able to provide.

Existing TCNT personnel (other than Bryan) were also able to take advantage of technical training opportunities during visits by scientific specialists, as were members of the TCI Government's Department of Environmental & Coastal Resources, DECR (specifically, Jasmine Parker and Amber Thomas). Educationalists who participated during visits from specialists also received technical training, including Nicola Warwick (British West Indian Collegiate, Providenciales) and Richard Wildman (Raymond Gardiner High School, North Caicos). Senior students ('A' Level or above) also

received technical training during participatory exercises with visiting scientists. Overall, we estimate that 132 days of technical training were delivered to 23 people. This is rather less than the anticipated 40 person weeks (=240 days, assuming a 6-day person week), but more than the 15 people specified in the table of agreed Project Outputs (see Appendix V).

The environmental education element of the project operated at a number of levels. A number of older students (notably those from British West Indies Collegiate and North Caicos High School) were able to participate during the taxonomic specialists' visits, gaining an increased awareness of biodiversity issues and environmental education skills, as well as a range of technical skills. Importantly, the Project Officer established at an early stage a very positive relationship with the local (Conch Bar) elementary school on Middle Caicos. This provided opportunities for Bryan (and taxonomic specialists) to become regular classroom visitors, raising awareness of biodiversity issues amongst students of a younger age group, whilst enhancing the capacity of the local teachers to deliver environmental education to future cohorts of pupils. Bryan was able to extend his programme of visits to other schools in TCI, where he was also able to raise awareness of biodiversity and conservation issues amongst students whilst providing training in environmental education to staff. In terms of training in environmental education, we estimate that the project delivered 86 days training to 14 people overall. This compares with 96 days (16 person weeks = 96 days, assuming a 6-day person week) and 10 people, the anticipated output under this heading.

As noted in the paragraph above, training in environmental education often went hand-in-hand with the delivery of environmental education (ie. awareness-raising) activities. As well as school visits, a range of activities conducted under the project contributed significantly to awareness raising. For example, the Project Officer has provided input to the "summer camp" for young people organised by the TCNT and the Coastal Resources Management Project (CRMP), and has participated in the National Museum's Children's Day. The participation of the wider Middle Caicos community in the management planning process (see below) itself provided a vehicle for environmental education. This was very much a two-way process, with project personnel learning a great deal about the natural resources of the island, as well as raising awareness amongst the local community of specific conservation issues. We estimate that meetings and presentations of this kind provided around 120 days of environmental education to around 60 people, including Ministers in the TCI Government.

The capacity building aspect of the project has also operated at a number of levels. A particular target for capacity building was the TCNT, and members of their staff have benefited from involvement in the project in different ways. Much of the technical capacity building was focused on Bryan Manco, the Project Officer, who was an able natural historian before joining TCNT. Through his central role in the implementation of the project, Bryan has gained a range of practical skills and knowledge, and has actively propagated this through the TCNT (see above). TCNT staff at all levels, including the Trust Council, have also gained a great deal from participation in the management planning process. The latter stages of this have brought senior TCNT staff into closer contact with relevant TCI Government officials, which has itself increased the capacity of the TCNT to pursue its wider agenda for conservation and natural resource management throughout the islands. Again through the management planning process, there has been substantial capacity building in the Middle Caicos community as a whole, enabling residents to take an increased part in decision-making relating to the future of their island. This has been facilitated by the representation of the local community on the Project Committee, regular (wider) community meetings, and the generally inclusive, participatory approach adopted by the project. The Project Schedule anticipated 12 person weeks (=72 days, assuming a 6-day person week) of training in management planning delivered to 8 people. Overall, we estimate that the project has delivered 143 days of such training in a more or less formal sense to 33 people. Whilst this

includes members of the local community who were members of the Project Committee, it does not include other members of the wider local community. Participation in community meetings, planning discussions and project presentations has enhanced the capacity of the wider community (on Middle Caicos in particular) to participate actively, and with confidence, in management planning and action, and in environmental democracy in general. We estimate that this represents a further 60 days of *de facto* training, delivered to 120 people, although these figures are not included in the formal table of outputs under the project (Appendix II).

Other technical issues

The most appropriate design for a biodiversity database to be established under the project is currently under discussion. Specimens of plants and insects arising from the first phase of biodiversity survey work provide the basis of reference collections established under the project. Both sets of material are still being examined in order to obtain authoritative identifications. The intention is to accumulate sufficient material to establish duplicate collections for both insects and plants: one set of material will be held at an appropriate repository outside TCI, whilst the other set of specimens will be returned to the islands when suitable facilities for their long-term maintenance are in place.

In relation to on-going biological monitoring, an aim of the project has been to enable residents and visitors to contribute as much as possible to such activities in the future. Identification guides and environmental education materials arising from the project's biodiversity survey work (see Section 6) will do much to facilitate this, as will the development of a study/visitors centre in the former Bambarra school building (see Section 11).



Top Left: The Turks & Caicos Islands in relation to the Bahamas, Florida and the Greater Antilles [Image: CABI Bioscience]

Top Right: Two of the dominant habitat types of Middle Caicos are the dry shrublands/woodland to the north (foreground) and saline flats to the south (background) [Photograph: Oliver Cheesman]

Bottom Left: Jimi Sadle (Fairchild Tropical Gardens) collects plant specimens, next to a wall which marks a field trail/boundary from the plantation period [Photograph: Oliver Cheesman]

Bottom Right: One of the plants of the Turks & Caicos Islands - *Croton discolor*, believed to be a larval foodplant for at least two of the islands' rarer species of butterfly [Photograph: Oliver Cheesman]



Top Left: The Conch Bar Caves, an important centre for biodiversity and home to four species of bat. The draft Management Plan arising from this project includes detailed recommendations for the management of this cave system. [Photograph: Oliver Cheesman]

Top Right: The big-eared bat *Macrotus waterhousii*, a resident of the Conch Bar Caves [Photograph: Oliver Cheesman]

Bottom Left: The curly tail *Leiocephalus psammodromus*, one of the Turks & Caicos Islands' endemic lizards [Photograph: Oliver Cheesman]

Bottom Right: The greenhouse frog *Elutherodactylus planirostris*, indigenous to the Caribbean, but introduced in the Turks & Caicos Islands [Photograph: Oliver Cheesman]



Top Left: The green heron *Butorides virescens*, one of twelve species of herons and egrets recorded from the ponds and wetlands of the Turks & Caicos Islands [Photograph: Mike Pienkowski]

Top Right: The thick-billed vireo *Vireo crassirostris*, one of many birds that occur in the dry shrublands/woodland of the Turks & Caicos Islands [Photograph: Mike Pienkowski]

Bottom Left: The gulf fritillary *Agraulis vanillae insularis*, widespread in the Caribbean, and amongst the more common butterflies of the Turks & Caicos Islands [Photograph: Oliver Cheesman]

Bottom Right: Drury's Hairstreak *Strymon acis leucosticha*. This subspecies of butterfly is endemic to the Turks & Caicos Islands [Photograph: Oliver Cheesman]



Top Left: Students from the British West Indies Collegiate (Providenciales) learn about the plants of the Turks & Caicos Islands from Jimi Sadle (Fairchild Tropical Gardens) [Photograph: Oliver Cheesman]

Top Right: Bryan Manco (Project Officer) pays one of his regular visits to the Conch Bar elementary school (Middle Caicos), as part of the project's programme of environmental education activities [Photograph: Oliver Cheesman]

