

## BAHAMAS

### INTRODUCTION

by The Bahamas National Trust

The Bahama Islands are an archipelago in the southwestern North Atlantic between latitudes 20°50'N and 27°25'N, and longitudes 70°00'W and 80°32'W. The islands vary greatly in size and are principally distributed on four shallow banks with seas less than 9m deep. These are the Great Bahama, Little Bahama, Cay Sal and Caicos Banks. Most of the eastern and southern islands are detached from the major banks and are surrounded by waters which reach depths of between 2,000 and 4,000m. The various banks total approximately 125,000 sq. km, but only about 14,000 sq. km are above sea level. It is generally considered that the dry land includes 29 inhabited islands, some 660 cays and almost 2,400 rocky islets ("rocks"). The total population of the Commonwealth of The Bahamas was about 225,000 in 1978.

The islands and cays are low-lying, with an average elevation of only 10m. Many of them have low hills which may reach 30-60m in height. The dominant vegetation is low, dense and thorny, the major vegetation types being as follows:

- a) Mangrove swamps and marshes. The Black Mangrove *Avicennia germinans*, White Mangrove *Laguncularia racemosa* and Red Mangrove *Rhizophora mangle* are found throughout the islands. Other species associated with mangrove swamps and brackish to saline marshes include *Conocarpus erectus*, *Typha sp.*, *Dichromena latifolia*, *Cladium sp.*, *Eleocharis sp.*, *Tillandsia sp.*, *Polypodium polypoides*, *Najas marina* and *Utricularia purpurea*. In addition, there are some small areas of freshwater marsh with *Acrostichum sp.*, *Cabomba sp.*, *Potamogeton sp.* and *Ceratophyllum demersum*.
- b) Beach vegetation. Sandy beaches occur widely throughout the archipelago and have a characteristic flora including *Canavalia obtusifolia*, *Batis maritima*, *Ipomoea pescaprae*, *Sesuvium portulacastrum*, *Cyperus mariscus*, *Coccoloba uvifera*, *Suriana maritima*, *Chrysobalanus icaco*, *Conocarpus erectus*, *Coccothrinax argentata* and *Casuarina litorea*.
- c) Swashes. These are extensive areas of mudflats bordering mangrove swamps, ponds and lagoons, characteristically with little or no permanent vegetation. Mangroves may attempt to grow but the shoots seldom reach a height of more than 10-15 cm.
- d) Pine forests or "barrens". Tracts of pine woodland with numerous palms; the dominant species are *Pinus elliottii*, *P. caribea*, *Acoelorrhaphe wrightii*, *Sabal palmetto*, *Thrinax morrisii* and *Coccothrinax argentata*.
- e) Mixed broad-leaf coppice. Mixed broad-leaf woodland with a wide variety of trees, shrubs and bromeliads including species of *Baccharis*, *Mimosa*, *Tamarindus*, *Acacia*, *Pithecellobium*, *Swietenia*, *Bursera*, *Ficus*, *Clusia* and *Tillandsia*.

Almost every major island contains some wetland habitat, and several islands, such as Grand Bahama, Abaco, Andros and Great Inagua, have enormous tracts of wetland. The great majority of this is comprised of shallow brackish to saline lagoons, mangrove swamps, coastal flats and intertidal mudflats. Many areas are difficult of access and remain very poorly known. The present inventory has been based to a large extent on a report compiled for IUCN by G. Carleton Ray on critical marine habitats of the wider Caribbean area.

#### Institutional Base for Wetland Conservation and Research

The governmental organization responsible for environmental conservation in the Bahamas is the Ministry of Agriculture, Fisheries and Local Government, with its headquarters in Nassau, New Providence. The only non-governmental conservation body is The Bahamas National Trust, also based in Nassau. This was created in 1959 by an Act of Parliament, and now has over 1,000 members. The Trust is concerned with the conservation of wildlife, particularly threatened and endangered species, the protection of critical habitats, and the preservation of places of historic interest and great natural beauty. Programmes include public and school education, protection and study of the flamingos on Great Inagua, and sea turtle research. The Trust publishes a journal of natural history, the "Bahamas Naturalist".

