

MANAGEMENT PLAN
FOR THE
PRINCESS ALEXANDRA LAND AND SEA NATIONAL PARK
PROVIDENCIALES, TURKS AND CAICOS ISLANDS
2000-2004

To be implemented by the TCI National Parks Service

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7th June, 2000

SUMMARY

The primary habitats represented in the Princess Alexandra Land and Sea National Park (PALSNP) are seagrass beds, barrier and patch coral reefs, sand banks, fringing mangroves, beach and low dunes, and seaside vegetation. The habitats in the Princess Alexandra Nature Reserve (PANR), are primarily mangroves and xerophytic scrub vegetation with palms.

The PALSNP is a major attraction for visitors and locals in Providenciales, primarily because of easy access to some of the better beaches and near shore coral reefs in the island. Most of the hotels are located along the beach providing good ocean views, and convenient access to watersports and beach activities. Visitor arrivals to the TCI was 120,898 in 1999, an increase of 148% over the amount of visitors a decade ago. More than 93% of the total number of visitors during that period arrived at and presumably spent some time in Providenciales.

The area of Providenciales is about 37 square miles and is home to an estimated population of 14,000, largely immigrant residents, distributed among the major communities of the Bight, Blue Hills, Leeward, Five Cays and Cheshire Hall. Within 0.5km of the landward boundary of the park there are more than 300 large and small single dwellings, more than 300 individual apartments, about 55 commercial offices, 1 golf course, 4 gas stations, 2 marinas, 5 reverse osmosis plants, 3 schools and 3 churches. There are 14 hotels/condominiums within this area with a total estimated accommodation of 1,500 rooms.

The area designated as the Princess Alexandra Land and Sea National Park will be used mainly for recreation, tourism and ecosystem protection. This management plan will identify and attempt to deal with critical issues affecting management of the area and will propose process-oriented approaches to deal with these issues wherever possible. Management activities will focus on:

- Demarcation of boundaries and zones
- Determining appropriateness of existing zones
- Mooring deployment and maintenance
- Awareness and interpretation
- Outreach and community support
- Surveillance and enforcement
- Monitoring and research
- Training
- Quality control/assurance

Progress on implementation of the management plan should be reviewed quarterly or at least twice per year so that difficulties in execution of activities could be identified and resolved. Progress can be measured by achievement of tangible outputs within a given timeline. Indicators of progress are therefore provided an easy means of verifying achievement, linking programme activity to outputs.

ACKNOWLEDGEMENT

Much of the work involved in the preparation of this document depended on the access of background information from old and often forgotten documents, and discussion with key individuals who were part of several initiatives (from as early as the 1970's) to protect important ecosystems. Further meetings, consultations and workshops with stakeholders, especially with the Ministry of Natural Resources, the National Trust, WATCI, and the staff of the Coastal Resources Management Project provided considerable direction on the range of issues and challenges encountered in trying to implement activities for the National Parks.

I offer my gratitude to the staff at CRMP: Judith Campbell, Ezekiel Hall, Galvin Hall, Gordon Smith, Julian Garland, Temika Hanfield and Michele Taylor for their useful and sometimes provocative insights on aspects of local management, as well as for their assistance in field work. Special thanks to David Shim for his redrafting of the section on Monitoring and Research. Other key individuals to whom I am indebted for sources of information include: Grace LesFouris, Clyde Robinson, Kamal Sant, Royal Robinson, Ethlyn Gibbs-Williams, Chuck Hess, Ian McLeod, Michele Fulford, Bob Gascoine, Delton Jones, Brian Riggs, and colleagues at the TCI Tourist Board.

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INTRODUCTION

The first National Parks Committee was set up in 1969 largely through the interest expressed by the Governor and that of an influential land surveyor who had visited many parts of the islands (Wood, 1993). In May 1970, this Committee had prepared a list of three categories of areas (Historical Sites, Sanctuaries and Recreational Areas) to be reserved for National Parks. Later that year, Ray and Sprunt were commissioned to survey the listed sites which they subsequently endorsed and further proposed additional areas for marine parks and reserves. Five years later the National Parks Ordinance was enacted and provided the legal framework for the establishment of the national parks, nature reserves, sanctuaries, and historic sites in the Turks and Caicos Islands. However, none of these areas were legally designated and little progress was made until a new National Parks Committee was created in 1987 to take the process further. Finally in 1992, the National Parks Order formally established the four designated categories of protected areas with site plans showing the location of boundaries of 33 sites.

In 1987 the Department of Environment and National Heritage (based in Grand Turk) was created to tackle a broad range of environmental responsibilities. After the change in Government in 1991, the department was renamed the Department of Environment, Heritage and Parks (DEHP) and had only two staff members at this time. The National Parks Committee seem to have had an executive function for the management of designated protected areas and undertook most of the work for the creation and passing of the legislation. By mid 1992, the total number of staff had increased to four, including one Park Warden based in Providenciales. A National Parks Development Advisor was recruited in 1992 for two years to develop management plans for the system of protected areas in the TCI (Wood, 1993) and to guide the operations of the DEHP. Much of this plan appeared not to be implemented due to institutional weaknesses and in 1994 another consultant was recruited to develop management plans for the Princess Alexandra Land and Sea National Park and the Northwest Point Marine National Park (van't Hof, 1994).

Eventually, restructuring within the Ministry in 1995 led to the creation of the Department of Environmental and Coastal Resources which included staff with responsibility for the National Parks. Since then, a renewed effort through the Coastal Resources Management Project will help the Turks and Caicos Islands Government (TCIG) to adopt and implement sustainable management mechanisms for designated national parks and marine protected areas for the benefit of a wide range of stakeholders. Financing of the project is through a partnership between the TCIG and the UK Department for International Development (DFID). The project was initiated in October 1998 and will end in the year 2001. The outputs of the project are to: 1) establish and operationalise a self sustaining National Parks Service by the end of the project; 2) establish a fully functioning National Environment Centre that will serve as the focal point for the institutional activities and the public education activities; 3) implement management plans for the Princess Alexandra Land and Sea National Park, the Northwest Point Marine National Park, and the West Caicos National Park; 4) strengthen the capacity of the National Trust to contribute to raising public awareness on environmental

issues; and, 5) prepare an action plan for extending the NPS management programme throughout the system of National Parks.

The area designated as the Princess Alexandra Land and Sea National Park will be used mainly for recreation, tourism and ecosystem protection. This management plan will identify and attempt to deal with critical issues affecting management of the area and will propose process oriented approaches to deal with these issues where ever possible.

An earlier version of this draft was distributed to 30 key stakeholders (individuals and organisations) for review and comments (Appendix 1). Additionally, one community meeting was held in the Bight to present the draft plan and to invite suggestions for modification of the management plan.

RESOURCE DESCRIPTION

Name of Area and Location

Princess Alexandra Land and Sea National Park occupies an area of about 6532 acres along the northern coast of Providenciales. It is bounded by a line taken due north of Blue Mountain (C42, 72° 14.914' W.Longitude) from the high water mark to the reef wall, along the reef wall to a point approximately due north of the most westerly point of Water Cay, approximately due south to a point some 1000 feet away from the most westerly point of Water Cay, east 500 feet along the southern coast of Water Cay to YV 972 177 a straight line south to YV 962 150 along the shoreline of Mangrove Cay to Leeward-Going-Through Point, along the high water mark to the starting point. Grid references are to sheet 3 series E8112 (DOS 309P) Edition 2-OSD 1985.

Note: The National Parks Regulations-Section 8, defines the reef 'wall' as the 50 fathom depth isobath on the seaward boundary of the national park.

Within the northeast sector of the park are three cays; Little Water, Mangrove and Donna with a total area of 450 acres. These have been designated the Princess Alexandra Nature Reserve.

Physical Features

Geomorphology and Bathymetry

The visible marine portion of the PALSNP is composed of about eight miles of reef crest which runs almost parallel with the coastline at about 1 to 1.5 miles offshore. On the seaward side, the forereef is composed of spurs and grooves down to a depth of about 75-90 feet, followed by a vertical to overhanging reef escarpment down beyond 300 feet. On the landward side, the shallow backreef lagoon varies in depth up to about 20 feet, with many patches of sand, reef, coral rubble and seagrass. There are three main cuts in the barrier reef: Sellars Cut, Club Med or Stubbs Cut, and Leeward Cut with water depths varying from 10 to 160 feet.

The sandy beach is continuous up to Turtle Cove, varying in width up to 100 feet from the low water mark to the line of vegetation. The narrowest part of the beach is towards the eastern portion from Pelican Bight to Leeward Point. Low dunes adjacent to the beach (derived from Holocene beach ridges composed of foraminiferal sands (Wanless and Dravis, 1989)) are noticeable in a few areas in Grace Bay where coastal development is absent.

Tides and Dominant Currents

The tidal range is estimated to be about 3 feet. The diurnal tidal flux affects the sediment transport patterns particularly along the Leeward area where tidal currents have been measured at 2.4 ft/sec in the Leeward Going Through Channel (ATM, 1988). The Antilles Current produces an east to west circulation along the coast, however, during storm conditions, water piled into the backreef lagoon by breaking waves can create strong shore-parallel currents along the central portion of the lagoon which then exit through one of the several cuts in the reef (Wanless and Dravis, 1989). Bottom flow patterns within the backreef lagoon indicate an east to west flow in the western portion of the lagoon heading out Wheeland Cut. Current features indicate water flows into Seller's Cut and sweeps eastward along the backreef lagoon (Wanless and Dravis, 1989).

Sediment Transport

Net sediment transport along the coast line is generally north to south with a local sediment transport reversal south of Leeward Going Through caused by wave refraction around the ebb tidal shoals (ATM,1988). Deposition of the southerly net sand movement (littoral drift) has resulted in the formation of the ebb tidal shoal which extends southwesterly from Little Water Cay to around the north end of Providenciales. Under natural conditions shoreline advancement was taking place at Leeward Going Through Point at a rate of 2 to 8 ft/yr (ATM, 1988). The North Leeward Beach shoreline had been receding at a rate of 2.5 to 3 ft /yr, while a little further south, the Pelican Bight Beach area had an erosion rate of about 0.5 ft/yr (ATM, 1988). The erosion rates are variable and can be changed due to the action of storms, and man-made coastal structures or intervention.

Freshwater Inputs

There are no natural freshwater inputs into the PALSNP, however during heavy rains, overland runoff drains directly into the sea. It is not known if hypersaline intrusion into the nearshore water from desalination plants discharge wells are significant. These wells have been in use for several years and are reported to be about 150 feet deep receiving volumes in excess of 100,000 gallons of hypersaline solution per day. However, one Reverse Osmosis plant is currently discharging about 90,000 gallons per day directly into the Turtle Cove Marina.