Bottom Left: The old Bambarra School building (Middle Caicos). Donated to the Turks & Caicos National Trust by the TCI Government, and soon to be converted into a visitors/study centre [Photograph: Oliver Cheesman]

Bottom Right: The people of Middle Caicos have participated at all stages of the Darwin Initiative project, not least through regular community meetings like this [Photograph: Oliver Cheesman]

5. Project Impacts

In terms of enabling “the local people of TCI to develop a biodiversity management plan”, the accomplishment of the project purpose is very clear in the management plan submitted with this report. In terms of enabling them to “initiate a viable sustainable programme of development based on eco-tourism”, again, the basis for this accomplishment is evident from the management plan itself. Assessment of the ultimate success and sustainability of this programme of development must wait for the longer term. However, there have been a number of specific, encouraging developments as a consequence of the project’s (and TCNT’s wider) activities, that are indicative of meaningful progress. For example, the TCNT has hosted a series of “small business workshops” on Middle Caicos, enabling members of the local community to develop the skills that would be required to support small-scale eco-tourism on the island. It has also hosted craft workshops and established a native plant nursery (as well as instigating other initiatives to promote appreciation of native plants). The transfer of the former Bambarra School to the TCNT by the TCI Government has provided an important piece of infrastructure; it is intended to refurbish the building as a visitors/study centre, as a focus for future biodiversity work and eco-tourism. Through the capacity building elements of this project, the TCNT at all levels (from members of Council to conservation staff) are now well-equipped to take forward the management planning and implementation process. Raised awareness and capacity elsewhere in TCI, from Middle Caicos residents to government Ministers, will also facilitate the on-going process of biodiversity management planning and appropriate action.

The provision of a draft management plan will assist the TCI and UK Governments to fulfil their commitments, not only under the CBD, but also under the Ramsar Convention and the Environmental Charter of 2001. In relation to the CBD specifically, the development of the management plan has already contributed significantly to the identification of local biodiversity, and provided a basis for its on-going monitoring (Article 7). The implementation of management plan recommendations will contribute to most (if not all) of the provisions under Article 8, from establishment of protected areas to the safeguarding of traditional lifestyles. The management planning process has contributed significantly to awareness-raising (Article 13) and education (Article 12). Perhaps most importantly, however, the plan provides a basis for fulfilling commitments under Articles 6 (national strategies) and 10 (integration of sustainable use into national decision-making). Through these Articles in particular, the CBD emphasises the need to integrate biodiversity conservation into all sectoral plans and policies. One important mechanism for this in TCI is via the national physical plan; at an early stage of the project, TCI Department of Physical Planning indicated to the project partners that it would welcome input into the proposed national plan in relation to the Ramsar site and adjacent areas in North, Middle and East Caicos. To this end, TCNT personnel were then included on the planning board. During the course of the project, TCI Government thinking evolved, and the Department of Physical Planning and the Department of Economic Planning & Statistics have initiated a participatory exercise, the Sustainable Development Planning Initiative (SDPI). The leaders of this project have eagerly embraced the management plan (whose format was altered in part to meet some of their needs), and sought the input and advice of the project partners in taking matters forward. The TCI Tourism Department has also proposed collaboration for work on Middle and North Caicos. The management plan, and the information and partnerships that have been generated in its production, provide important underpinning for such cross-sectoral activities. There are already indications that the project has led national decision makers to question whether intensive development is the only option for the future.

The project outputs have also helped initiate thinking about the UK Government's Environmental Charter in TCI, and this has been developed so that the country (with the help of UK Overseas Territories Conservation Forum and FCO support) is now piloting for UK Overseas Territories more generally the development of an implementation strategy for the Environmental Charter.

As noted in Section 4, the training elements of the project have contributed to capacity building at a number of levels. Awareness-raising within the community (particularly, perhaps, amongst younger school children) should provide for a continued and enhanced sympathetic treatment of biodiversity issues. The capacity building associated with community participation in the management planning process has ensured that local stakeholders have been engaged from the start. The sense of ownership and empowerment that flows from this should greatly facilitate implementation of (at least, aspects of) the management plan at a local level. Lastly, technical training (focused particularly, but not exclusively, within the TCNT) provides for an increased local capacity to undertake, and provide further training in, biodiversity survey, monitoring, environmental education, and so on.

In terms of collaboration, the project established at an early stage a forum (the Project Committee) for the discussion of biodiversity management issues, with UK project personnel, the TCNT, local government and local people represented. It is anticipated and planned that this group, and its activities, will evolve beyond the lifetime of project, under the guidance of the TCNT. The enhanced co-operation with Departments of the TCI Government arising from the project is evident from the points noted above (regarding the SDPI etc.). Although the project has already generated a number of positive social impacts, for example through environmental education and local participation in the management planning process, it is the longer-term outcomes of these collaborations (and implementation of the management plan) which have the greatest potential to yield benefits for individuals and communities in TCI.

6. Project Outputs

See Appendices V and VI respectively for table of Project Outputs and Implementation Timetable agreed under the Project Schedule. A summary analysis of outputs is given below, under the four thematic headings used by Darwin to group Standard Output Measures.

Training outputs

The training elements of the project had to remain flexible in response to local circumstances. The consequences of this for training outputs have been discussed in some detail in Section 4. In summary:

Biodiversity survey ("technical") training

Overall, we estimate that 132 days of technical training were delivered to 23 people. This is rather less than the anticipated 40 person weeks (=240 days, assuming a 6-day person week), but more than the 15 people specified in the table of agreed Project Outputs (see Appendix V). The shortfall in training days is mostly a consequence of difficulties in potential trainees re-scheduling their activities in order to participate in training, and in availability of affordable accommodation for extended periods of training.

Environmental education training

Overall, we estimate that the project delivered 86 days training in environmental education to 14 people. This compares with 96 days (16 person weeks = 96 days, assuming a 6-day person week) and 10 people, the anticipated output under this heading. In addition, a considerable amount of

environmental education was conducted under the project. We estimate that around 120 days of environmental education were delivered by project personnel to around 60 people, including Ministers in the TCI Government.

Management planning training

The Project Schedule anticipated 12 person weeks (=72 days, assuming a 6-day person week) of training in management planning delivered to 8 people. Overall, we estimate that the project has delivered 143 days of such training in a more or less formal sense to 33 people. In addition, we estimate that a further 60 days of less formal training in management planning and related activities were delivered to 120 people.

Other training outputs

The project successfully delivered long-term training to the Project Officer (output 5), enabling him to participate in the training of others and in a wide range of biodiversity survey, management planning and environmental education activities. In most cases, “formal” environmental education training materials (output 7) have yet to be fully developed. As with identification manuals (see below), it was found that the immediate need for support materials in relation to environmental education was largely met by the reference material provided under the project as part of the package of physical assets. These texts and field guides, alongside project newsletters and biological specimens collected by visiting specialists, provided a rich source of materials for environmental education during the lifetime of the project. Clearly, materials need to be developed to facilitate environmental education activities now that the project has finished. These will be designed and produced by the project partners as the full results of biodiversity surveys are assimilated. As an example, the preliminary poster presentation on TCI butterflies produced for use at conferences (see Appendix X) provides a model for the kind of material that might be developed for use with students in older age groups. A set of lesson plans for use in school visits and field trips with younger age groups have been developed, and are being refined, by the Project Officer and others.

