Review and Re-Assessment of the TCI Protected Area System

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Introduction

The Turks and Caicos Islands (TCI) is an Overseas Territory of the United Kingdom forming a part of the British West Indies. It comprises a complex of some 40 islands located along the western rim of the Atlantic Ocean to the south east of Florida at the southern extremity of the Bahama Plateau. For centuries the islands have supported a resident population of some 5 or 6,000 people, but the last twenty-five years have witnessed substantial growth in the TCI economy, with commensurate expansion of the population to some 26,000 by 2004.

The basis of this economic growth has been tourism. Lying as it does some 75 minutes flying time from Miami, and 3 hours flying time from New York, and possessing great natural beauty in the form of golden beaches, a mild, warm, and steady climate, clear blue lagoons, and a diverse island ecology, TCI has been able to share in an expanding international tourism market. In 2004 173,000 people made the journey to TCI, most of these (94%) heading for the island of Providenciales – drawn by the Tourism Board's promotional tag-line of "Beautiful by Nature".

The Protected Area System

In recognition of the need to manage the natural assets of the country a system of protected areas (the Protected Area System or PAS) was drawn up in the 1970s, and entered into legislation in the late 1980s. This seeks to maintain the natural quality and integrity of the various ecosystems found in the country:

- so that the habitats incorporated within the protected areas may be enjoyed by residents and visitors to the country,
- that their quality may sustainably underpin economic ventures linked to the protected areas that fall within "conforming use" criteria,
- that species and habitats representative of the country might be protected for future generations,
- that species and habitats particularly sensitive to human intrusion may be protected, and
- that sites of historic or cultural significance may be both conserved for posterity as well as opened up to public view[1].

The PAS also seeks to indirectly support and sustain the very rapid economic growth that the country and its people have benefited from by managing and maintaining the ecological integrity of the islands' natural systems, by providing the recreational and leisure space and amenities that contribute to the high quality of life expectations of residents and visitors alike, and by stewarding the natural beauty that underpins the attraction of TCI as a holiday destination and encourages many to make long-term investments in property on the islands. These economic benefits may be described as:

- providing ambience and amenities that add value to property development,
- providing recreational opportunities to residents and visitors to the country based on the exceptional qualities of the natural environment,
- facilitating access to the exceptional scenery and natural environments found across the island group
- boosting the scale of economic flows derived from the servicing of a broad based tourism sector,
- sustaining the natural island processes that ensure that beaches remain golden, lagoons remain crystal clear, and vegetation cover remains green,
- ensuring that the marine and terrestrial environments continue to support plant and animal communities in their natural state, and

[1] *Interpolated from Ray & Sprunt 1971 – see Chapter 4 for further details.*

- ensuring that the ecosystems are able to process the increased nutrient and pollutant loadings associated with raised human settlement patterns.

The PAS now comprises 33 sites across four forms of designation:

- **National Parks:** Ecosystem and biological conservation with recreation as the key secondary goal (11 parks).
- **Nature Reserve:** Ecosystem and biological conservation with recreation as a low-key secondary goal (11 reserves)
- **Sanctuary:** For the protection of the natural ecology, or animal or plant, and the avoidance of disturbance of the area by people (4 sanctuaries).
- **Area of Historic Interest:** For the purpose of protecting an area or object of historical interest (7 sites of historic interest).

The planning regime – balancing conflicting pressures

The Protected Area System forms but one type of land / marine use designation. Land use in TCI, as elsewhere, is managed according to a strategic plan where different areas are designated for different uses – for example essential infrastructure (roads, runways, ports, power, fuel), commercial (retail, light and heavy industrial), housing (single family homes, multiple occupancy dwellings), tourism infrastructure (hotels, condominiums, marinas), amenity areas (play areas, parks, squares, sports facilities, pedestrian areas), and physical protection (drainage, flood control systems, sea defences). In addition, some areas are designated as "Local Management Areas" (for example fenna grass areas that are maintained to supply raw material for cottage grass weavers), and others as informal "Bird Reserves". Up until the 1960s most of the land of TCI was held as Crown land, and remained undeveloped, particularly that land outside the three population centres of Grand Turk, Salt Cay and South Caicos. Since this time, much Crown land has been parcelled out for development – most particularly on the island of Providenciales – and the amount of undeveloped Crown land remaining is reducing year on year.

But as development grows apace, so there are fewer "prime" development sites remaining. With a view to further encouraging inward investment – in residential homes and tourism infrastructures (hotels, condominiums, estates and marinas) – "prime" development sites mean those with a combination of exclusivity (high quality, low density), seclusion (no nearby developments), accessibility (close to transport, commercial facilities and domestic services), a beachfront location (preferably on raised land / rocky outcrop), protection from the elements (not subject to erosion, flooding, or storm surge), and set within a high quality environment (good views, in a treed area with good vegetation cover, overlooking clear blue waters). There are not that many such sites that are yet to be developed – and because of the very qualities that make them candidate "prime" sites, many of these are to be found within the Protected Area System. But whilst the last thirty years have seen the Crown land used as something of a "land bank" – a repository of land that is available for development at some time in the future – the Protected Area System was specifically established to ensure that a proportion of the very features that make TCI so special, and which attract inward investment, is removed from this land bank. And this is enshrined in the National Parks Ordinance of 1975, and the National Parks Order of 1992 and the National Parks Regulations of 1992.

But in recent years the government has entertained development proposals relating to terrestrial protected areas that on the face of it are proscribed by this protected area legislation. While some protected areas are open to limited "conforming use"[2] development, recent development proposals have not been of this kind – being of "non-conforming use" and incompatible with the objectives of protected areas management. That such developments have been entertained reflects a view by some that too much land is locked away in protected areas, that nothing is being done to develop and exploit the many benefits of the Protected Area System, and thus that it would be better to let the commercial interests that have the wherewithal to reveal the commercial potential of this land get on and develop

[2] *"Development should be under the principle of conforming use. A gambling casino is not conforming use in a natural environment; a sports fishing facility is conforming use." Ray and Sprunt (1972). This concept has subsequently been captured and expanded upon within the National Parks and physical planning legislation.*

the land - rather than have the land un-used and out of reach of most people. These commercial interests seek to cherry-pick development sites within the Protected Area System.

Not everyone agrees with this argument. But the lobby to prevent any erosion of the Protected Area System is not helped by generally poor public knowledge and awareness of the Protected Area System and what it stands for, a misplaced public perception that protected areas are "no go" areas, and the absence of any viable funding mechanism by which the Protected Area System may be better opened up to the public and thus the substantial economic potential of the Protected Area System (a key rationale behind its formation) exploited.

Re-examining the development / protection equation

So there are the two opposing economic strands to the development equation:

- the strand that proposes that development opportunities should not be constrained by the restrictive use covenants of the Protected Area System, and
- the strand that suggests that the restrictive use covenants of the PAS actually underpin, strengthen and enhance the value of the commercial developments that take place outside the PAS, both now and in the future.

But at the bottom of this is the matter of investor confidence:

- how is investor confidence affected by recognition that there is little public or political resistance to the erosion of a Protected Area System that has been enshrined in law;
- how is investor confidence affected by recognition that past investment in tourism and residential development on the basis that no similar development will take place in an adjoining Protected Area can have that investment undermined by a reversal of the *status quo*?

To better inform the merits and demerits of each argument, the government has called for a review of the Protected Area System in respect of its ecological and socio-economic significance to the Turks and Caicos Islands. In this study we assess the origins of the current Protected Area System, undertake a thorough re-validation of the current system, and present our analysis of the role of the Protected Area System in the future development of TCI, and how the system might be modified to better reveal the economic value of the system whilst at the same time preserving and conserving the natural heritage of the country for generations to come.

The origins of the PAS

The rationale behind development of the Protected Area System was two-fold:

- **Economic** - to generate sustainable long-term economic benefits to the country and its people through maintenance of the high scenic and natural resources of the country that underpin the tourism industry and the quality of life of residents and visitors alike;
- **Natural** - to protect and manage the natural processes and resources of the islands to ensure the functionality of island-building systems, the integrity of marine and terrestrial habitats, the maintenance of natural island biodiversity, and the conservation of habitats, ecosystems and species particularly sensitive to human intrusion and the impacts of human settlement.

In 1969 Governor Wainwright established the first National Parks Committee thought to comprise[3]:

- The Hon. Robin Wainwright
- Tim Nicholl
- Liam Maguire
- Bert Malcolm
- Sterlin Garland
- Charles Hutchings

In its meetings of 1969 and 1970 it recommended establishment of a system of 14 national parks, 4 underwater parks, 3 nature reserves, 6 sanctuaries, and one site of special historic interest. This

[3] *personal communication with Chuck Hesse, 2006*

selection of sites was bound into primary legislation in the form of the National Parks Ordinance of 1975.

No further action was taken until the mid-1980s when a second National Parks Committee was convened under the Ministerial leadership of Llewlyn Handfield to take matters forward, assisted by Sterlin Garland and Royal Robinson as Permanent Secretaries. This Committee comprised[4]:

- Colin Floyd
- Oswald Williams
- Lou Handfield
- Michael Taylor
- Washington Misick
- Lynn Garland
- Royal Robinson
- Eric Lightbourne
- Patricia Bradley
- Sterlin Garland
- Ethlyn Gibbs
- Bernie Pauncefort (for the Ramsar Site)

Following consultation and drawing on the considerable local knowledge of the Committee members, a long-list of 50 candidate sites was drawn up, from which 33 sites were chosen for designation. These comprised 11 National Parks, 11 Nature Reserves, 6 Sanctuaries, and 5 Sites of Historic Interest.

The National Parks Ordinance of 1975 established the legal framework for these parks, but it was not until 1987 that the Department of Environment and Heritage was established, and 1988 when the first protected areas were officially designated under the National Parks Order of 1988. In 1992 the National Parks Order of 1988 was revoked and replaced by the National Parks Order of 1992, which established the 33 protected areas that remain on the Statute Books to this day. At the same time the National Parks Regulations (1992) set out details of permitted and prohibited activities, zoning, fees, enforcement, penalties and licenses for the different categories, including specific zoning for the Princess Alexandra National Park.[5][6]

Re-validation of the system

The main characteristics used to identify and select sites for protection in 1969 / 70 and again in 1986 reflect the dual objectives of supporting economic development and protection of the natural environment. But the actual set of criteria used to make the selection of sites was more complex. The Ray & Sprunt report of 1971 suggests that far from the original sites being selected at the whim of visiting specialists on the basis of cursory examination, it was based on a selection made by knowledgeable island-based individuals augmented by the views of islanders, and corroborated by outside specialists using a comprehensive set of selection criteria.

The criteria used were not explicitly recorded, but can be drawn from within the Ray & Sprunt report of 1971. These criteria very clearly divide into economic, natural and historic / cultural elements[7]:

- **Economic** – preserve and manage the natural beauty of the islands, maximise the recreational opportunities of exploring the natural environment, control economic activity within the protected areas commensurate with their designation, and open up the parks, nature reserves and sites of historic interest for public use and enjoyment;
- **Natural** – ensure that the system incorporates sites representative the diversity of island habitat, that these are represented at a relevant (for conservation purposes) scale, that fragile ecosystems / species are protected, and that species / habitats particularly sensitive to human intrusion are protected;
- **Historic** – sites of historic and cultural interest are protected for future generations, as well as opened up to public view.

[4] personal communication with Chuck Hesse, 2006

[5] Mackenzie C. & M Thomson (1995) National Protected Areas System, Turks & Caicos Islands, BWI – report on the financial and social planning mission

[6] Over the period 2004/05 revisions to the National Parks Ordinance 1998 were prepared by DECR and submitted to the National Parks Environmental Advisory Committee (NPEAC) and ExCo for consideration.

[7] Listed in more detail in Chapter 3 of the main report

We have taken this criteria-set and updated it, matching this with the criteria established under the SPAW Protocol[8], and adding additional criteria concerning social and socio-economic issues, and the opportunity cost of protection rather than development. We have used this set to re-assess each of the Protected Areas. The revised criteria-set is as follows:

Ecological values (SPAW criteria amended)

1 representative (within the islands; within the region)
2 naturalness
3 adequate size
4 species (threatened or endangered; rare or endemic; culturally or economically valued)
5 uniqueness
6 diversity (structural; habitat; species; genetic)
7 connectivity/coherence
8 resilience

Resource values

9 renewable resource(s) (eg fish nursery; silver palm; rush etc)
10 recreational resources (attractive for tourism and recreation - eg landscape [area of outstanding natural beauty], specific interest [bird colony, iguana, beach, patch coral]
11 opportunity for sustainable recreational and business opportunities (e.g. landing points; access; location etc)

Functional values

12 island building, stabilisation and physical protection
13 contribution to wider system (nursery habitat; nutrients)
14 waste assimilation/maintenance of water and land quality

Social and cultural values

15 historic and archaeological value
16 cultural or social value
17 quality of life of residents (recreational opportunities, greenspace, amenity, wellbeing)

Opportunity cost (to allow comparison between sites proposed for inclusion in the PAS)

18 degree to which site incompatible with development (eg not suitable for condominium construction / location)

These criteria are not independent. A large part of the rationale for the ecological criteria is that they underpin many of the more direct economic and social values. Thus, taken as a whole, the suite of sites should ensure the conservation of **all these values**, though particular sites may be selected, and

[8] *a criteria set developed as part of the The Protocol Concerning **S**pecially **P**rotected **A**reas and **W**ildlife (SPAW) in the Wider Caribbean Region, established in 1990*

appropriate designations applied, because they have exceptional value in relation to a particular sub-set of these values.

In applying these criteria we find the following:

- Our re-assessment shows the original basis of selection of Protected Areas to be rational, logical and broadly consistent with the intended purpose of the Protected Area System.
- The application of the criteria in the identification and selection of sites showed a due respect for the competing forces of development and conservation, and if anything sought to emphasise the importance of protecting key land and sea areas so as to provide sustainable economic opportunities associated with resident and visitor leisure and recreational activities.
- The designation of the 33 sites that comprise the TCI Protected Area System conforms coherently to the following basis of designation:
    - **National Parks** serve as a framework for the promotion, conservation and management of sites where environmental quality is a key underpinning of tourism and recreational opportunity;
    - **Nature reserves** serve a) to conserve representative, rare or attractive habitats and species; b) to maintain vital physical and ecological processes and services; c) as a recreational and educational resource for both local people and tourists
    - **Sanctuaries** serve to conserve endangered or valued habitats, species or life stages which are vulnerable to human disturbance;
    - **Historic sites** serve to conserve "an object of historical interest".
- In our scoring of the sites against ecological, resource, functionality and social and cultural values, we find the sites to score highly (i.e. a corroboration of the "rightness" of the choice of site).
- The largest single protected area in the system is that of the North, Middle and East Caicos Nature Reserve, designated as a wetland of international importance under the Ramsar Convention on Wetlands (1971).
- This site protects two-thirds of the country's tidal wetlands, 7 per cent of its terrestrial habitat (mainly comprising coastal coppice), and 2 per cent of its marine habitats – none of which is contested for construction or development purposes.
- For the rest, the Protected Area System incorporates a modest 7 per cent of the country's terrestrial habitats, 7 per cent of tidal wetlands and saline pond habitats, and 2 per cent of marine habitats.
- Some habitats are not well represented – these include, of note, upland blackland, upland whiteland, and coastal rock – three terrestrial habitats that are in most demand for the location of tourism / residential developments.

Conclusions and recommendations

Identifying and releasing economic value

- It is the case that much of the economic potential locked up in the Protected Area System is not being realised because of the failure to invest in the system.
- Whilst the natural features and attributes of the country are generally considered common property and free to use, this is not the case – they have significant value, the full benefit of which can only be derived if these resources are properly managed and maintained.
- The natural features and attributes of the country have the potential to generate substantial economic benefits to local communities and businesses – much of which has yet to be realised

or exploited - but the contribution of such features and attributes to the protection of existing and future economic assets and to the well-being of residents and visitors is likely to have a substantially greater value than is realised through the calculation of GDP.

- The economic benefits deriving to the TCI economy and its people from resort and residential development on land that is currently designated as protected are limited – one-off benefits to government and owners of building firms during the construction phase, and marginal benefits deriving from the purchase of consumables during the life of the development.
- A potentially larger stream of benefits attaching to such developments is that deriving from recreational activity – primarily associated with people accessing and using the natural features and attributes of the country; but these benefits attach to the built environment by association, not because of the specific location of the building or building complex – i.e. the value is not because the buildings are located in the middle of such an environment, but because the environment and its attributes can be easily accessed from wherever the buildings are located. On balance, building in, and reducing the extent of, these recreational areas undermines these benefit streams.
- Failure to protect the quality of the environment, and to properly conserve those features of the environment that have special value, will result in a devaluation of the value of these assets which will appear first in a slow down in economic growth, and secondly as a reduction in the well-being of residents and visitors, and a reduction in the quality of life of the resident population.
- National Park designation protects an area's natural assets, by limiting what can be done within the park to those activities that are compatible with the high environmental standing of the park and its value to the TCI economy, but its active management also optimises the value that visitors, tourism operators, and residents get from this asset by ensuring that access and use is ordered and safe, and that the qualities that make it special are retained for immediate and long-term use.
- The economic value of protected areas (for example National Parks and most Nature Reserves) goes up – to a point – the more people get to explore and learn about the features for which these areas have been designated; it starts to go down once too many people access these features, where their presence starts to impact negatively on the features that make these sites special.
- If all the National Parks, Nature Reserves and Sites of Historic Interest were kitted-out with access facilities, interpretative centres, picnic areas, rest areas, and other simple services, it is difficult to see that there would be the same pressure to build within the Protected Areas as we find today.
- Most of the problems now facing the Protected Area System stem from the fact that there is:
  - limited local knowledge of where the sites are and why they are protected,
  - a widely held view that the protected area system is in fact a "no-go" area – the complete opposite of what is intended
  - a lack of facilities to encourage public access and use, and as a result, lack of resources to patrol and manage the sites and site use,
  - pressure from developers to allow them to develop land that appears to serve little other purpose.

  All of these problems can be substantially eased if

  (i) there is better communication as to the purpose of the Protected Area System, and

  (ii) the parks, reserves and areas of historic interest are more obviously opened up for public access and use.

- There is a public obligation to open up the National Parks to public use – facilitating where possible the exploitation of such economic opportunities as the area can reasonably support, and managing the movement of people around the park areas in such a way as to ensure that there is no adverse impact on the very features that have made it a suitable candidate for National Park status.
- There is a public obligation to show residents and visitors why designated Nature Reserves are special – by managing access to the features that make them special, by informing through the provision of ranger services and tour guides, and by educating through appropriate signage and interpretation facilities.
- Despite the considerable economic benefits that government and the tourism industry derive as a result of the presence of the Protected Area System, the scale of financial transfers to the maintenance and management of this important national and economic asset is small, disproportionate, and inadequate.
- The PAS urgently needs a major injection of cash to fund the installation of basic access infrastructures in or near to protected areas – roads, car parks, paths, board walks, signage, rest areas and facilities, picnic areas, and information / literature on each site – plus the recurrent budget to allow for the development of management plans for each site, including effective stakeholder consultation, and the wherewithal to actively manage the sites and provide visible, effective and stimulating ranger services.

Recommendation 1 – In further promoting the Protected Area System as a valuable and accessible national resource, we suggest that consideration is given to re-naming the system as the **Pa**rks and **P**rotected **A**rea **S**ystem (PaPAS) – emphasising the public access element of the system, and providing a softer sounding acronym for the system – and it should be managed by a dedicated department.

Recommendation 2 – Funds and other resources need to be deployed as a matter of urgency to enable the development of comprehensive management plans for each protected area, the provision of visible ranger services, and the installation of essential access infrastructures.

Each management plan will need to include detailed plans for opening up the site to public use, details of access infrastructure and, within a specific management framework for each site, a definition of what sorts of development will and will not comply with "conforming use" criteria for that site.

Priority should be given to the development of such plans for Pigeon Pond & Frenchman's Creek NR, for Chalk Sound NP, for Princess Alexandra NR, for North West Point Pond NR, for Dick Hill Creek & Bellefield Landing Pond NR and for South Creek NP, Grand Turk – the integrity of each of which is being threatened by development pressure and for which a definition of "conforming use" is urgently required.

In principle "conforming use" in each site designation should comply with the following:

- for a National Park "conforming use" should be to encourage / provide access to the park and its resources, and to facilitate public use of the natural resources of the park for recreational purposes without compromising its natural values for which it has been given park designation;
- for a Nature Reserve "conforming use" should be to provide public access to the reserve, and to facilitate enjoyment of the natural features and resources of the reserve without compromising the underlying ecology and natural values for which the reserve has been designated;

- for a Sanctuary "conforming use" should mean that no building / development will be allowed except that it be for the explicit and necessary purpose of the management and conservation of the features / species / ecosystems for which sanctuary status has been designated; and that any access or recreational activity conforms with a code of conduct developed specifically to protect the particular interests of the sanctuary
- for a Site of Historic Interest "conforming use" should be to facilitate public access to the site, to enhance, in the historical context of the site, the experience of the visit to the site by the public, commensurate with the over-riding requirement to preserve and conserve the historic features of the site for the benefit of future generations.

Recommendation 3 – As part of the process of increasing the funds available to the development and maintenance of the PaPAS, and realising the economic potential locked up in many PAs, we are of the view that funding of the Conservation Fund from the Accommodation Levy should be increased from 1% to a 2% levy – a doubling of its current revenue generating capacity – and the monies should be held separate from the Government Consolidated Fund.

Recommendation 4 - We also believe that DECR's capital and recurrent budget allocations should be increased – rationalised in terms of the substantial under-pinning and benefits that the PaPAS offers to the islands' tourism sector – and that consideration should be given to re-balancing the role of DECR away from fisheries management (continue to manage fisheries, but at a more strategic level, controlling activity through greater monitoring of exports) and more towards management and interpretation of the parks system. Likewise, consideration should be given to part core-funding the Turks and Caicos National Trust from government funds, and creating greater institutional separation between fisheries and PaPAS management.

Recommendation 5 - The tourism and property investment sectors gain considerable benefit from the PaPAS, and this should be more explicitly recognised by both these industries and the government, and mechanisms should be established and clearly publicised by which the private sector can contribute to the maintenance of the PaPAS.

Recommendation 6 – DECR needs to do more to communicate the purpose of the Protected Area System – its ecological rationale, its values, the logic behind encouraging rather than discouraging public access, and the concept of "conforming use". In part this should be achieved through the production of visitor guides to Parks, Nature Reserves and Sites of Historic Interest, and in part through greater use of a ranger service, providing rangers - some on a site specific basis – to act as an information source, and to be available to guide visitors around sites.

Recommendation 7 – The Princess Alexandra L&SP is by far the most visited and used of the Protected Area sites, and the most actively managed, but with the steadily increasing density of settlement of Grace Bay the quality of the park is starting to suffer through people pressure – as reflected, amongst other factors, in too many nutrients entering the sea causing reduced water quality and a general increase in the incidence of green algal growth on the patch coral and coral reefs; it is essential that the causes of this chronic reduction in the quality of the environment within this park are communicated to tourism operators, Belongers and visitors alike, and that controls on sewage treatment systems and waste disposal are strictly enforced.

Strengthening planning systems

- The Protected Area System forms but one type of land / marine use designation and should not be viewed as an exotic and unusual part of land-use management; land use in TCI, as elsewhere, is managed according to a strategic plan where different areas are designated for different uses – for example essential infrastructure, commercial use, housing, tourism infrastructure, amenity areas, and physical protection. In addition, some areas are designated as "Local Management Areas" (for example fenna grass areas that are maintained to supply raw material for cottage grass weavers), and others as informal "Bird Reserves".
- Development should take place within the context of clear policy, a strategic framework, and where appropriate a plan at an appropriate geographical scale and level of detail; the whole purpose of such planning procedures is to avoid the need to deal with *ad hoc* development proposals.
- If the designation of Protected Areas is to have any value at all, it should imply and apply protection, and designation and boundaries should not be subject to change except under very unusual and well argued circumstances; this is a key element of the rationale for extension of Protected Area boundaries to incorporate suitable buffer areas, and for the application of the "precautionary" principle when considering boundary extensions and planning applications.
- Where an investment is made in the expectation that a Protected Area will remain a Protected Area, and as such be subject to "conforming use" restrictions, the investor will expect this condition to be maintained; should this situation alter, it has the potential to significantly and negatively impact on the confidence of investors in the TCI planning system.

Recommendation 8 – We are of the view that the Government of TCI should prepare a biodiversity strategy for the country as a means of providing a strategic framework for environmental policy, planning and management (bearing in mind that a Biodiversity Plan has already been developed for the Ramsar site under funding from the Darwin Initiative).

Recommendation 9 – There is inconsistency in how the designations of Conservation Area (as it is applied to built up areas) and Site of Historic Interest are used, which should be clarified and their use rationalised.

Recommendation 10 - The actual location of new or altered boundaries will need to be decided through a process of considered recommendation, debate and local consultation. This forms a part of the normal planning process. There is inevitably an element of subjectivity / pragmatism in the delineation of boundaries – which is to be expected – but the lack of precision or "scientific" underpinning of specific boundary locations should not be used, and must not be allowed to be used, as an excuse for encroachment or as an excuse to delay the process of establishment of new boundaries. Further, once established there would have to be arguments of over-riding national interest to change them.

Recommendation 11 – There are several instances where built heritage – whether in public or private hands – is deteriorating rapidly because the mechanisms by which public interest in the upkeep of these buildings can be exercised is unclear, and insufficient public (and private) resources are allocated to the task of restoration and conservation of this built heritage. Adequate funding mechanisms for the restoration of these assets need to be identified as a matter of some urgency.

Recommendation 12 – There are a range of public park and recreational areas, as well as Fishing Reserves, bird reserves, and maybe other such designations. Exactly how these designations fit into the overall frame of physical planning, and amenity and environmental management is unclear, and this needs to be clarified and clearly communicated to both decision-makers and users.

Adequacy of habitat representation with the PaPAS

- Within the current Parks and Protected Area System there is good representation of marine habitat and tidal wetlands, but poor representation of purely terrestrial environments; this situation is particularly extreme in respect of the island of Providenciales.
- The upland habitats of blackland and whiteland are very poorly represented within the Parks and Protected Area System (mainly represented within the Pigeon Pond and Frenchman's Creek NR), as is also coastal rock within any of the mainland sites.
- Given that fringing / barrier reef, going through, tidal Red mangrove forest, and saline lakes, ponds and salinas make up so little of the surface area of the country (and despite their reasonable representation within the Parks and Protected Area System), some additional care may be required to ensure that sufficient of these critical habitats is captured within the system and provided adequate protection

Recommendation 13 – The Parks and Protected Area System has very few examples of sites that incorporate a full cross-section of the habitat mosaic; to rectify this, the one existing example of this at Pigeon Pond & Frenchman's Creek NR should be retained intact, and consideration given to extending the northern boundary of the Boiling Hole HA so as to join it to Bell Sound, and to extend the boundaries of the North, Middle and East Caicos NR to incorporate some coastal rock, whiteland and blackland – perhaps on Middle and East Caicos.

PaPAS site management

- Whilst the system of Protected Areas may be well thought out, and boundaries in place, the purposes for which the system has been established are not being effectively realised – and as a result the system lacks value.
- On balance the TCI Parks and Protected Area System, though adequate in size and scope, fails to deliver effectively on the very purposes for which it was established – the protection of key habitats for active recreational purposes, and the protection of these and other areas as a means of protecting threatened and endangered species and habitats. Establishment of the Parks and Protected Area System without effective public access and site specific management delivers on only half the task, and does a disservice to the people of TCI, and future generations, on whose behalf this natural, historic and cultural heritage is being protected.
- Our assessment of the Parks and Protected Area System against ecological, resource, functional, and social and cultural values shows how well the National Parks system captures these values; but this also highlights the need for effective management within the Parks to conserve and promote these values.
- If the relevant areas of the Parks and Protected Area System are not opened up to the public it is almost automatic that their perceived value will be under-estimated, and respect for the integrity and management regime applying to that area weakened and rules abused.

- In practice we believe that "conforming use" is defined by the specific management plan developed for a Protected Area – such that it should not be possible to construct anything within a Protected Area without there first being an accepted Management Plan for the site, and without the proposed development conforming with the requirements of that Management Plan.
- To date, the evolution of the Department for Environment and Coastal Resources has retained a focus on active management and enforcement of the country's commercial fisheries, but management of the Parks and Protected Area System has lagged well behind
- DECR has, under the Coastal Resources Management Project funded by DFID, prepared draft management plans for a few National Park and Nature Reserve sites, but all of these need further work, and in particular need to be exposed to, and strengthened by, the forces of stakeholder consultation. Similarly the National Trust has developed management plans for parts of North, Middle and East Caicos, including the Ramsar site and Conch Bar Caves.
- It still remains that out of 33 designated Protected Areas, only three are in any way subject to active management, a fourth has been subject to substantial baseline field research, and with a fifth some local action is taking matters in hand.
- It is largely a simple reflection of the absence of management plans for sites that there is so little knowledge or management of the remaining sites amongst the general public - and as a result it is rather by default and through neglect that threatened and endangered species and habitats are being protected at all.
- These problems can also be more easily addressed if each site is more actively and sensitively managed in ways intended to better present and protect the features for which they have been designated.