### Progress in Wetland Conservation and Research

In 1905, an Act entitled "The Wild Birds (Protection) Act" was established with the cooperation and guidance of the U.S. National Audubon Society. This statute law was revised in 1965 (Chapter 28, Wild Birds Protection Act). Subsidiary legislation of this Act defines Section 4 (Reserves) and lists areas throughout the Bahamas which are recognized as Wild Birds Protection Reserves. The Act was further revised and strengthened in 1972.

Section 4 of the Wild Birds Protection Act currently lists twenty-five sites as Wild Bird Reserves. In addition to these, The Bahamas National Trust has under its jurisdiction eight national parks; three of these parks (Inagua National Park, Conception Island National Park and Lake Cunningham National Reserve) are specifically protected for their waterfowl populations.

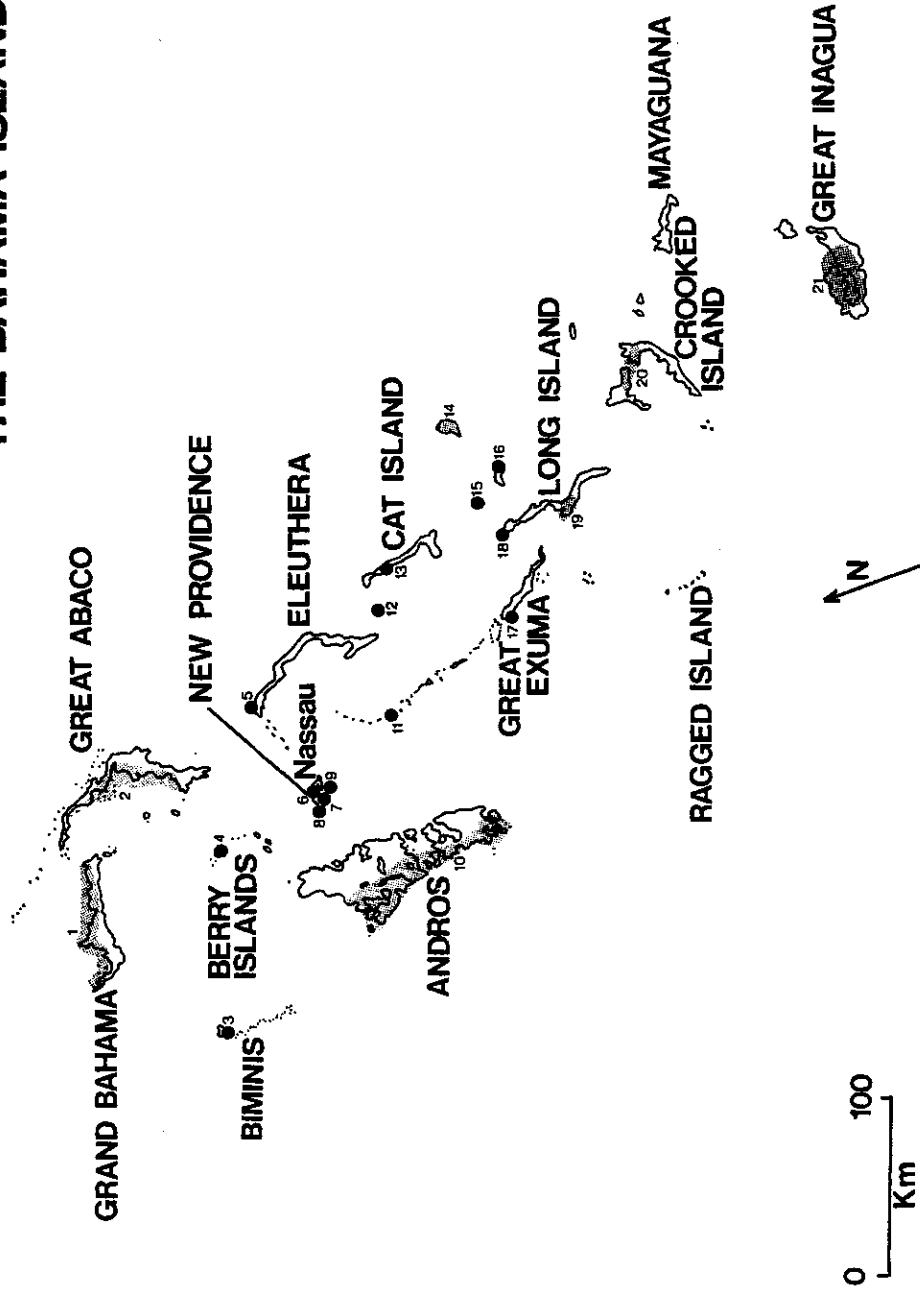
In August 1983, The Bahamas National Trust submitted to the Government a proposal entitled "The Development of a National Park System for the Commonwealth of The Bahamas". This proposal identifies fifty-two sites throughout the islands which the Bahamas National Trust feels should be given some degree of protection, and defines three suitable categories of protection, namely National Parks, National Reserves and Protected Areas. Although the Trust has had no official response from the Government concerning this proposal, it is optimistic that in due time the proposal will be accepted.