Research outputs

In terms of time spent on project work in TCI by UK (=non-TCI) project staff (output 8), the project has significantly exceeded expectations. A total of 36 person weeks was anticipated (Appendix V), equating to 216 days (assuming a 6-day person week). We estimate that the true total was 401 days (=67 weeks) weeks. In addition, significantly more time than anticipated was spent on project work *outside* TCI, eg. by UK project staff on co-ordination and planning activities, and by taxonomic specialists on processing of literature and biological specimens.

The draft management plan (output 9) represents the single largest tangible output of the project. A copy of the current version of the plan (*Plan for Biodiversity Management and Sustainable Development around Turks & Caicos Ramsar Site* Version 1.0) is included here as Appendix VIII in hard copy with this report, and is available on the UKOTCF website (<http://www.ukotcf.org/> -under “Publications”). This plan is habitually referred to as a “draft” throughout the project documentation, because it is seen as a body of information that will continually evolve as new data become available, and as implementation of its recommendations progresses. In this respect, there will never be a “final”, immutable version of the plan. It is designed so that sections on baseline biodiversity information can be readily updated, as results from fieldwork conducted under this project (and subsequently) are refined. Similarly, it is designed such that management recommendations in relation to particular activities and sites can be implemented selectively (say, as part of an annual work programme for the TCNT and others), and the overall plan modified accordingly. This process is already in play for those

aspects of management plan implementation that are possible with current non-Darwin funding; a quarterly cycle of planning and review of work draws material from the management plan.

The production of identification manuals (output 10) was deferred; there were two aspects to this decision. It was felt that available material, such as text books and existing field guides (see below) were more than sufficient to support immediate training needs. To a significant extent, also, identification manuals specific to the local flora and fauna could not be produced until significant biodiversity survey work had been undertaken (in order to determine which species should be included). Subsequently, project personnel have assisted locally-based colleagues to produce a photographic guide for birds, published by TCNT in 2001: Richard Ground's *The Birds of the Turks & Caicos Islands* (included here as Appendix XI). A similar (smaller) guide is in preparation for butterflies, and the production of volumes relating to other taxa is envisaged progressively. In order to emphasise the development of local capacity, these will be phased, volunteer specialist advice remaining available. In parallel, the production of identification and interpretation guides will be integrated with the opening of trails as part of the implementation of the management plan.

The Project Schedule anticipates the development of a computer-based biodiversity database (output 12) for Middle Caicos. Under the terms of the project MoU (Appendix VII), the database should, as far as possible, be compatible with systems used by the TCI Government. Sufficient data have been collected, and appropriate database designs considered, to produce a simple system. However, the project partners would like to achieve more. More importantly, it would be unwise to expect a database to be sustainable before reliable arrangements can be put in place for its long-term maintenance, and to this end more integration and development are desirable. Discussions have been held with NGO and governmental personnel, with good agreement on a potential joint "biological records centre". The project partners have also identified facilitators and possible funding for this further work, and will arrange to maintain support to see it into place. This will inevitably take some time because proper design should fully involve the participation of local staff – who were not in a position to do this until after the training provided by the present project.

The Project Schedule anticipates the development of reference collections for insects/plants (output 13). A proportion of the specimens of plants and insects collected during biodiversity surveys are still being examined in order to obtain authoritative identifications. As noted above, the project aims to establish duplicate sets of specimens, with one being held at an appropriate repository outside TCI, and the other returned to the islands when suitable facilities for their long-term maintenance are in place. Currently, plant specimens are held by the Fairchild Tropical Gardens, and insect specimens by the British Museum (Natural History) and the project entomologists. FTG and BM(NH) are the obvious repositories for the primary set of specimens (and any type material) in either case. It is anticipated that the study centre to be developed on Middle Caicos in the former Bambarra School building (see Section 11) will include suitable facilities for storage of local sets of specimens. Material cannot reasonably be transferred until these facilities are developed. As noted in Section 4, FTG has already established a "virtual herbarium" where some of the material collected in TCI can be viewed. Given the on-going process in relation to reference collections, we feel that it is reasonable to claim that these have been established (output 13A), but not yet enhanced (output 13B) – cf. Appendices II and V.

Dissemination outputs

In terms of activities to disseminate information on the project and its findings, and thereby to raise the profile of the Darwin Initiative, the project has significantly exceeded expectations. Some modification of anticipated outputs has been necessary, notably the combination of the second/third and fourth/fifth

project newsletters (output 16) into “double issues”. These newsletters were distributed more widely than anticipated (there is no standard output measure for circulation outside the host country/UK, for example, nor for availability of the newsletters through the UKOTCF website), and attracted a good deal of attention. The local TV and radio features (outputs 18A/19A) anticipated by the Project Schedule have not come to fruition, but dissemination activities in other areas have more than compensated for this. The project has generated a substantially greater number of articles (output 15) and presentations at meetings (output 14B) than was anticipated under the Project Schedule. There will be a considerable number of further outputs of this kind, and more formal publications (output 11), as the results of biodiversity surveys and other project activities are developed and made available in a variety of forms. The project has also made a greater contribution to the establishment and enhancement of dissemination networks (output 17) than had been anticipated. Although this type of output is difficult to quantify, it is clear that the establishment of the Project Committee (MCBMC in the Project Schedule) constituted the establishment of a distinct dissemination network, drawing together representatives of the UK project team, the TCNT, the TCI Government and the Middle Caicos community. The regular meetings of this committee, regular (wider) community meetings, and the various other activities arising from the closer relationships forged between the stakeholders (notably between the TCNT and TCI Government), all constitute enhancement of dissemination networks. The closer relationships forged between the TCNT and a range of educational institutions in TCI (particularly, but not exclusively, those that participated in the biodiversity surveys and environmental education exercises – see Section 4) also clearly constitute enhanced dissemination networks, specifically in relation to environmental education/awareness.

Dissemination of the management plan itself has been an iterative process, tied to the local networks described above. Individual sections of the plan, and early drafts of the overall document, have been developed through meetings of the Project Committee, community meetings and others. Particularly noteworthy, and considered to represent output 14A, were: a full-day workshop on a late draft of the plan in August 2002 with senior technical staff of TCI Government Departments and other bodies; a seminar to present the “finished” draft plan to the Executive Committee of the TCI Government (i.e. Ministers in Cabinet), in October 2002.

Future dissemination activities, and the realisation of anticipated project outputs which are yet to be fully developed (identification guides, environmental education materials, database), will be undertaken by the project partners. These activities will be funded through a combination of on-going in-kind contributions to what is (essentially) the completion of the Darwin project, and financial support from various sources for related initiatives. The enhanced local networks (and particularly the enhanced relationship between TCNT and the TCI Government) will greatly assist in the delivery of these delayed and additional outputs – see Section 11. The project partners are continuing actively to assist in the implementation of the management plan by local bodies.

Physical outputs

A significant additional output (23) is the value of in-kind contributions made to the project during the reporting period. The largest part of this relates to the time “donated” by scientific specialists. In addition to time spent in TCI (see above), a great deal of time has been spent in planning, processing specimens, reviewing available literature, co-ordination and liaison, drafting and editing of the management plan etc. In total, we conservatively estimate that the total in-kind contribution of time by non-TCI personnel (over and above that covered by project payments to named representatives of the project partners) amounts to some 650 days. This does not include considerable in-kind contributions of time made by TCI project personnel. Although anticipated (and considered difficult to quantify in

advance) by the original project proposal, this was not included as an output in the agreed Project Schedule. A conservative estimate is that GB£100,000 worth of scientists' time was given to the project during its lifetime. Furthermore, as noted above, in-kind contributions of this kind will continue beyond the end of the project.