Climate

Precipitation

Annual average rainfall is about 30", the annual range is less than 20" to greater than 50" depending on the number and intensity of storms that pass through the TCI. The minimum monthly rainfall can be less than 1" for any given month (ATM, 1988).

Temperature

Average monthly, ambient temperature ranges from about 25°C (December to March) to 29°C. Average monthly seawater, surface temperature ranges from about 23.5° to 29° C (ATM, 1988).

Winds

Easterly winds are predominant, blowing at about 10 to 20 knots for most of the year. Winds can also blow from the East Northeast, East Southeast and occasionally from the Northwest. The island is periodically hit by hurricanes and tropical storms, the last three major hurricanes include Donna (1960), Camille (1969), and Kate (1985). Even hurricanes and storms that pass near to the island can also cause some wind damage and torrential rain.

Plant Life

Terrestrial

Since the landward boundary of the PALSNP extends up to the high water mark, which is interpreted by the Planning Department as the seaward line of vegetation, there are practically no terrestrial vegetation within the park's boundary from Leeward Point to Blue Mountain. However, the vegetation adjacent to this boundary in the Grace Bay area has been classified by Wood (2000) as Sand Strand Dune community dominated by sea oats (*Uniola paniculata*), with herbaceous shrubs less than 3' in height and creepers (*Scaveola plumieri*, *Casasia clusiifolia*, *Ipomea pes-caprae* and *Ambrosia hispida*). Beyond the Sand Strand community is the Coastal Coppice Back Dune community in which silver palms (*Coccothrinax argentata*, *C. inaguensis*, *Thrinax morrissii*), black torch (*Erithalis fruticosa*), seven-year apple (*Casasia clusiifolia*) and sea grapes (*Coccoloba uvifera*) may be dominant. Several species that are endemic to the Bahama archipelago, which includes the TCI, are found in these communities, namely; kanky berry (*Solanum bahamense*), orchid (*Encyclia altissima*, *E. inaguensis*), and a silver palm (*Coccothrinax inaguensis*).

In the Princess Alexandra Nature Reserve (Little Water Cay, Donna Cay and Mangrove Cay), the major plant communities found are the Sand Strand, Coastal Coppice, Coastal Rock, Mangrove and Salt Pond (Wood, 2000). The Sand Strand and Coastal Coppice are comprised of the same species described in the previous paragraph. Sand Strand communities are found in limited areas along the northwestern and southeastern shoreline

of Little Water Cay and in small patches on Mangrove and Donna Cays. Coastal Coppice is dominant on Little Water and Donna Cays and can be found in isolated patches on the northern, eastern and southern shorelines of Mangrove Cay.

The Coastal Rock community contains plant species with heights of less than 3' growing on ironshore limestone rocks. The dominant species are sandfly bush (*Rhachialis americana*) and buttonwood (*Conocarpus erectus*). This community is found along the western coastline of Little Water Cay, the southern and western coastline of Donna Cay and the southern coastline of Mangrove Cay.

The Mangrove community is comprised of the red mangrove (*Rhizophora mangle*), white mangrove (*Laguncularia racemosa*), Black Mangrove (*Avicennia germinans*) and buttonwood. There is a red mangrove fringe along the northern shoreline of Donna Cay, on the southern side of Little Water Cay and on most parts of Mangrove Cay. White and black mangroves are more abundant on Mangrove Cay.

The Salt Pond community found on Little Water Cay around the hypersaline shallow, inland pond has abundant black mangrove, salt wort (*Batis maritima*), glasswort (*Salicornia bigelovii*) and buttonwood.

Marine

There are isolated patches of seagrass beds at depths of 2-18' composed mainly of turtle grass (*Thalassia testudinum*), interspersed with manatee grass (*Syringodium filiforme*), the seagrass *Halodule beaudetta*, the algae *Penicillus capitatus*, *Halimeda* spp., and encrusting sponges. Seagrass to the north, west and southwest of Leeward area are sparse and in poor health. Green, red, brown and calcareous algae are common, however, brown algae (especially *Dictyota* and *Turbinaria* spp.) seem to be more abundant in the vicinity popular snorkel mooring/anchorage sites.

Animal Life

Corals

Some rapid assessments of the coral reef in the PALSNP were done in January 2000, to determine the extent, health, size and variety of stony corals and fish in shallow areas. There are massive colonies of elkhorn coral (*Acropora palmata*) along the reef crest, and in some areas of the back reef, however, about 98% of these colonies are dead. In some areas there are large colonies of fire coral (*Millepora* spp.) adjacent to the dead *Acropora*. Small isolated colonies of *Siderastrea*, *Montastraea*, *Dendrogyra*, *Porites*, *Diploria* and *Agaricia* spp., are common. Soft corals are also common and include *Pseudopterogorgia*, *Eunicea*, *Muricea*, and *Gorgonia*.

Fish

Reef fishes that are common elsewhere in the region are also common in the park, including several species of wrasse (Labridae), grouper (Serranidae), snapper (Lutjanidae), parrotfish (Scaridae), angelfish (Pomacanthidae), triggerfish (Balistidae), damsel (Pomacentridae), butterflyfish (Chaetodontidae), grunt (Haemulidae), surgeonfish (Acanthuridae), jack (Caranxidae) and shark (Carcharhinidae).

Birds

Many species of birds both resident and migrant, can be observed foraging in the PALSNP and the Nature Reserve. These include the brown pelican (*Pelecanus occidentalis*), ruddy turnstone (*Arenaria interpres*), osprey (*Pandion haliaetus*), herons, doves, least bittern (*Ixobrychus exilis*), common snipe (*Gallinago gallinago*), northern waterthrush (*Seiurus noveboracensis*), oystercatcher (*Haematopus palliatus*), piping plover (*Charadrius melodus*), stilt sandpiper (*Calidris himantopus*), and royal tern (*Sterna maximus*) [Wood, 2000].

Other animals

Rock iguanas (*Cyclura carinata carinata*) are found on Little Water Cay and were estimated to be about 2000 in number (Woodring, 1996). These animals are endemic to the TCI but have no legal protection outside of designated protected areas. The common anole lizard (*Anolis scriptus scriptus*) is also endemic and common in the Nature Reserve. Hawksbill turtles (*Eretmochelys imbricata*) and green turtles (*Chelonia mydas*) are frequently seen in the PALSNP.

HISTORY AND DEVELOPMENT

Archaeology

Archeologists have indicated that the Turks and Caicos Islands were settled by Lucayan Tainos who were widely dispersed among the Bahamas archipelago by AD 800, migrating from Cuba and Hispaniola (Keegan, 1997). Reports from Spanish chroniclers and archeological digs indicate that these early settlers depended on cultivation of a few crops, hunting of land animals, fishing and collecting of shellfish for their dietary requirements.

In Providenciales there are nine reported open air archeological sites and two cave sites, where pottery shards have been found. However, neither these sites nor the whole of Providenciales have yet been fully surveyed (with the exception of the area leased to the Crystal Bay Development, a small section of Water Cay, and the Silly Creek peninsula and cay). In the PALSNP there were two sites; one at Turtle Cove which has already been lost to development and another located on Little Water Cay (Riggs, pers comm).

Written and Oral History

Christobal Colon was the first European to arrive in the Turks and Caicos Islands. It is claimed that he made landfall in Grand Turk in October 1492 and passed near Providenciales and North Caicos a few days later (Sadler, 1997). In 1760 the Treaty of Madrid acknowledged British rights to the TCI which subsequently came under the jurisdiction of Bermuda, largely through a judgement by the Lords of Trade and Plantations in England in 1764 (Sadler, 1997). After the American Declaration of Independence, some Loyalists or Tories sought asylum in British territories and grants of land were provided to them by the British Crown. At Providenciales in 1790, one grant of 600 acres was given at a site facing the sea to the north and the salinas to the south. This holding was later expanded to 800 acres and much of the land was planted with cotton. Later on, this parcel formed part of the 4,000 acre estate of Copeland J. Stammers. Today the ruins of the plantation homestead can be seen at Cheshire Hall.

Development planning for Providenciales began in 1965 through the efforts of a Town Planner appointed by the British Ministry of Housing and Local Government. In 1967, Provident Limited (an American company), entered into an agreement with the Government to develop 4,000 acres of land in Providenciales, to include an airstrip, air terminal, gravel roads and a small hotel. The Development Plan of 1966 (the Trevallion Report) was never implemented, but a series of new plans and proposals were drafted by other consultants between 1967 and 1971, dealing with *inter alia*, civil engineering, harbour improvement, salina development, mosquito control and park conservation.

Recent Developments

A ten year Providenciales Physical Development Plan was approved in 1987 to guide commercial and residential development on the island. National parks, reserve lands and recreational areas were also proposed to safeguard the requirements of the tourism industry.

In the past 10 years there has been a rapid development of tourism infrastructure in the Grace Bay area, including the construction of new hotels, and the refurbishment and expansion of a few existing hotels. In the last five years the number of hotel rooms available in Providenciales increased from 1,048 to about 1,542 rooms.

Conservation Status

The PALSNP was legally declared a national park through the National Parks Order of 1992. The National Parks Ordinance of 1975 designated national parks as areas which shall be open to members of the public for recreational use, including camping, fishing and sailing, and the Governor may make a grant of development permission for the erection in the area of buildings, the construction of roads, marinas and such other development as may be considered to be desirable to facilitate enjoyment by the public of the natural setting of the area and any features of historical interest therein.

The PANR was designated by the National Parks Order of 1992 as a nature reserve and may be used for agricultural, arboricultural, piscicultural, sporting and recreational purposes, subject to such restrictions as may be prescribed and which may be considered desirable to ensure a proper balance in the natural ecology of the area; but no building or other development shall be permitted except in accordance with the conditions of a grant of development permission made by the Governor and such grant shall only be made for a building or other development which is required for one of the aforesaid uses which are permissible in a nature reserve.

In 1996 a Memorandum of Understanding was signed by the Government delegating the day to day management of Little Water Cay to the National Trust. The Trust's primary objective was to manage the population of endemic rock iguanas found on this cay.

Access

Access to the park is easy through twelve beach and sea access lanes distributed at irregular intervals along the coast. Seaward access by boat is unrestricted and there are several channels through the barrier reef (Sellars Cut, Club Med or Stubbs Cut, Leeward Cut, Fort George Cut) which allow passage.