Research work conducted to date on the wetlands and/or waterfowl of the Bahamas has been limited almost entirely to general survey work and studies of the flamingos *Phoenicopterus ruber* on Great Inagua. The most recent survey providing some information on waterfowl was that conducted by Alexander Sprunt IV of the U.S. National Audubon Society on the status and conservation of sea-birds in the Bahamas (Sprunt, 1984). This survey, carried out jointly with officials of The Bahamas National Trust, has involved visits to many of the outer islands, and continues with annual expeditions, usually during May, to update the information.

### Major Threats to Wetlands and Waterfowl

Some wetland habitat has undoubtedly been lost to development for tourism and other purposes, particularly in the northern part of the archipelago, but it does not as yet appear to be a prominent factor in the decline of waterfowl populations. Very little is known about the effects of pollution in Bahamian waters. No major oil spills have occurred, but major shipping lanes, some heavily used by tankers, pass through the area. Hunting pressure on waterfowl is very light, and egg-collecting is prohibited under the Wild Birds Protection Act, but the extensiveness and remoteness of many parts of the Bahamas make enforcement of the laws and regulations impossible. Some egg-collection does take place, but only on a subsistence level. There have been no reports of incidental bird mortality from commercial fishing in Bahamian waters, but this must occur, and the situation should be monitored.

# THE BAHAMA ISLANDS



## WETLANDS

Site descriptions based on data sheets provided by Alexander Sprunt IV, Susan Holowesko and colleagues at The Bahamas National Trust.

### Grand Bahama Northern Coast (1)

**Location:** 26°40'N, 78°30'W; the entire north coast of Grand Bahama from West Point to East End Point.

**Area:** 49,800 ha.

**Altitude:** 0m.

**Province and type:** 8.38.13; 01, 03, 06, 07 & 08.

**Site description:** Extensive coastal flats and intertidal mudflats with very little vegetation (swashes), and numerous small offshore islands (cays) with mangrove swamps, stretching for 165 km along the north coast of Grand Bahama. Geological features known as blue holes are scattered throughout the region.

**Principal vegetation:** Mangrove swamps; broad-leaf coppice with scattered, and in some cases extensive, pine woodland (pine barrens) on the adjacent mainland.

**Land tenure:** 60% state owned (Crown Land), 40% owned by the Grand Bahama Development Co. Ltd.

**Protection:** None.

**Land use:** The region is undeveloped and the mangrove areas are at present undisturbed, but there has been a considerable amount of exploitation of the pine forests.

**Waterfowl:** No information.

**Other fauna:** Several rare species of Crustaceans, and in some cases forms new to science, have been discovered in the blue holes.