Physical assets (output 20) to a value of approximately GB£5000 were transferred to the TCNT under this project, as anticipated by the Project Schedule. These included a range of text books, regional field guides, field equipment, high-quality maps resulting from work jointly by the project and other elements etc. Such assets do much to enhance the capacity of the TCNT to deliver biodiversity monitoring and conservation (for example, through implementation of the management plan) well into the future.

7. Project Expenditure

Expenditure category	Budget	Expenditure	Variance (%)
TOTAL	132100*	132100	0%

*Increased from original budget by 8000 with agreement from Darwin (to cover increased salary costs of local Project Officer).

8. Project Operation and Partnerships:

UK OTCF representatives took the opportunity to plan for this project during visits to TCI on other business early in 1999. These preparatory activities were followed by a valuable project initiation visit by UK project personnel (November 1999), which allowed an important network of local contacts and partners to be reinforced and extended, and included the first steps towards the development of an MoU between the project and the TCI Government. The TCNT, as the primary body responsible for identifying the need for the project (see Section 2) and the nominated local co-ordinators under the project grant, were the most active local partners. As noted in Section 2, the TCNT exists to "...safeguard the cultural, historical and natural heritage of the Turks & Caicos Islands", and is the only local NGO concerned with such a wide-ranging and integrated conservation agenda, and with terrestrial biodiversity issues in particular. The employment, by the TCNT, of Bryan Manco (as Project Officer - Conservation Officer in the Project Schedule) at an early stage was important. Bryan's willingness to be based on Middle Caicos, and his enthusiasm for involving himself in a range of activities in the local community, was critical to the success of the project. Bryan's knowledge, willingness to learn, and ability

to teach in relation to local natural history and culture, made him a linchpin for the project's activities. However, a wide range of other individuals (and institutions) were actively involved in the project locally. In particular, the local community on Middle Caicos were pivotal in identifying the need for the project (see Section 2) and in its implementation, particularly the development of the draft management plan (see Section 4). The formation of a Project Committee (MCBMC in the Project Schedule), which brought together representatives of the UK project partners, the TCNT, relevant TCI Government Departments and Middle Caicos residents, cemented the collaborative approach of the project at an early stage. Other TCI residents with a knowledge of local natural history gave generously of their time and experience. Particularly notable was the participation of Richard Ground OBE QC (the TCI Chief Justice) who is a talented wildlife photographer and natural historian. Richard contributed to bird surveys, amongst other activities, and the project was happy to reciprocate in providing assistance in the preparation of his (2001) book *The Birds of the Turks & Caicos Islands*, published by the TCNT (included here as Appendix XI). A smaller volume on the *Butterflies of the Turks & Caicos Islands*, principally an output of the Darwin project, but using Richard's photographs, is in preparation. Kathleen Wood, a local natural historian based on Providenciales, also provided insight and advice, particularly in relation to local plants.

The relationship between the project and the TCI Government was generally positive from the outset. This was formalised in November 2000, with the signing of an MoU between the project (represented by the implementing organisations) and the TCI Government (represented by the Ministry of Natural Resources) – attached here as Appendix VII. Practical aspects of the relationship between the project and the Government did not always run smoothly, but have benefited the project substantially, for example, through the provision of project vehicles and the acquisition of the former Bambarra School (see Section 11). As the work initiated by this project continues, the relationship between the TCNT and the TCI Government appears to be going from strength to strength, with an unprecedented level of co-operation in initiatives of mutual interest (eg. see Section 5).

In relation to collaboration with similar projects elsewhere in the host country, a number of related TCNT initiatives have complemented the Darwin work. For example, the small business and craft workshops, and native plant activities noted in Section 5. Where possible, the project has worked with representatives of the TCI Government's Department of Environmental and Coastal Resources, and developed links with other Government departments and initiatives. Involvement in the development of the Sustainable Development Planning Initiative (SDPI), and links with the Tourism Department (see Section 5), are particularly important in this respect, as is the development of a strategy for implementing the Environmental Charter.

As well as the local partners noted above, this project brought together a group of international partners from a range of institutions, many of whom had not previously worked together. In relation to their particular areas of expertise, these international partners were:

- general biodiversity issues, conservation management planning and organisational capacity building: the UK Overseas Territories Conservation Forum (Mike Pienkowski and Sara Cross); the National Trust of the Cayman Islands (Fred Burton); CABI Bioscience (Oliver Cheesman)
- ornithology: the UK Overseas Territories Conservation Forum (Mike Pienkowski)
- entomology: CABI Bioscience (Oliver Cheesman); the British Museum (Natural History) in London (Roger Booth)

- botany: the Fairchild Tropical Gardens in Florida (Gerald “Stinger” Guala and Jimi Sadle); Cayman Islands (Fred Burton)
- bats: Tony Hutson (UK consultant, the joint chairman of the IUCN/SSC Chiroptera Specialist Group and conservation advisor to The Bat Conservation Trust); the Carnegie Museum of Natural History in Pennsylvania (Tim McCarthy)
- herpetiles: the Zoological Society of San Diego (Glenn Gerber and Tandora Grant)
- habitat mapping: the Cayman Islands (Fred Burton); the UK Overseas Territories Conservation Forum (Mike Pienkowski)

The local and international partnerships are continuing, in various combinations, after the end of the project. The relationship between the TCNT and the TCI Government has been strengthened by activities under this project, and will be increasingly relevant as aspects of the draft management plan are implemented. The relationship between the TCNT and the UK Overseas Territories Conservation Forum has long been strong, and will continue to yield collaborative activities (including work which naturally follows on from this Darwin project). The relationships established and strengthened between the TCNT and other international partners will continue to varying degrees. For example, Glenn Gerber (San Diego Zoo) is active in herpetile conservation projects in TCI outside the bounds of the Darwin project, and will continue to interact with the TCNT in relation to these. The Fairchild Tropical Gardens have treated the Darwin project as an introduction to work in TCI, which they are actively pursuing now that the project has ended (see Section 11). TCNT is leading work to implement the management plan from the project and this is active insofar as current funding allows. The TCI Government is looking favourably on contributing to the costs of future work, although the very narrow range of funds available to UK Overseas Territories means that matching funding is difficult to secure, so that the end of the Darwin project marked a sharp funding cut-off. Such sharp changes, rather than sensible transitional arrangements, give the wrong signals and make the development of sustainable projects particularly difficult. Nevertheless, the projects partners are striving to ensure that the successes of this project are built upon.

9. Monitoring and Evaluation, Lesson learning

The UK project personnel have met regularly to assess progress and discuss necessary actions. Maintaining contact with TCI can be difficult remotely, and delays in obtaining a (Cable & Wireless) telephone line for the Project Officer, to facilitate telephone and e-mail contact, were a particular barrier to communications early in the project. However, persistence (and regular visits by UKOTCF personnel to TCI in relation to other activities) has generally allowed timely exchange of information with host country partners. The Project Committee (with representation from UK project partners, the TCNT, the TCI Government and the local community) has provided another forum for on-going evaluation and monitoring of progress throughout the project’s lifetime. Similarly, regular community meetings have extended this forum to all local residents who wished to participate.