Recommendation 14 - We think that far greater use should be made of the concept of zonation – where different areas within an outer boundary can and should be subject to more constraining controls commensurate with the proper management of the site. Where such tools are used they should be addressed through a site's management plan rather than through a doubling up of designation.

Recommendation 15 – In respect of fisheries (recreational and commercial) we think far greater use should be made of designated fishing zones (where various classes of fishermen can fish), fishing "no-go" zones, and areas within a National Park or Nature Reserve that should be afforded greater protection as a part of the long-term management of such a site.

Recommendation 16 – There is an urgent need to give official support to, and adequately resource the implementation of, the management plan drawn up by the local community and the National Trust for Conch Bar Caves to halt the deterioration of this important site, to manage access to the site, to facilitate the capture of economic benefits for the local community, and to ensure the safety of visitors.

Recommendation 17 – DECR needs, as a matter of urgency, to prioritise the order in which site management plans will be drawn up, allocate the resources and get on with the assessments, investigations and consultation processes that will generate these plans.

Institutional

Recommendation 18 - The Turks and Caicos National Trust needs to grow its resource base and sphere of influence – by focusing its resources in those areas and on those activities that it can achieve rapid and high profile results in, and which will lead to a strengthening of its resource base and sphere of influence. In this regard we are of the view that it should strategically take major responsibility for conservation and management of some of the country's key historical and cultural assets, and responsibility for conservation of some of the islands signature endangered species (for example its rock iguana, Turks head cactus, flamingo, Lignum vitae tree and its pine yards), allowing the DECR to focus on the larger task of managing the parks, and most of the reserves and sanctuaries.

Recommendation 19 - Should the DECR fail to protect and develop the National Parks System – taking into consideration the relatively slow progress achieved to date in exercising a legal mandate established in the late 1980s – then it falls to the National Trust to both press government to rectify this situation and to raise public awareness of the slow progress in this area and the consequences of such action or inaction. To this end the National Trust should work hand in hand with DECR in, for example, making available its terrestrial and wetland management expertise, but should remain focused on developing the image and public support that will allow it to influence government in the protection and development of the National Parks System.

Recommendation 20 - We think that serious consideration should be given to encouraging the placing of land (and seabed) within the boundaries of Protected Areas into Trust on behalf of and for the benefit of future generations of Belongers and their guests, and that in this way at least some of the Parks and Protected Area System should be put outside the scope of de-designation.

Boundary changes, new sites and site specific management

- The scale, nature and boundaries of each existing site have been reviewed and recommendations made on boundary changes and management issues to be addressed on a site-specific basis. This tabulation is appended to his Executive Summary, with further detail presented in the main body of the report and assessment data presented in Appendices to the report.
- For a number of sites it is recommended that boundaries be extended to include buffer zones as a means of adding further protection to the core attributes for which the site has been designated. In some instances such a buffer zone should be included within the boundary of the Protected Area, and in other instances it may be more appropriate to designate an area as a "Regulated Development Zone" and thus subject to special planning conditions commensurate with close proximity to a Protected Area.
- For a number of sites it is recommended that their boundaries be extended to link to nearby sites (notably marine sites), but that such measures be accompanied by much increased use of activity management through zoning – reversing the idea that parks and reserves are "no-go" areas, and instead welcoming a wide range of activities under controlled conditions.
- We have recommended the de-designation of one reserve as not representing sufficient of its core habitat to provide relevant protection; we also recommend re-designation of a number of sites.
- We recommend that marine buffer zones be included in the designations of a number of cays, broadening the nature of the protection provided; we also recommend that some terrestrial sites be extended to incorporate a full range of ecosystems.

- We recommend that a number of new sites be designated, notably on North, Middle and East Caicos – primarily to increase inclusion of under-represented habitats.
- We also recommend some increase in the designation of Sites of Historic Interest – notably in respect of Lucayan sites and Wades Green plantation.

Summary

In summary, the marking out of a Protected Area System back in the 1970s and its gazetting in the 1980s represents a visionary initiative, which the people and economy of TCI are now benefiting from. This is most apparent in the use being made of the Princess Alexandra L&SP, Little Water Cay NR and South Creek NP, but the economic potential of most of the Protected Areas has yet to be realised.

The prime function of the National Parks system is to open up areas of natural beauty for public use under controlled conditions – managing access whilst at the same time preserving and conserving its natural features for both ecological and economic purposes. A similar arrangement applies to Nature Reserves, but with access and management geared more towards habitat, ecology and species conservation. But in practice, despite the intention to open these areas for public use, there has been next to no investment in developing the necessary infrastructures to encourage access to these sites. In part as a result of this both residents and visitors are poorly informed as to the purpose of the Parks and Protected Area System, and are of the view that access to these sites is discouraged. Further, that various economic opportunities that they might wish to pursue in relation to these sites – particularly in the are of fishing and provision of tourism and recreational services – are proscribed; they are not.

On balance the TCI Parks and Protected Area System, though adequate in size and scope, fails to deliver effectively on the very purposes for which it was established – the protection of key habitats for active recreational purposes, and the protection of these and other areas as a means of protecting threatened and endangered species and habitats. Establishment of the PaPAS without effective public access and site specific management delivers on only half the task, and does a disservice to the people of TCI, and future generations, on whose behalf this natural, historic and cultural heritage is being protected.

But further, the failure to invest in the necessary infrastructures and services to provide public access to these unique areas of natural beauty has left these sites open to encroachment and erosion as developers seek to identify the next location for a resort or marina. We repeat, if all the National Parks, Nature Reserves and Sites of Historic Interest were kitted-out with access facilities, interpretative centres, picnic areas, rest areas, and other simple services, it is difficult to see that there would be the same pressure to build within the Protected Areas as we find today. These are public assets, but there is currently little management of these areas for public use and benefit.

A final example demonstrates the need for informed investment in the Parks and Protected Area System as a means of stopping inappropriate development and the erosion of this system:

- We are of the view that the Pigeon Pond & Frenchman's Creek NR would benefit from the establishment of a clear gateway development – visitor centre, viewing deck and complex – on high land along or near to its north-easterly boundary as a means of revealing the considerable potential value of this Protected Area, serving an important role in public education about the Parks and Protected Area System, and providing clear demarcation of the northern edge of this reserve. This would promote public awareness of the Reserve and its purpose, provide a clear access point for the site, provide a central point for accessing recreational services for the site, and provide a locus for a range of commercial opportunities. But this can only be achieved within the context of a well-thought out and adequately resourced management plan for the reserve. To date, there is no clear system by which such a key piece of access infrastructure can be planned and financed.
- But at the other end of this Reserve, planning is proceeding for development of a ferry terminal and associated infrastructures near West Harbour Bluff at the south easterly extremity of the reserve – where it is rumoured that there are plans for the construction of condominiums, a golf course and a beach complex – none of which might be judged as of "conforming use" in relation to this Protected Area. All or most of this is expected to be funded from private sources.

Summary of suggested modifications and extensions to the PaPAS

In the following table we present a summary of the changes to the existing sites that we propose – based on the ecological and socio-economic assessments of sites and our analysis. Not all of these proposals have been signalled in the main text of the report. In a separate table below we also summarise proposals for new sites.

We indicate the level of urgency we ascribe to each of these proposals in the right-hand column – **1** = high priority; **2** = should be given serious consideration; **3** = under ideal circumstances we consider that this would enhance the quality and functionality of the PaPAS.

Summary of proposed changes to existing sites

No.	name	characteristics for which site has been designated	proposed boundary changes	priority
01NP	**Admiral Cockburn L&SP**	• excellent wall diving and representative coral reef ecosystems	• recommendations are to extend the reef areas further north or create another protected area to encompass these reefs, especially the areas having a predominance of berried females lobsters.	2
02NP	**Chalk Sound NP**	• scenic water; bonefish; boating; picnic area	• add vegetation buffer zone along northern border	1
03NP	**Columbus Landfall MNP**	• excellent wall diving • the only protected barrier/fringe reef for the island, as well as for the Turks Islands • dive operators have also recommended that park be extended south of the present Park area	• extend boundary to the east to include more shallow water area, and reduce western boundary back to a more appropriate depth contour; • possibly encompass northern end of North Creek, if not given independent protection; • extend area south to compensate for the out of weather reefs destroyed/disturbed or made inaccessible by the new Cruise Port.	2
04NP	**Conch Bar Caves NP**	• the entirety of the cave ecosystem in this region is not contained within this PA • critical cave habitats remain outside of protected at Indian Cave on Middle Caicos and at Jacksonville on East Caicos.	• extend protection to Indian Cave and Jacksonville • if Indian Cave is not protected under a new Crossing Trail NR, then it should be incorporated within the Conch Bar Cave NR; • because of its uniqueness, and as this PA provides critical and sensitive to a number of species at risk, consider re-designation as a Nature Reserve.	1
05NP	**East Bay Cays L&SP**	• scenic islands and favourite picnic area • need to remove Casuarina trees and re-establishment of natural strand communities;	• extend this Land and Sea Park to include the offshore reef areas of North or Middle Caicos • consider re-designating this park as a Nature Reserve.	2
06NP	**Fort George L&SP**	• dive and picnic sites; 1798 English fort; shipwreck; canons in shallow water; iguanas; ospreys and wading birds	• expand to include the nearby snorkel reefs at Fort George Cut and dive sites at Pine Cay • link NP with the offshore areas of Princess Alexandra National Park.	1

07NP	**Grand Turk Cays L&SP**	• shallow dive sites, bird and fish nurseries; day outings and picnics • Gibbs Cay prized for recreational features, and Penniston and Martin Alonzo Pinzon cays prized as critical habitats for internationally-important pelagic seabird populations and endangered sea turtles (also on Gibbs Cay). • need to ensure monitoring and management of pelagic bird populations on Gibbs Cay to ensure their long-term sustainability under the proposed arrangement.	• recommend that Gibbs Cay remain a National Park to facilitate the public's enjoyment of its unique recreational features • recommend that remaining cays be reclassified as Nature Reserve.	2
08NP	**North West Point MNP**	• best wall diving off Providenciales	• extend the Park to the south of its current boundaries to include the offshore reef areas west of Frenchman's Creek • extend to include Sandbore Channel • possibly extend to link with the West Caicos Marine National Park	2
09NP	**Princess Alexandra L&SNP**	• dive and picnic excursions, iguanas, ospreys, mangroves and marine life	• include at a minimum to extend the Park boundary to link with the Fort George Land and Sea National Park to include the favoured dive and snorkeling sites currently not under Park protection. no change	3
10NP	**South Creek NP**	• wetlands, mangroves, viewpoint, tourist destination, picnic areas, small boat activities and harbourage • represents the largest, unspoiled tract of land on the island of Grand Turk that has protective status • the Park's valuable upland habitats are currently being developed for a visitor center and conch farm, although this use is in keeping with acceptable uses in a National Park. From an ecological standpoint, the development of these areas means that there will be no undeveloped protected upland habitats on the island of Grand Turk • the proposed annexation of lands to the south of the current boundary will help to alleviate this somewhat, as these proposed areas are of equal quality to those being lost to development.	• existing DECR proposals to extend park boundary to the south and south east	2
11NP	**West Caicos MNP**	• excellent wall diving	• include the extension of the Park to the north and the south of its current boundaries, preferably to include the South West Reef and Sandbore Channel as well as link with the North West Point Marine National Park for connectivity to other PA's.	3

12NR	**Admiral Cockburn NR**	• rare rock Iguanas, breeding terns and frigate birds	• no change	
13NR	**Bell Sound NR**	• bonefish reserve	• extend to include some shoreline vegetation and mangrove • re-designate to National Park	2
14NR	**Cottage Pond NR**	• bird nesting	• no change	
15NR	**Dick Hill Creek & Bellefield Landing Pond NR**	• bird nesting	• consider physical barrier to prevent encroachment from new port	1
16NR	**Lake Catherine NR**	• area of scenic value and interest to naturalists; large hyposaline lake supporting abundant pink bivalve molluscs and black mussels; habitat of seaturtles and birdlife including flamingos with old causeway and small islands offering bird nesting sites • it does not include other representative communities on West Caicos including silver palm coastal coppice, adequate whiteland, mangrove tidal forest, coastal rock (including fossil reef), seasonal salt pond and karst sinkhole wetlands.	• the core recommendation is to add a buffer zone all around site, • such a proposal has already been put forward by DECR, and others have put forward further extension proposals in the context of a 10yr plan for the islands; these boundary changes are desirable and would improve the ecological values of this PA by including more representative communities, preserving unique karst features and endemic species, preserving unique archaeological and fossil records and increasing overall numbers of species in protection • we are also of the view that the boundary should be extended to incorporate Yankee Town	1
17NR	**Ramsar**	• natural, representative mangrove system; bird diversity; ocean hole; iguana; flamingo; arawak villages; West Indian Whistling Duck 10% of "a population"; fish and turtle nurseries	• extend the boundary to include Nanny and Garden Ponds, East Caicos caves, wetlands associated with Conch Cay and wetland ecosystems of East Caicos • consideration should be given to including significant upland habitats of North, Middle and East Caicos that are not currently represented within any Protected Area	2
18NR	**North West Point Pond NR**	• a prime example of red mangrove lagoon habitat with an abundance and diversity of lagoon fauna, serving as a nursery and food source for neighbouring waters; an important feeding area for migrant wading birds and breeding area for locally common waterfowl species	• extension of the boundary to include a buffer zone around the core wetland area	1
19NR	**Pigeon Pond & Frenchman's Creek NR**	• wetland birds; West Harbour Bluff rock carvings	• extend the Nature Reserve to include the offshore reef areas- through extensions of the North West Point or West Caicos Marine Parks along the outer perimeter of the barrier/fringe reef areas, or preferably (to keep the reserve status of the entire area) to include the area from the current boundary out to the reefs to connect with both Parks • efforts should be made to extend its boundaries to include more upland areas	2

			(to the north of the reserve), the one community type that is lacking from its boundaries	
20NR	**Princess Alexandra NR (Donna , Mangrove and Little Water Cays)**	• picnic excursions, iguanas, ospreys, mangroves	• defence of the existing boundaries of Mangrove Cay in the face of potentially intrusive development proposals beside Leeward "going through"	1
21NR	**Pumpkin Bluff NR**	• this habitat functions as only a fraction of a wider wetland ecosystem - including Moore Hall Pond, Mangrove Pond, St. Thomas Hill Pond, a boiling hole, and surrounding seasonal marshes and swamps; • wildlife utilizes all of these habitats intermittently and requires all of them for long-term sustainable populations; • furthermore, this NR has no upland terrestrial buffers making it vulnerable to adjacent value, which could further undermine its values for wildlife. • good wildlife management practices dictate that all wetland habitats be conserved	• de-designate – does not include enough of critical habitat to form a viable Nature Reserve, and impractical to include all of the target wetland ecosystem • if not de-designated, extend to include additional vegetation around salina	2
22NR	**Vine Point (Man O' War Bush) and Ocean Hole NR**	• frigate bird nesting area; and 220' deep by 1200 ' wide hole in 3' shallow sand bottom	• DECR has already proposed that the status of the North, Middle and East Caicos NR already provides the necessary protection to these particular natural features, but that protection of the special nature of these features needs to be incorporated into the management plan for this site	
23S	**Big Sand Cay Sanctuary**	• nesting birds and turtles	• deep water and coral reef ecosystems located adjacent to the Sanctuary are not included within its boundaries. Including these communities would protect this entire superlative ecosystem.	2
24S	**French, Bush & Seal Cays Sanctuary**	• nesting terns and Frigate birds	• as there are currently no marine areas contained within Sanctuaries, it is recommended that a generous buffer be incorporated. • the buffer could also take in near-by coral reef ecosystems; thus greatly improving biodiversity levels for this Sanctuary.	2
25S	**Long Cay S**	• nesting terns, flora, iguanas	• no change proposed	
26S	**Three Mary Cays Sanctuary**	• Osprey nest site	• Sanctuary or Nature Reserve status, which is awarded to areas of critical ecological significance, is not merited in this case. • this is, however, a popular picnicking spot, and it is therefore recommended that this PA be renamed as a National Park or re-designated as a local park	3

27HA	**The Boiling Hole Area of Historical Interest**	• is designated largely for its historical values, but its ecological values are significant.	• change to Nature Reserve • extend northern boundary to incorporate additional terrestrial habitat, possibly joining up with the boundary of Bell Sound NR	1
28HA	**Cheshire Hall HA**	• ruins of 1790s plantation house and outbuildings	• no change	
29HA	**Fort George HA**	• 1798 English fort	• no change	
30HA	**Endymion Wreck HA**	• 18th century shipwreck in shallow water • the presence of other wrecks in the area would also indicate reasons for increasing the limits of this historic site.	• as no barrier/fringe reef is protected under Sanctuary status to date, it is recommended that a portion of these reefs be included within Big Sand Cay Sanctuary and the remaining be included within the historic site for restricted use.	2
31HA	**Molasses Reef HA**	• site of oldest known wreck in W Hemisphere • the DECR amended maps now indicate the wreck and surrounding areas of patch reef as included within the site	• it is further recommended that the site be extended to the 100 fathom mark to include a portion of the barrier/fringing reef within the restricted area to encompass as many marine ecosystem types and processes as possible.	2
32HA	**Salt Works & Village HA**	• salt works, historic building including brown and white houses; whaling station due to ecological significance	• change to Nature Reserve • consider separating the two sites – salt works and whaling station and creek • consider extending the whaling station Nature Reserve designation to include all or part of the creek area located half way down the east coast of the cay (currently designated in part by DECR as an informal nature reserve)	1

Summary of proposals for new sites

type	location	nature / rationale	proposed action	priority
HA.	**Yankee Town**	• Yankee Town deriving from development in the 1890's, the town area includes remnants of a large-scale attempt to grow and process Sisal (Agave sisalana) fibre for export. Roads originating at Yankee Town provide access to all other parts of the Island. A causeway (now severed) links Yankee Town with the Eastern shore across Lake Catherine.	• If the boundaries of the Lake Catherine NR are not extended to encompass Yankee Town, then this should be established as an Area of Historic Interest	1
HA.	**West Harbour Bluff**	• Part of the Pigeon Pond & Frenchman's Creek Nature Reserve containing rock carvings	• If these rock carvings cannot be clearly protected under the management plan for the NR, then these should be designated as a Site of Historic Interest	2
NR	**Wades Green and Teren Hill**	• The most important high forest area in the Turks and Caicos Islands, incorporating two major historic plantations.	• Establish as a Nature Reserve, with management of Wades Green Plantation House as a Site of Historic Interest	2
HA.	**Wades Green**	• Plantation house	• If the area that includes Wades Green is not established as an NR, then establish the	1

			plantation house and surroundings as a HA	
NR.	**Crossing Place Trail & Indian Cave**	• The western part of the northern coast of Middle Caicos, including Fish Ponds, Crossing Place Trail, Indian Cave and Blowing & Juniper Holes.	• Establish as a Nature Reserve	1
NR.	**Middle Caicos Forest**	• Area of high forest, between the settlements of Lorimers & Bambarra, including various types of permanent and temporary wetlands. One of the areas in which re-establishment of woodland towards forest has moved furthest in places, so there is a good range of scrub and woodland types represented	• Establish as a Nature Reserve.	1
NR	**Eastern extension of the Ramsar site**	• East Caicos is a complex of inter-related dry-land, pond, cave, marshes, flats and other wetlands, adjoining the existing Ramsar site, which covers only a small part of East Caicos. The extension adds to the site important beach ecosystems together with global priority cave ecosystems, both lacking from the present site.. The extension adds to the site area probably the most important surviving nesting area for endangered Green and Hawksbill Turtles, *Chelonia mydas & Eretmochelys imbricata*.	• Establish as an extension to the existing North, Middle and East Caicos NR and International Ramsar site – to include those parts of East Caicos not already in the Ramsar site - Joe Grant's Cay and Windward Going Through	2
NR.	**Little Ambergris and Fish Cays**	• A low lying sand cay with extensive internal wetland, coastal coppice vegetation and the largest protected population (15,000 individuals) of TC Rock Iguana (*Cyclura carinata*)	• Establish as a Nature Reserve	1
NR & HA.	**Grand Turk salinas**	• It is understood that these are currently part of a Conservation Area under Planning Control, including some areas established as Public Park under Planning Control – but the effectiveness of this status relative to designation under the National Parks Ordinance should be re-examined.	• Re-designation as a NR and / or HA	1
NR	**North Creek Wetlands, Grand Turk**	• Both the extreme northern and southern ends of the North Creek have extensive wetland habitats and both, surprisingly, are in a relatively untouched state. Both are significant nursery habitats for the shallow and reef-dwelling populations outside the North Creek Mouth, supplying juvenile fish and lobsters in great numbers.	• Possible designation as an NR, specifically covering the wetland area, but also possibly the whole of North Creek	2
NR	**New areas Grand Turk**	• Several critical habitats remain unprotected on the island of Grand Turk and serious consideration should be given to the creation of more protected areas on this island. Areas for consideration should include the entire wetland network including all salinas and North and South Wells and their surrounding floodplains, which are critical habitats for the National Flower, *Limonium bahamense*.	• look at potential new sites	2

1. Introduction

1.1 The tourism boom and "beautiful by nature"

The Turks and Caicos Islands (TCI) is an Overseas Territory of the United Kingdom forming a part of the British West Indies. It comprises a complex of some 40 islands located along the western rim of the Atlantic Ocean to the south east of Florida at the southern extremity of the Bahama Plateau. For centuries the islands have supported a resident population of some 5 or 6,000 people, but the last twenty-five years have witnessed substantial growth in the TCI economy, with commensurate expansion of the population to some 26,000 by 2004.

The basis of this economic growth has been tourism. Lying as it does some 75 minutes flying time from Miami, and 3 hours flying time from New York, and possessing great natural beauty in the form of golden beaches, a mild, warm, and steady climate, clear blue lagoons, and a diverse island ecology, TCI has been able to share in an expanding international tourism market. In 2004 173,000 people made the journey to TCI, most of these (94%) heading for the island of Providenciales – drawn by the Tourism Board's promotional tag-line of "Beautiful by Nature".

In recognition of the need to manage the natural assets of the country a system of protected areas (the Protected Area System or PAS) was drawn up in the 1970s, and entered into legislation in the late 1980s. This seeks to maintain the natural quality and integrity of the various ecosystems found in the country:

- so that the habitats incorporated within the protected areas may be enjoyed by residents and visitors to the country,
- that their quality may sustainably underpin economic ventures linked to the protected areas that fall within "conforming use" criteria,
- that species and habitats representative of the country might be protected for future generations,
- that species and habitats particularly sensitive to human intrusion may be protected, and
- that sites of historic or cultural significance may be both conserved for posterity as well as opened up to public view[9].

The PAS also seeks to indirectly support and sustain the very rapid economic growth that the country and its people have benefited from by managing and maintaining the ecological integrity of the islands' natural systems, by providing the recreational and leisure space and amenities that contribute to the high quality of life expectations of residents and visitors alike, and by stewarding the extraordinary natural beauty that underpins the attraction of TCI as a holiday destination and encourages many to make long-term investments in property on the islands. These economic benefits may be described as:

- providing ambience and amenities that add value to property development,
- providing recreational opportunities to residents and visitors to the country based on the exceptional qualities of the natural environment,
- facilitating access to the exceptional scenery and natural environments found across the island group
- boosting the scale of economic flows derived from the servicing of a broad based tourism sector,
- sustaining the natural island processes that ensure that beaches remain golden, lagoons remain crystal clear, and vegetation cover remains green,
- ensuring that the marine and terrestrial environments continue to support healthy and balanced plant and animal communities, and
- ensuring that the ecosystems are able to process the increased nutrient and pollutant loadings associated with raised human settlement patterns.

[9] *Interpolated from Ray & Sprunt 1971 – see Chapter 4 for further details.*

1.2 The encroachment of development on the Protected Area System (PAS)

The PAS now comprises 33 sites across four forms of designation (see **Fig 1**):

- **National Parks:** Ecosystem and biological conservation with recreation as the key secondary goal (11 parks).
- **Nature Reserve:** Ecosystem and biological conservation with recreation as a low-key secondary goal (11 reserves)
- **Sanctuary:** For the protection of the natural ecology, or animal or plant, and the avoidance of disturbance of the area by people (4 sanctuaries).
- **Area of Historic Interest:** For the purpose of protecting an area or object of historical interest (7 sites of historic interest).

The Protected Area System forms but one type of land / marine use designation. Land use in TCI, as elsewhere, is managed according to a strategic plan where different areas are designated for different uses – for example essential infrastructure (roads, runways, ports, power, fuel), commercial (retail, light and heavy industrial), housing (single family homes, multiple occupancy dwellings), tourism infrastructure (hotels, condominiums, marinas), amenity areas (play areas, parks, squares, sports facilities, pedestrian areas), and physical protection (drainage, flood control systems, sea defences). Up until the 1960s most of the land of TCI was held as Crown land, and remained undeveloped, particularly that land outside the three population centres of Grand Turk, Salt Cay and South Caicos. Since this time, much Crown land has been parcelled out for development – most particularly on the island of Providenciales – and the amount of undeveloped Crown land remaining is reducing year on year.

Conclusion - The Protected Area System forms but one type of land / marine use designation and should not be viewed as an exotic and unusual part of land-use management; land use in TCI, as elsewhere, is managed according to a strategic plan where different areas are designated for different uses – for example essential infrastructure, commercial, housing, tourism infrastructure, amenity areas, and physical protection.

But as development grows apace, so there are fewer "prime" development sites remaining. With a view to further encouraging inward investment – in residential homes and tourism infrastructures (hotels, condominiums, estates and marinas) – "prime" development sites mean those with a combination of exclusivity (high quality, low density), seclusion (no nearby developments), accessibility (close to transport, commercial facilities and domestic services), a beachfront location (preferably on raised land / rocky outcrop), protection from the elements (not subject to erosion, flooding, or storm surge), and set within a high quality environment (good views, in a treed area with good vegetation cover, overlooking clear blue waters). There are not that many such sites that are yet to be developed – and because of the very qualities that make them candidate "prime" sites, many of these are to be found within the Protected Area System. But whilst the last thirty years have seen the Crown land used as something of a "land bank" – a repository of land that is available for development at some time in the future – the Protected Area System was specifically established to ensure that a proportion of the very features that make TCI so special, and which attract inward investment, is removed from this land bank. And this is enshrined in the National Parks Ordinance of 1975, and the National Parks Order of 1992 and the National Parks Regulations of 1992.

Fig 1 - Schematic of the TCI Protected Areas System

National Parks	National Reserves	Sanctuaries	Historical Sites
1. Admiral Cockburn Land and Sea National Park – South Caicos	12. Admiral Cockburn Nature Reserve – Long Cay, Middleton Cay, Six Hill Cay	23. Big Sand Cay Sanctuary – Big Sand Cay	27. Boiling Hole – South Caicos
2. Chalk Sound National Park – Providenciales	13. Bell Sound Nature Reserve – South Caicos	24. French, Bush and Seal Cays Sanctuary – South Caicos Bank	28. Cheshire Hall – Providenciales
3. Columbus Landfall Marine National Park – Grand Turk	14. Cottage Pond Nature Reserve – North Caicos	25. Long Cay Sanctuary – South East of Grand Turk	29. Fort George – Fort George Cay
4. Conch bar Caves National Park – Middle Caicos	15. Dick Hill Creek and Bellefield Landing Pond Nature Reserve	26. Three Mary Cays Sanctuary – North Caicos	30. H.M.S. Endymion Wreck –South of Big Sand Cay
5. East Bay Islands National Park – North Caicos	16. Lake Catherine Nature Reserve – West Caicos		31. Molasses Reef Wreck – South East of West Caicos
6. Fort George Land and Sea National Park – North of Pine Cay	17. North, Middle and East Caicos Nature Reserve		32. Salt Works and Village – Salt Cay
7. Grand Turk Cays Land and Sea National Park – Grand Turk	18. North West Point Pond Nature Reserve – Providenciales		33. Sapodilla Hill Rock Carving - Providenciales
8. North West Point Marine National Park - Providenciales	19. Pigeon Pond and Frenchman's Creek Nature Reserve – Providenciales		
9. Princess Alexandra Land and Sea National Park – Providenciales	20. Princess Alexandra Nature Reserve – Little Water, Donna and Mangrove Cays		
10. South Creek National Park – Grand Turk	21. Pumpkin Bluff Pond Nature Reserve – North Caicos		
11. West Caicos Marine National Park – West Caicos	22. Vine Point (Man O'War Bush) and Ocean Hole Nature Reserve – Middle Caicos		
	34. East Harbour Lobster and Conch Reserve – South Caicos		

But in recent years the government has entertained development proposals relating to terrestrial protected areas that on the face of it are proscribed by this protected area legislation. While some protected areas are open to limited "conforming use"[10] development, recent development proposals have not been of this kind – being of "non-conforming use" and incompatible with the objectives of protected areas management. That such developments have been entertained reflects a view by some that too much land is locked away in protected areas, that nothing is being done to develop and exploit the many benefits of the Protected Area System, and thus that it would be better to let the commercial interests that have the wherewithal to reveal the commercial potential of this land get on and develop the land - rather than have the land un-used and out of reach of most people. These commercial interests seek to cherry-pick development sites within the Protected Area System.