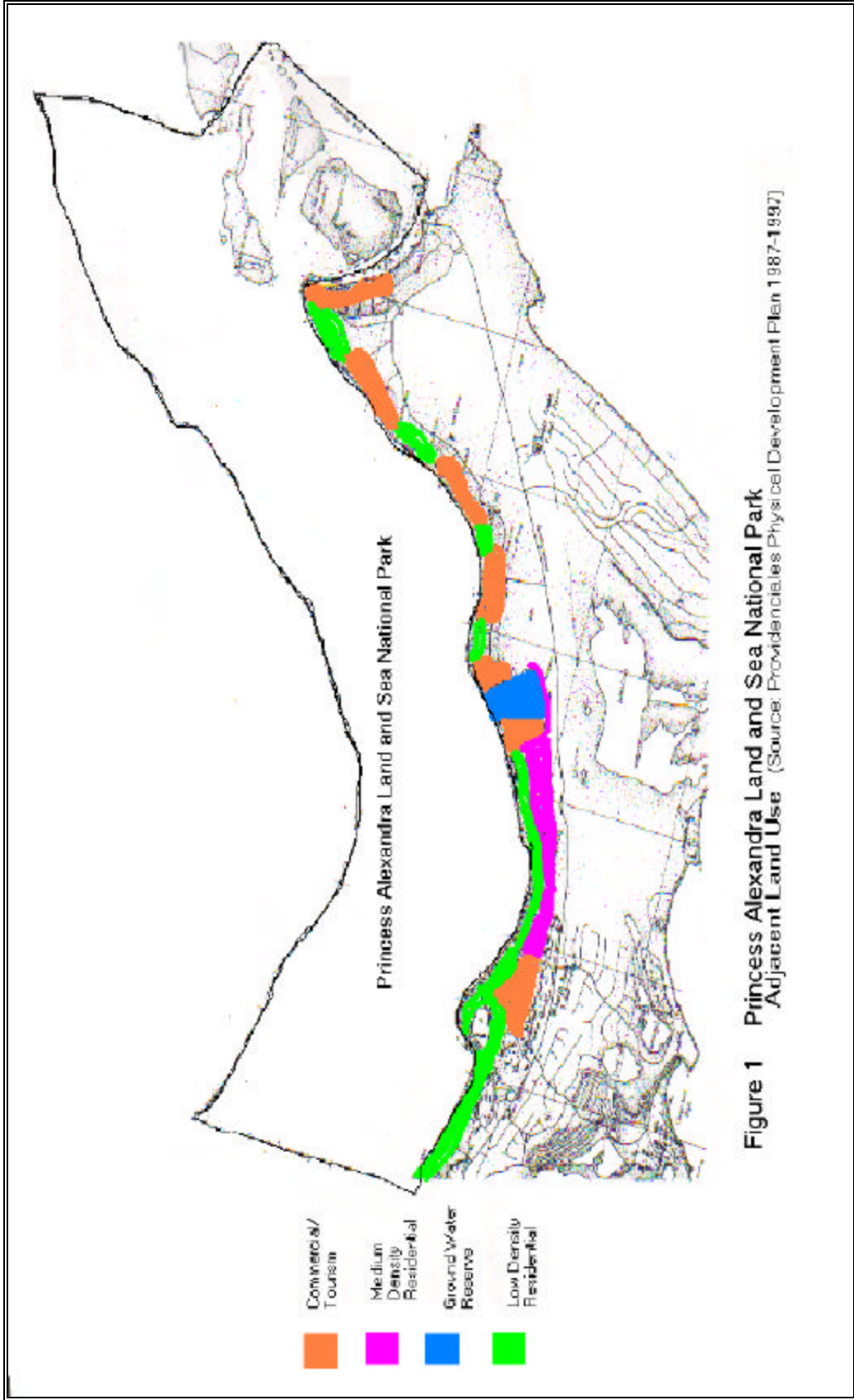
CURRENT HUMAN USE

Land Use

The area of Providenciales is about 37 square miles and is home to an estimated population of 17,000, largely immigrant residents, distributed among the major communities of the Bight, Blue Hills, Leeward, Five Cays and Cheshire Hall.

The Providenciales Physical Development Plan (1987-1997) had designated an open space on the landward side of the PALSNP, including the beach up to the line of natural vegetation and including the sand dunes. The Plan indicated that permanent construction was prohibited in this area. Parallel to this area, were other zones designated as low density residential (3 units /acre), medium density residential (3-6 units/acre), commercial/tourism uses and one ground water reserve (the Bight-Grace Bay Water Reserve). [Figure 1]

Within 0.5km of the landward boundary there are about 222 large single dwellings, 121 small single dwellings (public utilities connection not visible, also includes small shacks), 315 individual apartments, about 55 commercial establishments, 1 golf course, 4 gas stations (including 2 marina gas stations), 2 marinas, 5 desalination plants, 3 schools and 3 churches. There are 14 hotels/condominiums within this area with a total accommodation of about 1,550 rooms.



Marine Park Use

The Princess Alexandra Land and Sea National Park is a major attraction for visitors and locals in Providenciales, primarily because of easy access to some of the better beaches and near shore coral reefs in the island. Most of the hotels are located along the beach providing good ocean views, and convenient access to watersports and beach activities.

Visitor arrivals to the TCI was 120,898 in 1999, an increase of 148% over the amount of visitors a decade ago. Over the past five years the number of persons who indicated that scuba diving was the main purpose for their visit had declined from a little more than 22,800 to about 6,149. More than 93% of the total number of visitors during that period arrived at and presumably spent some time in Providenciales. [Table 1]

Year	Total Visitors	Total Divers	% Visitors Diving	Visitors to Providenciales	% Visitors to Providenciales
1993	67,303	50	.07%	59,899	89.0%
1994	71,655	12,655	18.0%	65,723	92.0%
1995	78,957	22,831	29.0%	73,486	93.0%
1996	87,794	22,697	26.0%	83,631	96.0%
1997	93,011	6,775	7.30%	89,119	95.80%
1998	110,855	5,794	5.20%	104,810	94.50%
1999	120,898	6149	5.07%	117,263	97.0%

Table 1: Some Visitor Statistics for the TCI (Source: TCI Tourist Board)

The majority of visitors indicated that they came to the TCI for a holiday and the assumption is that most, if not all visitors would have used the beach along the PALSNP. Most of the water-sports operators ply their trade in the Park or use the park for mooring or anchoring of their vessels. Scuba diving (on the fore reef), snorkeling (particularly at the nearshore Smith's and the Bight patch reefs) and parasailing are among the more popular waters sports activities within the park. The following range of uses were identified in the PALSNP:

1. Anchoring
2. Boat maintenance
3. Construction
4. Dredging
5. Filming
6. Fishing
7. Garbage disposal
8. Interaction with wild life
9. Mooring
10. Parasailing
11. Poaching
12. Relaxing
13. Research
14. Sailing
15. Sand mining
16. Scuba diving
17. Sewage disposal
18. Skiing
19. Snorkeling
20. Souvenir collection
21. Sunbathing
22. Surfing
23. Swimming
24. Tours
25. Training
26. Traversing
27. Vegetation removal

Existing Zones

Attempts to regulate user activities within the Park has been through the designation of specific use zones, located adjacent to the major hotels. However, these zones have not yet been physically demarcated in the park [Figure 2]. Schedule II Section 6 (2) proclaimed the following zones in the PALSNP:

1. Aquatic Sports, Swimming and Training Zones comprising the area between low water mark and a line situated 100 yards offshore from low water mark, running parallel to the shore and situated in:-
 - i. the Turtle Cove Area, from the western boundary of Babaloo Beach at Grid reference YV 862 115 to the Eastern boundary of the Provident/Turtle Cove Park (YV 867 118);
 - ii. the Princess Sheraton Area, from the western boundary of the Sheraton Hotel (now Beaches Resort) site (YV 896 119) to the eastern boundary of the Island Princess Hotel site (YV 900 122);
 - iii. the PDM Beach area from YV 906 127 to YV 908 129;
 - iv. the Turquoise Area extending from the eastern boundary of the Ramada Hotel (now Allegro Resort) site (YV 920 130) to the eastern boundary marker of the Club Med Hotel site (YV 928 138).

2. Access Zones for the purpose of allowing entry and egress of boats (both power boats and sail and manually propelled boats). Each Access Zone will comprise an area 100 feet wide extending from the beach to a point 110 yards offshore from the low water mark. Access Zones will be situated at the following grid references:- YV 862 115, YV 872 116, YV 881 112N, YV 889 115, YV 900 122, YV 904 126, YV 907 128, YV 914 129, YV 919 130, YV 924 133, YV 927 138, YV 933 149.

3. A Swimming Zone where swimming and snorkeling only are permitted. This zone will comprise the area between low water mark and a line situated 100 yards offshore from low water mark, running parallel to the shore. This zone will comprise the entire remaining coastal strip between Babaloo Beach (YV 862 115) and Leeward-Going-Through Point (YV 165 162).

4. A Water-ski Zone where water skiing, paragliding and similar activities using power-driven vessels will only be permitted. This zone will be bounded by a line perpendicular to the shore at the eastern boundary of the Ramada Hotel (now Allegro Resort) site (YV 920 130) and a line perpendicular to the shore at the eastern boundary marker of the Club Med Hotel site (YV928 138) and comprising the entire area from a line situated 100 yards below low water mark and running parallel to the shore to a line situated 1000 yards below low water mark and running parallel to the shore.

Grid references are to sheet 3 series E8112 (DOS 309P) Edition 2-OSD 1985.