**Threats:** None known.

**Research and conservation:** The Bahamas National Trust has identified the southeast portion of the wetland (encompassing Big Harbour Cay, Sweetings Cay and Lightbourn's Cay) as one of 52 priority sites in its National Parks System Proposal of 1983. The area contains the last remaining stand of virgin pine forest on Grand Bahama.

**References:** Bahamas National Trust (1983).

**Source:** The Bahamas National Trust.

**Criteria for inclusion:** 0.

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### The Marls (2)

**Location:** 26°25'N, 77°10'W; from Cooper's Town to Sandy Point, along the west coast of Great Abaco Island.

**Area:** 38,400 ha.

**Altitude:** 0m.

**Province and type:** 8.38.13; 01, 03, 05, 06, 07 & 08.

**Site description:** Extensive mangrove swamps and coastal flats, with numerous mangrove covered islands, intertidal mudflats and sandy beaches.

**Principal vegetation:** Mangrove swamps; sandy scrub, pine forest and mixed broad-leaf coppice on higher ground.

**Land tenure:** 98% state owned (Crown Land), 2% privately owned.

**Protection:** None.

**Land use:** Commercial and sport fishing; hunting, mainly for *Columba leucocephala*, during the open season.

**Waterfowl:** Little information available. *Anas bahamensis* is known to breed; *Phoenicopterus ruber* is a regular feeding visitor and may breed; and recent reports suggest that there may be a small breeding colony of *Pelecanus occidentalis* in the area.

**Other fauna:** An important nursery ground for juveniles of many marine animals including the Spiny Lobster *Panulirus argus* and several commercially important fishes. The rare and endangered Bahama Parrot *Amazona leucocephala bahamensis* occurs in the pine forests adjoining the southern end of the wetland.

**Threats:** There is no foreseeable threat to the wetlands at present, but the area is difficult to monitor and there is a fair amount of illegal hunting.

**Research and conservation:** The Bahamas National Trust has identified The Marls as one of 52 priority areas for protection in its National Parks System Proposal of 1983, and has recommended the establishment of a National Reserve. No official response has as yet been received.

**References:** The Bahamas National Trust (1983); Sprunt (1984).

**Source:** The Bahamas National Trust.

**Criteria for inclusion:** 2c.

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#### North Bimini (3)

**Location:** 25°45'N, 79°15'W; 5 km NNE of Alice Town, Bimini Islands.

**Area:** 800 ha.

**Altitude:** 0m.

**Province and type:** 8.38.13; 01, 03, 05, 06, 07 & 08.

**Site description:** A shallow sea bay and lagoon with extensive fringing mangroves, tidal mudflats and several low sandy islets; bordered by island masses on three sides. Water levels are influenced by rainfall and to a lesser extent the tides.

**Principal vegetation:** Mangrove swamps; sandy scrub on the islets.

**Land tenure:** State owned (Crown Land).

**Protection:** None.

**Land use:** Commercial fishing and tourist recreation.

**Waterfowl:** No information.

**Other fauna:** The eastern part of the area is reportedly an important nursery ground for juvenile Spiny Lobsters *Panulirus argus*. The critically endangered Bimini Boa *Epicrates striatus fosteri* is confined to three of the Bimini Islands including North Bimini; it is found in mangroves, coppice and scrub, and presumably occurs at this site.

**Threats:** The Biminis are exposed to heavy tourist traffic. Many Florida-based fishing and diving operations offer one-day package trips to the Islands, and much of the marine environment is suffering from over-use. The Bimini Boa is seriously threatened as a result of collecting by amateur herpetologists, habitat destruction and general human persecution.

**References:** WWF Red Data Book.

**Source:** The Bahamas National Trust.

**Criteria for inclusion:** 2a & 2c.

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#### Great Harbour Cay (4)

**Location:** 25°43'N, 77°51'W; in the northern Berry Islands.

**Area:** 1,000 ha.

**Altitude:** 0m.

**Province and type:** 8.38.13; 03, 06 & 07.

**Site description:** A shallow coastal lagoon with extensive coastal flats and intertidal mudflats with very little vegetation (swashes), and many small islands; bordered on three sides by island masses and open to shallow sea at the southern end. There is some tidal influence in the lagoon.