The value of the project is most clearly demonstrated in the contents of the draft management plan (which would not otherwise exist), and in the remarkable level of co-operation that has been generated locally towards its implementation. We are under no illusions, however; conflicts of interest will become apparent as aspects of the plan are put into operation, and logistic difficulties will impede progress. However, the considerable effort that has gone into ensuring that the widest possible range of local stakeholders have been involved in the development of the plan will help significantly to

ameliorate potential problems. The lead into the work on the Environmental Charter will help here. The value of the project is also clearly demonstrated in the increased capacity of the TCNT to use the management plan (and other project outputs) to ensure that biodiversity conservation is a major consideration in future developments in TCI.

The key lessons to be drawn from the experience of this project include:

- The value of wide-ranging stakeholder involvement from the earliest possible stage
- The value of preparatory visits by UK project personnel before and at the start of the project
- The value of a local co-ordinating partner who is able to provide commitment to the realisation of the project's objectives, not just during the project lifetime but for the longer term
- The costs and benefits of conducting biodiversity surveys based on time contributed in-kind by a team of specialists (this has provided exceptional value for money, but has made it difficult to impose rigorous reporting schedules on the specialists concerned)
- The importance of continuity of involvement with projects in the UK's Overseas Territories, partly because international funds are not available to these "developing countries", as the UK is expected to (but does not) earmark funds in support of environmental work here.

10. Darwin Identity:

Throughout the implementation of the project, it has been possible to use promotional events and materials to promote the Darwin Initiative and the project, whilst also raising awareness of the biodiversity issues on which they focus. There has thus been a synergy between promoting the identity of the Darwin Initiative and meeting one of the key objectives of the project. For example, a high-profile, official project launch was held at the November 1999 AGM of the TCNT (attended and participated in by the Governor, the Chief Minister and senior officials), and presentations were made at subsequent AGMs, attended by high-ranking TCI Government representatives and the media. A further launch event (for the biodiversity survey work) was held on Middle Caicos in November 2000 attended by TCI Government representatives, local people and visiting scientific specialists. Project newsletters, in particular, and regular TCNT newsletters, have contributed to the wider awareness-raising objectives of the project, and to increased the profile of the Darwin Initiative as well as the project. The availability of project newsletters on the Forum's web-site, and wide circulation of hard copy by the UK project partners, has ensured international access.

Through the types of promotional activities noted above, the project became very widely recognised within TCI as "The Darwin Project". Indeed (as noted in the 2001 project Annual Report), the project had so much success in getting the Darwin name recognised that subsequent efforts were required to overcome a misconception, in some quarters, that all local conservation projects were the work of the Initiative.

11. Leverage

Even in the project development stage, the leverage potential of this project was apparent in its ability to persuade international specialists to provide their time and taxonomic expertise as a contribution in kind. There were negative consequences; as noted in Section 4, it was not possible, under the circumstances, to impose rigorous reporting deadlines on the international specialists, when other (funded) work had to take priority in their schedules. However, the value of these scientists' in-kind contribution cannot be over-estimated. Even if conservatively costed, time given in kind to this project by non-TCI personnel has a value of some GB£100,000 (see Section 6). Whilst we are not necessarily comfortable with the principle here, believing that such taxonomic and ecological expertise should attract the funding that it deserves, we would pose the simple question: would the Darwin Initiative have funded this project if it had been based on a budget of GB£225,000?

The on-going commitment of the international partners whose activities were not directly funded under the project is illustrated by the example of The Fairchild Tropical Garden. FTG has been generous in their in-kind contributions to the project, not just in relation to fieldwork, but in the mounting, identification and storage of herbarium specimens, and the establishment of a "virtual herbarium" (see Section 4). There is also a further leverage element to their involvement in the project, as FTG personnel (Jimi Sadle and Jennifer Trusty) have continued botanical fieldwork in TCI beyond the lifetime of the project, supported by funding from FTG themselves.

The project has also benefited on a number of occasions from the largesse of the TCI Government. Their provision of a new project vehicle made a range of sites more accessible for the second round of biodiversity surveys, and allowed the Project Officer to implement a wide range of activities. A particular example of the generosity of the TCI Government towards the project was their agreement (during summer 2000) to transfer a former school building in Bambarra (Middle Caicos) to the TCNT for conversion to a study/visitors centre. The building requires considerable renovation before it can be used effectively, but is a major asset nonetheless. The TCNT, with the support of the TCI Government, UKOTCF and others, has actively sought funding for the necessary work from various sources, mainly in-country. We are happy to report that the necessary funds have recently been secured, and that renovation work will go ahead shortly. Such shared endeavours in addressing practical problems represent, in themselves, valuable achievements by the project, demonstrating the value of enhanced networks amongst representatives of TCI Government bodies, international partners, the TCNT and the local community.

During its implementation, the project also benefited from activities that were part-funded from other sources. For example, some additional resourcing from FCO and NGOs was found for habitat mapping, partly because the material was needed by UK and TCI Governments in meeting international commitments, by providing the first accurate maps for the TCI Ramsar site. Other examples of additional support gained by the project during its implementation include: free air travel obtained under the British Airways *Assisting Conservation* programme (flights to a value of some GB£5,000); discounted mapping software by ESRI (saving approximately GB£1000); free accommodation for much of the second round of biodiversity surveys on Middle Caicos provided by the Norbellis Foundation (to a value of some GB£4000).

The enhanced technical capacity of TCNT, and their enhanced relationship with the TCI Government and an international network of partners (referred to elsewhere in this report) has undoubtedly increased the capacity of this NGO to secure funding for similar work in the host country. The UK

Overseas Territories Conservation Forum, in particular, has a close relationship with the TCNT (which pre-dates this Darwin project), and are committed to on-going development work which will further raise the profile of the TCNT and increase its ability to capture project funding from a range of sources. The management plan developed under this project will be an important tool in that institutional development work.

12. Sustainability and Legacy

Throughout the project, the TCNT (with support from the UKOTCF in particular) has been active in pursuing initiatives distinct from, but complementary to, the Darwin project, which will underpin the sustainability of the project and its outputs. Related activities such as small business and craft workshops, native plant initiatives, involvement in the development of the Sustainable Development Planning Initiative (SDPI), and work with other TCI Government Departments have already been described.

In terms of sustainability and legacy arising from longer-term capacity-building and the implementation of the management plan, there has been considerable progress. This will help to ensure the sustainability of outputs and initiatives beyond the end of this project. The mutual confidence being developed between the local communities, the TCNT, and the TCI Government has meant that all are increasingly amenable to taking forward real participatory management planning and conservation action. There is already tangible evidence of this: a Government-convened local meeting resulted in the local community asking Government to vest in the TCNT responsibility for the management of some nominally protected areas. On the basis of such positive indications, it is now practicable to seek support for the actual implementation of the management plan (as opposed to the development of the document), to develop the necessary local capacity, and to make it self-sustainable. Work towards resourcing this began during the project lifetime, so that there would not be a conspicuous gap between the end of the Darwin project and the application of its results.

13. Value for money

There is little more to be said in relation to value for money. As noted in Section 11, including all in-kind contributions and support from other sources, the financial value of the activities conducted under the project was at least GB£235,000 (not including vehicles and the school building donated by the TCI Government), whilst the cost to the Darwin Initiative was less than £135,000. Although some of the anticipated project outputs are yet to be fully realised, the momentum, enhanced networks, enhanced technical capacity, and increased capacity of TCNT to attract funds, will all contribute to the realisation of these (and more) over the coming months.