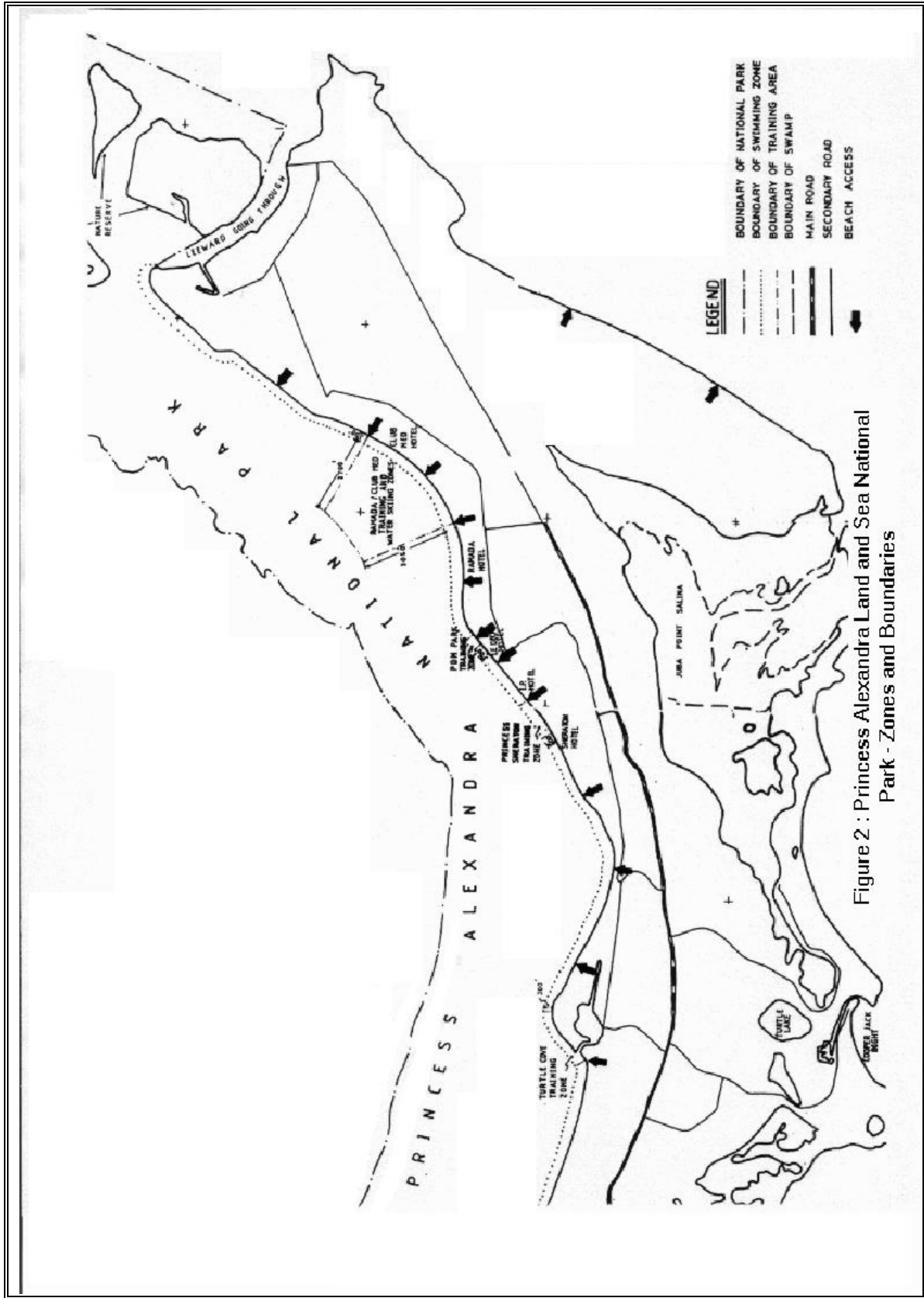


Figure 2 : Princess Alexandra Land and Sea National Park - Zones and Boundaries

Anchoring Zones were surveyed and proposed for boats larger than 60' length overall (Gascoine, 1995). These areas are not included in Schedule II Section 6 (2) of the National Parks Regulations but were apparently approved in 1995 by the Department of Coastal and Environmental Resources (DECR), and have not yet been demarcated. Three of these anchorages are located in sandy areas within the PALSNP, namely:

- i. Turtle Cove Anchorage – an area off shore from the lower Bight and south of the marked channel that gives access to the Turtle Cove marina.
- ii. Stubb's Cut – an area west of the seven dive sites that straddle Stubb's Cut.
- iii. Forbes Point/PDM Beach – an area offshore the PDM Beach.

DESCRIPTION OF MANAGEMENT ISSUES

Historic and Current Activities

Use of watercraft outside of designated zones

Several complaints over the years have noted that boats have frequently been passing through the Swim Zone and water skiing and parasailing has been taking place outside of the Water-ski Zone. National Park Regulations prohibit these activities outside of the designated zones. There have been reported incidents of damage to swimmers and to the dolphin Jojo.

Water-skiing a possible undesirable activity

Several hoteliers and residents have expressed their opinions that water-skiing should not take place either in the PALSNP, close to shore, or close to the hotels/residents beach front. The noise (hence change in the quiet character of the area) and the danger of accidents with other park users have been the major reasons why this activity is considered undesirable. The existing water skiing zone was initially set up to satisfy the need of one large hotel that was promoting this activity in the early 1980's.

Anchoring in non designated areas

Anchoring on corals and in seagrass beds leads to their destruction or degradation. Anchor damage to coral reef structures, living or dead and associated marine plant and animal life is prohibited in the national park. The extent to which anchoring in non-sandy areas is taking place is unclear. Boats greater than 60 feet are required to anchor in designated anchorage zones within the park, or to use moorings designated for boats of that size. This is of particular concern with regards to visiting boats that arrive late in the evening and seek convenient anchoring until suitable light allows navigation through the shoals and patch reefs.

Speed limit not observed

The speed limit for vessels traversing the park is 15 mph, unless that vessel is within an Aquatic Sports or Water-ski Zone. Most motor boats that use the park have been seen to exceed that limit regularly; cruising speed of about 20 mph and more is often observed. This speed increases the risk of accidents to swimmers when boats pass close to or in the Swimming Zone.

Inappropriate size, use and location of some zones

The parasail and water-ski operators have indicated that the shape and size of the existing Water-skiing Zone is not suitable. It is too small to accommodate more than one vessel at a time and is of the wrong shape to provide the long runs required for enjoyment of these sports. These operators currently use areas parallel with the shore and sometimes close to the Swim Zone. The designated Aquatic Sports Zone currently provides for conflicting uses such as sailing, windsurfing, canoeing, kayaking, swimming, snorkeling, scuba diving and other ancillary activities within a relatively small area. This may create a potentially dangerous situation if these activities were to occur at the same time.

Illegal fishing

There are no designated Fishing Zones within the PALSNP, however there were several incidents of illegal recreational fishing by visitors within the park over the past few years. The culprits often claim that they did not know that fishing is not allowed in the park or they were told that they could fish from jetties and piers. There were also a few reports of local residents catching turtles and fish within the park, apparently for domestic consumption and souvenir sales.

Impact of snorkelers on nearshore shallow reefs

The health of near shore shallow reefs, particularly Smith's Reef and the Bight Reef, have been degraded primarily due to physical damage from inexperienced or careless snorkelers and coral disease. About 50% of the Bight Reef is less than 5 feet deep. Up to 100 snorkelers per day have been estimated to use this area during the peak tourist season. Recent elevated sea water temperatures around the region have further contributed to stress on these corals through natural bleaching, so additional stress from continued heavy use of the area will prohibit recovery.

Obstruction of beach access

There has been increasing concern by the general public and some government agencies on the unauthorised restriction of access to the beach within the park, through several public easements. Particularly, parcels 60901/64 and 60904/489 which had been blocked off with bollards and connecting chains, parcel 60803/6 which had a "Private Property" sign erected at the entrance, parcels 60803/74 and 60803/75 now inaccessible because of private development, and 60907/? has been built over by Club Med. These actions were contrary to Section 28, of the Physical Planning Ordinance and an obstruction to persons in exercise of their right over public beach accesses. It was also reported that some private homeowners along Grace Bay were responsible for the disappearance of at least two access lane signs, in an effort to discourage people wanting to get to the beach alongside their property.

Inadequate mooring

Increasing tourism visitors has led to increased demands for marine activities. The water sports operators have made repeated requests for more moorings, including mooring for vessels over 60', and they are prepared to assist in procurement and installation. There are 24 dive/snorkel sites in the PALSNP and many of these are used regularly by seven of the dive operators. At this time, there were 7 dive mooring buoys outside the reef crest, 6 snorkel moorings and 30 private moorings within Grace Bay. Lack of maintenance has led to loss of service of 14 other mooring locations. There has been no standardisation of the colour, size and marking of moorings used within the park.

Inadequate capacity to manage

The recent recruitment of Park Wardens, a Scientific Officer and an Environmental Education Officer has improved the human resources requirement for the national parks. However, effective implementation of management plans requires some additional training and, even more importantly, translation of that training into functional and efficient systems for decision making and management.

Lack of awareness of the location park boundaries and zones

Neither the boundaries of the park nor the zones within the park have been demarcated and most users seem unaware of the location of most of these boundaries. Some hotels have demarcated swimming areas at their beach front with a line of buoys, but these do not demarcate the legally designated Swimming Zone and are located some distance within the legal zone. This has caused some confusion to boat operators who were observed to pass inside the legal Swimming Zone but outside of the hotel marked swim areas. The exact or approximate location of the eastern and western boundaries and several zones have recently been translated from the YV coordinates prescribed in the National Parks Regulations, into latitude/longitude coordinates which most users find easier to locate in the field. Targeted awareness and materials on these zones and boundaries have been inconsistent or poor.

Efforts at controlling beach erosion

Beach erosion in the park is a natural process that seems to have been accelerated at some locations in the Leeward area. There are 10 groins along the shore between Blue Mountain and Leeward Point, five of these are located at Leeward, the full impact of which have not been determined. At Thomas Stubbs Point (parcels 60904/254 and 60904/255), accelerated erosion has removed about 100-150 feet of sandy beach and adjacent land (despite the presence of a nearby groin), over the past 6-7 years. This loss of beachfront property has led to the swimming pool of Cotton House (an elevation of about 10-15 feet) located on these parcels to fall into the sea. Pumping of sand from an offshore bank on to the beaches at the northern end of Leeward has contributed to the accretion of these beaches, but has led to excessive sediment transport and deposition on some sea grass beds. In other areas such as around the Club Med jetty, the water has become noticeably shallower over the past few years. Club Med has since applied for approval to extend its jetty to deeper water.

Lack of, or inadequate information for planning and management

There is little baseline ecological, hydrologic, water chemistry, or socio-economic information on the PALSNP and adjacent areas. A few reports on environmental assessments for some coastal development, the rapid coral reef assessment by Operation Raleigh (1986) and the geophysical survey by Wanless and Dravis (1989) provide some background information. However, the rapid increase in development adjacent to the park over the past 5 years, the increase in intensity and frequency in use of the park and other natural factors may have caused significant environmental changes. If the capacity of a site or several sites to accommodate a given number of visits per year, is exceeded and heavy use continues then severe reef degradation will occur. The status of and impacts on the biological resources and water quality needs to be surveyed and monitored so that more appropriate management decisions can be made.

Poor inter-institutional collaboration

Activities within and adjacent to the park fall under the jurisdiction of the DECR, CRMP, Planning Department, Public and Environmental Health, Public Works, Tourist Board and the Marine Police. However, there are several service organisations which do have an interest in or a mandate for environmental or business activities in the park, such as the National Trust, Rotary Club, Hotel and Tourism Association and the Water Sports Association. Genuine and active collaboration among these groups has historically not been a part of the local institutional culture. Institutional arrangements for collaboration by itself will not bring effective management of activities within the park, unless there is sufficient, timely consultation and communication, trust, and significant improvement in the working relationships among the key stakeholders.