**Principal vegetation:** Sandy scrub and scattered areas of mixed broad-leaf coppice on the adjacent islands.

**Land tenure:** State owned (Crown Land).

**Protection:** None.

**Land use:** Local fishing, with a heavy emphasis on lobster.

**Waterfowl:** No information.

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**Other fauna:** An important nursery ground for juvenile Spiny Lobster *Panulirus argus*

**Threats:** As the Berry Islands are developed, there is the possibility that the wetlands could be threatened by expansion of the airstrip on Great Harbour Cay.

**Source:** The Bahamas National Trust.

**Criteria for inclusion:** 0.

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**The Bluff Wetlands (5)**

**Location:** 25°30'N, 76°40'W; at the northwest tip of Eleuthera Island.

**Area:** 1,600 ha.

**Altitude:** 0m.

**Province and type:** 8.38.13; 01, 05, 06, 07 & 08.

**Site description:** Extensive coastal flats and intertidal mudflats with very little vegetation (swashes), sandy beaches, and a few stands of mangroves; around shallow sea bays south and northeast of The Bluff.

**Principal vegetation:** Some mangrove; mixed broad-leaf coppice inland.

**Land tenure:** Partly public land (commonage) and partly privately owned.

**Protection:** None.

**Land use:** A popular area for sport fishing and commercial fishing, with some minor development.

**Waterfowl:** No information.

**Other fauna:** The Bluff wetlands and the adjacent Corrie Sound are an important nursery ground for juveniles of many marine animals, particularly Spiny Lobsters *Panulirus argus*.

**Threats:** Over-fishing may be a problem.

**Source:** The Bahamas National Trust.

**Criteria for inclusion:** 2c.

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**Lake Cunningham (6)**

**Location:** 25°04'N, 77°25'W; 7 km west of Nassau, New Providence.

**Area:** 70 ha.

**Altitude:** 0m.

**Province and type:** 8.38.13; 07 & 08.

**Site description:** A permanent shallow brackish lake, up to 1.5m deep, with some fringing mangrove swamps, mangrove covered islands, and low-lying swampy areas. The water level is dependent on rainfall, and there is some drying out at the east end during dry periods.

**Principal vegetation:** Mangrove swamps with *Conocarpus erectus* and *Rhizophora mangle*, and some brackish marshes.

**Land tenure:** State owned (Crown Land), with private properties bordering the lake's shoreline.

**Protection:** A Wildbird Reserve, as defined in the Wildbirds Protection Act.

**Land use:** Until 1983, little disturbed, but now used for powerboat racing.

**Waterfowl:** Few birds breed, but a wide variety of species has been recorded on passage and in winter, notably *Phalacrocorax* sp (almost certainly *P. auritus*), many Ardeidae, *Anas discors*, *Aythya collaris*, *A. affinis*, *Fulica americana* and many shorebirds. *Oxyura jamaicensis* has occurred in small numbers in recent years.

**Other fauna:** No information.

**Threats:** The Ministry of Tourism recently granted permission to a local (and international) powerboat racing organization to use the lake as a site for international racing events. Vegetation between the lake and a nearby road has been cleared and parts of the eastern marshes have been filled.

**Research and conservation:** The Bahamas National Trust is attempting to have the frequency of boat races brought down to a minimum, and to have the vegetation around the lake restored.

**Source:** The Bahamas National Trust.

**Criteria for inclusion:** 3a.

### Lake Killarney (7)

**Location:** 25°03'N, 77°26'W; 10 km WSW of Nassau, New Providence.

**Area:** 1,050 ha.

**Altitude:** 0m.

**Province and type:** 8.38.13; 07.

**Site description:** A permanent shallow brackish lake, up to 1.5m deep, with surrounding low-lying swampy areas. The water level fluctuates with local rainfall.