Author(s) / Date

Oliver Cheesman (CABI Bioscience)

Mike Pienkowski (UK Overseas Territories Conservation Forum)

January 2003

14. Appendices – see following pages / documents under separate cover

Appendix I: Project Contribution to Articles under the Convention on Biological Diversity (CBD)

Please complete the table below to show the extent of project contribution to the different measures for biodiversity conservation defined in the CBD Articles. This will enable us to tie Darwin projects more directly into CBD areas and to see if the underlying objective of the Darwin Initiative has been met. We have focused on CBD Articles that are most relevant to biodiversity conservation initiatives by small projects in developing countries. However, certain Articles have been omitted where they apply across the board. Where there is overlap between measures described by two different Articles, allocate the % to the most appropriate one.

Project Contribution to Articles under the Convention on Biological Diversity		
Article No./Title	Project %	Article Description
6. General Measures for Conservation & Sustainable Use	10	Develop national strategies which integrate conservation and sustainable use.
7. Identification and Monitoring	20	Identify and monitor components of biological diversity, particularly those requiring urgent conservation; identify processes and activities which have adverse effects; maintain and organise relevant data.
8. In-situ Conservation	20	Establish systems of protected areas with guidelines for selection and management; regulate biological resources, promote protection of habitats; manage areas adjacent to protected areas; restore degraded ecosystems and recovery of threatened species; control risks associated with organisms modified by biotechnology; control spread of alien species; ensure compatibility between sustainable use of resources and their conservation; protect traditional lifestyles and knowledge on biological resources.
9. Ex-situ Conservation		Adopt ex-situ measures to conserve and research components of biological diversity, preferably in country of origin; facilitate recovery of threatened species; regulate and manage collection of biological resources.
10. Sustainable Use of Components of Biological Diversity	20	Integrate conservation and sustainable use in national decisions; protect sustainable customary uses; support local populations to implement remedial actions; encourage co-operation between governments and the private sector.
11. Incentive Measures	10	Establish economically and socially sound incentives to conserve and promote sustainable use of biological diversity.

12. Research and Training	10	Establish programmes for scientific and technical education in identification, conservation and sustainable use of biodiversity components; promote research contributing to the conservation and sustainable use of biological diversity, particularly in developing countries (in accordance with SBSTTA recommendations).
13. Public Education and Awareness	10	Promote understanding of the importance of measures to conserve biological diversity and propagate these measures through the media; cooperate with other states and organisations in developing awareness programmes.
14. Impact Assessment and Minimizing Adverse Impacts		Introduce EIAs of appropriate projects and allow public participation; take into account environmental consequences of policies; exchange information on impacts beyond State boundaries and work to reduce hazards; promote emergency responses to hazards; examine mechanisms for re-dress of international damage.
15. Access to Genetic Resources		Whilst governments control access to their genetic resources they should also facilitate access of environmentally sound uses on mutually agreed terms; scientific research based on a country's genetic resources should ensure sharing in a fair and equitable way of results and benefits.
16. Access to and Transfer of Technology		Countries shall ensure access to technologies relevant to conservation and sustainable use of biodiversity under fair and most favourable terms to the source countries (subject to patents and intellectual property rights) and ensure the private sector facilitates such assess and joint development of technologies.
17. Exchange of Information		Countries shall facilitate information exchange and repatriation including technical scientific and socio-economic research, information on training and surveying programmes and local knowledge
19. Bio-safety Protocol		Countries shall take legislative, administrative or policy measures to provide for the effective participation in biotechnological research activities and to ensure all practicable measures to promote and advance priority access on a fair and equitable basis, especially where they provide the genetic resources for such research.
Total %	100%	Check % = total 100

Appendix II Outputs

Please quantify and briefly describe all project outputs using the coding and format of the Darwin Initiative Standard Output Measures.

Code	Total to date (reduce box)	Detail (←expand box)
Training Outputs		
1a	Number of people to submit PhD thesis	
1b	Number of PhD qualifications obtained	
2	Number of Masters qualifications obtained	
3	Number of other qualifications obtained	
4a	Number of undergraduate students receiving training	
4b	Number of training weeks provided to undergraduate students	
4c	Number of postgraduate students receiving training (not 1-3 above)	
4d	Number of training weeks for postgraduate students	
5	Number of people receiving other forms of long-term (>1yr) training not leading to formal qualification(i.e not categories 1-4 above)	1 person (Bryan Manco, Project Officer)
6a	Number of people receiving other forms of short-term education/training (i.e not categories 1-5 above)	Biodiversity Survey: 23 people Environmental Education: 14 people Management Planning: 33 people See Section 4 above for a detailed consideration of training activities/outputs.
6b	Number of training weeks not leading to formal qualification	Biodiversity Survey: 132 days Environmental Education: 86 days Management Planning: 143 days See Section 4 above for a detailed consideration of training activities/outputs.
7	Number of types of training materials produced for use by host country(s)	These are still in development. Consistent with Appendix V, four types of training materials is a realistic expectation.
Research Outputs		
8	Number of weeks spent by UK project staff on project work in host country(s)	401 days See Section 6 above for a detailed consideration of time spent in TCI by non-TCI project personnel.
9	Number of species/habitat management plans (or action plans) produced for Governments, public authorities or other implementing agencies in the host country (s)	1 management plan See Appendix 8 and references to this document throughout the report above.
10	Number of formal documents produced to assist work related to species identification, classification and recording.	These are still in development. Consistent with Appendix V, five such documents is a realistic expectation.
11a	Number of papers published or accepted for publication in peer reviewed journals	These are still in development. The total of two papers given in Appendix V is likely to be an underestimate.
11b	Number of papers published or accepted for publication elsewhere	1 <i>Calpe 2000</i> conference proceedings (see Appendix III).

Code	Total to date (reduce box)	Detail (←expand box)
12a	Number of computer-based databases established (containing species/generic information) and handed over to host country	The biodiversity database referred to in Appendix V is still in development. It is hoped that it will ultimately form an integrated part of a wider 'Biological Records Centre' for TCI.
12b	Number of computer-based databases enhanced (containing species/genetic information) and handed over to host country	
13a	Number of species reference collections established and handed over to host country(s)	Two collections (insects, plants) have been established, but are yet to be handed over to the host country (suitable facilities are not yet available locally), or enhanced (cf. Appendix V).
13b	Number of species reference collections enhanced and handed over to host country(s)	

Dissemination Outputs		
14a	Number of conferences/seminars/workshops organised to present/disseminate findings from Darwin project work	2
14b	Number of conferences/seminars/ workshops attended at which findings from Darwin project work will be presented/ disseminated.	10
15a	Number of national press releases or publicity articles in host country(s)	10
15b	Number of local press releases or publicity articles in host country(s)	
15c	Number of national press releases or publicity articles in UK	5
15d	Number of local press releases or publicity articles in UK	2 These items are in local (institutional) publications in the USA – there is no standard output category for such features outside the UK or host country.
16a	Number of issues of newsletters produced in the host country(s)	3 Including two “double issues”, in order to match the quantity of material (5 newsletters) described in Appendix V.
16b	Estimated circulation of each newsletter in the host country(s)	350
16c	Estimated circulation of each newsletter in the UK	200 Plus a wider international circulation of approximately 100.
17a	Number of dissemination networks established	1 This is difficult to quantify in the context of this project, but the Project Committee is referred to here.
17b	Number of dissemination networks enhanced or extended	4 Again, this is difficult to quantify. At least four networks are considered to have been enhanced – within the TCNT; amongst local environmental educationalists; amongst the Middle Caicos community; amongst those with environmental interests in TCI as a whole.
18a	Number of national TV programmes/features in host country(s)	
18b	Number of national TV programme/features in the UK	
18c	Number of local TV programme/features in host country	
18d	Number of local TV programme features in the UK	
19a	Number of national radio interviews/features in host country(s)	