Pollution

The extent of sewage pollution in the near shore environment is unknown, however there seems to be some discharge from boats in the Turtle Cove Marina (an odour is evident at some times and effluent can be seen floating in the marina). The pattern of discharge and extent of dilution, particularly for coliform bacteria is unknown and needs investigation. The nature of the anti-fouling paint (bottom-paint) used by boats in the marina or moored in the park is unknown. Tributyl tin (TBT), a component of many anti-fouling paints causes death and deformations to various marine organisms and can get into the food chain through shell fish and finfish. Its accumulation in American marinas and its toxic nature caused its ban in the USA since 1987. The International Maritime Organisation adopted a resolution in 1990 that recommended Governments to put in place measures to eliminate or control the use of anti-fouling paints containing TBT. At least one retailer in Providenciales currently sells anti-fouling paints containing TBT. Two other retailers currently sell a type of anti-fouling paint that is reportedly banned in the USA.

The presence of crude oil on beaches along the coast has been observed in several areas. The last reported oil/tar contamination along the beach at Grace Bay was during the last week of January, 2000. It was suggested that the source of this contamination was from passing ships.

Recently, a rapid assessment of the impacts on the coastal environment with particular reference to Providenciales was completed. This assessment identified the sources and impacts of pollution along the coast, as well as the institutions that contribute to this pollution. The study was directed by the CRMP in collaboration with the DECR, Public and Environmental Health and the Public Works Department.

Future demand

The average increase in visitors over the past three years was 12%. If one assumes that tourism arrivals would continue to increase at that rate, then the number of visitors could be in excess of 200,000 within the next five years. This increase in visitors would suggest potential increases in the number of hotels/rooms available, the number of boats for tourism activities, scuba and snorkeling and its attendant impacts on the park. Such impacts may lead to a decrease in the quality of the marine habitats and hence a reduction in the quality of experience. Overcrowding of the beaches may also be a source of conflict between locals and visitors. An increase in watercraft traffic in the park may also increase the risk of accidents and injury.

RELEVANT POLICIES

The trend in development along Grace Bay in Providenciales, current management of the national parks and the National Parks Regulation indicate that the maintenance of protected areas seem to favour recreational benefits for visitors and development opportunities for expatriates. Recreation/development priorities rather than broader conservation of coastal resources has led to the current type and intensity of uses within and adjacent to the park.

Government's general policy on commercial development states that "the government is prepared to use any available Crown land (other than national parks, nature reserves, sanctuaries and areas of historical interest) for development in the right circumstances" (TCInvest, 1995?). However, the National Parks Ordinance (1975) provides for some types of development in the national park including buildings, marinas and other construction to facilitate enjoyment by the public; and other types in the nature reserve such as agriculture, arboriculture, pisciculture, sports and recreational purposes.

A national policy specifically geared towards a conservation agenda for marine resources is not clearly defined, although there are a few policy documents that allude to conservation or sustainable development.

Chapter Eight (Sustainable Development-the environment) of the UK White Paper on Progress Through Partnership (1999?) proposes the following policy objectives:

1. To promote sustainable use of the Overseas Territories natural and physical environment, for the benefit of local people;
2. To protect fragile ecosystems such as coral reefs from further degradation and to conserve biodiversity in the Overseas Territories;

3. To promote sustainable alternatives to scarce resources or species which are used for economic purposes;
4. To enhance participation in and implementation of international agreements by Overseas Territories (OT).

The document further indicated that: “the role of Overseas Territory Governments, supported by the UK Government, is to develop appropriate, applicable and affordable environmental policies, legislation and standards. These are the basis for integrated environmental management systems to enable them to monitor and evaluate progress towards achieving their environmental objectives and lessons learnt can then be fed back into policy development”.

The new TCI Strategic Country Programme (1999-2003) was prepared and agreed with Her Majesty’s Government (HMG) in October 1999. The aim of the Environment Section of this policy document is to facilitate long term sustainable development of infrastructure and human settlement in a manner which minimizes unnecessary damage to the environment. Its three objectives are to:

1. Manage the TCI environment on a sustainable basis.
2. Develop further the partnership between the UK and the TCI on environmental issues.
3. Agree on shared commitments by both government and the community to sustainable development and the protection of the environment in the TCI.

The Action Points prescribed in the document for fulfillment of these objectives are:

- i. HMG to draft and circulate text of an Environment Charter.
- ii. Co-ordination of a team to address issues outlined in the UK White Paper Document with respect to Environmental Protection, and the facilitation of an Environmental Charter for the OTs.
- iii. Review and agree revisions to the Coastal Resources Management Project.
- iv. Strengthen the institutional capacity and legislative framework of Management of the terrestrial/coastal/marine environs (including the Protected areas).
- v. Strengthen the monitoring and control of sand mining.
- vi. Implementation of the Fisheries Management Plan with particular emphasis on developing and maintaining a viable and sustainable fisheries industry.
- vii. Review of Environmental Policy.

- viii. Provide the environmental input into the formulation of the National Physical Development Plan.
- ix. Collaboration of key Departments involved in Scientific Data Collection.
- x. Extend relevant multilateral Environmental Agreements to TCI and Incorporate into national legislation eg CITES, MARPOL.
- xi. Implementation of effective programmes to create public awareness.
- xii. Review of Guidelines for EIA procedure that will incorporate a Strategic Environmental Assessment approach to development.
- xiii. Consideration of provisions for public participation in the EIA process.
- xiv. UK to provide information on funds available through the UK Environmental Department to assist UK Overseas Territories.
- xv. Provide environmental input to the develop of a Comprehensive Solid Waste Management Plan for TCI

These action points provide useful guidance on some of the priorities that require attention. However, in order to conserve and ensure sustainable benefits of coastal resources to Belongers and other stakeholders, national policy should not allow for any development that significantly degrades the quality of coastal ecosystems or which impairs the potential of such ecosystems to generate long-term economic benefits.

MANAGEMENT ACTIVITIES

Objectives

The area designated as the Princess Alexandra Land and Sea National Park will be used mainly for recreation, tourism and ecosystem protection and will have the following management objectives:

1. To protect natural and scenic areas of national and international significance for spiritual, scientific, educational, recreational and touristic purposes;
2. To perpetuate, in as natural a state as possible, representative examples of different habitats and species, and to facilitate ecological stability and diversity;
3. To manage habitats for the maintenance of fishery stocks;
4. To manage visitor use at a level which will maintain the area in a natural or near natural state;

5. To prevent exploitation detrimental to the purposes of the designation.

Several activities are proposed in fulfillment of these objectives which recognise the issues affecting management of the park. Wherever possible, an incremental and process driven approach is proposed for implementation of key activities so as to improve effectiveness and efficiency.

Demarcation of Boundary and Zones

Several of the conflicts of use within the park are due largely to the lack of demarcation of boundaries and zones and the misleading demarcation of some swimming areas within the Swimming Zone. The process of preparation for demarcation could include the following steps:

1. Review existing national parks regulation and other documents to determine the description of the boundaries, anchoring and other zones within the PALSNP.
2. Locate the boundary references described in the legislation on the topographic map.
3. Convert these references into Lat/Long coordinates.
4. Using the Lat/Long coordinates converted from the legislation, find the park boundaries in the field using the GPS.
5. During a field reconnaissance, determine the physical location along the boundaries for the demarcation buoys using the GPS and line of site estimation. Also estimate the quantity of buoys and other hardware which will be needed.
6. Obtain specifications of anchors, pins and other hardware for installation of demarcation buoys.
7. Select appropriate types and quantity of hardware including buoys and place an order for purchase.
8. Arrange for drilling equipment and expertise to operate the drill.
9. Invite selected Water Sports Operators to collaborate in installation of the buoys.
10. Prepare a schedule for installation of demarcation buoys.

Determining Appropriateness of Existing Zones

Due to the conflict in use of the existing Waterskiing Zone by the parasail and waterski operators, as well as the undesirability of skiing activities in the park by some stakeholders, a resolution by consensus of all key stakeholders should be encouraged. This process for resolution has already started and should continue. New zones may also be proposed to meet the needs of Turk Islanders, who seem to derive the least direct benefit from the park. The following steps are proposed:

1. Arrange for a workshop to determine the need and best location for the Water-ski Zone or any other type of zone. Community meetings may be preferable for reaching particular target groups for consensus on the need for changes in the current zoning.

2. Participants should include the Hotel and Tourism Association, the Water Sports Operators (WATCI), National Trust, Tourist Board, the Maritime Unit, Marine Police, CRMP and representatives of local communities.
3. Let all parties represent their case and through consensus develop a proposal for the activity and zoning.
4. Visit the area proposed for the zone with selected stakeholders to determine its appropriateness.
5. Test the appropriateness of the proposed zone by monitoring its use over a few months.
6. Present findings at a meeting of the key stakeholders and make adjustments to redefine the zone in agreement with the stakeholders if needed.
7. Declare the redefined zone in accordance with the National Parks Regulations.

Mooring Deployment and Maintenance

A collaborative venture with the watersports operators on procurement and installation of moorings has been on going for a number of years but needs to be strengthened. The setting up of a Mooring Buoy Committee made up of representatives of CRMP, DECRA and Water Sports Operators to determine the number, type and location of moorings buoys and to facilitate installation has been a good start. Rotating of popular dive sites to allow for recovery of heavily used sites should also be considered by this committee.

This Committee needs to meet at least once per month to review progress on decisions taken and to ensure that standardisation of mooring rigs and their installation are being implemented in a timely manner. The standard dive mooring rig should have a cylinder or ball with one blue stripe on a white background for vessels less than 60' LOA. For vessels larger than 60' but up to 110' (about 80 tons maximum), the dive mooring rig should have a cylinder or ball with two blue bands on a white background. Alternatively, a yellow ball with a blue stripe could be used to distinguish the mooring for large vessels. All such moorings must be anchored with at least two pins or the appropriate capacity helix anchors. Vessels larger than 110' or 80 tons, must be encouraged to use anchorages at designated locations.

It may be preferable to install only moorings that can accommodate any vessel up to 110' in length at the dive sites only. This will eliminate the need for two types of moorings and repair or replacement of smaller boat mooring rigs damaged through use by larger boats. These moorings should be used on a first come, first served basis.

Maintenance of the mooring buoys will be the responsibility of the Park Wardens. All non-standard mooring rigs should be replaced. All mooring buoys should be physically numbered and marked with the NPS logo for ease of identification. The following schedule for maintenance is proposed (van Breda and Gjerde, 1992):

1. Monthly
 - i. Inspect condition of all buoys and pick-up lines; note GPS location.
 - ii. Clean algal growth from pick-up lines or replace if necessary
 - iii. Clean buoy and check for cracks, replace if necessary
 - iv. Inspect and clean exposed portions of buoy through-line and replace as appropriate
2. Three months
 - i. Inspect down line for wear and damage, replace if necessary
 - ii. Inspect shackle for wear and damage, replace if necessary
 - iii. Inspect anchor and examine area between anchor and shackle for signs of wear
 - iv. Inspect anchor mount site and surrounding area, look for signs of movement or looseness between the anchor and cement core or between the cement core and the substrate
3. Six months

Replace buoy through line and pick up line after six months of use if the system is used regularly
4. Twelve months

Replace pin in down line shackle
5. Twenty-four months

Replace down line if necessary.