Not everyone agrees with this argument. But the lobby to prevent any erosion of the Protected Area System is not helped by generally poor public knowledge and awareness of the Protected Area System and what it stands for, a misplaced public perception that protected areas are "no go" areas, and the absence of any viable funding mechanism by which the Protected Area System may be better opened up to the public and thus the substantial economic potential of the Protected Area System (a key rationale behind its formation) exploited. There is limited outcry to instances of encroachment of the PAS when most of the indigenous population are more interested in knowing when and how they will benefit materially from the economic success story that is the TCI – because for many, and particularly those away from the tourism capital of Providenciales, this boom seems to have left them by. Further, the sociology of these communities has been significantly altered as a result of the scarcity of economic opportunity on these islands - communities are fragmenting in the pursuit of higher standards of living (Mackenzie & Thomson 1995) through the migration of the children and men-folk of these communities to seek work on Providenciales, or in the Bahamas or the United States, leaving behind an aged and female dominated community.

So there are the two opposing economic strands to the development equation:

- the strand that proposes that develop opportunities should not be constrained by the restrictive use covenants of the Protected Area System, and
- the strand that suggests that the restrictive use covenants of the PAS actually underpin, strengthen and enhance the value of the commercial developments that take place outside the PAS, both now and in the future.

But at the bottom of this is the matter of investor confidence:

- how is investor confidence affected by recognition that there is little public or political resistance to the erosion of a Protected Area System that has been enshrined in law;
- how is investor confidence affected by recognition that past investment in tourism and residential development on the basis that no similar development will take place in an adjoining Protected Area can have that investment undermined by a reversal of the *status quo*?

1.3 The Terms of Reference for this study

To better inform the merits and demerits of each argument, the government has called for a review of the Protected Area System in respect of its ecological and socio-economic significance to the Turks and Caicos Islands. Consultants have been asked to undertake the following:

- an examination of the protected areas system and individual parks in the context of their overall contribution to the national development of the TCI;
- an examination of the history of the establishment of the PAS and the suitability of the criteria used in the process;

[10] "Development should be under the principle of conforming use. A gambling casino is not conforming use in a natural environment; a sports fishing facility is conforming use." Ray and Sprunt (1972). This concept has subsequently been captured and expanded upon within the National Parks and physical planning legislation.

- production and application of updated criteria for the establishment of PA's in TCI;
- the undertaking of island-wide surveys to determine the views of local communities on the Protected Area System, and the current and potential socio-economic contribution of the PAS to local communities;
- the undertaking of a review of the areas of land lying within the boundaries of the PAS relative to areas of unprotected land, and particularly the ecological significance of the areas within the protected areas relative to those without – responding to the question of "are we protecting the right bits?";
- an examination of the developments that are being proposed in protected areas, in the light of the overall national interest and the benefit flows from these or similar types of development;
- an examination of the potential benefit flows arising from "conforming use" developments within or associated with the PAS.
- the provision of recommendations for changes to the PAS – in respect of their number and scale, including recommendations where appropriate for re-categorisation, de-designation, new sites, and site management (including the role of the DECR and the National Trust in such management).

1.4 Report layout

This report examines the Turks & Caicos Islands System of Protected Areas – its National Parks, Nature Reserves, Sanctuaries and Areas of Historic Interest. This examination is presented sequentially according to three view-points:

- **Section 1** (Chapters 2) - The historical basis for the Protected Area System and how it came into being.
- **Section 2** (Chapters 3 & 4) - A description of the Protected Area System as it is today – its rationale, and its ecological, social, cultural and economic status.
- **Section 3** (Chapters 5 & 6) – Argumentation and debate as to the role of the Protected Area System in the future development of TCI, and conclusions and recommendations as to how the system might be modified to best meet national obligations and ambitions.

2. Background information

2.1 The natural processes of the islands

The islands of TCI sit atop two carbonaceous platforms that form part of a larger physical feature – the Bahamas Plateau – that lies between the main US land mass and the two related tectonic plates of Cuba and the Caribbean Plate (**Figs 2 & 3**). To the north west of TCI lie the banks and islands of the Bahamas, and to the south east lie the Mouchoir and Silver Banks – two shallow-water carbonaceous platforms, but with no features breaking the water surface.

These carbonaceous platforms have developed over millions of years through a process of precipitation from seawater. This process of precipitation continues to this day and its effects can be seen in the growth of sand bars to the rear of the islands of Middle and East Caicos and those associated with Little Ambergris Cay.

Fig 2 – The gross topology of TCI in relation to the Ocean, the Atlantic rim and the Caribbean

Source:

The surface geology of TCI has been determined by the impact of sea level change in combination with the moulding effects of storm surges, hurricanes and wind. In this, hard corals have found foothold in the shallow waters on and at the fringes of the carbonaceous platforms, forming limestone accretions that have grown in depth and width according to local sea conditions and to sea level. As sea levels have risen, so these coral accretions have grown upwards; as sea levels have fallen, so these accretions have formed dry land. The impacts of current, wind, storm and hurricane have then built up land around these exposed accretions, forming the varied terrestrial and underwater landscape found today (**Fig 4**). These processes are dynamic and ongoing.

These physical features provide the foundations for the ecology of the islands – providing different habitats for trees and plants, and for invertebrate and vertebrate animals. The principal habitats found in TCI are shown in **Fig 5**.

Finally, the natural history of the islands is moulded and impacted by man – through his settlement patterns, his use of land, and his exploitation of available natural resources.

Fig 3 – The location of TCI

2.2 Human settlement patterns of TCI[11]

When under Taino occupation settlement appears to have been in small communities in low-lying areas at the fringes of the lagoons. Subsequently settlement became concentrated around the salinas of Grand Turk, later extending to Salt Cay and then South Caicos (16th, 17th, 18th and 19th centuries),

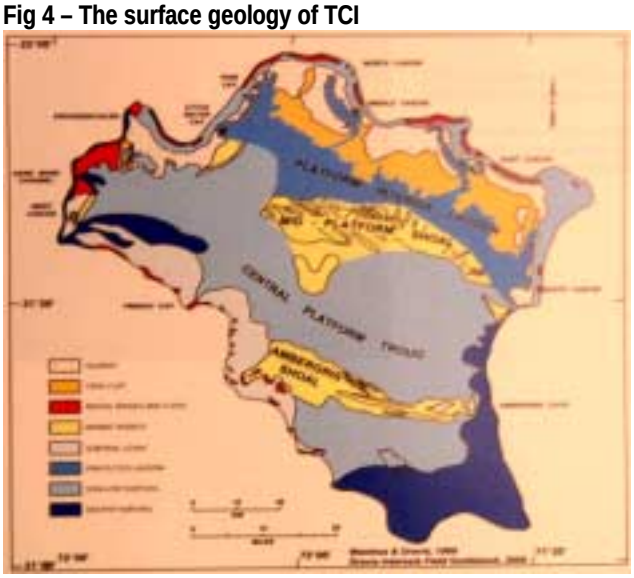
[11] *For sections 2.2 and 2.3 we drawn on the consolidated historical information presented in "Turks Islands Landfall: a history of the Turks & Caicos Islands" by H. E. Sadler, edited by Marjorie Sadler and Karen Collins, expanded by reference to government documents and field research.*

where Bermudan merchants settled a population of "salt-rakers" in the early to mid-18th century comprising people of African descent sold into slavery.

The islands' population was boosted again a little later, with the establishment of cotton plantations at the end of the 18th century, located on the larger of the Caicos Islands. But this form of cultivation was relatively unsuccessful and short-lived (cotton production was continued for some time, but most plantations were non-viable), and land-use returned to small-holder cultivation to support the subsistence requirements of the worker population left *in situ* as these ventures folded. This population of plantation workers comprised, in the main, people of African descent brought as first or second generation slaves from the American mainland by the landowners loyal to the British Crown who were given land in the Caicos Islands at the time of American Independence. In general, these former plantation workers settled in the areas of the original plantations (mainly North and Middle Caicos) and, along with the salt-rakers, formed the main population of TCI.

Slavery was abolished in 1834, allowing a degree of self-determination for these formerly enslaved labourers – though they had limited wherewithal to exercise such self-determination. With the administration of the islands based on Grand Turk, with an outlying office in South Caicos, the inhabitants of the settlements of the other Caicos islands were rather left to their own devices, engaging in a very much hand to mouth existence. This situation lasted from the mid-nineteenth century to the mid-twentieth century.

Fig 4 – The surface geology of TCI



Effort was made to stimulate agricultural production for the supply of fruit and vegetables to the islands by the establishment in 1882 of the settlement of Kew in North Caicos. Towards the end of the nineteenth century ventures to cultivate and harvest sisal were established on West and East Caicos, and cattle ranching was tried on East Caicos – all initiated and owned by outsiders. From the early twentieth century, exports of sponge and dried conch meat were initiated, based on the efforts of indigenous fishermen located on the islands' fishing capital of South Caicos.

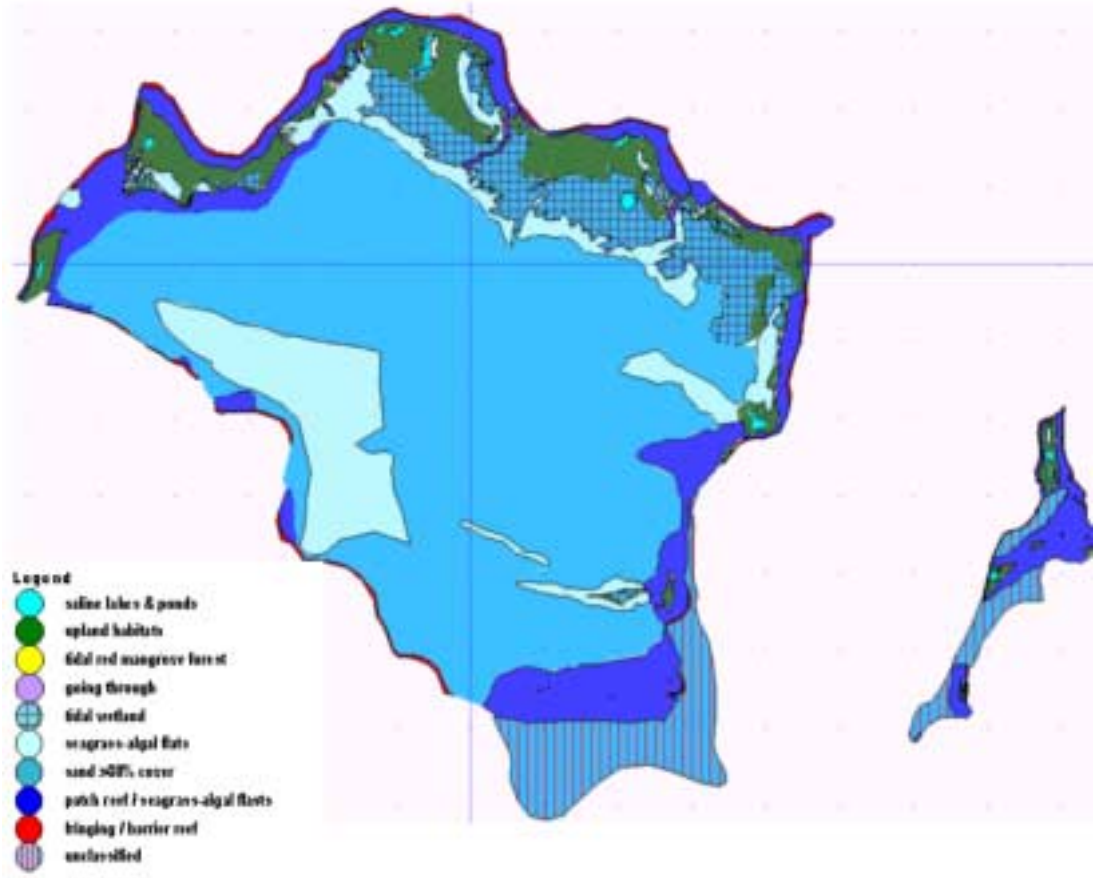
2.3 The impacts of human settlement on the environment

Up until the mid-twentieth century the main impacts of man on the environment were large scale clearing of high forest, dwarf forest and ground vegetation – first to facilitate large scale salt production on Grand Turk, Salt Cay and South Caicos, and later to facilitate cotton cultivation on North and Middle Caicos and on Providenciales. Further, but less intrusive, clearance took place on West and East Caicos to facilitate sisal cultivation.

Slash and burn agriculture was practiced on a subsistence basis, but long-term small-holder cultivation was practiced on particularly fertile land associated with the areas of Lorimers (Middle Caicos), Kew (North Caicos), the western edge of North West Point (associated with the settlement of Blue Hills on Providenciales) and the area to the back of what is now Grace Bay (associated with the settlement of the Bight, Providenciales). The shallow sea areas within sailing range of South Caicos were exploited for sponge in the early part of the twentieth century, and the conch resources of the Caicos Bank have been steadily harvested over the first half of the twentieth century.

The most significant impacts of man up until the mid-twentieth century have been the felling of most large hardwood trees – though stands of native pine are still to be found in the Pine Yards of North and Middle Caicos (though currently threatened by the recent introduction of an alien scale insect), and large casuarinas (a non-native invasive species) are to be found along exposed sandy lagoon margins.

Fig 5 – A habitat map of TCI



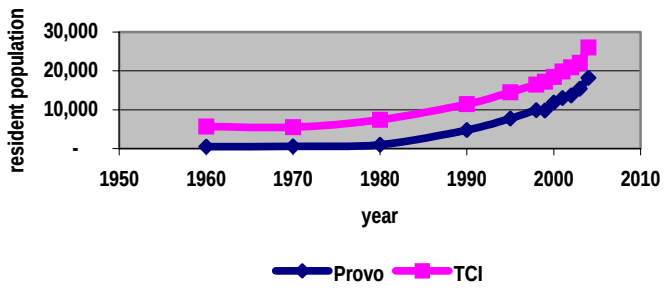
2.4 Development in the late 20th century

For the hundred years running up to 1976, TCI was administered by a resident Administrator appointed by the British government. From 1873 to 1962 TCI was administered as an outlying territory of the British colony of Jamaica, but when Jamaica achieved independence from the UK in 1962, administration was passed to the Bahamas. But this too sought and achieved independence from the UK in 1973. Reflecting these new circumstances, in 1976 a new constitution for TCI was drawn up, a Governor was appointed, and a new government duly elected.

Since this time TCI has had its own elected government headed by the Chief Minister. It exercises decision-making through an Executive Council (Exco) headed by the Chief Minister, and a Legislative Council (Legco) headed by a Governor appointed by the Queen. The UK retains responsibility for the country's external affairs, internal security and the public service, but in these and other matters the Governor is expected to seek and take the advice of Exco.

The modern development of the TCI economy is generally considered to have commenced with the registration of the Provident Company, a development company established by a group of outside investors in 1967. They applied for and were given title to 4000 acres of Crown land on the island of Providenciales on provision that they developed a

Fig 6 – Growth in the resident population of Provo and TCI



commercial airstrip, a marina and a hotel. By 1970 the company had constructed a 4,500 foot surfaced airfield on Provo, developed the Turtle Cove Marina, and opened the Third Turtle Inn, a hotel, at Turtle Cove. Much of the 4,000 acres of land was parcelled up for private development and sold or leased to private and corporate outside investors. In essence, this laid the foundation for what is now Turtle Cove and Grace Bay – with international access to the area facilitated through Grand Turk airport, direct to the Provo airstrip, or by sea to Turtle Cove Marina.

Grand Turk remained the administrative capital of TCI, and its airport the main port of entry to TCI (of note, the first scheduled jet service from Miami to TCI (Grand Turk) commenced in 1976). But the opening up of the islands to tourism had well and truly begun (see **Fig 6**), heralding the return of several thousand Turks and Caicos Islanders who had earlier left the islands to participate in the construction of Freeport in the Bahamas. By 1984 the TCI government had further developed the infrastructure of Provo, by extending the Provo runway to 7,600 ft (suitable for commercial jets), installing 17 miles of paved road, and putting in a commercial cargo port facility at Gussy Cove (now South Dock). As part of this same initiative, Club Méditerranée opened its Club Med Village on Grace Bay in 1984. Today Grand Turk remains the seat of government, but Provo is the centre of the islands' tourism industry, and forms the core of the country's economy.

A large range of modern hotels and condominiums has now been constructed along Grace Bay, and all the central and eastern areas of Provo, from the front of the island to the back, have been parcelled off and sold as residential and commercial lots. The high ironshore ground to the southern edge of Chalk Sound has been developed as exclusive luxury residences, and marinas have been installed at Turtle Cove, Leeward Landing, South Side, and Long Bay. Most recently an early holiday village development on the western shore by Malcolm Roadstead (western edge of Providenciales) has been redeveloped as the top end Amanyara Resort, and there is continuing pressure to sanction large-scale development between the western edge of Blue Hills settlement and North West Point.

On other islands, in the late 1980s a luxury hotel and resort complex was developed on Parrot Cay, slightly to the east of Provo, which continues to attract a host of celebrity visitors and investors. A new luxury hotel and resort complex is now under construction on West Caicos, the first construction to take place on the island since the demise of its sisal industry back in the early 1890s. In addition the large exclusive Ambergris Cay Sporting Club development is taking shape on Great Ambergris Cay on Caicos Bank.

More modest developments have taken place on North and Middle Caicos but critical mass has yet to be achieved for developments on these islands. Small scale development has also taken place on Grand Turk, but matters have been stepped up a notch with the opening this year of a dedicated cruise ship terminal by Carnival Lines, which is expected to deliver cruise ship passengers to the small island of Grand Turk on an almost daily basis. Projections suggest that on an annual basis some 350,000 cruise ship passengers will disembark to enjoy the extension of cruise ship facilities enclosed within the cruise ship terminal itself, and to explore the range of excursions, activities and facilities on offer on the island.

The impacts of these developments on the islands have been considerable. Grace Bay, bounded by one of the longest uninterrupted golden sand beaches of the islands, now sports a skyline of hotel and condo tower blocks, interspersed by small forests of the tower cranes being use to erect yet more five and seven storey buildings. Leeward Highway and its Millennium Highway westerly extension now run from the Conch Farm at Leeward Going Through all the way up to North West Point. The exposed areas of cream-white limestone mark cleared building sites and roads and tracks cut through to open up new development areas in Long Bay Hills, by Discovery Bay, and at the back of Juba Pond Salinas, and to cut the canals that will service new residences at Cooper Jack. The prominent roof tops of the luxury villas of Chalk Sound and Silly Creek can be seen from most parts of the Frenchman's Creek and Pigeon Pond Nature Reserve, and from far out on the Caicos Bank.

Over a short few years the skyline of Provo has been converted from one of tree covered hilltops, with the occasional rooftop showing through, to one of high-rise blocks along Grace Bay, and multi-coloured roof tops along the crests of most other hills. The commercial infrastructure of Provo has also grown apace, with large areas given over to warehousing, retail malls and office complexes, and the traditional

settlements of the islands – Blue Hills, the Bight and most notably Five Cays – rapidly expanding in order to accommodate the increasing workforce needed to support the construction boom and the service economy. And yet there is next to no evidence of such changes on the other islands, but there is little doubt that the next waves of development are lining up to hit North Caicos (a new cargo port in the making to facilitate delivery of building materials, and a widening of the airstrip to accommodate commercial jet aircraft) and Grand Turk (various modern developments in the pipeline).

2.5 The impacts of modern development on the natural

As far as the natural heritage of the country is concerned, the main changes relate to the handling of larger numbers of people. Key elements are:

- managing and moderating the visual impact of construction, buildings, and physical planning;
- the containment and management of the increased volume of organic and inorganic waste that accompanies population increase – through specification of sewage systems, and utilisation of grey water systems for irrigation;
- controlling the incidence and impact of pollution – from sediment and increased run-off, to disposal of high salinity waste water from RO (reverse osmosis) plants, from non degradable litter, to faecal contamination of the freshwater lenses and bathing water;
- the management of vegetation clearance so as to mitigate the increased erosion and flood risks that this engenders;
- protection against the introduction of invasive plant and animal species;
- the management of water sports activities so as to segregate incompatible pursuits, and to spread the burden of use – for example separation of snorkellers and divers;
-
- minimisation of damage to the environment - provision of moorings; holding of operators to strict codes of practice; establishment of safe practices for fuelling, boat cleaning, and sewage / wastewater removal;
- the management of materials movement – aggregate dredging, sand extraction, channel dredging, beach nourishment;
- control of the demarcation of building lines and the use of hard engineering in development of coastal defences (for example planning for the impacts of longshore drift along Grace Bay).

2.6 Building the Protected Area System – the work of the National Parks Committee

Set against this upsurge in economic development, and the cautious emergence of a modern – and exclusive – tourism industry, the attention of government and various community leaders turned to the matter of ensuring that the very natural characteristics that tourists and investors look for in an exclusive holiday destination remained intact, that key natural features and environments were presented and managed for the enjoyment of not just visitors but also the islanders, and that any designation allowed for the maintenance of traditional uses – fishing, small-scale agriculture, crafts, bush medicine, etc..

The key rationale for establishment of a Protected Area System, derived from this argument, can be expressed as two-fold:

- **Economic** - to generate sustainable long-term economic benefits to the country and its people through maintenance of the high scenic and natural resources of the country that underpin the tourism industry and the quality of life of residents and visitors alike;
- **Natural** - to protect and manage the natural processes and resources of the islands to ensure the patency of island-building systems, the integrity of marine and terrestrial habitats, the

maintenance of natural island biodiversity, and the conservation of habitats, ecosystems and species particularly sensitive to human intrusion and the impacts of human settlement.

In 1969 Governor Wainwright established the first National Parks Committee for the purpose of examining the opportunities for establishment of a National Parks system. Specifically the Committee was tasked with recommending marine and terrestrial areas of the Turks & Caicos Islands that should be demarcated as subject to restrictive use so as to protect ecosystems sensitive to human intrusion, and/or to maintain the quality and integrity of areas of outstanding natural beauty for the enjoyment and benefit of residents and visitors to the islands.

This First Committee is thought to have comprised[12]:

- The Hon. Robin Wainwright
- Tim Nicholl
- Liam Maguire
- Bert Malcolm
- Sterlin Garland
- Charles Hutchings

This Committee recommended the establishment of three sanctuaries, eight reserves and one site of special historic interest[13].

The following year, further to research by specialists contracted to take a more in-depth look at the protected area system (culminating in the Ray & Sprunt Report of 1971), the National Parks Committee endorsed proposals:

- to extend the system to incorporate a fourth designation, that of parks – essentially a recreational designation with a focus on public access and underpinning elements of recreational and leisure economic activity;
- to increase the extent of the Protected Area System (PAS) - involving consolidation of some of the previous year's recommendations within larger parks and reserves, and culminating in a system of 14 national parks, 4 underwater parks, 3 nature reserves, 6 sanctuaries, and one site of special historic interest;
- to establish a Department of Environment and Heritage to take forward these proposals, and bring these designations on to the Statute Book.

This selection of sites was bound into primary legislation in the form of the National Parks Ordinance of 1975.

No further action was taken until the mid-1980s when a second National Parks Committee was convened under the Ministerial leadership of Llewlyn Handfield to take matters forward, assisted by Sterlin Garland and Royal Robinson as Permanent Secretaries. This Committee comprised[14]:

- Colin Floyd
- Oswald Williams
- Lou Handfield
- Michael Taylor
- Washington Misick
- Lynn Garland
- Royal Robinson
- Eric Lightbourne
- Patricia Bradley
- Sterlin Garland
- Ethlyn Gibbs
- Bernie Pauncefort (for the Ramsar Site)

Following consultation and drawing on the considerable local knowledge of the Committee members, a long-list of 50 candidate sites was drawn up, from which 33 sites were chosen for designation. These comprised 11 National Parks, 11 Nature Reserves, 6 Sanctuaries, and 5 Sites of Historic Interest.

2.7 Site selection criteria

The criteria used to by the National Parks Committees in 1970 and 1985/86 to draw up a Protected Area System may be stated simplistically as:

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[12] personal communication with Chuck Hesse, 2006

[13] Ray C. & A. Sprunt (1971) Parks and Conservation in the Turks & Caicos Islands

[14] personal communication with Chuck Hesse, 2006

- **National Parks** and **Site of Historic Interest** have been selected for their potential to underpin economic activity (primarily associated with leisure and recreation), with the preservation of natural and historic characteristics of secondary though fundamental consideration.
- **Nature Reserves** and **Sanctuaries** have been selected for the purposes of protecting particular habitats, natural features and species, with recreational and economic uses of secondary consideration.

These characteristics can be clearly identified in the outputs of these committees, and they have been captured in the National Parks Ordinance of 1975, the National Parks Order of 1988 and its replacement of 1992, and the National Parks Regulations of 1992.

But the actual criteria-set used to make the selection of sites was more complex. The Ray & Sprunt report of 1971 suggests that far from the original sites being selected at the whim of visiting specialists on the basis of cursory examination, it was based on a selection made by knowledgeable island-based individuals augmented by the views of islanders, and corroborated by outside specialists using a comprehensive set of selection criteria. The criteria used were not explicitly recorded, but can be drawn from within the Ray & Sprunt report of 1971. These criteria very clearly divide into economic, natural and historic / cultural, as shown in **Table 1**.

Table 1 – Summary of criteria used in the original, 1970, selection of Protected Area sites

Economic

1. Conserve marine resource for benefit of resident population and tourism
2. Preserve the productivity and natural beauty of the island systems
3. Maintain the aesthetic value of the islands and their various habitats
4. Development should not violate the islands' beauty and relative remoteness
5. Strong emphasis on designation to protect and exploit recreational potential
    - *Marine areas suitable and accessible to shore for general swimming and snorkelling in support of tourism*
    - *Marine areas suitable for dive tourism – particularly deep water reefs offering high concentrations of wildlife*
    - *Protect areas with strong and concentrated terrestrial wildlife values – such as tree and mangrove stands, salinas, freshwater and saline ponds, some cays, etc*
    - *Protect and provide access for public use to viewing points that offer views over spectacular natural features*
    - *Conserve areas of particular scenic quality – underwater, physical, vegetation features*
    - *Protect cays and beaches suitable for recreational use – boating, picnicking, swimming, snorkelling and related uses*
    - *Protect cuts and "going-through" channels as of particular scenic value and offering opportunities for exploration by canoe and small boat*
    - *Protect high quality physical features – such as hill-tops, blue holes, caves, etc.*
6. Parks, and to a lesser extent reserves, should be easy to access by locals and tourists – proximity to settlements, proximity to tourism facilities, ease of road and foot access, ease of beach access
7. Parks, and to a lesser extent reserves, should possess features of general interest (natural, scenic, historical, cultural, rare or unique features, special and representative habitats, ecological and species mixes)
8. Within park boundaries, and to a lesser extent reserves, visitors should be able and encouraged to view and access the special features of the park or reserve without adversely impacting on the environmental or built features that make the park special
9. Fishing, trapping and spearfishing should be controlled where these adversely impinge on the quality of snorkelling and diving experience in those areas of particular tourism value

Natural

Integrity

10. Parks, reserves and sanctuaries should be "natural units"
11. Marine resource cannot be conserved apart from the land area – conservation of islands systems in particular should involve integrated conservation and development of both land and sea

12. Maintenance of the patency of main elements of the island building processes 13. Maintenance of essential dynamics of island physical and ecological systems 14. Lowlands, and especially mangrove, is the base of inshore marine nutrition and should be conserved – and should not be subject to dredge and fill developments 15. Protect cuts and "going-through" channels as essential conduits for the circulation of water between the banks and the offshore waters, and thus maintaining the natural dynamics of island building, nutritional cycling and habitat stability 16. Protect large representative areas of black mangrove and associated habitat as important elements in the dynamic processes of island building and nutrient cycling **Representitiveness** 17. Regional - Retain some areas because they are in as near their natural undisturbed state – unusual in the American tropics 18. Local - Protect red mangrove stands, associated salinas and a relevant buffer zone as of particularly high ecological value, and a scarce resource type 19. Local - Protect representative areas of patch reef as a particularly rich habitat type 20. Local - Protect representative cays and their surrounding marine habitats as rich, varied and fragile habitat types **Protect fragile ecosystems / species** 21. Protect shallow water reefs immediately offshore, which are likely to be most affected by people / tourism pressure 22. Protect iguana habitat – notably on cays where un-natural predators are absent **Protect species / habitats particularly sensitive to human intrusion** 23. Protect nesting populations of birds – closure to landing during nesting season 24. Protect turtle nesting beaches closure to landing during nesting / incubation season
Historical 25. Sites of historic interest 26. Sites of cultural interest

These criteria were once again utilised in the work of the National Parks Committee in the mid-1980s.