19b	Number of national radio interviews/features in the UK	
19c	Number of local radio interviews/features in host country (s)	
19d	Number of local radio interviews/features in the UK	
Physical Outputs		
20	Estimated value (£s) of physical assets handed over to host country(s)	5,000
21	Number of permanent educational/training/research facilities or organisation established	1 Consistent with the description of activities under this output in Appendix V, the Project Committee is seen as a long-term "organisation" which is active in spreading the outputs and approach of this project through the islands of TCI.
22	Number of permanent field plots established	
23	Value of additional resources raised for project	110,000 See Section 11 above for details. This is a conservative estimate, and does not include the value of vehicles and the Bambarra School building donated by the TCI Government.

Appendix III: Publications

Provide full details of all publications and material that can be publicly accessed, e.g. title, name of publisher, contact details, cost. Details will be recorded on the Darwin Monitoring Website Publications Database that is currently being compiled.

Mark (*) all publications and other material that you have included with this report

Type (e.g. journals, manual, CDs)	Detail (title, author, year)	Publishers (name, city)	Available from (e.g. contact address, website)	Cost £
Article in newsletter	<i>Forum News 18</i> , May 2000	UKOTCF	Electronically at: www.ukotcf.org	none
Article in annual report	<i>CAB International Annual Review 1999</i> , Ed. Zoe Armitage, June 2000	CAB International	CAB International	none
First project newsletter*	August 2000	Project partners	Hard copy from project partners, or electronically at: http://www.ukotcf.org/pdf/darwin.pdf	none
Article in annual report	<i>UKOTCF Annual Report 1999-2000</i>	UKOTCF	Electronically at: www.ukotcf.org	none
Article in conference proceedings (<i>Calpe 2000: Linking the Fragments of Paradise, Gibraltar</i>)	<i>Little Water Cay Nature Trails and Middle Caicos Darwin Initiative Project Ethlyn</i> Gibbs-Williams, Sept 2000 [published Sept 2001]	UKOTCF	Electronically at: www.ukotcf.org	none
Article in annual report	<i>Turks & Caicos National Trust Review for the Year 2000</i> , November 2000	Turks & Caicos National Trust	Turks & Caicos National Trust	none

Article in newsletter	<i>Forum News 19</i> , Feb 2001	UKOTCF	Electronically at: www.ukotcf.org	none
Article in newsletter	<i>Forum News 20</i> , June 2001	UKOTCF	Electronically at: www.ukotcf.org	none
Article in annual report	<i>UKOTCF Annual Report 2000-01</i>	UKOTCF	Electronically at: www.ukotcf.org	none
Article in newsletter	<i>Garden Views</i> (Vol.56,No.4), July 2001	Fairchild Tropical Gardens	Fairchild Tropical Gardens, 10901 Old Cutler Road, Coral Gables (Miami), FL 33156-4296, USA Text also available at: http://www.virtualherbarium.org/lf/tci/tci.html	?none
Article in annual report	<i>Turks & Caicos National Trust Review for the Year 2001</i> , November 2001	Turks & Caicos National Trust	Turks & Caicos National Trust	none
Photographic guide book produced in association with project*	<i>The Birds of the Turks & Caicos Islands</i> , Richard Ground, 2001	Turks & Caicos National Trust	Turks & Caicos National Trust	US\$20
Second/third project newsletter*	November 2001	Project partners	Hard copy from project partners, or electronically at: http://www.ukotcf.org/pdf/darwin.pdf	none
Article in newsletter	<i>Forum News 21</i> , Feb 2002	UKOTCF	Electronically at: www.ukotcf.org	none
Article in annual report	<i>UKOTCF Annual Report 2001-02</i>	UKOTCF	Electronically at: www.ukotcf.org	none
Management plan*	<i>Plan for Biodiversity Management and Sustainable Development around Turks & Caicos Ramsar Site</i> , Mike Pienkowski (ed.), 2002	Project partners	Electronically at: www.ukotcf.org	none

Maps produced partly within the project*	Formal maps issued by UK Government and TCI Government to the Secretariat of the Ramsar Convention as part of the site designation	Project partners for HMG	Project partners	Cost of printing (approx. £25 per set)
Fourth/fifth project newsletter*	Jan 2003	Project partners	Hard copy from project partners, or electronically at: http://www.ukotcf.org/pdf/darwin.pdf	none
Article in widely circulated TCI magazine	Article in <i>Times of the Islands</i> , in press early 2003	Times Publications Ltd	Commercially in TCI	US\$4

Appendix IV: Darwin Contacts

To assist us with future evaluation work and feedback on your report , please provide contact details below.

Project Title	Developing biodiversity management capacity around the Ramsar site in the Turks & Caicos Islands
Ref. No.	162 / 8 / 164
UK Leader Details	
Name	Oliver Cheesman Co-ordinator, Characterisation & Conservation of Biodiversity (CABI Bioscience)
Role within Darwin Project	Project co-ordinator (UK)
Address	CABI Bioscience, Bakeham Lane, Egham, Surrey, TW20 9TY, UK
Phone	
Fax	
Email	
Other UK Contact (if relevant)	
Name	Mike Pienkowski Chairman, UK Overseas Territories Conservation Forum
Role within Darwin Project	Project co-ordinator (UK)
Address	102 Broadway, Peterborough, PE1 4DG, UK
Phone	
Fax	
Email	
Partner 1	
Name	Ethlyn Gibbs-Williams Executive Director, Turks & Caicos National Trust
Organisation	Turks & Caicos National Trust
Role within Darwin Project	Project co-ordinator (local partner)
Address	Turks & Caicos National Trust, PO BOX 540, Providenciales, Turks & Caicos Islands, BWI

Fax	
Email	
Partner 2 (if relevant)	
Name	
Organisation	
Role within Darwin Project	
Address	
Fax	
Email	

Appendix V – Project Outputs as agreed under the Project Schedule

PROJECT OUTPUTS		
Year	Output ref. no.	Details
1999/2000		(Oct-March)
Nov 99	15A	National press release in TCI marking the commencement of the project.
	8	4 person weeks spent in TCI by UK project staff for project initiation.
March 00	16A, B, C	First of five project newsletters produced; distributed within TCI (circulation approx. 350); distributed within UK (circulation approx. 200); distributed to other OTs (circulation approx. 100).
2000/2001		(April-March)
Apr 00	towards 21	Middle Caicos Biodiversity Management Committee (MCBMC) formed; Conservation Officer in place.
Sept 00	16A, B, C	Second of five project newsletters produced; distributed within TCI (circulation approx. 350); distributed within UK (circulation approx. 200); distributed to other OTs (circulation approx. 100).
Dec 00	20	Transfer of physical assets (computer, software, field sampling apparatus, field recording equipment), estimated value UK£4.5K.
	6A	Biodiversity survey training provided to a total of 15 local people, over 2-3 days with each of five visiting survey teams (insects, higher plants, birds, bats, herpetiles).
	6B	25 person weeks biodiversity survey training provided.
	10	A total of five manuals to be produced, in relation to the identification, classification and recording of: insects; plants; birds; bats; herpetiles.
	towards 9	Baseline biodiversity data collected by visiting survey teams.
	12A	Middle Caicos biodiversity database established.
	13A	2 species reference collections established (insects and plants).
	6A	Biodiversity management planning training provided to a total of 8 local people (the MCBMC), over 5 days, in conjunction with biodiversity surveys and their outputs.
	6B	6 person weeks biodiversity management planning training provided.
	towards 9	Draft management plan produced.