Awareness and Interpretation

Since the authority for managing the parks does not have a captive audience, it is not possible to conduct a cost-effective education programme. What is achievable however, is improving awareness of the negative impacts on the park and action to minimise these impacts. The awareness communications should be: 1) positive, 2) alternatives to current negative actions presented, 3) good practice encouraged, 4) done in the context of existing regulations, 5) unambiguous and packaged based on the nature of the target group. Representatives of the target group could also be involved in drafting the messages to improve effectiveness of design. Tour Operators, Hoteliers, Real Estate Developers, and Government Decision Makers were among the groups with highest priority for awareness (Table 2). These groups were also considered as having the highest actual or potential negative impacts on the park. Because tourists are a transient group it was felt that reaching the hoteliers who can then influence their guests may be a more cost effective strategy.

The messages to be communicated should be based on an understanding of the nature of the impacts that can be caused by the selected target groups. For example, the negative or potentially negative impacts facilitated by Tour Operators may include: wildlife feeding, anchor damage, improper mooring, diver related damage to coral reef, snorkeling related damage to corals, flushing of boat toilets, pumping bilge, illegal fishing, collecting living and non-living materials, and boat cleaning/maintenance.

Sectors	Negative Impact [Actual or Potential]	Priority for Awareness
Schools	0	4
Tourists	5	1
Fishermen	2	4
Tour Operators	5	1
Recreational Boaters (Local, Foreign)	3	3
Hoteliers	5	1
Real Estate Developers (Managers, Construction Workers)	5	2
Fish Processing Plants	3	3
Local Conservationists	1	0
Non Governmental Organisations	4	3
Government Decision Makers	5	2
Stay-at-home Persons	1	4
Non-belongers (Haitian, Dominicanas, English Speaking)	3	3
Small Business Owners	3	3
Taxi Drivers	0	4
Government Agencies (Police Customs, Fisheries, Planning, Tourist Board)	3	3

Key:- Impact: 1= lowest ; 5= highest
Priority: 1 = highest

Table 2. Key Sectors Identified For National Parks Awareness

One of the key issues for redress under an awareness programme is the promotion of the location of the park boundaries and zones, and the prescribed uses within each zone. This activity will be planned for implementation shortly after the boundaries and zones in the PALSNP have been demarcated.

An additional approach to “spreading the message” has been initiated through a collaborative arrangement with the National Trust for an education and awareness programme. Since the National Trust already has a national environmental education programme, its effort would be strengthened through the provision of an Environmental Education Officer and some core funding by the TCIG to additionally implement the national parks education/awareness activities. Nevertheless, development of effective education/awareness activities requires that the following questions be considered during the planning process (Fazio and Gilbert, 1981):

1. What do you want to accomplish in realistic and reasonably measurable terms? That is, do you want to simply build awareness or do you want some change in behaviour or practice?
2. What are the expected results that will help you know if you are achieving your objectives? For example, better use of dive moorings? Reduced reef damage?
3. What are the internal policies that need to guide the initiative?

4. What are the problems that need to be addressed?
5. What are the socio-economic and environmental trends that provide the context for the initiative?
6. What groups are you trying to reach and what are some of their characteristics? For example, with some groups, literacy or language may be a problem; for young people materials need to be catchy and cater to their level of understanding.
7. What is the message you need to convey to the selected target groups?
8. Is the message 'packaged' so that it is most likely to achieve the expected results to improve knowledge, persuade, change behaviour, etc?
9. What is the best communications channel to use to reach those target groups with your message?
10. Have you put it all together by matching the message, target group and media in implementation of the initiative?
11. Have you developed a means of evaluating the initiative?
12. Are you open to feedback and have you established channels to receive that feedback?
13. Did the activity have the desired effect? Consider both long and short term impacts.
14. Are you reasonably willing to make changes if necessary as a result of the feedback and results?

Outreach and Community Support

Outreach is a term that refers to interpersonal communication with selected groups. It is often used to mean "extension work" where direct interaction with the target groups are utilised to achieve a desired objective. An organisation's most important medium for communication is its staff. Nothing affects perceptions and understanding of, or support for an idea as much as the knowledge, attitudes and actions of staff. The advantages of interpersonal communications include directness, appreciation of reality, opportunity for direct feedback, ability to target a very specific group and low cost (Minty and McNeil, 1996).

Outreach activities can consist of field work and presentations providing practical, hands-on knowledge usually within the "home" environment of the target group e.g. a fishing beach, work site, recreational area etc. Generally, outreach work helps solve problems of target groups, helps them learn of new practices and deal with very specific issues (Minty and McNeil, 1996).

Building community support among the general population for management activities in the park requires an understanding of the socio-economic conditions and needs of the target groups. The process for building this support requires the following steps:

1. Identify the target groups
2. Acquire a profile on each of these groups (i.e. occupations, living conditions, needs, knowledge about the park, etc)
3. Identify the opinion leader(s) in each of these groups
4. Determine what information needs to be communicated

5. Determine how this information can be effectively communicated
6. Identify local activities in which staff could participate or assist.
7. Design an evaluation for the effectiveness of communication efforts
8. Identify the resources and cost required for implementation of outreach
9. Identify logistics (including collaborating agencies) required
10. Agree on the timeframe for execution of these activities
11. Agree on the responsibility of each person in carrying out these activities
12. Implement outreach activities and provide quarterly analytic progress reports
13. Evaluate effectiveness of outreach activities and redesign future efforts

Pollution Abatement

The control of pollution in the coastal environment can be facilitated through the creation of a task force comprised of representatives of the key polluting institutions, selected technical specialists and senior staff of the government agencies with jurisdiction in the regulation of coastal pollution. This task force will be required to formulate and implement mitigation measures for coastal pollution, focusing primarily on areas within and adjacent to the national park. The sources and extent of pollution in the coastal environment has already been identified, as well as the institutions responsible for discharge of the pollutants into the coastal environment and the governmental agencies responsible for monitoring/regulation of coastal pollution. Through the Permanent Secretary, Ministry of Natural Resources, the contact persons from all of the above agencies should be invited to be part of the task force.

Surveillance and Enforcement

The movement of people and vessels in the park will be assessed through routine patrols by the Park Wardens. Foot patrols along the beach and boat patrols along the zones and areas of popular visitor use such as the dive and snorkel sites, should be scheduled during peak use of these areas. Additionally, irregular schedules should also be planned to detect infringement of the parks regulation and monitor user activities.

Interpretative enforcement of the regulations will be the preferred method of dealing with infringement of the national parks regulation. First time offenders may be given a warning and will be provided with information on the park, including the boundaries, zones, regulations and why it is important to respect and support conservation in the park. If a first time offender is a boat captain/owner, he/she may be asked to report to the National Parks Office within 24 hours for an orientation on the national parks. Failure to comply will be recorded in a log to guide further action if there is another infringement by that individual. No warnings will be given to offenders under the following conditions:

1. Use of illegal fishing implements
2. Possession of undersized catch
3. Possession of catch out of season
4. Use of hazardous substances within the park

5. Lack of cooperation

The Park Wardens will have the ability to enforce the regulations to the fullest extent of the law. In such cases, the gathering of evidence and filing of a report on the incident will follow procedures developed in consultation with the Police and the DECR.

Monitoring and Research

The management objectives of the park include the maintenance of the quality of visitor enjoyment, regulating compatible and non-destructive activities, maintaining biological diversity (i.e. adequate populations of all plants and animals found in the area) and ecosystem functions. Toward this end, monitoring and research activities will be designed to provide information on the status, and changes over time, of environmental quality together with type, intensity and impacts of uses. Monitoring will include two main components – the living system and the non-living (water quality and physical system).

Living Systems

In reference to the marine habitats which are the dominant element of PALSNP (outside the Nature Reserves), a monitoring and research programme will focus on:

1. Tracking and assessing changes in reef communities in response to environmental stressors or specific human uses e.g. abundance and diversity of some of the major components of the reef ecosystem (corals, fish, algae), types of use, etc.
2. Number of users, frequency of use, impact of use and evaluation of operator procedures will be assessed. This information will guide decisions on level of usage and interventions on cycling dive sites out of usage. The collection of dive statistics (which is a requirement for the grant of the license for dive and charter vessels) is the responsibility of the DECR and discussions are required to agree on collaborative mechanisms for data collection, modifications to the forms, and data analysis.
3. The snorkeling sector is a growing market with potential for damage to the shallow reefs from both physical damage as well as boat discharges. Like dive statistics, a mechanism needs to be instituted to collect snorkel statistics. The Bight Reef and Smith's Reef need special attention as they are subject to both boat and land usage. There will be monitoring of the number of divers/snorkelers at the reef and length of time spent at the reef. Considerations are being given to having sections zoned for research in order to protect the juvenile habitat and reducing use by boats.
4. The seagrass communities which are the basis of many commercial species is a frequently overlooked system. Information on distribution, condition and associated species will be initiated. DECR collaboration with regard to fisheries issues will be sought in order incorporate appropriate protocols.

The preparation of a comprehensive habitat map showing distribution of corals, seagrass and other benthic features would be a useful activity which could be done through a

consultancy (also using remote sensed data). Collaboration with the Lands Surveys Department and the DECR in carrying out field surveys and mapping should be encouraged so as to build local capacity in resource/habitat mapping.

Non-living Systems

This will address the disposal of waste (particularly liquid waste) into the nearshore environment and potential impacts on coastal living systems. The following elements are proposed:

1. Assessment of location, treatment and disposal systems, volumes and discharge mechanisms.
2. Impact on receiving system (irrigation and ground water).
3. Impact on coastal water and living systems.

A consultant with expertise in hydraulic engineering was recruited on short term in order to assist with a rapid assessment of the impacts. This will provide information towards long term monitoring. The parameters likely to be of importance include temperature, salinity, turbidity, suspended solids, petroleum hydrocarbons, nitrogen (nitrates and ammonia) and phosphates. Samples will need to be sent to specialised overseas labs for analysis.

In the long term the aim is the development of simple models linking discharge and possible coastal impacts. In this way one may have some predictive ability which would assist decision making on coastal development.