What emerged from the deliberations of the 1970 National Parks Committee was a recommendation for establishment of 18 National Parks, 3 Nature Reserves, 6 Sanctuaries and 1 Site of Historic Interest. The National Parks Committee of 1985/85 took this recommendation as its starting point, but modified the selection by drawing up a long-list of 50 candidate sites, from which it eventually recommended 33 sites for designation - 11 National Parks, 11 Nature Reserves, 6 Sanctuaries, and 5 Sites of Historic Interest – consolidating some of the earlier choices into more manageable units, and adding a few more sites reflecting the economic interests of a more consolidated tourism industry.

2.8 Establishment

The National Parks Ordinance of 1975 established the legal framework for these parks, but it was not until 1987 that the Department of Environment and Heritage was established, and 1988 when the first protected areas were officially designated under the National Parks Order of 1988. In 1992 the National Parks Order of 1988 was revoked and replaced by the National Parks Order of 1992, which established the 33 protected areas that remain on the Statute Books to this day. These comprise 11 national parks, 11 nature reserves, 4 sanctuaries, and 7 historical sites. Short descriptions of the main features of each of these sites are shown as **Appendix 1**.

At the same time the National Parks Regulations (1992) set out details of permitted and prohibited activities, zoning, fees, enforcement, penalties and licenses for the different categories, including specific zoning for the Princess Alexandra National Park.[15][16]

To date, due largely to the limited resources available to the DECR, only one of the protected areas is actively managed by that body – Princess Alexandra Land and Sea Park. DECR is in the early stages

[15] Mackenzie C. & M Thomson (1995) National Protected Areas System, Turks & Caicos Islands, BWI – report on the financial and social planning mission

[16] Over the period 2004/05 revisions to the National Parks Ordinance 1998 were prepared by DECR and submitted to the National Parks Environmental Advisory Committee (NPEAC) and ExCo for consideration.

of working up plans for other sites on Grand Turk. The National Trust for TCI, a subscription organisation established by statute in 1992, manages the Little Water Cay, a part of the Princess Alexandra Land and Sea National Park, as a managed iguana conservation area. The National Trust also manages Cheshire Hall on Provo, the remains of perhaps the grandest of the cotton plantation houses. The National Trust has also, with international partners, been at the forefront of developing plans for the management of the North, Middle and East Caicos Nature Reserve, including the Ramsar site and Conch Bar Caves.

3. Re-assessment of site selection

3.1 Changing environmental commitments

In **Chapter 2** we have described the origins of the current Protected Area System. We have also shown that the emergence of the particular sites that currently form the PAS has been due the application of a systematic process that, though not fully documented and thus not totally transparent, has yielded a rational and logical choice and distribution of sites.

Conclusion - The emergence of the particular sites that currently form the PAS has been the result of the application of a systematic process that, though not fully documented and thus not totally transparent, has yielded a rational and logical choice and distribution of sites.

Conclusion - Since the establishment of the PAS, the rationale behind its formation and the choice of sites has been substantially strengthened with the emergence of greater international consensus and agreement on nature conservation, the need to recognise and manage the diversity of global biological resources, and the fragility and importance of the marine environment.

Four agreements are of particular significance:

The Ramsar Convention on Wetlands (1971)

The Convention on Wetlands, signed in Ramsar, Iran, in 1971, is an intergovernmental treaty that provides the framework for national action and international cooperation for the conservation and wise use of wetlands and their resources. There are presently 152 Contracting Parties to the Convention, with 1611 wetland sites, totalling 145.2 million hectares, designated for inclusion in the Ramsar List of Wetlands of International Importance. The UK became a signatory to this Convention in 1976.

The North, Middle and East Caicos Nature Reserve was recognised as an International Ramsar site in 1990, following its designation as a Nature Reserve by the TCI government. Its submission for consideration as a Ramsar site links closely with the ambitions and obligations of TCI in the context of the SPAW Protocol, described below.

The Protocol Concerning Specially Protected Areas and Wildlife (SPAW) in the Wider Caribbean Region (1990)

In 1983 the Convention for the Protection and Development of the Marine Environment of the Wider Caribbean Region – the more generally termed Cartagena Convention - came into being in 1983. The UK was one of the founding signatories to this convention. In January 1990 a Protocol to this Convention was developed covering **S**pecially **P**rotected **A**reas and **W**ildlife. This protocol is most commonly referred to simply as SPAW. It was adopted at a meeting held in Kingston, Jamaica on 18 January 1990, when the UK signed up to this protocol.

The nature of the relationship between the UK and its dependent territories is such that the latter are broadly required to comply with such international agreements as the UK has signed up to – where they have the appropriate systems in place to do so. On this basis the Turks and Caicos Islands are in effect signatories to both the Convention and its Protocols, and the actions of its government and its people are required to be in compliance with the Convention and its Protocols.

The objectives of the SPAW Protocol are to protect, preserve and manage in a sustainable way:

1) areas and ecosystems that require protection to safeguard their special value,

2) threatened or endangered species of flora and fauna and their habitats, and

3) species, with the objective of preventing them from becoming endangered or threatened.

The SPAW Protocol stresses the importance of protecting habitats as an effective method of protecting the listed species. Protection is focused on fragile and vulnerable ecosystems as a whole, rather than on individual species. The SPAW Protocol is, in many respects, a precursor to what the international community has subsequently endorsed on a global level, in particular through the Convention on Biological Diversity (CBD).

The TCI Protected Area System in most respects implements the obligations and responsibilities encapsulated in the SPAW Protocol. The designation of the North, Middle and East Caicos Nature Reserve as a Ramsar site of international importance is an extension of this. It is of note that in 2000 a Memorandum of Cooperation was signed by the Secretariat of the Convention for the Protection and Development of the Marine Environment of the Wider Caribbean (Cartagena, Colombia, 1983) and the Bureau of the Convention on Wetlands (Ramsar, Iran, 1971).

The Convention on Biological Diversity (1992)

In 1992, the largest-ever meeting of world leaders took place at the United Nations Conference on Environment and Development in Rio de Janeiro, Brazil. An historic set of agreements was signed at the "Earth Summit", including two binding agreements, the Convention on Climate Change (which targets industrial and other emissions of greenhouse gases such as carbon dioxide) and the Convention on Biological Diversity (the first global agreement on the conservation and sustainable use of biological diversity). The biodiversity treaty gained rapid and widespread acceptance. Over 150 governments signed the document at the Rio conference (including the UK), and since then more than 187 countries have ratified the agreement.

The Convention has three main goals:

- The conservation of biodiversity,
- Sustainable use of the components of biodiversity, and
- Sharing the benefits arising from the commercial and other utilization of genetic resources in a fair and equitable way

The Convention recognises-for the first time-that the conservation of biological diversity is "a common concern of humankind" and is an integral part of the development process. The agreement covers all ecosystems, species, and genetic resources. It links traditional conservation efforts to the economic goal of using biological resources sustainably. It sets principles for the fair and equitable sharing of the benefits arising from the use of genetic resources, notably those destined for commercial use. The Convention is legally binding; countries that join it are obliged to implement its provisions.

The Convention on Biological Diversity, as an international treaty, identifies a common problem, sets overall goals and policies and general obligations, and organises technical and financial cooperation. However, the responsibility for achieving its goals rests largely with signatory countries themselves.

Under the Convention, governments undertake to conserve and sustainably use biodiversity. They are required to develop national biodiversity strategies and action plans, and to integrate these into broader national plans for environment and development. This is particularly important for such sectors as forestry, agriculture, fisheries, energy, transportation and urban planning. Other treaty commitments include:

- Identifying and monitoring the important components of biological diversity that need to be conserved and used sustainably.

- Establishing protected areas to conserve biological diversity while promoting environmentally sound development around these areas.
- Rehabilitating and restoring degraded ecosystems and promoting the recovery of threatened species in collaboration with local residents.
- Respecting, preserving and maintaining traditional knowledge of the sustainable use of biological diversity with the involvement of indigenous peoples and local communities.
- Promoting public participation, particularly when it comes to assessing the environmental impacts of development projects that threaten biological diversity.
- Educating people and raising awareness about the importance of biological diversity and the need to conserve it.

The Environmental Charter signed by the Governments of the UK & TCI (2000)

In its 1999 white paper on the United Kingdom's Overseas Territories, the UK Foreign and Commonwealth Office identified an objective, common to the UK and the territories, of using the environment in a sustainable manner to provide benefits to the residents of the territories whilst also conserving the natural heritage. Within this objective, specific aims were identified with the intention that these aims should be achieved through the drafting and implementation of environmental charters agreed between the UK and the Overseas Territories.

These aims may be summarised as:

- to promote the sustainable use and management of the natural and physical environment of the Overseas Territories;
- to protect fragile ecosystems from further degradation, and to conserve biodiversity;
- to promote sustainable alternatives to scarce resources or species which are used for economic purposes;
- to enhance participation in, and implementation of, international agreements in Overseas Territories.

In relation to TCI, an Environment Charter was drawn up and signed by the UK and TCI governments in 2002. The terms of the Environment Charter committed the two parties to the following:

Commitments

The government of the UK will:	**The government of the Turks and Caicos Islands will:**
1. Help build capacity to support and implement integrated environmental management which is consistent with the Turks and Caicos Islands' own plans for sustainable development.	1. Bring together government departments, representatives of local industry and commerce, environment and heritage organisations, the Governor's office, individual environmental champions and other community representatives in a forum to formulate a detailed strategy for action.
2. Assist the Turks and Caicos Islands in initiating, reviewing and updating environmental legislation.	2. Ensure the protection and restoration of key habitats, species and landscape features through legislation and appropriate management structures and mechanisms, including a protected areas policy, and attempt the control and eradication of invasive species.
3. Facilitate the extension of the UK's ratification of Multilateral Environmental Agreements of benefit to the Turks and Caicos Islands and	3. Ensure that environmental considerations are integrated within social and economic planning processes; promote sustainable

which the Turks and Caicos Islands has the capacity to implement (and a desire to adopt).	patterns of production and consumption within the territory.
4. Keep the Turks and Caicos Islands informed regarding new developments in relevant Multilateral Environmental Agreements and invite the Turks and Caicos Islands to participate where appropriate in the UK's delegation to international environmental negotiations and conferences.	4. Ensure that environmental and environmental health impact assessments are undertaken before approving major projects and while developing our growth management strategy.
5. Help the Turks and Caicos Islands to ensure it has the legislation, institutional capacity (technology, equipment, procedures) and mechanisms it needs to meet international obligations.	5. Commit to open and consultative decision-making on developments and plans which may affect the environment; ensure that environmental impacts assessment include consultation with stakeholders.
6. Promote better cooperation and the sharing of experience and expertise between the Turks and Caicos Islands, other overseas Territories and other states and communities which face similar environmental problems.	6. Implement effectively obligations under the Multilateral Environmental Agreements already extended to the Turks and Caicos Islands and work towards the extension of other relevant agreements.
7. Use UK, regional and local expertise to give advice and improve knowledge of technical and scientific issues. This includes regular consultation with interested no-governmental organisations and networks.	7. Review the range, quality and availability of baseline data for natural resource sand biodiversity.
8. Use the existing Environment Fund of the Overseas Territories, and promote access to other sources of public funding, for projects of lasting benefit to the Turks and Caicos Islands' environment.	8. Ensure that legislation and policies reflect the principle that the polluter should pay for prevention of remedies; establish effective monitoring and enforcement mechanisms.
9. Help the Turks and Caicos Islands identify further funding partners for environmental projects, such as donors, the private sector or non-governmental organisations.	9. Encourage teaching within school to promote the value of our local environment (natural and built) and to explain its role within the regional and global environment.
10. Recognise the diversity of the challenges facing Overseas Territories in very different socio-economic and geographical situations.	10. Promote publications that spread awareness of the special features of the environment in the Turks and Caicos Islands; promote within the Turks and Caicos Islands the guiding principles wet out above.
11. Abide by the principles set out in the Rio Declaration on Environment and Development and work towards meeting International Development Targets on the Environment.	11. Abide by the principles set out in the Rio Declaration on Environment and Development and work towards meeting International Development Targets on the environment.

The relationship between the UK and its Overseas Territories is complex. The UK retains responsibility for defense and international relations, leaving the government of an Overseas Territory to manage internal affairs, albeit with the Queen's representative, the Governor, holding a pivotal role in LegCo. Under these conditions, where the UK is a signatory to International Agreements it is reasonable that the Overseas Territories will be expected, at such time as they have the wherewithal to do so, to comply with these obligations. Where an Overseas Territory is not able to comply with these, the UK has on obligation to work with the government of that OT to move to a position of compliance. The above Environment Charter seeks to formalise this relationship.

It is notable that the commitment under the Convention on Biological Diversity to develop a national biodiversity strategy is not included in the Environment Charter. Nonetheless, the commitment to develop a strategy to implement the Charter (as captured in Commitment 1) includes this, and it was in this context that TCI was the first territory to develop such a strategy. Any protected area system

requires a strategic context if it is to be effective, and it would be beneficial to build on the start made in the Environment Charter strategy adopted by the TCI Government in December 2003.

Recommendation – We are of the view that the Government of TCI should prepare a biodiversity strategy for the country as a means of providing a strategic framework for environmental policy, planning and management (bearing in mind that a Biodiversity Plan has already been developed for the Ramsar site under funding from the Darwin Initiative).

The TCI Protected Area System, drawn up the mid-eighties, reflects the principles incorporated into the various international, regional and national agreements described above, and the DECR has been working to further develop the legislation, background data, the Protected Area System itself, and codes of practice to better reflect these standards and agreements.

Conclusion – The conformation of the TCI Protected Area System drawn up in the mid-eighties faithfully reflects the principles incorporated in a range of international and regional Multilateral Environmental Agreements to which the UK is a signatory - most of which were developed in the 1990's.

But the Protected Area System has come under some criticism as the forces for conservation and development increasingly find themselves in a face off, rather than in a situation where they work hand in hand. In particular, the lack of transparency and documentation associated with the original choice of sites to be incorporated into the Protected Area System has allowed some to suggest that such choices were of an arbitrary rather than directed nature.

We have shown above in section 1 that far from being arbitrary, the process was relatively thorough, though somewhat less well documented and transparent than would have been desirable. There is really only one way of re-establishing the credibility of the system, which is to re-assess the original designations using an updated set of criteria – one that more overtly takes into consideration economic, cultural, and social dimensions as well the ecological. This process is described in the following sections.

3.2 Developing and applying a revised system for assessing the basis of Protected Area designation

The UK Government, and in effect the Government of TCI, signed up for the 1990 SPAW Protocol under the Cartagena Convention, and this provides a specific set of criteria for the designation and assessment of protected areas (the "SPAW criteria"). These criteria are primarily ecological, and serve as a starting point for re-appraisal.

In practice as we have shown in previous studies, protected areas also serve to maintain a range of other economic and social values, and it important to include these in any re-appraisal. Furthermore, the Protected Areas System in the Turks and Caicos Islands includes 4 designations with differing functions and values. The objectives and functions of these PAs are not rigorously defined in the early literature relating to their designation, nor in the existing National Parks Ordinance, and have been interpreted in various ways at various times. Broadly, our understanding of the historic and current rationale / objectives for the protected area system is as follows:

- **National Parks** serve as a framework for the promotion, conservation and management of sites where environmental quality is a key underpinning of tourism and recreational opportunity;
- **Nature reserves** serve a) to conserve representative, rare or attractive habitats and species; b) to maintain vital physical and ecological processes and services; c) as a recreational and educational resource for both local people and tourists

- **Sanctuaries** serve to conserve endangered or valued habitats, species or life stages which are vulnerable to human disturbance;
- **Historic sites** serve to conserve "an object of historical interest".

We therefore propose three additional subsets of criteria to allow for assessment against the above objectives and to encompass the broader economic and social values of PAs.

Ecological value (The SPAW Criteria)

1 **Representativeness**
The protected area **should** be representative of the region or eco-region's characteristic physiographic features, species, populations, habitats and ecosystem types and processes

2 **Naturalness**
The protected area should have a high degree of naturalness as a result of the lack of or low level of human-induced disturbance and degradation.

3 **Adequate size**
The protected area **must** have an adequate size to ensure the conservation of the elements for which it is listed

4 **Species/critical habitat**
The protected area **must** help prevent species from becoming endangered or threatened. The protected area should contain habitats and ecosystems that are critical to the survival and have recovery of endangered, threatened, endemic species (and those listed under the SPAW Protocol).

5 **Uniqueness**
The protected area **should** contain unique or rare species, habitats or ecosystems. An area or ecosystem is unique if it is among the few of its kind in the country or Wider Caribbean Region or has been seriously depleted across its range. The area may contain habitats that occur in a limited area or rare, endemic, threatened or endangered species that are geographically restricted

6 **Diversity**
The protected area should contain the variety or richness of species, communities, ecosystems, landscape, seascape and genetic diversity that allow for the conservation of their long-term viability and integrity, especially where there are endangered, threatened, endemic and/or migratory species (and those listed under the SPAW Protocol).

7 **Connectivity/coherence**
Protected areas that are adjacent, transboundary or ecologically connected and thus contribute to the regional network are valued components of the regional network and **should** be considered if nominated by the Parties which have jurisdiction over these areas.

8 **Resilience**
The protected area may contain biological components (habitats, species, populations that have the ability to recover from disturbances in a reasonable timeframe or are naturally resistant to threats such as climate change. For example, the protection of these areas may be able to enhance the recovery of damaged ecosystems elsewhere in the eco-region by providing a source of larvae and juveniles.

Economic resource value

9 **Renewable resources**
e.g. presence of fish nursery; silver palm; rush; medicines etc

10 **Recreational resources**
Attractive for tourism and recreation - e.g. landscape, specific interest [bird colony, iguana, beach, patch coral]

11 Opportunity for **sustainable recreational and business opportunities**
e.g. landing points; access; location; specific opportunities

Functional value

12 **Island building, stabilisation and physical protection**

13 **Contribution to wider system**
Nursery habitat; nutrient source and dispersal

14 **Waste assimilation and** maintenance of water and land quality

Social and cultural value

15 **Historic and archaeological value**

16 **Quality of life** of residents (traditional associations and activities; recreational opportunities; greenspace; amenity; wellbeing)

These criteria are not independent. A large part of the rationale for the ecological criteria is that they underpin many of the more direct economic and social values.

Taken as a whole the suite of sites should ensure the conservation *of all these values*, though particular sites may be selected, and appropriate designations applied, because they have exceptional value in relation to a particular sub-set of these values.

A final criterion, which is not a value criterion but rather an important decision criterion, should be considered in any selection process is **opportunity cost.** If alternate sites score equally and serve the same overall function, then that which is of lesser value for development should be chosen, although it should be noted that there is not always the available information on which to make this judgement.

We have assessed all the sites against this full criteria set. The detailed evaluation against the SPAW criteria is presented in the Site Assessment Annex. A summary of this assessment, but also including assessment against the economic and social criteria is presented in **Appendix 2.**

These assessments, recorded by us in spreadsheet form, should be considered as a work in progress. The reason for this is that the more we know about these sites the better we are able to make these assessments. This has particular relevance to the assessment of social and economic values, for example.

These assessments should be considered as an ongoing resource to be developed in the light of developing knowledge and local people's values. It could also form a useful workshop tool – for public meetings ideally facilitated by consultants / trained DECR staff – to engage local people more in considering the various values. It could also be used as a basis for developing management plans – most of the criteria can be rephrased as management objectives.

Recommendation – These assessments we have made of each site should be considered an ongoing resource to be developed in the light of developing knowledge and local people's values – particular through facilitated workshops to engage local people more in considering the various values. These assessments should also be used as a basis for developing management plans for each site.

In the following sections we offer a summary of this assessment with emphasis on the PA system as a whole.

3.3 Checking the extent to which the PAS is representative

Representativeness and size are particularly important criteria, and in many ways encompass the other SPAW criteria. Adequate representation of all major habitat types should ensure conservation of species and habitats, including exceptionally natural or unique examples. A key question is therefore "Is the PAS proportionate to the scale of TCI's natural environment, and representative of its major features?"

In assessing the distribution of such designations it is important to understand how the geological, physical, climatic and ecological characteristics differ across the islands (see **Fig 5**).

- The largest physical features of the islands are the tidal wetlands to the rear of North, Middle and East Caicos, and the accretion and sediment deposition areas to the south of these wetlands, extending from South Caicos to Long Bay along the eastern shoreline of Providenciales, and a second area to the west of Big Ambergris Cay.
- These areas are distinct from the fringing reefs and patch reef and seagrass areas that are typical boundary features of the Caicos and Turks banks, but which are a dominant feature of

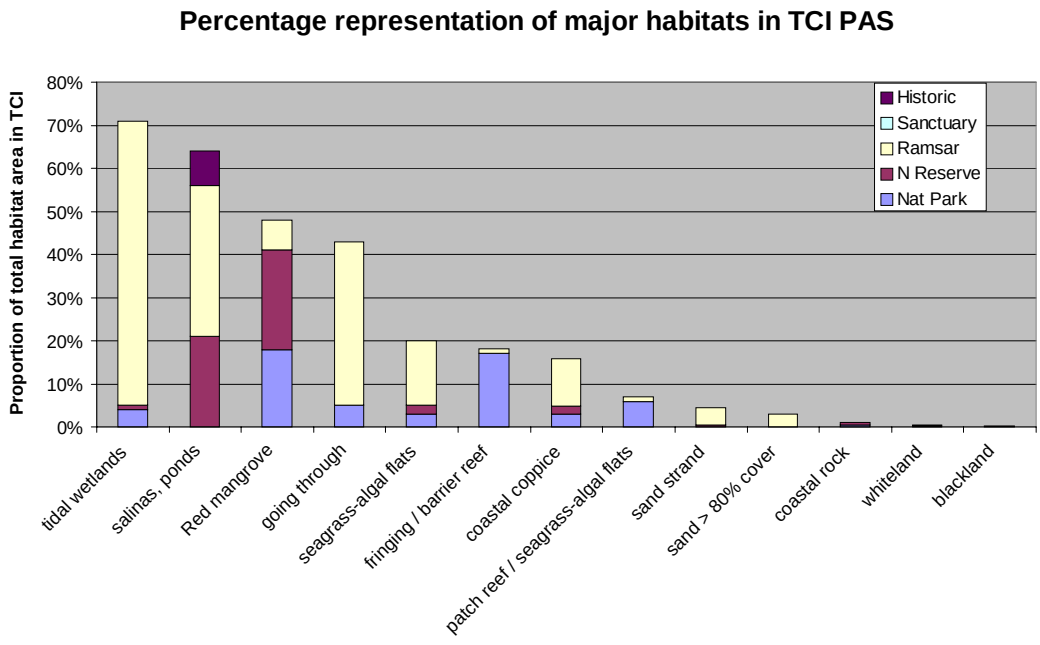
Provo and West Caicos, of the outer edge features running south from South Caicos along Long Cay, Big Ambergris Cay to The Seal Cays, and of Grand Turk, Salt Cay and Big Sand Cay.

- Annual rainfall generally increases east to west, hence the salinas of Grand Turk, Salt Cay and South Caicos were most suited to salt production, the higher rainfall found in North Caicos and Provo most suited to food crop production, and the arid nature of East and West Caicos most suited to sisal production.
- The combination of the predominant wind direction of NE across the Caicos Bank, and the tidal movement of water through the Caicos islands via the main "going through" channels and between the cays lying between Provo and North Caicos, and the area between Provo and West Caicos has a large influence on water movement, and the dynamic and differentiated ecologies that this produces.
- The unique physical, geological and ecological features of Chalk Sound, Pigeon Pond & Frenchman's Creek and West Caicos, not just in terms of TCI but in terms of the whole Bahamas platform, makes these stand out as special features.

In **Fig 7** (see also **Table A1** in **Appendix 3**) we assess the proportion of the different island habitats represented within the existing Protected Area System (PAS). Nine core habitat types have been selected (as represented in the habitat map in **Fig 5**).

If we take the island plateaux as a whole, the Caicos and Turks Banks have an area of some 613,014 hectares. Fifty per cent of this comprises shallow water sandy area (where sandy seabed accounts for over 80% of the seabed cover), and a further 25% comprises a mix of patch reef, sea grass and algal flats. 1.4% is made up of fringing and barrier reefs, and 7% of unspecified marine habitat type. 8% comprises a mix of "going-through" channels, tidal wetlands, tidal red mangrove forest, and saline lakes, ponds and salinas. The remaining 7.3% comprises dry terrestrial habitat (denoted upland habitat in **Tables A1 & A2**).

Fig 7 – Percentage representation of major habitats in TCI PAS



By far the largest of the Protected Areas is the North, Middle and East Caicos Nature Reserve, an extensive area of predominantly tidal wetland lying to the rear of these three islands, and this ensures protection of a large proportion of TCI tidal wetlands. This is an area of particular importance in the

geological and ecological dynamics of the Turks and Caicos islands' system, and an important island natural resource. The importance of this area both nationally and internationally has been recognised through its additional international designation as a Ramsar Site. This Nature Reserve covers an area equivalent to 10% of the area of the Caicos and Turks Platforms and serves to protect around 75% of tidal wetlands and significant proportions also of salinas, going thru, seagrass and algal beds and coastal coppice.

For the rest the Protected Area System captures small proportions of the main habitats (between 5 and 7%), but larger proportions of three particularly sensitive habitats:

- 41% of tidal red mangrove forest, a habitat that makes up a minor 0.1% of the area of TCI, and is a rare and particular diverse habitat – the two largest stands of red mangrove in TCI are found in South Creek NR, Grand Turk, and NW Point Pond NR, Providenciales;
- 29% of saline lakes, ponds and salinas, a habitat that makes up a minor 0.4% of the area of TCI, forms an unusual habitat with particular importance for wading birds – notably Lake Catherine NR, Pigeon Pond & Frenchman's Creek NR, Dick Hill & Bellefield Landing Pond NR, Pumpkin Bluff Pond NR, and Flamingo Pond (part of the Ramsar site) – and has cultural and historical significance in respect of the salt industries associated with Grand Turk, Salt Cay and South Caicos – represented in the Salt Works and Village HA, and the Boiling Hole HA;
- 17% of fringing and barrier reefs, a habitat critical to the physical coherence and protection of the islands, and to the water sports industries, but one that makes up only 1.4% of the surface area of TCI, and which is represented within the PAS by a range of marine National Parks and Nature Reserves.

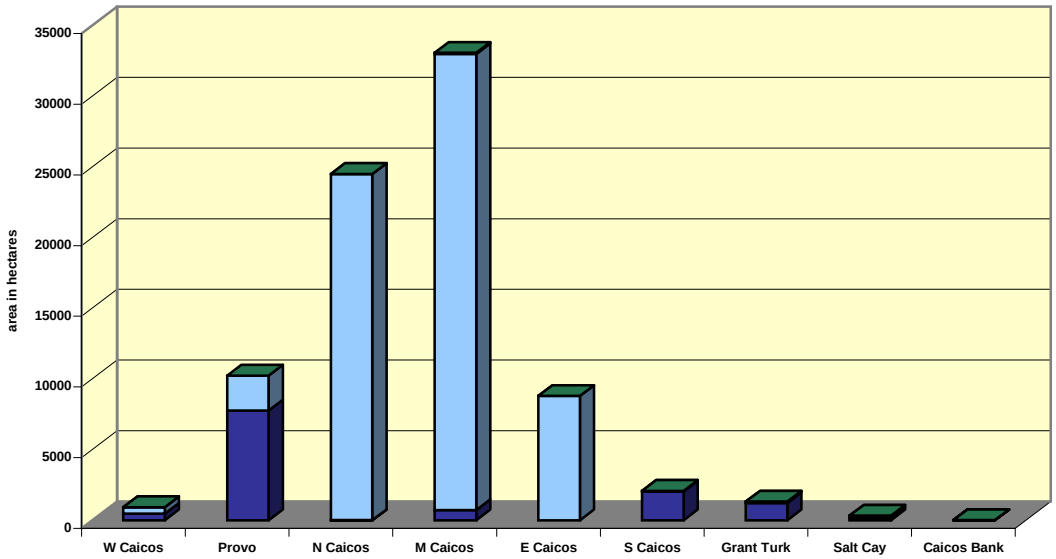
22% of "upland" habitat is captured within the Protected Area System ("upland" habitat makes up some 7.3% of the total area of the island platforms (broadly equivalent to the area of tidal wetlands), but this is misleading. The catch-all habitat category of "upland" has been used because there is not sufficient ground data to clearly separate out the geographical coverage of its constituent habitat types. Accordingly we have allocated areas to a more detailed breakdown of the habitat – but based on working knowledge of the areas – into blackland, whiteland, coastal coppice, coastal rock (ironshore), and sand strand. In reality, the greater proportion of "upland" habitats captured in the PAS comprises coastal coppice, and is captured within the boundaries of the Ramsar site. For the rest, it comprises mainly coastal rock and sand strand, and this mainly captured within the various cays falling within the National Park and Nature Reserve sites. Blackland and whiteland are very poorly represented within the Protected Area System (mainly represented within the Pigeon Pond and Frenchman's Creek NR), as is also coastal rock within any of the mainland sites.