**Principal vegetation:** Brackish swamps.

**Land tenure:** State owned (Crown Land).

**Protection:** None.

**Land use:** Occasional bird hunting.

**Waterfowl:** No information.

**Other fauna:** No information.

**Threats:** The lake is threatened by possible extension of Nassau's international airport which would involve the filling in of the southwest portion of the lake.

**Research and conservation:** The Bahamas National Trust has identified Lake Killarney as one of 52 priority sites for protection in its National Parks System Proposal of 1983, and has recommended the establishment of a National Reserve.

**References:** The Bahamas National Trust (1983).

**Source:** The Bahamas National Trust.

**Criteria for inclusion:** 3a.

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### Lightbourn Creek (8)

**Location:** 25°03'N, 77°32'W; 17 km WSW of Nassau, New Providence.

**Area:** 200 ha.

**Altitude:** 0m.

**Province and type:** 8.38.13; 06, 07 & 08.

**Site description:** A shallow tidal creek, 1m deep at low tide, bordered by dense mangrove swamps and tidal mudflats.

**Principal vegetation:** Mangrove swamps.

**Land tenure:** Owned by the New Providence Land Development Company.

**Protection:** Lightbourn Creek has been declared a Wildbird Reserve under the Wildbirds Protection Act.

**Land use:** Although designated a Wildbird Reserve, permission has been granted for dredging, filling and development. Some dredging and filling have taken place.

**Waterfowl:** No information.

**Other fauna:** An important nursery ground for juvenile fishes and Spiny Lobsters *Panulirus argus*.

**Threats:** The Creek is currently the focus of a legal battle between residents of the area and a development company which has plans to fill the creek and construct condominiums on the adjacent point. The protection status of the creek is being challenged at this time.

**Research and conservation:** One of the last virgin stands of mangrove swamp in the New Providence and Paradise Island area. It was an oversight that the area was not included in the initial National Parks System Proposal of The Bahamas National Trust, and it will undoubtedly be included at some later date.

**Source:** The Bahamas National Trust.

**Criteria for inclusion:** 3a.

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### Millers Sound and Bonefish Pond (9)

**Location:** 25°00'N, 77°25'W; 10 km southwest of Nassau, New Providence.

**Area:** 600 ha.

**Altitude:** 0m.

**Province and type:** 8.38.13; 06, 07 & 08.

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**Site description:** A complex of tidal marshes with some mangroves, and adjacent permanent and semi-permanent brackish ponds fed by rainfall.

**Principal vegetation:** Brackish marshes and a few isolated stands of mangroves.

**Land tenure:** State owned (Crown Land).

**Protection:** None.

**Land use:** Some sport hunting for birds, and fishing.

**Waterfowl:** No information.

**Other fauna:** No information.

**Threats:** As New Providence continues to be developed at a rapid pace, there is an ever present threat of filling in and drainage for development.

**Research and conservation:** The Bahamas National Trust has identified this wetland as one of 52 priority sites for protection in its National Parks System Proposal of 1983, and has recommended the establishment of a National Reserve. It is hoped that the Government will move quickly on this proposal and give Millars Sound and Bonefish Pond adequate legal protection before it is too late. The area has been identified as the most ideal location for the re-introduction of *Phoenicopterus ruber* on New Providence.

**References:** The Bahamas National Trust (1983).

**Source:** The Bahamas National Trust.

**Criteria for inclusion:** 3a.

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Western Andros (10)

**Location:** 24°30'N, 78°00'W; the western side of Andros Island from near Owens Town to the southern tip of the island.

**Area:** 270,000 ha.

**Altitude:** 0m.

**Province and type:** 8.38.13; 01, 03, 05, 06, 07 & 08.

**Site description:** A vast complex of low-lying islands and tidal channels, up to 2m deep, with extensive coastal flats and intertidal mudflats with very little vegetation (swashes), sandy beaches, numerous shallow brackish lagoons and ponds, and some mangrove swamps. Water levels are dependent both on the tides and on local rainfall. Blue holes (inland pools connected with the sea through subterranean cave systems) occur throughout the area.