With regard to the terrestrial environment the following investigations are proposed:

1. Population studies of the rock iguanas on Little Water Cay should be undertaken. However, the responsibility for Little Water Cay has been contracted by the Government to the National Trust so they will be responsible for the monitoring and management of the area. Additionally, the ponds on Little Water Cay should also be assessed in terms of its importance to waterfowl. Some baseline data on water quality in the ponds could be collected with assistance from CRMP.
2. The location, species and zonation patterns of mangrove species in the Nature Reserve should be surveyed and mapped. These should be monitored for resident and migratory wildfowl and associated juvenile fish. Additionally the endemic rock iguana is found on Donna Cay and the population status should be assessed; the collaboration of the Trust should be sought in this matter .
3. Coastal erosion is a serious issue along sections of the north shore of Princess Alexandria and this may be a combination of natural and man-made factors. It is proposed that a collaborative arrangement be set up between CRMP and the DECR (which has national responsibility) to institute monitoring of beach profiles and provide the necessary information on rates of change so that the appropriate action can be taken by relevant authorities. The Physical Planning Department

should be encouraged to identify vulnerable areas along the coast and these should be zoned for no construction. The construction of groins, jetties and breakwaters should not be encouraged without adequate expert studies of local coastal dynamics.

4. Given that there is oil tanker traffic through the area, Beach Tar monitoring, following the IMO protocols should be initiated. While this may not be controllable in the short term, analysis of the monitoring data will provide an assessment of the trends.

Training

The parks management staff have had access to many in-house training opportunities and a few relevant overseas training courses, however, to ensure that such training can be translated into management activities, the process of learning has to be encouraged. Learning requires reinforcement of a message or action. Learning is hampered by the manner in which the message or action is communicated to an individual, that individual's ability to understand, and his/her acceptance or rejection of the information. Once the information is accepted it has to be internalised by the individual and related to some interest or activity that the individual deems useful, important or worth knowing. A mechanism needs to be developed in-house for this process of learning, which at this time, could be through the engagement of a short term Consultant Training Officer. This Officer will be responsible for development of materials and implementation of activities to reinforce training to which staff has been exposed. Key areas in which staff proficiency is required include:

1. Computer skills
2. Report writing
3. Work planning including coordination of work plans
4. Evaluation of activities
5. Coastal ecology
6. Species/habitat identification and description
7. Survey and monitoring
8. Use and maintenance of specialised equipment
9. Participatory planning
10. Public relations
11. National Parks legislation; less rigorous training will be required in Fisheries Protection Ordinance, Wild Birds Protection Ordinance, Coast Protection Ordinance, Summary Offences Ordinance, and the Public and Environmental Health Ordinance.

Further off-island training of staff should be encouraged as the need and opportunities arise. Such training should be formally passed on to other staff members within one month of the completion of the overseas training to ensure maximising of benefits to the institution.

Quality Control/Assurance

The efficiency and effectiveness of management activities can be improved if there is close supervision by a senior and experienced officer to ensure that appropriate methodologies and information are used in a timely manner. Attention to details must be encouraged especially in the procurement of materials and services, execution of field work (particularly target levels of what should be measured and reliability of the results), interaction with stakeholders, follow-up, and in the preparation of relevant reports. The Project Manager/National Parks Director will have overall responsibility for quality control/assurance of programme activities but may call upon specific technical expertise to assist as needed.

Continuous improvement in the performance of staff should be encouraged. Method Study and Work Measurement can be employed to identify the scope for improvement, as long as there is genuine commitment to progressive change. Method study involves examining in detail how work is currently carried out, and challenging every aspect of it; whether it needs doing at all, and whether it is done in the right way, at the right time and by the right people. The study continues by developing improved methods and ensuring their implementation. Work measurement involves accurate observation and timing of work, with the aim of establishing performance standards (Peel, 1995).

In terms of information needed for management or for communicating various aspects of the programme to various target groups, the Project Manager/National Parks Director can be guided by answers to the following questions (Peel, 1995):

1. What information is now supplied; a) regularly, b) occasionally, c) when asked for?
2. Is the accuracy of this information satisfactory?
3. For each kind of information, is it; a) essential, b) useful, c) occasionally handy, d) useless?
4. What additional information do we need?
5. How often do we need it?
6. How can we get it most efficiently?

INSTITUTIONAL ARRANGEMENTS

Currently, the Coastal Resources Management Project of the DECR has day to day management responsibility for the national parks. The Project Manager reports directly to the Permanent Secretary, Ministry of Natural Resources. A Project Steering Committee comprised of the a representative from the Ministry of Finance and the National Trust is chaired by the Permanent Secretary and offers policy and administrative direction to the project through monthly meetings. A National Parks Environmental Advisory Committee, comprised of representatives from several stakeholder groups meets

periodically to advise on the role of the project in conservation and sustainable use of the natural environment.

An output of the CRMP is the establishment of the National Parks Service (NPS) that would be responsible for all parks and protected areas in the TCI. It is proposed that the NPS will be a quasi-governmental agency, institutionally similar to the manner in which CRMP operates, but with modification for improved efficiency, with clear procedures of operation and a definition of roles and responsibilities of its Director and advisory/technical committee.

Operational management of the NPS will be through a Director, guided by a Policy/Administrative Committee. This Committee will be comprised of the Permanent Secretary - Ministry of Natural Resources, the Senior Economist - Ministry of Economic Planning and Statistics, the Chairman (or designated representative) of the National Trust, and the Director of the NPS (the P/A Committee composition will be identical to the current Project Steering Committee). The P/A Committee will receive advice when required from the National Environmental Advisory Committee which will be established by Government. The NPS will report to the Permanent Secretary of the Ministry responsible for coastal resources, in this case, the Ministry of Natural Resources (Figure 3).

Selected activities of parks management will be done in collaboration with other agencies on the basis of complementarity, maximising use of scarce resources, and on defined and formalised agreements. Key agencies for collaborative arrangements include the DECR, Physical Planning Department, Public and Environmental Health Department, Public Works Department, Tourist Board, the Maritime Unit and the National Trust. Other NGOs with which partnerships may be built, could include the Hotel and Tourism Association, the Water Sports Operators (WATCI), Rotary Club, and the Chamber of Commerce.

Operational issues which need resolution e.g. zoning of the parks, mooring buoy deployment and maintenance etc, should be through participatory planning sessions with broad based involvement of key stakeholders. Therefore all affected parties will have their say and consensus will be sought for deciding on action. This is a more effective way of dealing with operational issues which affect many target groups. Specialist technical advisors could also be contracted on an 'as needed' basis to advise the NPS.

ADMINISTRATION AND MAINTENANCE

Staffing

The Coastal Resources Management Project is comprised of a Project Manager, Chief Parks Warden, 3 Parks Wardens, a Scientific Monitoring Officer, an Education Officer and an Administrative Officer. The number of staff is currently adequate for managing

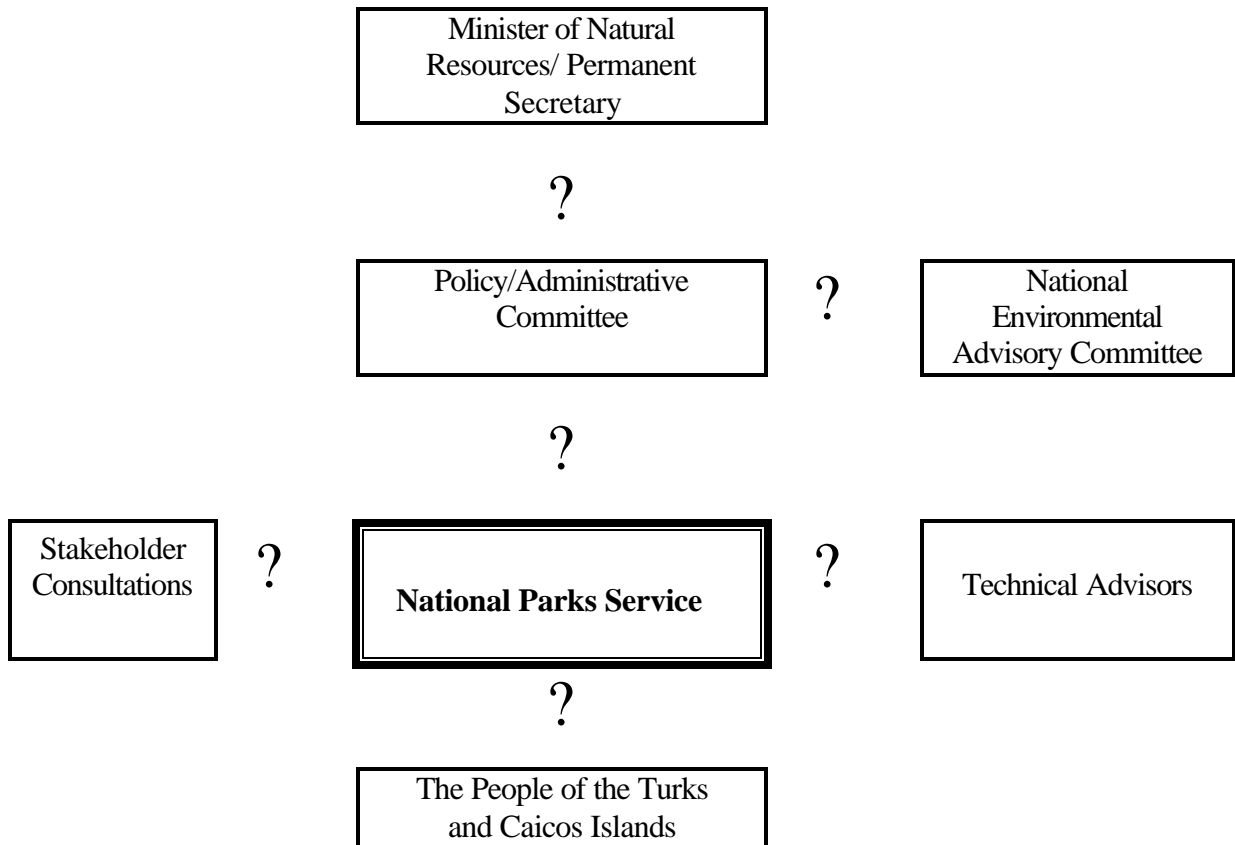


Figure 3. Proposed Institutional Arrangement for the National Parks Service

existing activities of the PALSNP, but their current ability to satisfactorily implement many management activities require significant improvement. The preparation of habitat maps for the PALSNP require a short term consultancy and an in-house Data Management Officer for data analysis, database management and use of geographic information systems as a park management tool will need to be recruited.

Maintenance

Maintenance of park infrastructure (signs, buoys, access lanes, etc) and equipment (boat, truck, radios, etc) will be the responsibility of the Park Wardens, maintenance of office equipment will be the responsibility of the Administrative Officer and maintenance of the scientific equipment will be the responsibility of the Scientific Monitoring Officer. Equipment should generally be inspected at least monthly to determine the need for servicing.

Equipment

Coral reef monitoring equipment (video camera, underwater housing, pH/salinity/temperature/dissolved oxygen meter) mapping/database software, computer, plotter, and digitiser are the major equipment that will be required for data acquisition, analysis and reporting.