Conclusion – The upland habitats of blackland and whiteland are very poorly represented within the Protected Area System (mainly represented within the Pigeon Pond and Frenchman's Creek NR), as is also coastal rock within any of the mainland sites.

Thus in terms of overall representation of habitat types, the Protected Area System is weak in respect of blackland, whiteland and coastal rock. Further, given that fringing / barrier reef, going through, tidal Red mangrove forest, and saline lakes, ponds and salinas make up so little of the surface area of the country, some additional care may be required to ensure that sufficient of these critical habitats is captured within the system and provided adequate protection. A significant proportion of important marine habitats are captured within the PAS as a whole, but only a very small proportion of these have the higher level of protection offered by Nature Reserve or Sanctuary Status.

Conclusion – Given that fringing / barrier reef, going through, tidal Red mangrove forest, and saline lakes, ponds and salinas make up so little of the surface area of the country (and despite their reasonable representation within the Protected Area System), some additional care may be required to ensure that sufficient of these critical habitats is captured within the system and provided adequate protection

Fig 8 – Schematic showing distribution of main habitat types in PA's by main island



***Note**: dark blue = marine / cays; light blue = wetland; green = terrestrial*

Is the PAS representative on an individual islands basis?

In **Table A2** we re-interpret data shown in **Table A1**, breaking representation down by island. Once again, sub-categories of "upland" have been estimated. This shows that:

- the fringing and barrier reefs are incorporated in those areas currently most used by the dive industry
- patch reef / seagrass-algal flats are captured in the Marine Parks and Nature Reserves of Provo, and the East Bay Nature Reserve of North Caicos
- the seagrass-algal flats are proportionately represented in association with the Ramsar site, and with Provo, North Caicos and South Caicos
- the key "going through" channels of the Caicos Bank are represented in the Princess Alexandra LSNP and the Ramsar site
- tidal wetlands are represented in the form of the Ramsar site, augmented by the East Bay Islands NP and Princess Alexandra LSNP to the north, and Chalk Sound NP and Pigeon Pond & Frenchman's Creek NR to the south and south east of Provo
- tidal red mangrove forest is dominated by the concentrated stands of red mangrove in NW Point Pond NR and South Creek NP, and the more extensive but distributed mangrove of Pigeon Pond & Frenchman's Creek NR
- the salinas are represented from Salt Cay and South Caicos, and by Pumpkin Bluff Pond; the salt lakes by Lake Catherine, NW Point Pond, and Cottage Pond; and integrated lakes, ponds and salinas by Pigeon Pond & Frenchman's Creek NR and by the Ramsar site
- terrestrial environments are represented in a range of sites, but most particularly in Pigeon Pond & Frenchman's Creek NR, Princess Alexandra LSNP and NR, Lake Catherine NR, East Bay Islands NP, and the Ramsar site, most notably to the south of Bambara, and along the western edge of Flamingo Pond

Fig 8 (based on **Table A3**) shows the distribution of protection by nature of site (marine / cays, wetland, terrestrial). This indicates clearly the dominance of tidal wetland, salinas and ponds in the PAS, the dominance of marine areas with respect to Providenciales, and the very limited protection of purely terrestrial environments.

Conclusion – Within the current Protected Area System there is good representation of marine habitat and tidal wetlands, but poor representation of purely terrestrial environments; this situation is particularly extreme in respect of the island of Providenciales.

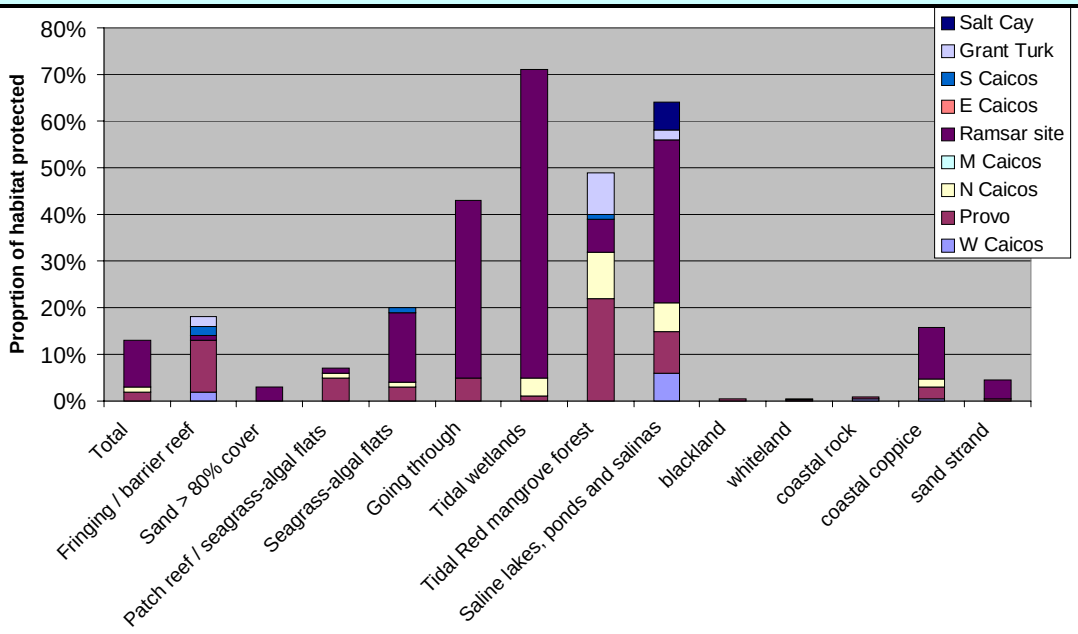
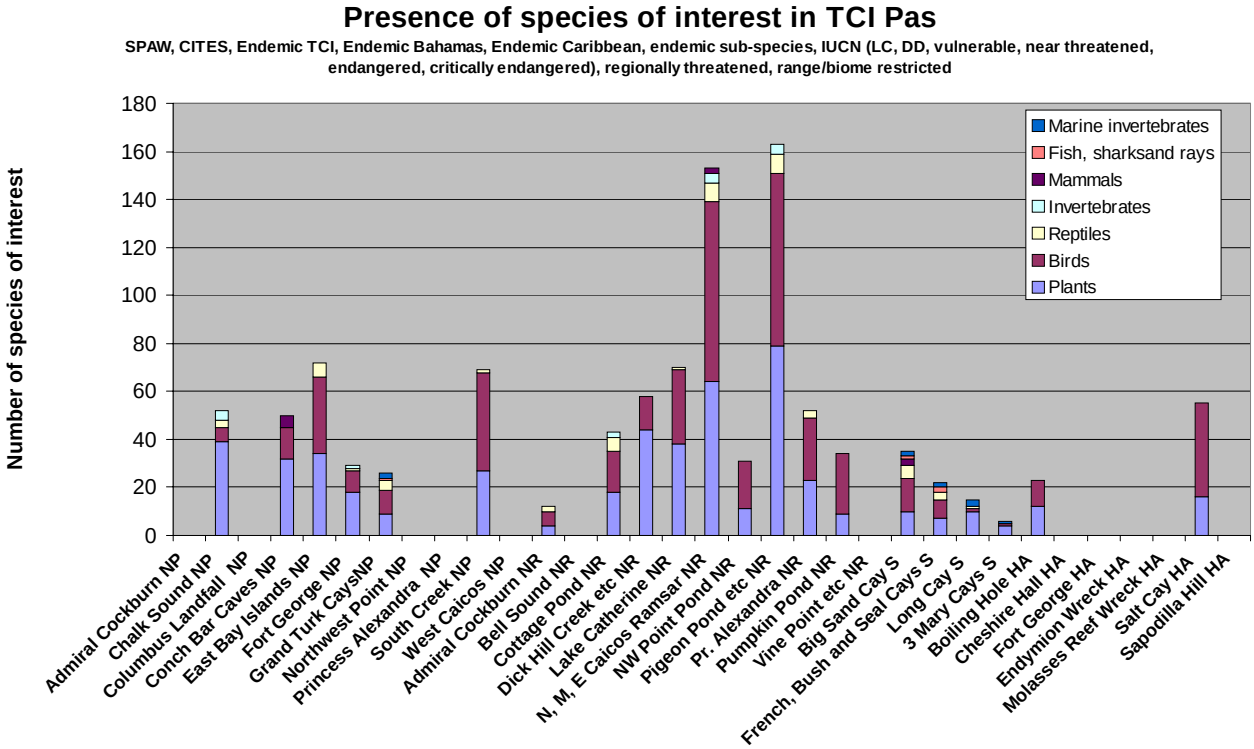


Fig 10 – Summary of threatened or endangered species found in TCI and the PAS



But **Fig 8** also shows just how much of the protected area system is made up of aquatic areas – marine, tidal wetlands, saline ponds and salinas. Taken as a whole, and excluding cays, only 4 sites are exclusively terrestrial in form, though our habitat mapping exercise that allowed us to produce **Table A2** indicates that upland habitat makes up some 22% of the area under protection (a figure that includes the cays, and mainly comprises coastal coppice).

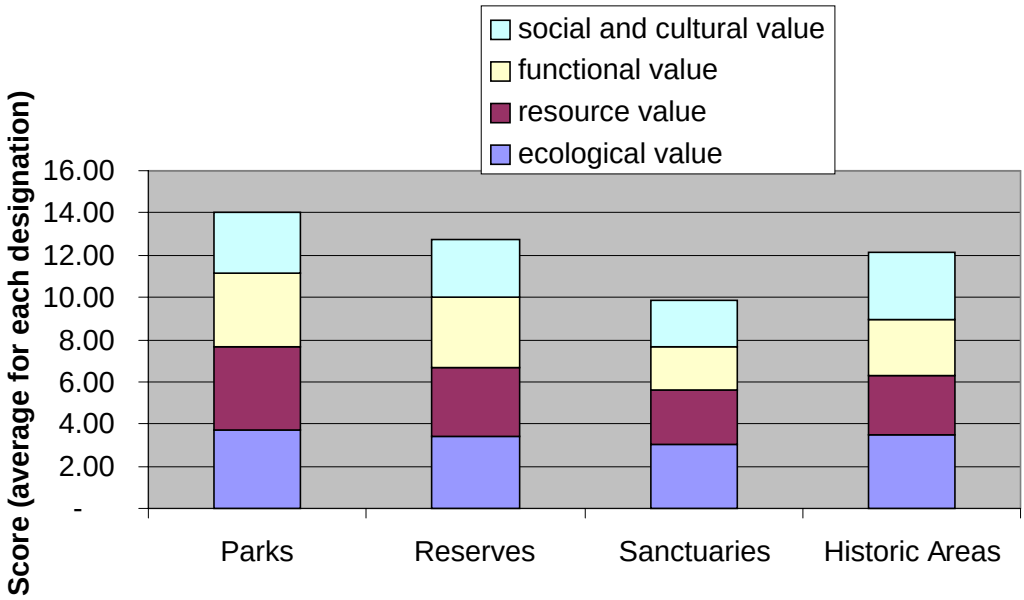
Fig 9 (also based on **Table A2**) displays in more detail the distribution of protection by detailed habitat and by island. In total, the protected areas account for some 14% of the surface area of the Turks and Caicos plateaux. Of this one site, the Ramsar, site accounts for 10%. Other Nature Reserves account for another 1% and National Parks a further 2%. Together Sanctuaries and Sites of Historic Interest less than 1%.

This schema goes to show how slim some of the representation is on an island by island basis, and demonstrates how the choice of sites has sought to marry geophysical and ecological features with the demands of the settlement pattern of the islands and the current and future requirements of the tourism industry. Once again the fragility of the system in terms of terrestrial and wetland representation needs to be emphasised – particularly in respect of "blackland", "whiteland", "coastal rock" and "tidal red mangrove forest" and "saline lakes, ponds and salinas".

3.4 How well are species protected?

A summary list of the species of interest identified at the various sites is presented in **Appendix 4**. This information is summarized in **Fig 10**. It should be emphasised that knowledge at a species level is extremely limited, especially for plants and invertebrates, and that existing data reflects to some extent the survey effort directed at particular sites, and the particular taxonomic focus of those surveys. However, the figure highlights the exceptional qualities of Pigeon Pond and Frenchman's Creek, and North, Middle and East Caicos Nature Reserves, and to a lesser extent East Bay Islands, South Creek, Lake Catherine, and Salt Cay.

Fig 11 - Assessment of different types of protected area in TCI against the full range of criteria



3.5 Does the PAS adequately reflect the economic and ecological dimensions of designation?

The above analysis has assessed the PAS system as a whole against some key ecological criteria. In this section we take the analysis further, and explore how well the system as a whole delivers the full range of values encompassed in our set of criteria. It should be remembered that we have applied no

differential weights to the scoring of different criteria or criteria sub-sets. Any such weighting should be undertaken as part of a consultative / representative process. These assessments are shown graphically in **Fig 11**.

The most striking feature of this assessment is the importance of the Parks, which score well across the full range of criteria. This also highlights the need for effective management within the Parks to conserve and promote these exceptional values.

Conclusion – Our assessment of the Protected Area System against ecological, resource, functional, and social and cultural values shows how well the National Parks system captures these values; but this also highlights the need for effective management within the Parks to conserve and promote these values.

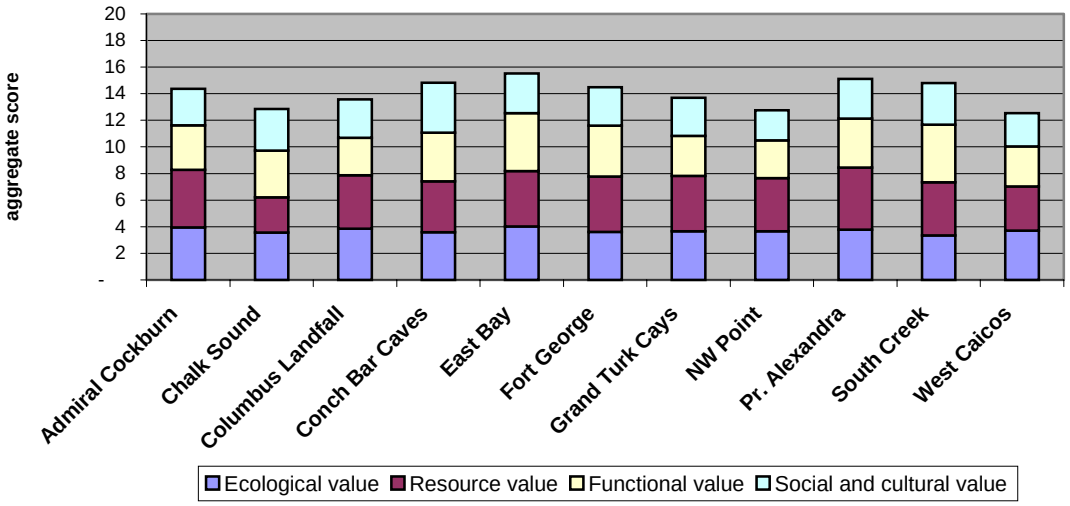
The historic areas also score well across all criteria, suggesting that some changes in designation or management focus might be appropriate to conserve the range of values represented.

Sanctuaries appear to score rather poorly, even on broad ecological criteria, but this reflects the very specific values (such as turtle or bird nesting sites) that they are designed to conserve.

3.6 Comparative assessment by type of designation

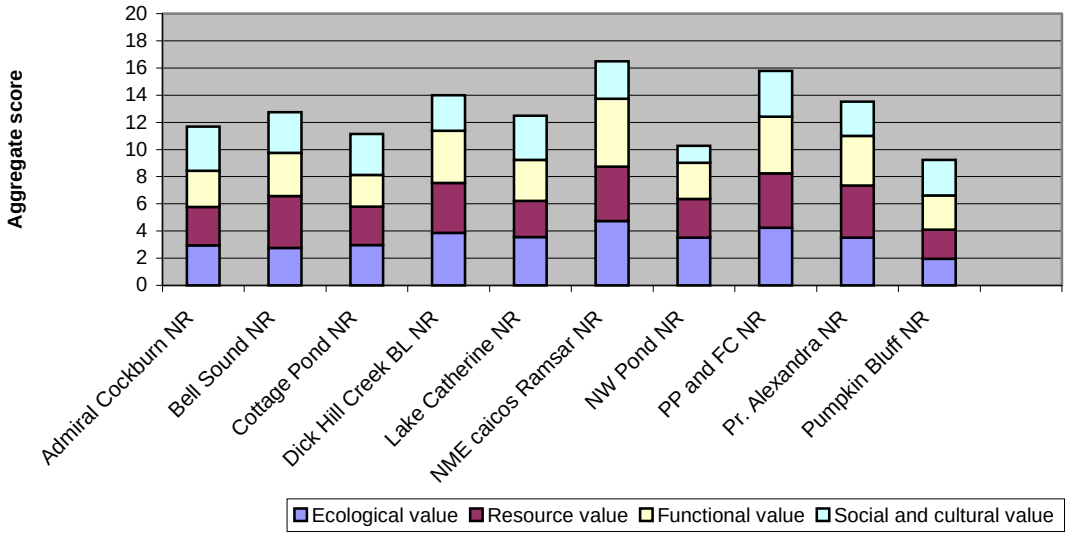
National Parks serve as a framework for the promotion, conservation and management of sites where environmental quality is a key underpinning of tourism and recreational opportunity. They should therefore score well across ecological, social and economic criteria. Our assessment (summarised in **Fig 12**) shows that this is indeed the case with all National Parks scoring well, and with some outstanding examples.

Fig 12 – National Parks: relative value



Nature reserves serve "a) to conserve representative, rare or attractive habitats and species; b) to maintain vital physical and ecological processes and services; c) as a recreational and educational resource for both local people and tourists". In other words, they should also score well against the full range of criteria, and particularly well against ecological criteria.

Fig 13 – Nature reserves: comparative values

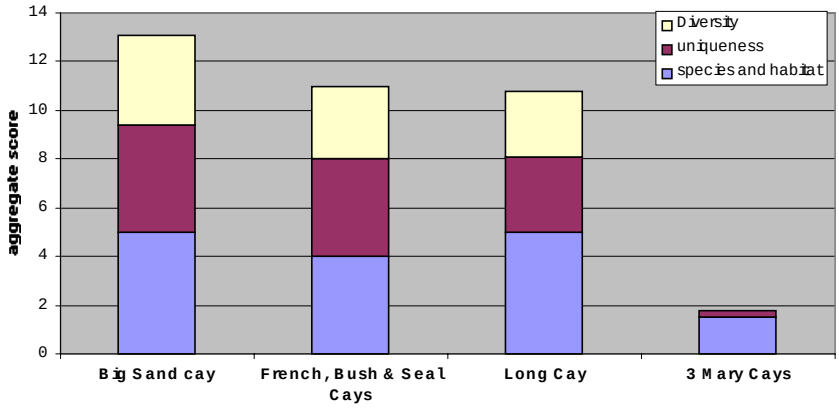


Again, **Fig 13** shows that most of the designated reserves score well against most criteria, with North, Middle and East Caicos and Pigeons Pond and Frenchman's Creek Reserves being exceptional. At the other end of the spectrum, Pumpkin Bluff scores poorly on ecological criteria, and its status as a reserve should be reviewed. NW pond also scores rather badly overall, though in terms of purely ecological criteria (which deserve a higher weighting for a reserve) it scores fairly well. Bell Sound scores low on ecological criteria, but well on social and economic criteria, suggesting that it should be re-designated as a park, but with a management plan specifically designed to conserve important ecological features, such as bone fish nursery grounds.

Sanctuaries "serve to conserve endangered or valued habitats, species or life stages which are vulnerable to human disturbance" and should score well on ecological criteria, and in particular those related to species and critical habitat.

Fig 14 shows that three of the designated sanctuaries score well against key ecological criteria, but Three Mary Cays scores very poorly. On the other hand this Cay is important as a recreational area for local people and it may be appropriate to consider re-designation of this site as a "local park".

Fig 14 – Sanctuaries: relative values



Historic sites serve to conserve "an object of historical interest" and should therefore score well against recreational and historic criteria.

For the **Sites of Historic Interest**, it has not been possible to score under all categories, since in most cases scoring of natural features is not fully appropriate to the site. Scoring in social and cultural value (for which the site has been specifically designated) is universally high, but in the cases of the two larger sites of Boiling Hole HA and Salt Cay HA, scoring in the other areas is also high. We would suggest either that re-designation of all or part of these latter two sites as Nature Reserves might be appropriate in order to better reflect their unique characteristics.

The foregoing analysis is only one simple first order assessment of the strength of the designations of the current suite of Protected Areas. We need to look at the meaningfulness of the different designations in practice and the effectiveness of the Protected Area System as a whole, and to examine in greater depth the distinct characteristics of each site and the relationship of each with its surrounding, the built environment, actual and potential user groups, other planning designations and other protected sites. This we explore in **Chapters 5 & 6**.

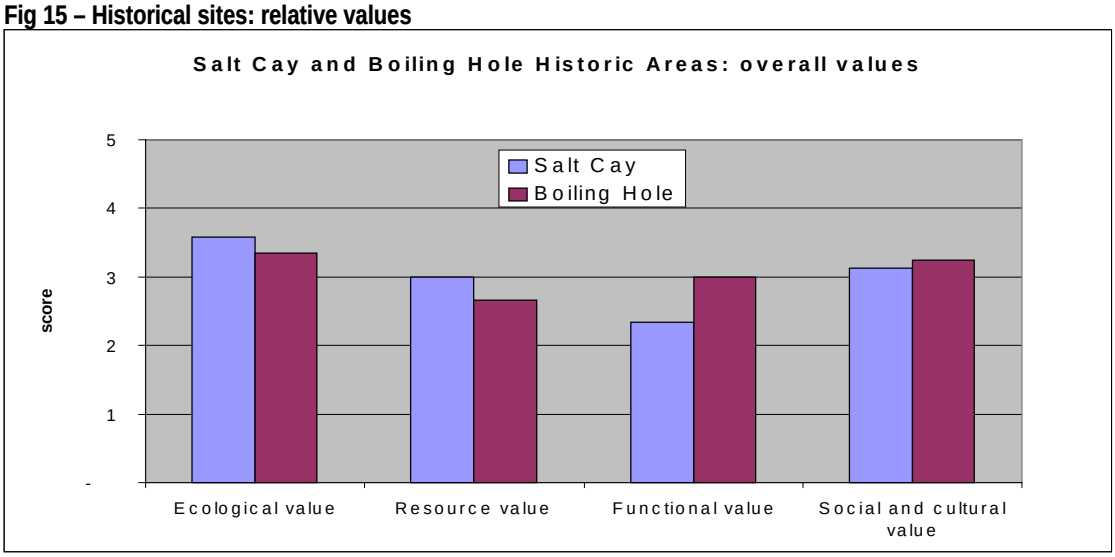
Below we list our conclusions and recommendations arising from the assessments of each of the existing Protected Areas, the assessments of the spatial orientation and representativeness of the system, and the extent to which endangered and threatened species are protected.

3.7 Re-validation of site boundaries

In all the foregoing we have worked with the current boundaries, and here and elsewhere make recommendations on some amendment of boundaries. Specifically we look at matters of buffer zones, representativeness, and ways of improving the value of sites. We have also assessed the sites broadly on size and commented on what is included in broad terms, but the exact delineation of boundaries must take account of local practical as well as ecological interests. This has to be done through a local process.

Except where we have made suggestions for the extension of boundaries, we find that the current boundaries are satisfactory. Where we have made recommendations for change we have done so as a general statement; the actual location of new boundaries will need to be decided on through a process

Fig 15 – Historical sites: relative values



of considered recommendation, debate and local consultation. This forms a part of the normal planning process, as does the formulation of management plans for each site – plans that will necessarily need to take into consideration the practical elements of boundary definition, protection of those elements for which the site has been designated, and management of the site to allow public access where appropriate. There is an element of subjectivity / pragmatism in the delineation of boundaries – which is to be expected – but the lack of precision or "scientific" underpinning of specific boundary locations should not be used, and must not be allowed to be used, as an excuse for encroachment or as an

excuse to delay the process of establishment of new boundaries. Further, once established there would have to be arguments of over-riding national interest to change them.

Conclusion - Except where we have made suggestions for the extension of boundaries, we find that the current boundaries are satisfactory.

Recommendation - The actual location of new or altered boundaries will need to be decided through a process of considered recommendation, debate and local consultation. This forms a part of the normal planning process. There is inevitably an element of subjectivity / pragmatism in the delineation of boundaries – which is to be expected – but the lack of precision or "scientific" underpinning of specific boundary locations should not be used, and must not be allowed to be used, as an excuse for encroachment or as an excuse to delay the process of establishment of new boundaries. Further, once established there would have to be arguments of over-riding national interest to change them.

3.8 Conclusions arising from re-assessment of the PAS

Arising from our assessment of the 33 Protected Areas, we are minded to propose a number of changes, as follows:

Designation rationale

Conclusion - Our review of the site selection criteria used to identify possible sites for inclusion in the Protected Area System, both in 1969/70, and in the mid to late 1980s, shows them to be rational, logical and consistent with the intended purpose of the Protected Area System. The application of the criteria showed a due respect for the competing forces of development and conservation, and if anything sought to emphasise the importance of protecting key land and sea areas so as to provide sustainable economic opportunities associated with resident and visitor leisure and recreational activities.

Conclusion - The designation of the 33 sites that comprise the TCI Protected Area System conforms coherently to the following basis of designation:

- **National Parks** serve as a framework for the promotion, conservation and management of sites where environmental quality is a key underpinning of tourism and recreational opportunity;
- **Nature reserves** serve a) to conserve representative, rare or attractive habitats and species; b) to maintain vital physical and ecological processes and services; c) as a recreational and educational resource for both local people and tourists
- **Sanctuaries** serve to conserve endangered or valued habitats, species or life stages which are vulnerable to human disturbance;
- **Historic sites** serve to conserve "an object of historical interest".

Re-designation

Recommendation - The Sites of Historic Interest of Boiling Hole, South Caicos, and Salt Cay salt works and village, hold a rich natural heritage as well as the physical remains of the salt industry. We would like to suggest that, without in any way prejudicing their relevance and interest as sites of significant historical interest, these be re-designated as Nature Reserves, but managed as appropriate to both their natural and historic values.

Recommendation - We are not convinced that Bell Sound altogether has the credentials for its

Nature Reserve designation, but that it would be better managed as a recreational and amenity area. Accordingly we suggest that this be re-designated as a National Park.

De-listing

Recommendation - Pumpkin Bluff Pond NR forms part of a natural salina complex, and whilst we are of the view that its key characteristics as an open water body should be retained within any future development of the area, we believe that in itself it is too small an area to justify designation, and that to include the rest of the adjacent salinas in such a designation would be excessive. Accordingly we suggest that this should be de-designated altogether.

Local public park

Three Mary Cays Sanctuary forms the only rock promontory on this particular coastline, and forms a focal point along this beach for picnics, beach parties, etc.. It has some interesting, but not unique, natural features, though has strong scenic and landmark features. Overall we believe that it is difficult to exclude people from this site. Combined with its moderate natural resource interest, we believe that this justifies de-designation as a Sanctuary.

Recommendation - We are of the view that the designation of Three Mary Cays Sanctuary should be changed to that of a local public park or a Nature Reserve – subject to local consultation with both the Belonger residents of North Caicos and outsider investors in nearby property.

Recommendation – There are a range of public park and recreational areas, as well as Fishing Reserves, bird reserves, and maybe other such designations. Exactly how these designations fit into the overall frame of physical planning, and amenity and environmental management is unclear, and this needs to be clarified and clearly communicated to both decision-makers and users.

Buffer zones

There are a small number of cay sites where the area that is designated is limited largely to that part of the cay above sea level. We suggest that the value of these sites would be significantly enhanced, and the original basis of designation strengthened, if a buffer zone of marine habitat were also included in such designation.

Recommendation - We suggest that such buffer zones be added to French, Bush and Seal Cays Sanctuary, Big Sand Cay Sanctuary, and to the cays within the Admiral Cockburn Nature Reserve. This will also partly address the lack of strong protection (NR or sanctuary) for marine habitats.

There are a number of sites where the absence of buffer zones causes concern – where the boundary of the designated site only covers the area of special interest and nothing more – raising concern that development could crowd out and adversely affect the quality and status of the features that the site designation seeks to preserve.

Recommendation - We suggest that consideration is given to extending the boundaries of a number of Protected Areas to incorporate a buffer zone. Sites that this condition applies to are: Chalk Sound NP, South Creek NP, Lake Catherine NR, and North West Point Pond NR.