**Principal vegetation:** A few stands of mangroves; areas of open scrub with seasonal marsh, mixed broad-leaf coppice and pine forest scattered throughout on higher ground.

**Land tenure:** 98% state owned (Crown Land), 2% privately owned.

**Protection:** None.

**Land use:** There is very little human activity in the area.

**Waterfowl:** Little information is available, but the area is known to be very important for a wide variety of breeding, passage and wintering waterfowl. Breeding species include *Ixobrychus exilis*, *Egretta rufescens*, *Anas bahamensis* and *Haematopus palliatus*; *Phoenicopterus ruber* is a regular feeding visitor and may breed. The rare West Indian Tree-Duck *Dendrocygna arborea* still occurs in the area and probably breeds. *Eudocimus albus* and *Plegadis falcinellus* have been recorded on passage, and *Ardea herodias* and *Anas discors* are common in winter.

**Other fauna:** Southern Andros is a very important breeding area for the White-crowned Pigeon *Columba leucocephala*, the most popular game-bird in the Bahamas. An endemic subspecies of the rare Bahamian Rock Iguana occurs on the island.

**Threats:** Unknown, but probably none.

**Research and conservation:** The blue holes are currently being studied by the British Cave Diving Expeditions. The Bahamas National Trust included the northwestern corner of this huge wetland in its National Parks System Proposal of 1983, and recommended the establishment of a National Reserve.

**References:** The Bahamas National Trust (1983).

**Source:** The Bahamas National Trust.

**Criteria for inclusion:** 123.

## Shroud Cay (11)

**Location:** 24°30'N, 76°45'W; near the northwest end of the Exuma Cays.

**Area:** 800 ha.

**Altitude:** 0m.

**Province and type:** 8.38.13; 01, 03, 05, 06, 07 & 08.

**Site description:** Extensive brackish marshes, coastal flats and intertidal mudflats with very little vegetation (swashes), and some small isolated stands of mangroves; with an eastern fringe of higher ground and a chain of small sandy islands and cays along its western fringe. Parts of the interior of the marsh dry out between June and September.

**Principal vegetation:** Brackish marshes and some mangrove swamps; broad-leaf coppice and sandy scrub on higher ground.

**Land tenure:** State owned (Crown Land).

**Protection:** Protected within the Exuma Cays Land and Sea Park (45,584 ha), established in 1958 and under the jurisdiction of the Bahamas National Trust.

**Land use:** Controlled sport fishing.

**Waterfowl:** No information.

**Other fauna:** A critical nursery ground for juvenile Queen Conch *Strombus gigas*, the most important source of protein for Bahamians.

**Threats:** None known.

**Research and conservation:** The area was surveyed by the Exuma Cays Expedition in 1958.

**References:** IUCN (1982).

**Source:** The Bahamas National Trust.

**Criteria for inclusion:** 2c.

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 Little San Salvador Interior (12)

**Location:** 24°34'N, 75°56'W; 20 km west of the north end of Cat Island.

**Area:** 270 ha.

**Altitude:** 0m.

**Province and type:** 8.38.13; 07.

**Site description:** A permanent brackish lagoon with open connection to the sea, several small islands, and some permanent brackish marshes along the southern shore. The lagoon occupies much of the interior of Little San Salvador Island.

**Principal vegetation:** Brackish marshes; sandy scrub on the islands and south shore, mixed broad-leaf coppice on the north shore.

**Land tenure:** Privately owned.

**Protection:** None.

**Land use:** None.

**Waterfowl:** No information.

**Other fauna:** No information.

**Threats:** Unknown, but probably none.

**Source:** The Bahamas National Trust.

**Criteria for inclusion:** 0.

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 Bennett's Harbour Creek (13)

**Location:** 24°32'N, 75°36'W; 10 km SSE of Arthur's Town, Cat Island.

**Area:** 1,950 ha.

**Altitude:** 0m.

**Province and type:** 8.38.13; 07, 08 & 13.

**Site description:** A shallow tidal creek opening to the sea at Alligator Point, and bordered by low-lying brackish swamps with some small freshwater ponds, and isolated stands of mangroves.