Budget

Some recurrent expenditures are met by the CRMP grant from DFID and contributions from TCIG. However, the 1% increase in hotel accommodation tax which was instituted in April 1999 has been allocated to the Conservation Fund. This Fund is expected to meet the budgeted requirements for the National Parks from April 2000. Below is a projected annual cost of management activities for the PALSNP:

<u>Activity</u>	<u>Cost US\$</u>				
	2000	2001	2002	2003	2004
Demarcation of boundary and zones	25,000	-	-	-	-
Determining appropriateness of zones	2,000	-	-	-	-
Mooring deployment	25,000	-	5,000	-	5,000
Buoy and mooring maintenance	5,000	5,000	5,000	6,000	6,000
Awareness and interpretation	10,000	15,000	10,000	15,000	15,000
Outreach and community support	4,000	4,000	5,000	5,000	6,000
Surveillance and enforcement	40,000	40,000	45,000	45,000	50,000
Monitoring and research	10,000	10,000	12,000	12,000	15,000
Preparation of habitat maps	20,000	-	-	-	6,000
Training	6,000	-	10,000	-	10,000
Quality control/assurance	4,000	4,000	2,000	2,000	1,000
Equipment	70,000	-	-	10,000	-
Equipment maintenance	3,000	3,000	4,000	4,000	5,000
TOTAL	\$224,000	81,000	98,000	99,000	119,000

EVALUATION

No implementation schedule is provided for this management plan because the accuracy of such scheduling is dependent on the capacity of staff and local administrative bureaucracy. The NPS staff will decide on which elements of the plan they wish to undertake on an annual basis. This will also depend on the level of additional training for, and the learning curve of individual staff members.

Progress on implementation of the management plan should be reviewed quarterly or at least twice per year so that difficulties in execution of activities could be identified and resolved and slippage in timely outputs could be controlled. It would be useful to prepare quarterly work-plans and implementation schedules for the National Parks Officers to whom specific tasks are delegated. This will guide operational efficiency, however, overall annual work-plans should be prepared to further assist in evaluation of progress.

Progress can be measured by achievement of tangible outputs within a given timeline. The use of indicators of progress can provide an easy means of verifying achievement, linking programme activity to outputs. Several indicators are proposed below for each programme activity:

Activity	Indicators of Progress
Demarcation of boundary and zones	<ol style="list-style-type: none"> 1. Number of demarcation buoys acquired 2. Buoy accessories acquired 3. Boundaries and zones demarcated on map 4. Lat/Long. Coordinates for boundaries determined 5. Field reconnaissance of boundaries completed 6. GPS fixes of boundaries confirmed in the field 7. Access to drilling equipment and expertise obtained 8. Watersports Operators invited to participate 9. Number of demarcation buoys installed
Determining appropriateness of zones	<ol style="list-style-type: none"> 1. Number of meetings held with stakeholders 2. Identification of modification to existing zones 3. Identification of new zones 4. Stakeholders agreement on size, shape and location of zones 5. Designation and trial of use of modified or new zones
Mooring deployment	<ol style="list-style-type: none"> 1. Number of mooring buoys acquired 2. Buoy accessories acquired 3. Agreement by stakeholders on location for deployment 4. Number of mooring buoys deployed
Buoy and mooring maintenance	<ol style="list-style-type: none"> 1. Number of buoy inspections per month 2. Number of replacement or repairs per month
Awareness and interpretation	<ol style="list-style-type: none"> 1. Programme of activities for priority groups developed 2. Number of different types of awareness materials prepared 3. Number of awareness events planned 4. Number of awareness events executed 5. Evaluation of effectiveness completed 6. Redesign of future activities (if needed)
Outreach and community support	<ol style="list-style-type: none"> 1. Programme of activities for target groups developed 2. Profile of each group prepared 3. Number of outreach events planned

	<ol style="list-style-type: none"> 4. Number of outreach events executed 5. Evaluation of effectiveness completed 6. Redesign of future activities (if needed)
Surveillance and enforcement	<ol style="list-style-type: none"> 1. Number of marine patrols per month 2. Number of beach patrols per month 3. Number and type of infringement of national parks regulations per month 4. Number and type of follow-up action with offenders
Monitoring and research	<ol style="list-style-type: none"> 1. Number of monitoring parameters and frequency of data collection identified 2. Number and location of monitoring stations identified 3. Monitoring stations established 4. Data analysis reports 5. Number and type of measurements taken per quarter 6. Number of monthly park user surveys conducted 7. Research priorities identified 8. Number of research activities initiated 9. Recommendations for management interventions prepared
Preparation of habitat maps	<ol style="list-style-type: none"> 1. Procurement of technical assistance 2. Survey of habitats completed 3. Habitat map(s) completed
Training	<ol style="list-style-type: none"> 1. Number and type of training activities per quarter 2. Mechanism to facilitate in-house learning developed
Quality control/assurance	<ol style="list-style-type: none"> 1. Number of planning sessions held per month 2. Number of detailed review of tasks and activities per month 3. Number and type of corrective actions required per month
Equipment procurement	<ol style="list-style-type: none"> 1. Specifications of equipment identified 2. Number and type of equipment procured
Equipment maintenance	<ol style="list-style-type: none"> 1. Number and type of equipment inspected per month 2. Number and type of maintenance activity carried out per month

Table 3. Indicators of progress of management activities in the PALSNP

REFERENCES

- ATM, (1988). EIA for the Leeward Marina? (*cover page and first chapter missing*)
- DFID (1999?). White Paper on Progress Through Partnership: Chapter Eight, Sustainable Development-the environment. DFID?
- Fazio, J.R. and D.L. Gilbert (1981). Public relations and communications for natural resource managers. Kendall/Hunt Publishing Co.
- Gascoine, B. (1995). Turks and Caicos Islands marine information package: nautical agency notification (NAN project, November 1994). Unpublished report to the Turks and Caicos Islands Government, Grand Turk.
- Keegan, W.F. (1997). Bahamian archaeology: life in the Bahamas and the Turks and Caicos before Columbus. Media Publishing, Nassau.
- Minty, D. and E. McNeil (1996). Making environmental education work: an evaluation of the effectiveness of materials produced for marine resource awareness and education. Unpublished report to the Caribbean Conservation Association, Barbados.
- Operation Raleigh (1986). Report on the Turks and Caicos Expedition: Report on the distribution of habitats and species of the north coast of Providenciales and Leeward Cays; part 1. University of York, U.K.
- Operation Raleigh (1990). Report on the Turks and Caicos Expedition: Management of the marine and coastal resources of the Princess Alexandra National Park; recommendations for protected areas; part 8. University of York, U.K.
- Ray, G.C. and A. Sprunt (1971). Parks and conservation in the Turks and Caicos Islands. Unpublished report to the Turks and Caicos Islands Government, Grand Turk.
- Sadler, H.E. (1997). Turks Islands Landfall: a history of the Turks and Caicos Islands. Consolidated, edited and published by Marjorie Sadler.
- TCIG (1987). Providenciales Physical Development Plan, 1987-1997. Department of Planning, Natural Resources Branch, Grand Turk.
- TCIG (1995). Environment Action Plan 1995-1998 (TCI Country Policy Plan). Typescript.
- TCIG (1998). Chapter 80: National parks ordinance and subsidiary legislation. Revised edition as at 15th May, 1998.
- TCIG/DFID (1999). Coastal Resources Management Project. Revised project memorandum September 1999. Unpublished.

TCInvest (1995?). Doing business in the Turks and Caicos Islands: Government Policies.
van Breda, A. and K. Gjerde (1992). The use of mooring buoys as a management tool.
Center for Marine Conservation, Washington, D.C.

van't Hof, T. (1994). Management plan for the Princess Alexandra Land and Sea
National Park and the Northwest Point Marine National Park, Providenciales, Turks and
Caicos Islands. Unpublished report to the Turks and Caicos Islands Government, Grand
Turk.

Wanless H.R. and J.J. Dravis (1989). Carbonate environments and sequences of Caicos
platform. Fieldtrip guidebook T374. American Geophysical Union, Washington, D.C.

Wood, B. (1993). A national parks service for the Turks and Caicos Islands.
Unpublished report to the Turks and Caicos Islands Government, Grand Turk.

Wood, K. (2000). A rapid assessment of the flora and faunal communities at selected
protected areas in and around Providenciales. Unpublished report to the Coastal
Resources Management Project.

Woodring, M.P. (1996). The development of the Little Water Cay rock iguana trail
program. Project proposal on behalf the National Trust of the TCI and the Department of
Environment and Coastal Resources, TCIG.

APPENDIX 1

List of Recipients for First Draft PALSNP Management Plan

Mr. Terry Smith
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P/S Ministry of Natural Resources
Grand Turk
Turks & Caicos Islands

Mr. Delton Jones
Project Steering Committee
Economics and Statistics
Grand Turk
Turks & Caicos Islands

Royal Robinson
Project Steering Committee
National Environmental Advisory
Committee
C/O National Trust
Providenciales

Mrs. Ethlyn Gibbs- Williams
Executive Director
The National Trust
Providenciales

Mr Willete Williams
Chairman
The Bight Community Awareness
Association
Kingston, The Bight
Providenciales

Mr. Ian McLeod
President
Hotel and Tourism Association
Erebus Inn
Providenciales

Mr. Carter Takacs
President
WATCI
C/o Provo Turtle Divers
Providenciales

Mrs. Mickey Shoulet
Chairperson
Rotary Club
C/o New Waves Hair Design
Bristol Building (Bldg next to FedEx)
Providenciales

Mr. John Skippings
Director
Tourist Board
Grand Turk

Mr Oswald Skippings
Minister
Communication, Tourism and
Transportation
Grand Turk

Mr. Clarence Selver
Minister
Health and Education
Grand Turk

Mr. Noel Skippings
Minister
Ministry of Public Works and Utilities
Grand Turk

Hon. Cynthia Astwood
Chief Secretary
Chief Secretary's Office
Grand Turk

Hon. Derek Taylor
Chief Minister
Chief Minister Office
Grand Turk

Mr. Tommy Skippings
Chairman
Sewage Board
Ministry of Public Works
Grand Turk

Mr. Bob Gascoine
C/o Brian Riggs
Turks & Caicos National Museum
Grand Turk

Mr. Bengt Soderqvist
Provident Ltd
Turtle Cove Marina
Providenciales

Mr Brian Riggs
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Chief Environmental Health Officer
Public and Environmental Health
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Mr. Max Smith
Chief Engineer
Public Works Department
Grand Turk

His Excellency Mervyn Jones
Governor
The Governor's Office
Grand Turk

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President
Chamber of Commerce
C/o Bamboo Gallery
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