In some instances it may be more appropriate to designate an area as a “Regulated

Development Zone" and thus subject to special planning conditions commensurate with close proximity to a Protected Area

Zonation and nesting one designation within the bounded area of another designation

There are a number of sites where a site of higher designation sits within the boundary of another designation – as for example Princess Alexandra NR resting within the boundary of Princess Alexandra L&SNP. Another is the case of Vine Point and Ocean Hole NR resting within the boundary of the Ramsar NR – but in this case it has been suggested that because the designations are both of Nature Reserve, the smaller one is redundant. Yet another is where the East Harbour Lobster and Conch Reserve (in fact a fishery area designation) rests within the boundaries of the Admiral Cockburn L&SNP.

Recommendation - We think that the logic behind such nesting designations stands up to scrutiny, and should not be seen as in any way contrary. But further we think that far greater use should be made of the concept of zonation – where different areas within an outer boundary can and should be subject to more constraining controls commensurate with the proper management of the site. Where such tools are used they should be addressed through a site's management plan rather than through a doubling up of designation.

We are aware that over the years there has been some concern expressed by commercial (and some recreational) fishermen about the closure of marine National Parks and Nature Reserves to commercial fishing. It is understandable that commercial fishermen might like access to areas that have not been fished for some years, or that they be allowed access to areas that are geographically close to their operating base, but neither of these arguments in themselves warrant the sanctioning of such access. But it is also clear that few fishermen are fully aware of the boundaries of the Protected Area System, and fewer still are aware that commercial and/or recreational fishing can be allowed within both National Parks and Nature Reserves where there is specific rationale for such, and where a bounded zone has been sanctioned for such use. The first needs to be addressed through better communication of the boundaries of the PAS; the second needs to be re-addressed through consultation as management plans for each area.

Recommendation – In respect of fisheries (recreational and commercial) we think far greater use should be made of designated fishing zones, fishing "no-go" zones, and areas within a National Park or Nature Reserve that should be afforded greater protection as a part of the long-term management of such a site.

Access policy – particularly with regard to Sanctuaries

The designation of Sanctuary has been used to protect vulnerable animal communities such as native iguana, but also for bird colonies at key points in their life-cycle. In general, the general public is proscribed from landing on such cays at any time. This condition is not being upheld, and most Sanctuaries are regularly used as stopping off points for commercial and recreational fishermen and for diving and beach parties. There is little evidence that the vulnerable communities for which site designation has been awarded are being adversely affected by such limited visitation, but there is clear inconsistency in how the constraints on public access to Sanctuaries are exercised. The DECR is not in a position to enforce a breach of this constraint, but should communicate more clearly what is and is not allowed in the form of a code of practice. Sites where this is particularly applicable are Long Cay Sanctuary, Big Sand Cay Sanctuary and French Cay.

Recommendation – Recognising that people do use many of the cays designated at Sanctuaries

as stopping-off points, DECR should develop and communicate to users clear codes of practice for such landings.

Protecting / designating the built heritage

In the case of Boiling Hole HA and Salt works and village HA (which we have suggested should be re-designated as Nature Reserves) there is clearly a mix of industrial and natural heritage. The management of these distinct assets should be clearly and specifically incorporated within the relevant management plans. But in the case of the Salt Cay whaling village and associated salina, we feel that consideration should be given to separating this site from that of the main salt works, and designating it as a Nature Reserve, whilst managing it for both its industrial and natural heritage features. Consideration should also be given to extending this designation to the creeks lying halfway down the east side of the island, part of which has been given an informal bird reserve designation by DECR.

Recommendation - In the case of the Salt Cay whaling village and associated salina, we feel that consideration should be given to separating this site from that of the main salt works, and designating it as a Nature Reserve whilst managing it for both its industrial and natural heritage features.

But there remains a conundrum in the preservation of industrial heritage and the built environment, insofar as the salinas and some of the associated infrastructures in Salt Cay and South Caicos are protected through a Site of Historic Interest designation, but the same does not apply to the salinas and associated infrastructures on Grand Turk. By the same token, there is a range of buildings associated with the salt industry – warehouses, salt merchants houses and stores, etc. - that fall outside these PAS designations. Many, but not all, of these are covered by a Conservation Area designation under Planning Law. There is evident inconsistency in how exactly these two forms of site / building preservation are applied, but more seriously neither designation has been shown to be effective in protecting these key elements of built and historic heritage – because the PAS and Planning System do not have the financial resources to intervene in the protection and preservation of such assets, and the law empowering government to force owners to institute measures to protect and preserve buildings and assets is rarely if ever applied. There is some inconsistency in how these designations are awarded, but more crucially the built heritage of Salt Cay and Grand Turk is deteriorating (in some cases rapidly) due to unclear policy and the failure to identify and allocate the scale of resources needed to halt such deterioration. This most critically applies to a range of vernacular wooden houses in and around Cockburn Town, Grand Turk, Government House and vernacular housing, Salt Cay, and vernacular housing South Caicos.

Recommendation – There is inconsistency in how the designations of Conservation Area (as it is applied to built up areas) and Site of Historic Interest are used, which should be clarified and their use rationalised.

Recommendation – There are several instances where built heritage – whether in public or private hands – is deteriorating rapidly because the mechanisms by which public interest in the upkeep of these buildings can be exercised is unclear, and insufficient public (and private) resources are allocated to the task of restoration and conservation of this built heritage.

In addition to the industrial heritage associated with the salt industry, there is also built and industrial heritage associated with the former plantation culture – cotton plantations on Providenciales, North Caicos, and Middle Caicos, and sisal plantations on West Caicos and East Caicos. Cheshire Hall has been designated as a Site of Historic Interest, but we support the proposition that Wades Green also be designated a Site of Historic Interest. We also suggest that industrial infrastructures associated with the former development of a sisal industry on West Caicos should be protected, and that this be achieved

by incorporating such assets within an expanded Lake Catherine NR.

Recommendation – We are of the view that an area incorporating the remains of the Wades Green plantation house complex on North Caicos should be designated an Area of Historic Interest, and that an area incorporating the industrial remnants of the aborted sisal industry at Yankee Town, West Caicos should be treated likewise.

The former military assets at Fort George and Sapodilla Hill are protected by designation as Sites of Historic Interest, but the site of Gun Hill on Grand Turk is, to our knowledge, unprotected (though it may be covered by Conservation status under Planning Law). Despite the fact that Gun Hill is in private ownership, its status as a site of historic interest should be reviewed, and some clarification should be given as to the standing of national assets held in private ownership, and the extent to which the state can control and enforce management of such sites.

Recommendation – The conservation status of Gun Hill, Grand Turk, as a site of historic interest should be reviewed, and some clarification should be given as to the standing of national assets held in private ownership, and the extent to which the state can control and enforce management of such sites.

There are a range of other sites that have local cultural or historic significance, whether they are the remnants of the first historical settlers of the islands, the Lucayans, or the caves at Conch Bar and other Middle Caicos locations, which were used by Lucayans and later by survivors of shipwrecks and by runaway slaves. It is evident that the Lucayan culture was well established in TCI over several centuries, and many artefacts of this culture have been collated and displayed in the National Museum in Cockburn Town on Grand Turk. This museum is owned and operated by a private charity, and sanctioned by government and authorised to be the central repository of objects and information pertaining to the cultural and natural history of the Turks and Caicos Islands. The charity plans to open a branch on Providenciales, for which fund-raising is underway. But despite there being over a hundred identified Lucayan settlement sites in TCI, none are subject to any form of protection – and indeed one such site was recently bulldozed during the unauthorised construction of the road through the centre of the Pigeon Pond and Frenchman's Creek Nature Reserve. This is evidence of a major disregard for the historical heritage of the country – not in itself without precedence – but it is also the case that a major tourism opportunity is being missed here, and efforts should be made to redress this situation with some urgency.

Recommendation – One or more of the many sites of Lucayan settlement should be designated as a Site of Historic Interest, both to recognise this important role played by the Lucayans in the history of the country, but also to avail of the tourism opportunities that the story of the Lucayan culture can offer.

The Conch Bar Caves are subject to a protective designation, but it is evident that without a stronger system of active management the quality of this site will deteriorate as a result of vandalism and undisciplined use of the site. Preliminary work on a management plan has been undertaken through collaboration between the local community and the National Trust, but to date there have not been the resources to take this further. It is also the case that the nearby Indian Cave, which is also believed by the local community to offer tourism potential, lies outside the existing boundaries of the NP and thus is not subject to any protective designation. The status and management of these caves should be reviewed, with the possibility of extending the existing NP boundaries.

Recommendation – There is an urgent need to adequately resource management for Conch Bar Caves to halt the deterioration of this important site, to manage access to the site, to facilitate the

capture of economic benefits for the local community, and to ensure the safety of visitors.

Recommendation – There is also local concern that the nearby and associated cave system known as Indian Cave remains outside the Protected Area System; this should be remedied by either extending the boundary of the Conch Bar Caves NR, or designated Indian Cave as an additional area (there has been a proposal to establish a Crossing Place Trail NR to incorporate the western part of the northern coast of Middle Caicos, including Fish Ponds, Crossing Place Trail, Indian Cave and Blowing & Juniper Holes.

Protecting representative examples of habitat mosaics

One of the ambitions of any Protected Area System is to represent, conserve and manage integrated habitats and ecosystems, typically by ensuring that a number of protected areas incorporate elements of each of the main habitat types. This is illustrated by the balance of ecosystem types captured within the Pigeon Pond and Frenchman's Creek NR – running as it does from blackland at the northern extremity of the site, through whiteland, salt ponds, mangrove, tidal wetland and sand strand to coastal rock and coppice. But this is the only protected area to capture such a mix of ecosystems. In this context we suggest that consideration should be given to extending the northern boundary of the Boiling Hole Area of Historic Interest to Bell Sound, so taking in a corridor of whiteland and coastal coppice. Consideration might also be given in the future to some small additions to the Ramsar site in the same way, incorporating a range of upland habitats - perhaps on East Caicos.

Recommendation – The Protected Area System has very few examples of sites that incorporate a full cross-section of the habitat mosaic; to rectify this, the one existing example of this at Pigeon Pond & Frenchman's Creek NR should be retained intact, and consideration given to extending the northern boundary of the Boiling Hole HA so as to join it to Bell Sound, and to extend the boundaries of the North, Middle and East Caicos NR to incorporate some coastal rock, whiteland and blackland – perhaps on Middle and East Caicos.

Expanding some marine park boundaries

In addition to the above, our consultations suggest that consideration should be given to extending the westward boundary of the Fort George L&SNP to capture and protect some popular snorkel and dive sites. They also suggest that some re-thinking should take place in respect of the conformation of the northern boundary of the Columbus Landfall MNP, so as to better conform with the 100m depth contour, whilst also recognising the popularity of the area as a recreational fishing area (perhaps through demarcation of a designated recreational fishing zone).

Recommendation – Consideration should be given to extending the westward boundary of the Fort George L&SNP to link with the Princess Alexandra L&SP and capture and protect some popular snorkel and dive sites, and to re-think the conformation of the northern boundary of the Columbus Landfall MNP, so as to better conform with the 100m depth contour. In both cases, greater consideration should be given to the user requirements of recreational fishermen (through demarcation of designated recreational fishing zones).

4. Putting the PAS into national context

4.1 The role of the PAS in the national economy

The principle driver of the TCI economy is tourism, followed by investment (primarily by outsiders) in residential property. This has a number of impacts on population distribution and occupation:

- Most people live on Providenciales, where the greater proportion of tourism infrastructure (hotels, condominiums and restaurants) is located
- The emergence of a modern tourism industry has encouraged many Belongers to return to the islands – the Belonger resident population now stands at some 10,000 people
- The boom in the economy has encouraged others to locate in TCI – to take up positions primarily in the service and construction industries
- Of the 2001 islands population of 19,886, 52% were Belongers, 25% Haitians, 8% from North America and the UK, and 13% comprising other nationalities.
- From the 2001 Census, the adult workforce was identified as numbering 10,180 people, with some 48% employed in tourism / service related occupations, 20% in government service (administration, education, health and social services), and 13% involved in construction.

TCI is recognised as a high quality tourism destination, offering low-density tourism occupancy, a pristine natural environment (clean beaches, clear water, sun, and green vegetation cover), great leisure / recreational opportunities, and a high standard of catering and support services. The tourism industry' strap line is "Beautiful by Nature", and every opportunity is used to extol the quality of the local natural environment, and much reference is made to the extensive Protected Area System in place in the country. Prospective visitors to the islands respond positively to the images that are created in such descriptions and utilised in promotional literature. In addition, the stability of the government and the economy, and the transparency of its legal system, are also particular qualities that are emphasised when seeking to encourage inward investment, whether it is in tourism related infrastructure (hotels, condominiums and the catering sector), residential development or service businesses.

The extent of the inter-dependence between the natural environment and the tourism industry has been explicitly recognised in the choice of many of the sites designated within the Protected Area System, and particularly its National Parks. But it is also the case that many of the sites chosen for more explicitly ecological reasons also underpin the value of tourism, though many of the opportunities locked up in these sites have yet to be recognised, let alone exploited. An example of the potential that is on offer can be seen in the development of Little Water Cay as a visitor attraction based primarily on its role in the protection of the indigenous rock iguana – balancing visitor education and the provision of local economic benefit with species / habitat conservation and revenue generation[17]. Allowing, encouraging and facilitating visitors to the cay has been calculated to generate in the order of US$500,000 gross value added to the TCI economy, and to contribute to the profitable operations of a wide range of predominantly small locally operated businesses. In the overall context of what TCI has to offer in terms of conservation and eco-related visitor attractions, this is but a tiny project.

Conclusion - The extent of the inter-dependence between the natural environment and the tourism industry has been explicitly recognised in the choice of the many of the sites designated within the Protected Area System, and particularly its National Parks.

But there are other benefits. Grace Bay forms the focal point for Providenciales' tourism industry, matching the land-based accommodation and service side of the industry with the extensive portfolio of natural resources and recreational opportunities encompassed within the Princess Alexandra Land &

[17] Although the intrusion of feral cats, which hunt and kill the rock iguana, remains a problem - revenue generation has not be sufficient to cover the costs of controlling feral cats which access the site from adjacent cays recently rejoined with Little Water Cay as a result of hurricane activity;

Sea National Park. This park designation protects these natural assets, by limiting what can be done within the park to those activities that are compatible with the high environmental standing of the park and its value to the TCI economy, but its active management also optimises the value that visitors, tourism operators, and residents get from this asset by ensuring that access and use is ordered and safe, and that the qualities that make it special are retained for immediate and long-term use.

Conclusion – National Park designation protects an area's natural assets, by limiting what can be done within the park to those activities that are compatible with the high environmental standing of the park and its value to the TCI economy, but its active management also optimises the value that visitors, tourism operators, and residents get from this asset by ensuring that access and use is ordered and safe, and that the qualities that make it special are retained for immediate and long-term use.

On a broader basis, our valuation study of 2005 indicated that the value of the natural environment contributes substantially to the economy and well-being of the people of TCI. In 2003, Gross Domestic Product (GDP) was estimated to amount to US$300M. Much of this was generated by the 150,000 people that visit the islands each year – mainly as tourists – and the services they purchase. We estimate that at least US$50M of this can be directly linked to the quality and use of natural features – the fact that visitors pay a premium to come to TCI because of the attractions of its high quality natural environment – truly "Beautiful by nature". Such visitors also support a range of businesses when they choose to go snorkelling, kayaking and sports fishing, or when they visit the iguanas on Little Water Cay.

For example, we looked at the role of coral reef in the TCI economy, and calculated that these made a contribution to GDP of some US$18M per year – values derived from diving, fishing, water sports, etc.. But in addition we calculated that the coral reefs protected economic value (protecting property from the full force of hurricane damage, facilitating the build up of white beaches, and protecting those beaches from storm-surge, etc.), a benefit that we valued at US$17M per year, but one that does not appear in national accounts. Further still, we estimated that islanders and visitors benefited to the tune of US$13M in terms of general well-being – a slightly more difficult concept to grasp, but one that we recognise when we enjoy views out over the sea, when we walk along the beaches, and when we feel safe, protected from the worst that the forces of nature can throw at us. This is another figure that does not appear in GDP calculations.

A fair proportion of this value reflects the extent to which settlement and human activity utilises coral reef resources. A consequence of this is that as the economy grows, so too will the contribution that the coral reef system makes to the economy and the well-being of its people. But if the coral reef system, and the services that it provides, is weakened – for example by being smothered and killed by algal growth as a result of too many nutrients in the water from poor management of sewage, or by breaking up as a result of persistent use of bleach to catch lobster – then it becomes difficult if not impossible to realise these potential opportunities in the future.

4.2 Distinguishing between "good" and "bad" development

These arguments over value come into sharp focus:

- when a developer seeks to change the boundary of a Protected Area so that he or she may build a holiday resort, or a residential complex, or
- when conservation interests seek to establish new areas for the protection of a particular habitat, natural feature, or endangered species, when others would prefer to see the area developed for housing.

Inevitably, the decision to develop or protect is a trade-off between the perceived benefits and costs of the two development paths. Most of us see the value locked up in property – we see that such and such a villa is valued at US$1M, or that such and such a hotel has a turnover of US$2M per year. By the same token most of us take nature for granted – and consider it a common property and free to use. But look a little deeper, and these figures mis-represent actual costs and benefits.

A US$1M villa may have been built by a local contractor. All the materials and equipment have been imported, and most of the labour to design, manage and build the villa has been provided by foreign nationals – from the US, from Haiti, and from other Caribbean countries. The local owners of the contractor business or businesses will have benefited from some element of salaries and profits, but at only a small proportion of the costs of the building. The government treasury will have benefited from duties on land purchase, land registration, import tax, etc., but again such amounts are very limited, particularly where a developer has been given a waiver on the import tax associated with materials. Once the villa has been sold to an inward investor – as a holiday residence or second home – the recurrent benefits are slim. When the owners are in residence they will buy local supplies (with the import tax element going to the government, some element of profits going to local and outsider entrepreneurs, and wages going to employees, often outsiders), they will hire local services in terms of domestic help, gardeners, pool maintenance, etc. (but mainly involving low paid foreign labour), and they will utilise phone and power services (contributing marginally to the economics of these businesses). In general, the recurrent benefits to the economy are likely to very small indeed. On balance a built development will yield some initial one-off benefits to government and the owners of contractor businesses, and relatively slim recurrent benefits. If the building is to be utilised by predominantly short-term visitors, then other benefits will be generated through their use of local restaurants and bars, and purchase of recreational services.

The benefits from environmental management and protection are a little more complex. They are most evident in their removal – when a reef degrades, when high and dwarf forest is cut down creating a dust-bowl, or when the fringing grass and coastal coppice protecting beach a has been removed resulting in erosion of the beach. But it is also clear that benefits are being foregone where the quality of the environment is reduced, or where it is being put to improper use. Householders enjoy having a planted / natural garden, enjoy the birds and insects that are attracted to trees and flowering plants, and enjoy having views over the sea and countryside. Residents and visitors enjoy being able to walk in the countryside or along clean beaches, but such enjoyment is greatly undermined where the beaches and bush are littered with rubbish, or ponds polluted with garbage and effluent. Hotel, condominium and residential owners and guests enjoy space, and are put off when developments are too close together, and where a formerly rural / natural environment is turned into an urban or suburban landscape. The result is that land and property prices go down, and it is no longer possible to charge visitors the same rates as formerly.

And at the top end of the resort and residential development market, investors pay a premium for space, a high quality environment, good views, and natural features. Developers pay a premium to locate close to a protected area, because they know that no-one will develop beside them. Residential investors pay a premium for position, particularly where they know that no-one will build beside them, that their property will not be over-looked, and that the land and water around them will not be subject to pollution. Key examples of these characteristics are the location of the Amanyara Resort on the edge of the Pigeon Pond & Frenchman's Creek Nature Reserve, and the development of prime property at Silly Creek over-looking Chalk Sound National Park.

Conclusion - Developers pay a premium to locate close to a protected area, because they know that no-one will develop beside them; residential investors pay a premium for position, particularly where they know that no-one will build beside them, that their property will not be over-looked, and that the land and water around them will not be subject to pollution.

But it is also the case that the economic value of protected areas (for example National Parks and most Nature Reserves) goes up – to a point – the more people get to explore and learn about the features for which they have been designated. And it is here that some of the arguments for and against more capital intensive development get more complex. A powerful developers' argument is that "it is all very well having all this land locked away to protect a few birds and plants, but no-one gets to benefit from it; far better that you let us build houses here, and to design them in such a way as to allow the house-owners to see the birds and trees".

Conclusion - It is the case that the economic value of protected areas (for example National Parks and most Nature Reserves) goes up – to a point – the more people get to explore and learn about the features for which these areas have been designated.

We would suggest that such an argument simply fails to take on board the fundamental principles of a protected area system, and treats the protection that such systems provide in a superficial and over-simplistic fashion. But such a developer does have a serious point – that if people do not know what the benefits of protected areas are, and cannot visit and share in the natural beauty that is there, the value of such areas is greatly undermined. No-one is suggesting that Sanctuaries should be opened up to the public – this goes directly against the purpose for which they have been designated. But by the same token, there is a public obligation to open up the National Parks to public use – facilitating where possible and appropriate the exploitation of such economic opportunities as the area can reasonably support, and managing the movement of people around the park areas in such a way as to ensure that there is no adverse impact on the very features that have made it a suitable candidate for National Park status. With respect to Nature Reserves, there is a public obligation to show residents and visitors why such reserves are special – by managing access to the features that make them special, by informing through the provision of ranger services and tour guides, and educating through appropriate signage and interpretation facilities. Also of note, however, it is not always appropriate or necessary to locate infrastructure and people within the boundaries of parks and reserves; they can also be located nearby.

Conclusion - There is a public obligation to open up the National Parks to public use – facilitating where possible the direct or indirect exploitation of such economic opportunities as the area can reasonably support, and managing the movement of people around the park areas in such a way as to ensure that there is no adverse impact on the very features that have made it a suitable candidate for National Park status.

Conclusion - There is a public obligation to show residents and visitors why designated Nature Reserves are special – by managing direct or indirect access (for example through use of remote cameras, webcams and viewing platforms) to the features that make them special, by informing through the provision of ranger services and tour guides, and by educating through appropriate signage and interpretation facilities.

If all the National Parks, Nature Reserves and Sites of Historic Interest were kitted-out with access facilities, interpretative centres, picnic areas, rest areas, and other simple services, it is difficult to see that there would be the same pressure to build within the Protected Areas as we find today. The local communities, resort and house owners and their guests that make use of the facilities within the National Parks and Nature Reserves would resist proposals to encroach on these Protected Areas. Similarly those who had invested in property and facilities adjacent to such Protected Areas – in part because they had a reasonable expectation that no resort or residential development would take place within the Protected Areas – would also strongly resist such developments.

Conclusion - If all the National Parks, Nature Reserves and Sites of Historic Interest were kitted-out with appropriate access facilities, interpretative centres, picnic areas, rest areas, and other simple services – either within or nearby the site boundaries, it is difficult to see that there would be the same pressure to build within the Protected Areas as we find today. These are public assets, but there is currently little management of these areas for public use and benefit.

So there are a number of key issues at play in this argument about protection and development:

Conclusion - The economic benefits deriving to the TCI economy and its people from resort and residential development are limited – one-off benefits to government and owners of building firms during

the construction phase, marginal benefits deriving from the purchase of consumables during the life of the development, and a potentially larger stream of benefits deriving from recreational activity – primarily associated with the natural features and attributes of the country.

Conclusion - Whilst the natural features and attributes of the country are generally considered common property and free to use, this is not the case – they have significant value, the full benefit of which can only be derived if these resources are properly managed and maintained.

Conclusion - The natural features and attributes of the country have the potential to generate substantial economic benefits to local communities and businesses – much of which has yet to be realised or exploited – but the contribution of such features and attributes to the protection of existing and future economic assets and to the well-being of residents and visitors is likely to have a substantially greater value than is realised through the calculation of GDP.

Conclusion - Failure to protect the quality of the environment, and to properly conserve those features of the environment that have special value, will result in a devaluation of the value of these assets which will appear first in a slow down in economic growth, and secondly as a reduction in the well-being of residents and visitors, and a reduction in the quality of life of the resident population.

Conclusion - And in the background is the fact that TCI shares international obligations to uphold agreements to protect endangered and threatened species and habitats, to manage protected areas effectively, to apply and uphold the laws of the land, and to systematically apply international standards of planning – economic planning, physical planning, building control, and biodiversity planning.

Conclusion - If the designation of protected area is to have any value at all, it should imply and apply protection, and designation and boundaries should not be subject to change except under very unusual and well argued circumstances; this is a key element of the rationale for extension of protected area boundaries to incorporate suitable buffer areas, and for the application of the "precautionary" principle when considering boundary extensions and planning applications.

Conclusion - If the relevant areas of the Protected Area System are not opened up to the public, directly or indirectly, it is almost automatic that their perceived value will be under-estimated, and respect for the integrity and management regime applying to that area weakened and rules abused.

Which brings us around to two important elements of future planning:

- Just what can you build within the protected areas – what does the concept of "conforming use" mean?
- How can the infrastructures necessary to facilitating the opening up of Protected Areas to the public be funded and operated?

These are addressed in the following sections.

4.3 Conforming use

Ray and Sprunt in their report of 1971 refer to the concept of "conforming use" in the context of what can and cannot be build within the boundaries of Protected Areas. This concept has been carried through into the National Parks Ordinance 1975, the National Parks Order of 1988, the National Parks Regulations of 1988, and the Physical Development Manual (last edition 1999), though it is not referred to specifically as "conforming use". The nature of "conforming use" is that the paramount consideration

for any development within the Protected Area System shall be to limit such development to the minimum consistent with the purpose for which the area was established:

Conclusion - For a National Park "conforming use" should be to encourage / provide access to the park and its resources, and to facilitate public use of the natural resources of the park for recreational purposes without compromising its natural values for which it has been given park designation;

Conclusion - For a Nature Reserve "conforming use" should be to provide public access to the reserve, and to facilitate enjoyment of the natural features and resources of the reserve without compromising the underlying ecology and natural values for which the reserve has been designated;

Conclusion - For a Sanctuary "conforming use" should mean that no building / development will be allowed except that it be for the explicit and necessary purpose of the management and conservation of the features / species / ecosystems for which sanctuary status has been designated;

Conclusion - For a Site of Historic Interest "conforming use" should be to facilitate public access to the site, to enhance, in the historical context of the site, the experience of the visit to the site by the public, commensurate with the over-riding requirement to preserve and conserve the historic features of the site for the benefit of future generations.

Examples of conforming use may be described as follows:

National Parks

- conforming structures in the form of roads, paths, board walks, car parking, viewing areas, toilets, sitting areas, children's play areas, snack and barbecue areas, formal and informal camping areas, jetties, shade areas / structures, information areas, simple and necessary vending structures, possibly some café / restaurant facilities, mooring buoys, small conforming business premises (bicycle hire, diving, snorkelling, kayaking, boating, yachting, paragliding, etc.), bird watching hides and platforms, possibly simple overnight facilities – dormitories / eco-lodges / bone fish camps

Nature Reserves

- conforming structures are similar to those as for National Parks, but to a lesser degree, commensurate with the more specific ecological focus of Nature Reserves;
- thus they might include roads, paths, board walks, car parking, limited viewing areas, and facilities such as small conforming business premises (bicycle hire, diving, snorkelling, kayaking, boating, yachting, paragliding, etc.), shade areas / structures, information areas, simple and necessary vending structures, possibly some café / restaurant facilities, toilets, sitting areas, children's play areas, snack and barbecue areas to be strategically and centrally (at an entry to a reserve, or at a hub or focal point for access to the reserve);
- more specialist elements such as bird watching hides and platforms, jetties, mooring buoys and possibly simple overnight facilities – more narrowly focused formal and informal camping areas in the form of dormitories / eco-lodges / bone fish camps – to be located discretely and involving minimal environmental / ecological footprints;

Sanctuaries

- in principal such areas are no-go areas; facilities should be limited to those necessary to allowing management and research staff access to the site (anchorage, small jetty, pathway / boardwalk; where access to the site is only proscribed at certain times of the year, then some minimal facilities for beach picnicking, mooring, etc., might be suitable provision, but limited so as to provide least possible impact on a sensitive environment; any visitors must be required to take all rubbish away with them, and to leave the site as they found it.

Sites of Historic Interest

- these sites have a two-fold purpose – to preserve what is there for posterity, and to facilitate access by the public to these sites in such a way as to comply with the over-riding requirement to preserve for posterity;
- here the overarching requirements is to manage the movement of people around the site so that all can enjoy the benefits of the site without crowding and without damaging the site;
- conforming structures would include access roads, paths and board walks, car parking, small jetties, mooring buoys; extensive signage directing vehicular and pedestrian traffic, and informative signs showing points of interest; viewing areas, toilets, information areas, interpretation centres, sitting areas, children's play areas, snack and barbecue areas, shade areas / structures, simple and necessary vending structures, possibly some café / restaurant facilities, conforming business premises (bicycle hire, diving, snorkelling, kayaking, boating, yachting, etc.), bird watching hides and platforms.