March 01	6A	Environmental education training provided to a total of 10 local people, using material generated from biodiversity survey outputs and management planning process.
	6B	10 person weeks environmental education training provided
	7	4 types of environmental education training materials produced (1 leaflet + 1 poster for each of 2 age groups)
	17B	Existing informal information dissemination network amongst TCI education professionals enhanced.
	15A, C	National press releases in TCI/UK reporting outputs from first biodiversity survey period.
	18A, 19A	Coverage of outputs from first biodiversity survey period by TCI national TV/radio, as news items or features.
	16A, B, C	Third of five project newsletters produced; distributed within TCI (circulation approx. 350); distributed within UK (circulation approx. 200); distributed to other OTs (circulation approx. 100).
	5	Conservation Officer – on-going professional training over the course of 2000/01, in relation to biodiversity survey, management planning, environmental education and related issues. Inputs from: Director of TCI NT; UK project personnel (Forum officers and scientists, whilst in TCI and from UK as required); other (non-UK) project personnel as applicable.
8	20 person weeks spent in TCI by UK project staff, on biodiversity survey and training, biodiversity management planning and training, environmental education and training.	
	17B	Existing informal information dissemination network amongst those in TCI with environmental interests (and/or professional responsibilities) enhanced.
2001/2002		(April-March)
Sept 01	16A, B, C	Fourth of five project newsletters produced; distributed within TCI (circulation approx. 350); distributed within UK (circulation approx. 200); distributed to other OTs (circulation approx. 100).
Dec 01	6A	Additional biodiversity survey training provided to a total of 15 local people, over 1-2 days with each of five visiting survey teams (insects, plants, birds, bats, herpetiles).
	6B	15 person weeks biodiversity survey training provided.
	towards 9	Additional baseline biodiversity data collected by visiting survey teams.

March 02	12B	Middle Caicos biodiversity database enhanced
	13B	2 species reference collections enhanced (insects and plants)
	6A	Additional biodiversity management planning training provided to a total of 8 local people (the MCBMC), over 5 days, in conjunction with biodiversity surveys and their outputs.
	6B	6 person weeks biodiversity management planning training provided.
	towards 9	Draft management plan revised.
	6A	Additional environmental education training provided to a total of 10 local people, using material generated from additional biodiversity survey outputs and management planning process.
	6B	4 person weeks environmental education training provided.
	7	4 types of environmental education training materials produced (1 leaflet + 1 poster for each of 2 age groups)
	17B	Existing informal information dissemination network amongst TCI education professionals enhanced.
	16A, B, C	Fifth of five project newsletters produced; distributed within TCI (circulation approx. 350); distributed within UK (circulation approx. 200); distributed to other OTs (circulation approx. 100).
	5	Conservation Officer – on-going professional training over the course of 2000/01, in relation to biodiversity survey, management planning, environmental education and related issues. Inputs from: Director of TCI NT; UK project personnel (Forum officers and scientists, whilst in TCI and from UK as required); other (non-UK) project personnel as applicable.
	8	12 person weeks spent in TCI by UK project staff, on biodiversity survey and training, biodiversity management planning and training, environmental education and training.
	17B	Existing informal information dissemination network amongst those in TCI with environmental interests (and/or professional responsibilities) enhanced.
	9	Biodiversity management plan finalised and delivered to MCBMC for on-going biodiversity management on Middle Caicos and spreading of approach to other islands.
11A, B	2 papers submitted to (and published in!) peer reviewed journals. (Outputs of biodiversity surveys / analysis of project overall).	
14A	Workshop/seminar organised in TCI, providing overview of project and facilitating spreading of the approach within TCI.	

	14B	Project presentation at UK OTCF AGM seminar (to an audience of representatives of UK NGOs and OTs).
	21	MCBMC begins the work of spreading the approach to other islands.

Appendix VI – Project Implementation Timetable as agreed under the Project Schedule

PROJECT IMPLEMENTATION TIMETABLE	
Date	Key milestones
1999/2000	(Oct-March)
Nov 99	<p>Project initiation visit to TCI by UK project staff.</p> <p>Formation of the Middle Caicos Biodiversity Management Committee (MCBMC), and recruitment of Conservation Officer initiated.</p>
2000/2001	(April-March)
Apr 00	MCBMC formed; Conservation Officer recruited, and in place to coordinate activities.
Dec 00	<p>Baseline biodiversity surveys carried out for: insects; higher plants; bats; birds; herpetiles. Each survey involving a 2-3 week visit to TCI by a specialist team, and each survey generating 2-3 days biodiversity survey/monitoring training for 15 local people. Entry of relevant biodiversity data onto database, and collation of reference material (for insects/plants) initiated.</p> <p>Biodiversity management planning training delivered by members of survey teams to 8 local people (the MCBMC). Draft biodiversity management plan produced.</p> <p>Environmental education training delivered to 10 local people. Environmental educational materials produced.</p> <p>Survey work continued by 15 local people over the year, coordinated by Conservation Officer and MCBMC.</p>
2001/2002	(April-March)
Dec 01	<p>Additional biodiversity surveys carried out for: insects; higher plants; bats; birds; herpetiles. Each survey involving a 1-2 week visit to TCI by a specialist team, and each survey generating (at least) 1-2 days biodiversity survey/monitoring training for 15 local people. Entry of relevant biodiversity data onto database, and collation of reference material (for insects/plants).</p> <p>Biodiversity management planning training delivered by members of survey teams to 8 local people (the MCBMC). Draft biodiversity management plan revised.</p>

<p>March 02</p>	<p>Environmental education training delivered to 10 local people. Environmental educational materials produced.</p> <p>Survey/monitoring work continued by 15 local people, coordinated by Conservation Officer and MCBMC.</p> <p>Draft biodiversity management plan revised and final version delivered to MCBMC.</p> <p>Project outputs disseminated through papers submitted to (and published in) peer reviewed journals, workshop/seminar in TCI and presentation at UK OTCF AGM seminar.</p> <p>Survey/monitoring work continued by 15 local people, coordinated by Conservation Officer and MCBMC, who also initiate the spread of the approach to other islands.</p>
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Appendix VII – Project Memorandum of Understanding with TCI Government

Appendix VIII – Draft Management Plan (included under separate cover)

Appendix IX – Habitat Maps (included under separate cover)

Appendix X – Poster presentation. *Butterflies of the Turks & Caicos Islands: their status and conservation* (following page)

Appendix XI – *The Birds of the Turks & Caicos Islands* (Richard Ground, 2001) (included under separate cover)