The intent of the legislation is all very well and good, but what does it actually mean when someone wishes to construct a very grand "eco-lodge" in the Pigeon Pond and Frenchman's Creek Nature Reserve, or a large "backpackers" / walkers hostel in the Ramsar site? When is such a development a "conforming use" and when is it not? For this we would strongly suggest that "conforming use" is actually defined by the management plan for that particular protected area. In this context, one should not be allowed (by both DECR and the Planning Department) to construct anything within a protected area without there first being an accepted Management Plan for the site, and without the proposed development conforming with the requirements of that Management Plan.

Conclusion – In practice we believe that "conforming use" is defined by the specific management plan developed for a protected area – such that it should not be possible to construct anything within a protected area without there first being an accepted Management Plan for the site, and without the proposed development conforming with the requirements of that Management Plan.

In this way, a conforming eco-lodge may be defined within a Management Plan as having a particular footprint, serving a narrowly defined purpose, constructed using particular materials or design features, and exercising a particular type of "footprint" in respect of the particular values and sensitivities of a Protected Area. A project's "footprint" might be defined in terms of its service requirements – power, water, food, transport of staff and visitors in and out of the site – and its provisioning and waste treatment volumes and systems – waste minimisation strategies and practices in place, composting of sewage and vegetable waste, and removal of all solid waste from the site.

This sort of system of decision-making is much the same as that which should apply for most physical planning. Development should take place within the context of clear policy, a strategic framework, and where appropriate a plan at an appropriate geographical scale and level of detail. The whole purpose of such planning procedures is to avoid the need to deal with *ad hoc* development proposals. This has some particular bearing in the current case of proposals for development of a marina within the current boundary of the North West Point Pond Nature Reserve.

Conclusion - Development should take place within the context of clear policy, a strategic framework, and where appropriate a plan at an appropriate geographical scale and level of detail; the whole purpose of such planning procedures is to avoid the need to deal with *ad hoc* development proposals.

Irrespective of whether or not the proposed development affects a Protected Area, the development should comply with strategic objectives for TCI, and the economic and physical development plan for Providenciales – in terms of development density, economic value, the existing distribution and utilisation of marinas, and demand for property, boat launch sites and boat moorings. Whether or not the boundary of the existing Protected Area should be modified to accommodate the proposed

development is inevitably a trade-off between the merits of the Protected Area and the benefits to be derived from the new development. Currently the economic development plan for the country is being updated, and physical development plans for each of the main islands are being updated / drafted. Fast-tracking this development proposal before these critical strategic planning documents are in place immediately undermines any claims as to the "rightness" of this development, and simply re-enforces the acceptability to the government and people of TCI of *ad hoc* development. This is contrary to planning best practice, and to the long-term interests of people and economy of TCI.

The authenticity of the planning process being followed in respect of this particular development is further undermined by the fact that no Management Plan has yet been developed for either the North West Point Pond NR or the North West Point Marine Reserve, both of which are going to be impacted by the proposed development. And it is also the case that a marina could be constructed on land to the south of the Nature Reserve – though probably as some extra cost, one of the elements of the trade-offs to be assessed. This is not to say that the proposed development should or should not go ahead – this should be decided upon on the basis of a proper analysis of the trade-offs involved. But we simply point out that the particular process being employed to sanction this development does not conform to good, let alone best, practice.

4.4 Management plans

To date, the evolution of the Department for Environment and Coastal Resources has retained a focus on active management and enforcement of the country's commercial fisheries, but management of the Protected Area System has lagged well behind. To date only three Protected Areas may be said to be actively managed – Princess Alexandra LSNP, Little Water Cay NR, and Cheshire Hall HA. The Princess Alexandra LSNP is the most prominent of the Protected Areas, lying adjacent to the largest tourism complex of Grace Bay. From the outset, the management of this National Park has been the subject of wide consultation and as a result its zonation and user discipline has been widely accepted and upheld. It is also the case that DECR wardens do patrol the area, and water sports operators are quick to report infringements of zones or abuse of the park resources.

Conclusion - To date, the evolution of the Department for Environment and Coastal Resources has retained a focus on active management and enforcement of the country's commercial fisheries, but management of the Protected Area System has lagged well behind

For Little Water Cay NR and Cheshire Hall HA the fact that they are subject to active visitor management simply reflects that these two sites form the key heritage assets of the Turks and Caicos National Trust, and a focus of its work. The National Trust has raised the funds to install boardwalks in Little Water Cay NR, and to develop information packs and signage for Cheshire Hall HA. Its wardens are also on hand to help visitors to Little Water Cay better understand the life-cycle and behaviour the rock iguana, and the reasons why they and their habitat need protecting.

In addition to the above, the Ramsar site has come under regular and intense study as a result of the partnership between the local community, the Turks and Caicos National Trust and the UK Overseas Conservation Forum, and funding from the Darwin Initiative, the Foreign and Commonwealth Office and the Department for International Development. This has generated a wealth of information on the plant, insect, amphibian, reptile, avian and mammalian species found within this Nature Reserve, and relatively detailed mapping of the habitats present in the reserve. In addition, Biodiversity and Management Plans have been developed for the reserve, Conch Bar Caves and surrounding areas, and support has been provided to the local community in developing guide, trail and small business skills to take forward these plans.

The people of Middle Caicos and the National Trust are attempting to instil active management of visitors to the Conch Bar Caves NP. But they have indicated that they are in need of some official support and funding to be able to do the job properly – to stabilise the damage being done to the caves, and to better provide for tourist needs in respect of information, toilet facilities, picnic areas and vending opportunities.

Conclusion - DECR has, under the Coastal Resources Management Project funded by DFID, prepared draft management plans for a few additional National Park and Nature Reserve sites, but all of these need further work, and in particular need to be exposed to, and strengthened from, the forces of stakeholder consultation.

Conclusion - It still remains that out of 33 designated Protected Areas, only three are in any way subject to active management, a fourth has been subject to substantial baseline field research, and with a fifth some local action is taking matters in hand.

Conclusion - It is largely a simple reflection of the absence of management plans for sites that there is so little knowledge or management of the remaining sites amongst the general public - and as a result it is rather by default and through neglect that threatened and endangered species and habitats are being protected at all.

Conclusion - Whilst the system of Protected Areas may be well thought out, and boundaries in place, the purposes for which the system has been established are not being effectively realised – and as a result the system lacks value.

Conclusion - Most of the problems now facing the Protected Area System stem from the fact that there is:

- limited local knowledge of where the sites are and why they are protected,
- a widely held view that the protected area system is in fact a “no-go” area – the complete opposite of what is intended
- a lack of facilities to encourage public access and use, and as a result,
- lack of resources to patrol and manage the sites and site use,
- pressure from developers to allow them to develop land that appears to serve little other purpose.

All of these problems can be substantially eased if the parks, reserves and areas of historic interest are more obviously opened up for public access and use.

Conclusion - These problems can also be more easily addressed if each site is more actively and sensitively managed in ways intended to better present and protect the features for which they have been designated.

Conclusion - As matters stand neither DECR nor the Turks and Caicos National Trust has the resources to do much about this. Further, the general planning and investment climate as it relates to the Protected Areas System is not conducive to private sector investment in the infrastructures needed to accomplish an opening up of the protected areas.

Conclusion - On balance the TCI Protected Area System, though adequate in size and scope, fails to deliver effectively on the very purposes for which it was established – the protection of key habitats for active recreational purposes, and the protection of these and other areas as a means of protecting threatened and endangered species and habitats. Establishment of the Protected Area System without effective public access and site specific management delivers on only half the task, and does a disservice to the people of TCI, and future generations, on whose behalf this natural, historic and cultural heritage is being protected.

Recommendation – There is an urgent need for leadership in managing the Protected Area System – to conserve ecosystems, habitats and species and, where appropriate, to facilitate public enjoyment of these natural features and assets. DECR is the formal lead body in this matter, and needs to give greater priority to this role - advised as appropriate by the National Parks Advisory Committee. But there is also an obligation for it to draw on and utilise the considerable knowledge and experience of the TC National Trust and local communities – the more so given the limited resources and experience in such matters within DECR.

Recommendation – DECR needs, as a matter of urgency, to prioritise the order in which site management plans will be drawn up, allocate the resources and get on with the assessments, investigations and consultation processes that will generate these plans.

Recommendation – DECR needs to do more to communicate the purpose of the Protected Area System – its ecological rationale, its values, the logic behind encouraging rather than discouraging public access, and the concept of "conforming use".

Recommendation – As a means of better communicating with public, DECR should make greater use of a ranger service, providing rangers - some on a site specific basis – to act as an information source, and to be available to guide visitors around sites.

Recommendation – In further promoting the Protected Area System as a valuable and accessible national resource, we suggest that consideration is given to re-naming the system as the **Pa**rks and **P**rotected **A**rea **S**ystem (PaPAS) – emphasising the parks element of the system, and providing a softer sounding acronym for the system – and it should be managed by a dedicated department.

Recommendation – We would also suggest that a visitor guide to the Protected Area System is prepared and published, and made available through DECR and island bookshops. The ecological assessments and mapping undertaken as part of this study would make a good starting point for such a guide.

4.5 Funding access to the Protected Areas

By 1995 most of the Protected Area System simply amounted to a "paper parks" system, with no management, and no effective allocation of funds to develop or manage the system. In ensuing years the need to adequately manage the Protected Area System was effectively communicated to government, and in 1998 agreement was reached to establish the TCI Conservation Fund. Its source of income was a 1% levy on tourism accommodation – revenue per tourist per night – collected as a small addition to the existing Accommodation Tax.

The aims and objectives of the Conservation Fund were laid out in the Coastal Resources Management Project memorandum (CRMP) (TCIG/DFID; 1999). This document was the official agreement between TCIG and HMG and contained a number of important policy statements. Key amongst these was a statement addressing the overall goal of the fund as:

> *"to encourage and promote the provision, protection, conservation, enhancement and sustainable use of the natural and historical resources of the Turks and Caicos Islands for the benefit and enjoyment of present and future generations of the people of the Turks and Caicos Islands."*

Between the years 1998 – 2003 the Conservation Fund accrued a total income of US$ 3.24 million of which US$ 1.87 million was spent during the same period. A formal apportionment of the Fund was agreed as 70% for the management of protected areas, 20% for a small grant mechanism called the

Community Conservation Grants, and 10% to be held in reserve. To date the largest *tranche* of funds has been used in the management of 3 of the nation's 33 Protected Areas – leaving 30 of the sites without effective management.

But what the PAS urgently needs is a major injection of cash to fund the installation of basic access infrastructures – roads, car parks, paths, board walks, signage, rest areas and facilities, picnic areas, and information / literature on each site – plus the recurrent budget to allow for the development of management plans for each site, including effective stakeholder consultation, and the wherewithal to actively manage the sites. The current scale and revenue mechanism of the Conservation Fund is simply not up to this task. Despite the considerable economic benefits that government and the tourism industry generate as a result of the presence of the Protected Area System, the scale of financial transfers to the maintenance and management of this important national and economic asset is small, disproportionate, and inadequate. It is also the case that much of the economic potential locked up in the Protected Area System is not being realised because of this failure to invest in the system.

Conclusion – The PAS urgently needs a major injection of cash to fund the installation of basic access infrastructures – roads, car parks, paths, board walks, signage, rest areas and facilities, picnic areas, and information / literature on each site – plus the recurrent budget to allow for the development of management plans for each site, including effective stakeholder consultation, and the wherewithal to actively manage the sites

Conclusion – The current scale and revenue mechanism of the Conservation Fund is simply not sufficient to meet the demand for effective management of the country's natural heritage.

Conclusion – Despite the considerable economic benefits that government and the tourism industry derive as a result of the presence of the Protected Area System, the scale of financial transfers to the maintenance and management of this important national and economic asset is small, disproportionate, and inadequate.

Conclusion – It is the case that much of the economic potential locked up in the Protected Area System is not being realised because of the failure to invest in the system.

We think that the rationale behind the Conservation Fund is good, and that it provides an effective funding mechanism for support of some of the requirements of the PAS. But it is simply too small in size to accomplish the task set it. We are of the view that it should be increased to at least a 2% levy – a doubling of its current revenue generating capacity. But hand in hand with such an increase should be a much increased effort to communicate to island residents and visitors just what use and purpose this money is being put to.

Recommendation - We are of the view that funding of the Conservation Fund from the Accommodation levy should be increased from 1% to 2% levy – a doubling of its current revenue generating capacity – and the monies should be held separate from the Government Consolidated Fund.

Recommendation - We are also of the view that consideration should be given to re-balancing the role of DECR away from fisheries management (continue to manage fisheries, but at a more strategic level, controlling activity through greater monitoring of exports) and more towards management of the parks system. In this regard, consideration should be given to creating greater institutional separation between fisheries and PaPAS management.

Recommendation -We also believe that its capital and recurrent budget allocations should be

increased – rationalised in terms of the substantial under-pinning and benefits that the PAS offers to the islands' tourism sector.

We are also of the view that the Turks and Caicos National Trust needs to grow in stature and size, as reflects the scale and nature of the tasks ahead of it. It has developed considerable knowledge, expertise and track record in the area of terrestrial and wetland conservation, and the interpretation and communication of the country's natural and cultural heritage to the public, but it lacks the resources, influence and scale of local support to effectively and adequately exercise its wider mandate – at this time. It needs to grow its resource base and sphere of influence – by focusing its resources in those areas and on those activities that it can achieve rapid and high profile results in, and which will lead to a strengthening of its resource base and sphere of influence. In this regard we are of the view that it should strategically take major responsibility for conservation and management of some of the country's key historical and cultural assets, and responsibility for conservation of some of the islands signature endangered species (for example its rock iguana, Turks head cactus, flamingo, Lignum vitae tree and its pine yards), allowing the DECR to focus on the larger task of managing the parks, and most of the reserves and sanctuaries.

Recommendation - The Turks and Caicos National Trust needs to grow its resource base and sphere of influence – by focusing its resources in those areas and on those activities that it can achieve rapid and high profile results in, and which will lead to a strengthening of its resource base and sphere of influence. In this regard we are of the view that it should strategically take major responsibility for conservation and management of some of the country's key historical and cultural assets, and responsibility for conservation of some of the islands signature endangered species (for example its rock iguana, Turks head cactus, flamingo, Lignum vitae tree and its pine yards), allowing the DECR to focus on the larger task of managing the parks, and most of the reserves and sanctuaries.

As of this time, outside the management of marine areas (building on its fishery management heritage), the DECR has very little experience or capacity in wetland, terrestrial or historic site conservation, protection or management. Indeed it can be reasonably argued that more resources have been deployed by the National Trust than by DECR in the management of these latter assets. But it remains the case that the DECR is the formal vehicle through which government exercises its legal, administrative and development obligations under National Parks and other legislation. The National Trust is not, and should not be, a substitute in this matter. Should, however, the DECR / government find it appropriate and expedient, recognising the special expertise held within the National Trust, to pass responsibility for management of some of the terrestrial and wetland areas of the National Parks System to the National Trust, as it currently does in the case of some sites of historic interest and some sites of importance for signature species, it should also provide the National Trust with the necessary resources to fully exercise this responsibility.

Should the DECR fail to protect and develop the National Parks System – taking into consideration the relatively slow progress achieved to date in exercising a legal mandate established in the late 1980s – then it falls to the National Trust to press government to rectify this situation, and to raise public awareness of the slow progress in this area and the consequences of such action or inaction. This is no easy task, given that its formal powers are limited; it is also for this reason that we are of the view that the National Trust needs to grow in stature, size and influence. It needs to do this by concentrating its efforts on key initiatives, and not dissipating its resources too widely and on too many projects. To achieve this it needs to develop a much stronger financial / fund raising focus (and capacity) to its operations, and develop much stronger political connections (by achieving stronger linkage to the islands' power structures, and better balancing local membership with expatriate membership).

Recommendation – Should the DECR fail to protect and develop the National Parks System –

taking into consideration the relatively slow progress achieved to date in exercising a legal mandate established in the late 1980s – then it falls to the National Trust to both press government to rectify this situation and to raise public awareness of the slow progress in this area and the consequences of such action or inaction. To this end the National Trust should work hand in hand with DECR in, for example, making available its terrestrial and wetland management expertise, but should remain focused on developing the image and public support that will allow it to influence government in the protection and development of the National Parks System.

But funding of the PAS is not just a matter for the public purse. The tourism and property investment sectors gain considerable benefit from the PAS, and this should be more explicitly recognised by both these industries and the government, and mechanisms established and clearly publicised by which the private sector can contribute to the maintenance of the PAS. These mechanisms should include means by which businesses and individuals can gift funds or other assets to the PAS, as well as mechanisms by which businesses can invest in PAS infrastructures and commercial operations within and on the outskirts of Protected Areas. A number of issues arise from this suggestion.

Recommendation - The tourism and property investment sectors gain considerable benefit from the PAS, and this should be more explicitly recognised by both these industries and the government, and mechanisms established and clearly publicised by which the private sector can contribute to the maintenance of the PAS.

Gifting to government – for example to cover the costs of wardens, etc. - can be difficult. Nonetheless, we have come across circumstances where businesses or private individuals would be more than willing to contribute to the capital costs of setting moorings, board walks, and the like, if the DECR could install them. It would seem appropriate to set up the official mechanisms by which this sort of gifting of material assets could be accommodated (as long as it does not require the DECR to incur costs outside its normal or planned programme of work).

Gifting to a "not-for-profit" organisation such as the Turks and Caicos National Trust should not present a problem, since this is a standard practice for such organisations. Nonetheless, it would work in the National Trust's favour if this funding mechanism were to be more widely publicised, particularly in respect of large donations, and that the facility to gift small amounts of money – say in the order US$100 – was made functionally simpler.

One of the problems facing the sustainability of the Protected Area System is that, bearing in mind most of the PAS is Crown Land, government appears to treat the PAS as a potential landbank – i.e. land that could be de-designated at some time in the future so that it might be developed for what would otherwise be treated as a "non-conforming use". As indicated elsewhere in this report, we think that any tendency towards this view will be substantially allayed where the appropriate Protected Area sites and designations are opened up to public use. A second form of protection against de-designation is that anyone making an investment in the expectation that a Protected Area will remain a Protected Area, and as such be subject to "conforming use" restrictions, will not sit back if this *status quo* is being challenged. In extreme, such challenges to the existing system are likely to result in legal challenge, and have the potential to significantly and negatively impact on confidence of investors in the TCI planning system.

Conclusion – Where an investment is made in the expectation that a Protected Area will remain a Protected Area, and as such be subject to "conforming use" restrictions, the investor will expect this condition to the maintained; should this situation alter, it has the potential to significantly and negatively impact on the confidence of investors in the TCI planning system.

But in addition to the above disincentives, we also think that serious consideration should be given to encouraging the placing of land (and seabed) within the boundaries of Protected Areas into Trust on

behalf of and for the benefit of future generations of Belongers and their guests. This can be done on the basis of long lease or transfer of freehold title – as is the case, for example, in respect of the transfer of Cheshire Hall HA and Little Water Cay NR to the Turks and Caicos National Trust. We are of the view that land and seabed within the boundaries of the Protected Areas is subject to planning constraints that regular Crown or Private land is not. But the increasing incidence with which "non conforming" development is being entertained on land that is currently designated as Protected Area is worrying. We believe that at least some of the Protected Area system should be put outside the scope of de-designation. This can be achieved by the government nominating certain land to be placed in Trust – whether with the Turks and Caicos National Trust or another suitable not-for-profit organisation. It might also be achieved through the use of a "planning gain" argument, that where a particular development is likely to benefit specifically from its position adjacent to a Protected Area, it be offered the opportunity to buy up all or part of the land for immediate and permanent transfer to an appropriate Trust organisation. Such a move would benefit current and future generations of Belongers, would result in a financial transfer to the Treasury, and more explicitly demonstrate the relationship between property and tourism development, the high quality natural environment, and the Protected Area System.

Recommendation - We think that serious consideration should be given to encouraging the placing of land (and seabed) within the boundaries of Protected Areas into Trust on behalf of and for the benefit of future generations of Belongers and their guests, and that in this way at least some of the Protected Area system should be put outside the scope of de-designation.

5. Current development pressures on the PAS

5.1 Types of pressure

As matters stand, the PAS is subject to a number of development pressures that adversely impact on the standing, quality and sustainability of Protected Areas. These pressures can be divided into a number of categories (see **Table 2**):

- Proposals to approve "non-conforming" developments (it is assumed, but not confirmed, that for such development proposals to go ahead the affected area of Protected Area will need to be officially de-designated;
- For a number of Protected Areas it is already evident that the quality of the sites is being affected by the number, timing, and behaviour of people visiting the sites;
- For a number of Protected Areas there is the potential that development at the edge of the site will adversely affect the quality of the site and the features for which the site was designated – and thus where the provision of buffer zone between the Protected Area boundary and the core features of the site for which the area was designated – is necessary;
- Whilst most Protected Areas would benefit from improved access management, a number of sites display particularly acute needs with respect to how to access and explore the attributes of the site.

Table 2 - Table showing main pressures affecting the PAS

	area hectares	develop.	buffer	people	access
West Caicos					
West Caicos MNP	467				
Lake Catherine NR	397	D	B		A
Providenciales					
Princess Alexandra LSNP	3,848			P	
North West Point MNP	1,687				
Fort George LSNP	738				
Chalk Sound NP	1,461	D	B		
NW Point Pond NR	57	D	B		A
Pigeon Pond & Frenchman's Creek NR	2,411	DDDD			A
Princess Alexandra NR	117	D			
Cheshire Hall HS - 3 acres					
Fort George HS - 1 acre					A
Sapodilla Hill HS - 0 acres				P	
North Caicos					
East Bay Islands NP	3,377	D			
Dick Hill & Bellefield Landing Pond NR	402		B		
Pumpkin Bluff Pond NR	166		B		
Cottage Pond NR	8				A
North, Middle & East Caicos NR	58,654				
Three Marys Cays S	15			P	
Middle Caicos					
Conch Bar Caves NP - 231 acres	94	D			A
North, Middle & East Caicos NR	58,654				
Vine Point & Ocean Hole NR	726				
East Caicos					
North, Middle & East Caicos NR	58,654				
South Caicos					
Long Cay S - 188 acres	76			P	
Boiling Hole HS	49				
Admiral Cockburn LSNP	849				
Bell Sound NR	1,157		B		
Admiral Cockburn NR	321				
East Harbour Conch & Lobster FR					
Grand Turk					

Grand Turk Cays LSNP	198			
South Creek NP	98	B		
Columbus Landfall MNP	1,127			
Salt Cay				
Big Sand Cay S	179		P	
Salt Works & Village HS	189			A
Other				
French, Bush & Seal Cays S	19		P	
Endymion Wreck HS	3		P	
Molasses Reef Wreck HS			P	

Notes: *In the above, the main characteristics of the sites are denote by colour coding – blue = marine; light blue = aquatic; light green = largely tidal wetlands; green = largely terrestrial*

5.2 Buffers zones

We have identified eight sites where we believe buffer zone problems exist. In each of these we are of the view that the current boundaries should be expanded in order to offer greater separation between any future development outside the Protected Area and the features of the site that have prompted designation.

The largest affected of these sites the Lake Catherine NR, West Caicos, the Chalk Sound NP, Providenciales, and Dick Creek and Bellefield Landing Pond NR.

- For the Lake Catherine NR we recommend that the boundaries be extended to incorporate a much wider area around the Lake, so as to protect this from future development. At the same time we suggest that the opportunity is taken to incorporate a number of adjacent habitat, geological and industrial heritage features within the reserve – much along the lines presented in the West Caicos Ten Year Master Plan, and expanded upon in subsequent planning documentation.

Recommendation – We recommend that the boundaries of the Lake Catherine NR be expanded to incorporate a buffer zone, and to bind within this site additional habitats, geological features and areas of industrial heritage.

- For Chalk Sound NP we are of the view that the negative impacts of further residential development around the periphery of the NP (waste management, effluent, land-scaping, run-off, jetties, boat traffic) is likely to significantly alter the ecology of this site, particular given the limited nature of water exchange between it and the open sea. We suggest that a vegetation buffer zone is included within the park boundary along its northern edge, and that other planning and management measures are taken to control / reduce the impacts of residential development and nearby roadways.

Recommendation – We recommend that the boundaries of the Chalk Sound NP be extended to incorporate a terrestrial buffer zone along its northern border.

- The Dick Creek & Bellefield Landing Pond NR is currently in largely pristine condition, but the proposed construction of a significant cargo landing site and associated infrastructure along its southern edge does pose a threat to the integrity and quality of the site. In addition, there is talk of a marina development along its north-easterly edge. There appears to be little opportunity for the extension of the boundaries of this site (both along its northern and southern edges) to provide a buffer zone, and so emphasis will need to be placed on managing its perimeter, possibly through some hard barrier such as fencing (for example to the rear of the industrial zone accompanying the cargo landing site development).

Recommendation – The Dick Creek & Bellefield Landing Pond NR is potentially threatened with encroachment from the development of a commercial port facility along its southern edge; in the

absence of any realistic opportunity to establish a relevant buffer zone, emphasis should be placed on managing its perimeter, possibly through some hard barrier such as fencing.

The buffer zone issues associated with other sites are smaller in scale.

- Bell Sound NR is a large and shallow water reserve, in some ways akin to the structure of the Chalk Sound NP. The parcelling of much of the land along its perimeter has already been undertaken, and there will inevitably be pressure to allow the construction of jetties and slipways – as there has been for Chalk Sound NP. There needs to be some control and rationalisation of this tendency, but in addition, it is appropriate that at least some of the coastline at the edge of this reserve is incorporated within the boundary of the reserve so as to retain the nature features of the sea / land interface, particularly mangrove areas. We have proposed elsewhere that consideration should be given to extending the boundary of the Boiling Hole HA to the north to incorporate an area of coastal coppice. If this were to be accomplished at a reasonable scale, this would effectively join the Boiling Hole HA and Bell Sound NR and achieve the desired result in respect of developing an element of buffer zone within the Bell Sound NR.

Recommendation – Some clear planning guidelines need to be developed and issued in respect of the development of jetties along the perimeter of Bell Sound NR as this area becomes subject to development pressure; in addition, we suggest that consideration should be given to incorporating an area of coastal coppice within the boundary of this reserve so as to retain the nature features of the sea / land interface.

- The boundaries of North West Point Pond NR and South Creek NP currently only incorporate the key habitat under specific protection, but this leaves each of these sites vulnerable to inappropriate development along these boundaries – to the potential detriment of the habitats being protected. In each of these cases we strongly suggest that each boundary be extended to incorporate a reasonable buffer zone around each site.

Recommendation – The boundaries of North West Point Pond NR and South Creek NP should be extended to incorporate relevant and reasonable buffer zones around each site.

- In the case of Pumpkin Bluff NR, we have indicated elsewhere that on its own, i.e. without the incorporation of the other adjacent salinas, it lacks scale. If it is to remain within the Protected Area System, however, we believe that the boundary of this site should be expanded to incorporate a buffer zone to prevent development right up to the edge of the salina.

Recommendation – If the Pumpkin Bluff NR is to remain within the Protected Area System (see recommendation for de-designation) we believe that the boundary of this site should be expanded to incorporate a buffer zone to prevent development right up to the edge of the salina.

5.3 Access issues

A number of sites display major problems with respect to public access of one sort or another.

- North West Point Pond NR is very inaccessible as matters stand and anyone attempting to access this site is likely to have to break through vegetation; in the case of Cottage Pond NR it is relatively easy to get to a vantage point overlooking the pond, but any closer inspection is likely to involve trampling of fragile vegetation and the dislodging rocks and plants – none of which is good for the integrity of these sites. Proper access infrastructure needs to be developed for the benefits of these sites to be revealed (some form of viewing platform for both sites, possible linked to strategically located terrestrial and underwater video cameras, site

interpretation, etc.). If such infrastructure is not provided, visitors to these sites should be discouraged.

Recommendation – There are access and access management issues associated with both Northwest Point Pond NR and Cottage Pond NR that should be remedied by erection of viewing platforms, and interpretation facilities.

- Tourist visits to Conch Bar Caves NP are steadily increasing, but there is very little control of visitor access to what is a sensitive and easily damaged site. The local community is eager to exploit the economic opportunities of this site, and has worked with the National Trust to development a management plan for the site, and to develop a training / certification scheme for guides, but the absence of clear responsibility for the site, and the absence of needed funding mean that the features that make this site so special are in danger of being eroded or destroyed. Urgent action is needed to bring this situation under control – activitation of the management plan, and the formal allocation and management of vending concessions around the entrance to the site.

Recommendation – To maintain impetus in the involvement of the local community in the management of the Conch Bar Caves NP, there is urgent need for the resourcing and activation of the management plan, and the formal allocation and management of vending concessions around the entrance to the site.

- The Lake Catherine NR on West Caicos is a great reserve, and the people of TCI and visitors to TCI need to be more aware of the features that make this special, and be allowed to visit the park. But the current isolation of this reserve, and the absence of any formal means of transport to and from the island makes this difficult. This needs to be remedied. There are plans to develop a stepping off point at near West Harbour Bluff on the south east extremity of Pigeon Pond & Frenchman's Creek NR to ferry guests to and from the new hotel complex under construction on West Caicos, but provision needs to be made for easier public access to West Caicos – either through this ferry point, or from other setting off points such as Cooper Jack or Gussy Cove. Care needs to taken to ensure that a monopoly position is not established on this route, that adequate facilities are available on landing at West Caicos to support public visits to the reserve, and that relevant trails, guides and tracks are provided to control visitor access to the reserve.

Recommendation – To facilitate public access to the Lake Catherine NR on West Caicos provision needs to be made for easier public access to West Caicos – through the proposed ferry point at the southwest extremity of Pigeon Pond and Frenchman's Creek NR, or from other setting off points such as Cooper Jack or Gussy Cove.

- Until a year ago, the Pigeon Pond & Frenchman's Creek NR was almost inaccessible from the land. It is natural that the location on the main tourism island of Providenciales, coupled with its proximity to the airport and key tourism infrastructure, has and will encourage developers to eye up this site for development. But we believe that the failure to actively and practically encourage public access and use of the reserve has rather left an open door to the uninformed suggestions that the reserve serves little purpose, is too big, and that its boundaries can be eroded for resort and residential development. We are of the view that the reserve should be maintained intact, but that its access infrastructure should be developed as a matter of urgency.

Recommendation – It is our view that the Pigeon Pond & Frenchman's Creek NR should be maintained intact, that a management plan for the reserve should be developed as a matter of urgency, to be quickly followed by the development of necessary and appropriate access infrastructure, and active intervention to prevent further degradation of Lucayan archaeological sites.

- In particular we believe that a gateway development should be established at or near the point where the current road enters the reserve from the Millennium Highway on its north east

boundary. This should be located on the crest of the escarpment offering extensive views over the reserve to the south, and should include viewing platform, site interpretation facility, café / restaurant, toilet facilities, picnic area, car park, and some retailing facilities. If at all possible it makes sense that such a development should be located on but outside the boundary of the reserve.

Recommendation – We are of the view that the Pigeon Pond & Frenchman's Creek NR would benefit from the establishment of a clear gateway development – visitor centre, viewing deck and complex – on high land along or near to its north-easterly boundary as a means of revealing the considerable potential value of this Protected Area, serving an important role in public education about the Protected Area System, and providing clear demarcation of the northern edge of this reserve.

- In addition to this, it appears now to be a *fait accompli* that a small development will take place near West Harbour Bluff to facilitate a starting-off point for a West Caicos ferry. We are of the view that any such development should be small, should fully comply with "conforming use" criteria, and should not incorporate any residential or resort type development. For the establishment of what exactly constitutes "conforming use", there needs to be a detailed management plan for the reserve – no such plan currently exists. This management plan should also include the development of other access infrastructures within the park, such as trails, boardwalks, and possibly a Lucayan interpretation centre.

Recommendation – A further reason for the urgent development of a Management Plan for the Pigeon Pond & Frenchman's Creek NR is that planning is proceeding for development of a ferry terminal and associated infrastructures near West Harbour Bluff at the south easterly extremity of the reserve; it is imperative that any development here complies with the concept of "conforming use" – and the specification of "conforming use" in relation to the management of this Nature Reserve can only be made in the context of such a Management Plan.

- Cheshire Hall HA forms the pinnacle of the islands' cultural heritage sites, but this is really not reflected in the standing it is given within the tourism industry. Whilst the Plantation culture that is represented in the layout and remains of Cheshire Hall harks back to a period of colonialism, slavery and a cotton industry based on deployment of slave labour, it offers a great opportunity to relate the humble origins of most Belonger families, and to link this to the story surrounding the emergence of the current nation state. For a major tourism destination served by so few historic and cultural sites, coupled with a visitor population keen to understand a little more about the country they are visiting, the relatively lowly standing of Cheshire Hall HA as a visitor attraction is a major lost opportunity. There is much more that can be achieved with this site – with the adding on of a visitor centre, interpretation zone, café and rest area. Given that the Turks and Caicos National Trust does not have the resources to fully realise this potential (and it is suggested that similar developments should also be considered in respect of Wades Green Plantation on North Caicos, and Government House on Salt Cay) it is of national interest that this site should be further developed, and ways should be explored to enable the National Trust to raise and deploy the necessary funding from public and private sources.

Recommendation – We consider it of national importance that the status of the Cheshire Hall HA be substantially raised through its further development (with the adding on of a visitor centre, interpretation zone, café and rest area), and that ways need to be explored to enable the National Trust to raise and deploy the necessary funding for this task from public and private sources.

- The Salt Works and Village HA, Salt Cay is another signature site – incorporating salt industry infrastructure, whaling industry infrastructure, examples of vernacular housing from hovel through to merchants' houses, and systematised salinas habitat and natural salinas habitat. But whilst it would be quite wrong to suggest that this is inaccessible from a physical perspective – visitors are largely free to wander the various sites – facilities offering interpretation of the various sites are limited, there is few signs, and the mechanisms for ensuring that the key character of the built environment is retained and maintained are not

clear. It is fair to say that the number of visitors to Salt Cay is not great, but this will almost certainly change over time, and with the Cruise Ship Terminal now in place a trip to Salt Cay as part of the excursions offered to cruise ship passengers is likely to substantially increase visitor numbers. Now is the time to ensure that the characteristics that make Salt Cay and its Salt Works and Village HA so special are shown off to their best advantage, and in such a way as to reap the most of meagre economic opportunities. This requires development of an appropriate management plan, and the raising of the funds necessary to undertake works and interpretation to the scale and quality that this very special historic site demands.

Recommendation – Now is the time to ensure that the characteristics that make the Salt Works and Village HA on Salt Cay so special are shown off to their best advantage, and in such a way as to reap the most of meagre economic opportunities on the island; this requires development of an appropriate management plan, and the raising of the funds necessary to undertake works and interpretation to the scale and quality that this very special historic site demands.

5.4 People pressure

In a slight variation on a theme, we have identified another set of Protected Areas where the quality and sustainability of the sites is already under threat from the number of people that are visiting the sites, or a combination of the number and the undisciplined nature of the intrusion within any Protected Area.

- For dive sites, the water sports operators in collaboration with DECR do their best to ensure that sites do not become over-used. They do this by keeping records of how many people dive each site, by maintaining regular dialogue as to which dive operators plan to visit particular sites, and by participating in the monitoring of the quality of each site. DECR collates data on each of the dive sites and on dive quality, and can feed back management information to water sports operators accordingly. This system appears to work well. Nonetheless there is particular site sensitivity in respect of people pressure on the Endymion Wreck and Molasses Reef Wreck Historic Sites.
- But we are aware that dive operators, commercial fishermen and recreational fishermen use some of the cays that have been designated as Sanctuaries as stopping off / picnic / rest points. We have no evidence that such use is causing any particular problem with regard to the quality of these sites, or to activities that this designation seeks to protect, but it is the case that unauthorised visiting of these cays is strictly against the letter of the law protecting these sites. We are of the view that the current *laissez-faire* approach should be continued, but that the DECR should pursue a slightly more formal site-condition monitoring programme in respect of these sites. It should also better communicate the purpose surrounding the protection of these sites, and that they are essentially off-limits to the general public for all or part of the year.

Recommendation – Recognising that various user groups visit a range of protected cays, without evident impact on the cays but in contravention of the rules for these sites, we are of the view that the current *laissez-faire* approach should be continued, but that the DECR should pursue a slightly more formal site-condition monitoring programme in respect of these sites.

- Sapodilla Hill HA has been designated as an historic site, particularly reflecting the preservation of the ancient graffiti left by sailors, lookouts and the like. We are aware that there is very little actual physical protection of this site, and that it is being subject to some vandalism, not least by others seeking to leave new graffiti. Short of enclosing the area, which is not an obvious way forward (though there may be opportunity to fence small areas and allow viewing from a suitable vantage point), the only course of action is to make people more aware of why this site is being protected, and of the historic and cultural significance and value of the ancient graffiti, and why it is inappropriate to add new graffiti.

Recommendation – To ensure the long-term protection of historic sites incorporating fragile artefacts – such as the carvings on Sapodilla Hill HA – increased effort and resources need to be

applied to making people more aware of why such sites are protected, and of the historic and cultural significance and value of – in this case - ancient graffiti, and why it is inappropriate to add new graffiti.

- Princess Alexandra LSNP is the most heavily visited and use Protected Area, is the only park for which a management plan has been in place for some years, and the only park that is subject to active management. Nonetheless, with the steady increase in construction along Grace Bay and in its immediate hinterland, the quality of the park is starting to suffer through people pressure – as reflected, amongst other factors, in too many nutrients entering the sea causing reduced water quality and a general increase in the incidence of green algal growth on the patch coral and coral reefs. Ultimately this has the potential to substantially reduce the quality of the experience of anyone visiting the park – whether walking along the beach, swimming in its waters, or sailing across its surface. It is essential that the causes of this chronic reduction in the quality of the environment within this park are communicated to tourism operators, marina operators, Belongers and visitors alike, and that controls on sewage treatment systems and waste disposal are strictly enforced. There are also real health implications to such chronic degradation, and already some areas show high bacteriological loading. Failure to enforce these issues will eventually lead to a steady decline in the economic value and contribution of the park and the tourism businesses located along Grace Bay.

Recommendation – The Princess Alexandra L&SP is by far the most visited and used of the Protected Area sites, and the most actively managed, but with the steadily increasing density of settlement of Grace Bay, the quality of the park is starting to suffer through people pressure – as reflected, amongst other factors, in too many nutrients entering the sea causing reduced water quality and a general increase in the incidence of green algal growth on the patch coral and coral reefs; it is essential that the causes of this chronic reduction in the quality of the environment within this park are communicated to tourism operators, Belongers and visitors alike, and that controls on sewage treatment systems and waste disposal are strictly enforced.

5.5 Development

As indicated in **Table 2**, we are aware of a number of current and recent development proposals that appear to run counter to the "conforming use" criteria that govern developments within the Protected Area System. The more specific location of these projects is shown in **Fig 15**. On the basis of fairly superficial examination of these proposals (we do not have access to any detail on these proposals) we are of the view that they do indeed run counter to the intent of the Protected Area System, that they amount to a cherry-picking of beach and high ground sites within the Protected Area System, and that if they go ahead they will distort the composition of the Protected Area System, they will remove from the PAS habitats that are very poorly represented within the system, and they will set a precedent for the further erosion of a PAS that was developed as a single system.

- The greatest development pressure is being exerted on Western Providenciales in six sites.
    - As part of a larger scheme for the development of the north western area of Providenciales there is a plan to reduce the size of the North West Point Pond NR to allow for construction of a marina adjacent to the North West Point Marine Park.
    - It is further proposed to sanction residential development on the high ground along the northern boundary of the Pigeon Pond & Frenchman's Creek NR, and possibly to de-designate the higher areas of the park – primarily areas of blackland vegetation that are poorly represented within the PAS
    - The development of the Amanyara Resort along the western edge of Providenciales, and just to the north of the Pigeon Pond & Frenchman's Creek NR, along with a golf course, whilst undoubtedly a well-thought out development offering a particularly un-intrusive ecological footprint, it seems to incorporate part of the reserve area within the boundaries of the Amanyara Resort property. It is not clear to us how ownership

of this land by the Amanyara Resort sits with the legal requirement to management this land as part of the Nature Reserve.

Fig 15 - Schematic identifying the main locations of development and people pressures

Note: *red = development pressure; orange = people pressure*

- It is rumoured that alongside the development of a setting-off point for the West Caicos ferry to service the new hotel under construction there, it is also proposed to sanction condominiums and residential development along the ironshore ridge running out to Osprey Point at West Harbour Bluff. This area is an outstanding walk and scenic area for visitors and residents alike, and visitors to this area are on the increase. Proposed development of this area appears to runs counter to the "conforming use" restrictions on development within the PAS, but also compromises the sight lines, visual amenity and landscape quality of the rest of the Nature Reserve.
- It is also rumoured that a triangle of land lying to the rear of Proggin Bay along the southern edge of the Pigeon Pond & Frenchman's Creek NR is to be developed as a golf course, and the ironshore along the north western edge of this area, opposite the Silly Creek development, is to be allocated for residential development. Such a development would remove yet another important habitat component of the Nature Reserve, and a brackishwater wetland area that appears to have significantly different ecological characteristics to any other water body in the TCI.
- It is also rumoured that land along the northern edge of Chalk Sound is to be set aside for residential development. We are of the view that any such development would adversely affect the sustainability of the ecological integrity of the Chalk Sound NP, and significantly alter the horizon of views from the Pigeon Pond & Frenchman's Creek NR which we see as an area of outstanding natural beauty.

- The ten year development plan for West Caicos envisages a range of built developments around the coast of the island. We do not object to the principle of such development, but do have concerns about the impact of such developments on the Lake Catherine NR, and encroachment of such development on this and the other natural and built heritage of the island. It is for this reason that we think that the boundary of the reserve should be extended to incorporate a substantial buffer zone around the lake, and that the opportunity should be

made to incorporate area of other sensitive habitat within the reserve, as well as some of the industrial heritage of the island.

- There is a proposal to substantially increase the scale of the Leeward Marina and associated infrastructures. This impacts on the makeup of the Leeward Going Through, and involves destruction of some of the mangrove areas opposite the current Leeward Landing. The sand banks associated with this Going Through are very sensitive to changes in the physical dimensions of this passage, and a re-sculpting of this area is inevitable where any changes are made. We have concerns that any alteration to the Going-Through will impact negatively on the Princess Alexandra NR, but also recommend that the impacts of any changes to the Leeward Landing / Leeward Marina area are carefully modelled and the ramifications of any impacts clearly thought through – particularly the impacts of sediment erosion and deposition on existing and planned buildings and structures.
- Some eighteen months ago intense preliminary investigations were undertaken in respect of a resort development proposal for the northern end of East Bay Islands NP. In the end this proposal was turned down, but it is not evident that this was turned down because the proposed development was not a "conforming use" development for a National Park, but rather for commercial reasons. The East Bay Islands NP is a significant national park asset, and one that should be opened up for public use. It is of great concern that development plans for this area were allowed to progress so far regardless of the earlier designation of this area as a national asset. It has also to be questioned that anyone should consider significant built development in such a low-lying location in an area that is known to have flooded as a result of severe storm surge.

Conclusion – In the last 24 months an increasing number of investment proposals has been discussed relating to construction within the boundaries of the Protected Area System; we are of the view that the entertainment of such developments by the Government, by TCInvest and by the Planning Department transmits a very poor signal to everyone concerning the commitment of the government to the PAS, but also reflects poor comprehension of the significant economic value locked up within the PAS, value that can only be released through committed investment in opening up the Parks, Reserves and Sites of Historic Interest to the public.

6. Proposed modifications and extensions to the Protected Area System

In the following table we present a summary of the changes to the existing sites that we propose – based on the ecological and socio-economic assessments of sites and our analysis. Not all of these proposals have been signalled in the foregoing text. In a separate table below we also summarise proposals for new sites.

We indicate the level of urgency we ascribe to each of these proposals in the right-hand column – **1** = high priority; **2** = should be given serious consideration; **3** = under ideal circumstances we consider that this would enhance the quality and functionality of the PaPAS.

Summary of proposed changes to existing sites

No.	name	characteristics for which site has been designated	proposed boundary changes	priority
01NP	**Admiral Cockburn L&SP**	• excellent wall diving and representative coral reef ecosystems	• recommendations are to extend the reef areas further north or create another protected area to encompass these reefs, especially the areas having a predominance of berried females lobsters.	2
02NP	**Chalk Sound NP**	• scenic water; bonefish; boating; picnic area	• add vegetation buffer zone along northern border	1
03NP	**Columbus Landfall MNP**	• excellent wall diving • the only protected barrier/fringe reef for the island, as well as for the Turks Islands • dive operators have also recommended that park be extended south of the present Park area	• extend boundary to the east to include more shallow water area, and reduce western boundary back to a more appropriate depth contour; • possibly encompass northern end of North Creek, if not given independent protection; • extend area south to compensate for the out of weather reefs destroyed/disturbed or made inaccessible by the new Cruise Port.	2
04NP	**Conch Bar Caves NP**	• the entirety of the cave ecosystem in this region is not contained within this PA • critical cave habitats remain outside of protected at Indian Cave on Middle Caicos and at Jacksonville on East Caicos.	• extend protection to Indian Cave and Jacksonville • if Indian Cave is not protected under a new Crossing Trail NR, then it should be incorporated within the Conch Bar Cave NR; • because of its uniqueness, and as this PA provides critical and sensitive to a number of species at risk, consider re-designation as a Nature Reserve.	1
05NP	**East Bay Cays L&SP**	• scenic islands and favourite picnic area • need to remove Casuarina trees and re-establishment of natural strand communities;	• extend this Land and Sea Park to include the offshore reef areas of North or Middle Caicos • consider re-designating this park as a Nature Reserve.	2
06NP	**Fort George L&SP**	• dive and picnic sites; 1798 English fort; shipwreck; canons in shallow water; iguanas; ospreys and wading birds	• expand to include the nearby snorkel reefs at Fort George Cut and dive sites at Pine Cay • link NP with the offshore areas of Princess Alexandra National Park.	1

07NP	**Grand Turk Cays L&SP**	• shallow dive sites, bird and fish nurseries; day outings and picnics • Gibbs Cay prized for recreational features, and Penniston and Martin Alonzo Pinzon cays prized as critical habitats for internationally-important pelagic seabird populations and endangered sea turtles (also on Gibbs Cay). • need to ensure monitoring and management of pelagic bird populations on Gibbs Cay to ensure their long-term sustainability under the proposed arrangement.	• recommend that Gibbs Cay remain a National Park to facilitate the public's enjoyment of its unique recreational features • recommend that remaining cays be reclassified as Nature Reserve.	2
08NP	**North West Point MNP**	• best wall diving off Providenciales	• extend the Park to the south of its current boundaries to include the offshore reef areas west of Frenchman's Creek • extend to include Sandbore Channel • possibly extend to link with the West Caicos Marine National Park	2
09NP	**Princess Alexandra L&SNP**	• dive and picnic excursions, iguanas, ospreys, mangroves and marine life	• include at a minimum to extend the Park boundary to link with the Fort George Land and Sea National Park to include the favoured dive and snorkeling sites currently not under Park protection. no change	3
10NP	**South Creek NP**	• wetlands, mangroves, viewpoint, tourist destination, picnic areas, small boat activities and harbourage • represents the largest, unspoiled tract of land on the island of Grand Turk that has protective status • the Park's valuable upland habitats are currently being developed for a visitor center and conch farm, although this use is in keeping with acceptable uses in a National Park. From an ecological standpoint, the development of these areas means that there will be no undeveloped protected upland habitats on the island of Grand Turk • the proposed annexation of lands to the south of the current boundary will help to alleviate this somewhat, as these proposed areas are of equal quality to those being lost to development.	• existing DECR proposals to extend park boundary to the south and south east	2
11NP	**West Caicos MNP**	• excellent wall diving	• include the extension of the Park to the north and the south of its current boundaries, preferably to include the South West Reef and Sandbore Channel as well as link with the North West Point Marine National Park for connectivity to other PA's.	3

12NR	**Admiral Cockburn NR**	• rare rock Iguanas, breeding terns and frigate birds	• no change	
13NR	**Bell Sound NR**	• bonefish reserve	• extend to include some shoreline vegetation and mangrove • re-designate to National Park	2
14NR	**Cottage Pond NR**	• bird nesting	• no change	
15NR	**Dick Hill Creek & Bellefield Landing Pond NR**	• bird nesting	• consider physical barrier to prevent encroachment from new port	1
16NR	**Lake Catherine NR**	• area of scenic value and interest to naturalists; large hyposaline lake supporting abundant pink bivalve molluscs and black mussels; habitat of seaturtles and birdlife including flamingos with old causeway and small islands offering bird nesting sites • it does not include other representative communities on West Caicos including silver palm coastal coppice, adequate whiteland, mangrove tidal forest, coastal rock (including fossil reef), seasonal salt pond and karst sinkhole wetlands.	• the core recommendation is to add a buffer zone all around site, • such a proposal has already been put forward by DECR, and others have put forward further extension proposals in the context of a 10yr plan for the islands; these boundary changes are desirable and would improve the ecological values of this PA by including more representative communities, preserving unique karst features and endemic species, preserving unique archaeological and fossil records and increasing overall numbers of species in protection • we are also of the view that the boundary should be extended to incorporate Yankee Town	1
17NR	**Ramsar**	• natural, representative mangrove system; bird diversity; ocean hole; iguana; flamingo; arawak villages; West Indian Whistling Duck 10% of "a population"; fish and turtle nurseries	• extend the boundary to include Nanny and Garden Ponds, East Caicos caves, wetlands associated with Conch Cay and wetland ecosystems of East Caicos • consideration should be given to including significant upland habitats of North, Middle and East Caicos that are not currently represented within any Protected Area	2
18NR	**North West Point Pond NR**	• a prime example of red mangrove lagoon habitat with an abundance and diversity of lagoon fauna, serving as a nursery and food source for neighbouring waters; an important feeding area for migrant wading birds and breeding area for locally common waterfowl species	• extension of the boundary to include a buffer zone around the core wetland area	1
19NR	**Pigeon Pond & Frenchman's Creek NR**	• wetland birds; West Harbour Bluff rock carvings	• extend the Nature Reserve to include the offshore reef areas- through extensions of the North West Point or West Caicos Marine Parks along the outer perimeter of the barrier/fringe reef areas, or preferably (to keep the reserve status of the entire area) to include the area from the current boundary out to the reefs to connect with both Parks • efforts should be made to extend its boundaries to include more upland areas	2

			(to the north of the reserve), the one community type that is lacking from its boundaries	
20NR	**Princess Alexandra NR (Donna , Mangrove and Little Water Cays)**	• picnic excursions, iguanas, ospreys, mangroves	• defence of the existing boundaries of Mangrove Cay in the face of potentially intrusive development proposals beside Leeward "going through"	1
21NR	**Pumpkin Bluff NR**	• this habitat functions as only a fraction of a wider wetland ecosystem - including Moore Hall Pond, Mangrove Pond, St. Thomas Hill Pond, a boiling hole, and surrounding seasonal marshes and swamps; • wildlife utilizes all of these habitats intermittently and requires all of them for long-term sustainable populations; • furthermore, this NR has no upland terrestrial buffers making it vulnerable to adjacent value, which could further undermine its values for wildlife. • good wildlife management practices dictate that all wetland habitats be conserved	• de-designate – does not include enough of critical habitat to form a viable Nature Reserve, and impractical to include all of the target wetland ecosystem • if not de-designated, extend to include additional vegetation around salina	2
22NR	**Vine Point (Man O' War Bush) and Ocean Hole NR**	• frigate bird nesting area; and 220' deep by 1200 ' wide hole in 3' shallow sand bottom	• DECR has already proposed that the status of the North, Middle and East Caicos NR already provides the necessary protection to these particular natural features, but that protection of the special nature of these features needs to be incorporated into the management plan for this site	
23S	**Big Sand Cay Sanctuary**	• nesting birds and turtles	• deep water and coral reef ecosystems located adjacent to the Sanctuary are not included within its boundaries. Including these communities would protect this entire superlative ecosystem.	2
24S	**French, Bush & Seal Cays Sanctuary**	• nesting terns and Frigate birds	• as there are currently no marine areas contained within Sanctuaries, it is recommended that a generous buffer be incorporated. • the buffer could also take in near-by coral reef ecosystems; thus greatly improving biodiversity levels for this Sanctuary.	2
25S	**Long Cay S**	• nesting terns, flora, iguanas	• no change proposed	
26S	**Three Mary Cays Sanctuary**	• Osprey nest site	• Sanctuary or Nature Reserve status, which is awarded to areas of critical ecological significance, is not merited in this case. • this is, however, a popular picnicking spot, and it is therefore recommended that this PA be renamed as a National Park or re-designated as a local park	3

27HA	**The Boiling Hole Area of Historical Interest**	• is designated largely for its historical values, but its ecological values are significant.	• change to Nature Reserve • extend northern boundary to incorporate additional terrestrial habitat, possibly joining up with the boundary of Bell Sound NR	1
28HA	**Cheshire Hall HA**	• ruins of 1790s plantation house and outbuildings	• no change	
29HA	**Fort George HA**	• 1798 English fort	• no change	
30HA	**Endymion Wreck HA**	• 18th century shipwreck in shallow water • the presence of other wrecks in the area would also indicate reasons for increasing the limits of this historic site.	• as no barrier/fringe reef is protected under Sanctuary status to date, it is recommended that a portion of these reefs be included within Big Sand Cay Sanctuary and the remaining be included within the historic site for restricted use.	2
31HA	**Molasses Reef HA**	• site of oldest known wreck in W Hemisphere • the DECR amended maps now indicate the wreck and surrounding areas of patch reef as included within the site	• it is further recommended that the site be extended to the 100 fathom mark to include a portion of the barrier/fringing reef within the restricted area to encompass as many marine ecosystem types and processes as possible.	2
32HA	**Salt Works & Village HA**	• salt works, historic building including brown and white houses; whaling station due to ecological significance	• change to Nature Reserve • consider separating the two sites – salt works and whaling station and creek • consider extending the whaling station Nature Reserve designation to include all or part of the creek area located half way down the east coast of the cay (currently designated in part by DECR as an informal nature reserve)	1

Summary of proposals for new sites

type	location	nature / rationale	proposed action	priority
HA.	**Yankee Town**	• Yankee Town deriving from development in the 1890's, the town area includes remnants of a large-scale attempt to grow and process Sisal (Agave sisalana) fibre for export. Roads originating at Yankee Town provide access to all other parts of the Island. A causeway (now severed) links Yankee Town with the Eastern shore across Lake Catherine.	• If the boundaries of the Lake Catherine NR are not extended to encompass Yankee Town, then this should be established as an Area of Historic Interest	1
HA.	**West Harbour Bluff**	• Part of the Pigeon Pond & Frenchman's Creek Nature Reserve containing rock carvings	• If these rock carvings cannot be clearly protected under the management plan for the NR, then these should be designated as a Site of Historic Interest	2
NR	**Wades Green and Teren Hill**	• The most important high forest area in the Turks and Caicos Islands, incorporating two major historic plantations.	• Establish as a Nature Reserve, with management of Wades Green Plantation House as a Site of Historic Interest	2
HA.	**Wades Green**	• Plantation house	• If the area that includes Wades Green is not established as an NR, then establish the	1

			plantation house and surroundings as a HA	
NR.	**Crossing Place Trail & Indian Cave**	• The western part of the northern coast of Middle Caicos, including Fish Ponds, Crossing Place Trail, Indian Cave and Blowing & Juniper Holes.	• Establish as a Nature Reserve	1
NR.	**Middle Caicos Forest**	• Area of high forest, between the settlements of Lorimers & Bambarra, including various types of permanent and temporary wetlands. One of the areas in which re-establishment of woodland towards forest has moved furthest in places, so there is a good range of scrub and woodland types represented	• Establish as a Nature Reserve.	1
NR	**Eastern extension of the Ramsar site**	• East Caicos is a complex of inter-related dry-land, pond, cave, marshes, flats and other wetlands, adjoining the existing Ramsar site, which covers only a small part of East Caicos. The extension adds to the site important beach ecosystems together with global priority cave ecosystems, both lacking from the present site.. The extension adds to the site area probably the most important surviving nesting area for endangered Green and Hawksbill Turtles, *Chelonia mydas & Eretmochelys imbricata*.	• Establish as an extension to the existing North, Middle and East Caicos NR and International Ramsar site – to include those parts of East Caicos not already in the Ramsar site - Joe Grant's Cay and Windward Going Through	2
NR.	**Little Ambergris and Fish Cays**	• A low lying sand cay with extensive internal wetland, coastal coppice vegetation and the largest protected population (15,000 individuals) of TC Rock Iguana (*Cyclura carinata*)	• Establish as a Nature Reserve	1
NR & HA.	**Grand Turk salinas**	• It is understood that these are currently part of a Conservation Area under Planning Control, including some areas established as Public Park under Planning Control – but the effectiveness of this status relative to designation under the National Parks Ordinance should be re-examined.	• Re-designation as a NR and / or HA	1
NR	**North Creek Wetlands, Grand Turk**	• Both the extreme northern and southern ends of the North Creek have extensive wetland habitats and both, surprisingly, are in a relatively untouched state. Both are significant nursery habitats for the shallow and reef-dwelling populations outside the North Creek Mouth, supplying juvenile fish and lobsters in great numbers.	• Possible designation as an NR, specifically covering the wetland area, but also possibly the whole of North Creek	2
NR	**New areas Grand Turk**	• Several critical habitats remain unprotected on the island of Grand Turk and serious consideration should be given to the creation of more protected areas on this island. Areas for consideration should include the entire wetland network including all salinas and North and South Wells and their surrounding floodplains, which are critical habitats for the National Flower, *Limonium bahamense*.	• look at potential new sites	2