**Principal vegetation:** Brackish marshes and mangrove swamps; patches of scrub and small areas of mixed broad-leaf coppice on higher ground.

**Land tenure:** 10% state owned (Crown Land), 90% privately owned.

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**Protection:** None.

**Land use:** No information.

**Waterfowl:** No information.

**Other fauna:** The endangered Cat Island Turtle *Pseudemys felis*, endemic to the island and confined to shallow freshwater ponds near the west coast, occurs in ponds bordering Bennett's Harbour Creek and around the settlement of Bluff to the south.

**Threats:** The main wetlands are probably under no threat. The Cat Island Turtle is threatened by land development around some of the ponds, and capture for food and for pets.

**Research and conservation:** Studies are being conducted on the Cat Island Turtle by The Bahamas National Trust, the Ocean Research and Education Society, Inc., and the Animal Research and Conservation Center of the New York Zoological Society.

**References:** WWF Red Data Book.

**Source:** The Bahamas National Trust.

**Criteria for inclusion:** 2a & 3a.

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**San Salvador Interior (14)**

**Location:** 24°03'N, 74°28'W; the interior of San Salvador Island.

**Area:** 5,625 ha.

**Altitude:** 0m.

**Province and type:** 8.38.13; 06, 07 & 08.

**Site description:** A complex of permanent shallow saline lagoons and ponds with extensive brackish to saline marshes, and a coastal lagoon (Pigeon Creek) with open connection to the sea. Pigeon Creek is tidal; the water level in the other lagoons and marshes is influenced by rainfall.

**Principal vegetation:** Brackish and saline marshes, and a few isolated stands of mangrove mixed broad-leaf coppice on higher ground.

**Land tenure:** State owned (Crown Land).

**Protection:** None.

**Land use:** There is very little human activity in the area.

**Waterfowl:** Little information is available, but the area is known to be important for breeding, passage and wintering waterfowl of a wide variety of species. Breeding birds include *Podilymbus podiceps*, *Phalacrocorax olivaceus*, several Ardeidae, *Charadrius vociferus* and *Sterna albifrons*. The rare West Indian Tree-Duck *Dendrocygna arborea* may still occur on the island.

**Other fauna:** Several pairs of *Pandion haliaetus* breed.

**Threats:** Probably none.

**Research and conservation:** It has been many years since a proper survey of this island was conducted. Miller carried out some avifaunal studies in the mid 1970s, and a major survey is planned for 1985.

**References:** Miller (1978).

**Source:** The Bahamas National Trust.

**Criteria for inclusion:** 3a.

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**Conception Island Interior (15)**

**Location:** 23°50'N, 75°07'W; the interior of Conception Island, between Cat Island and Rum Cay.

**Area:** 675 ha.

**Altitude:** 0m.

**Province and type:** 8.38.13; 03, 06, 07 & 08.

**Site description:** A permanent shallow saline lagoon with several islands and a narrow connection with the open sea. The lagoon occupies much of the interior of Conception Island and is surrounded by mudflats, mangrove swamps and brackish to saline marshes. It is less than 1m deep at high water, and parts of the marshes dry out at low water.

**Principal vegetation:** Brackish to saline marshes and mangrove swamps; mixed broad-leaf coppice and patches of sandy scrub on higher ground.

**Land tenure:** State owned (Crown Land); leased to The Bahamas National Trust on a 99 year lease.

**Protection:** The Island is protected in a Land and Sea Park of 810 ha under the jurisdiction of The Bahamas National Trust: It is unlawful to remove any plant or animal life, with the exception of the daily bag limit of certain edible marine species.

**Land use:** The island is uninhabited, and is visited only by cruising yachts and Haitian refugees.

**Waterfowl:** Little information available, but known to be an important stop-over for migratory birds.

**Other fauna:** There are colonies of sea-birds on the nearby Booby Cay and South Rocks, and Green Sea Turtles *Chelonia mydas* nest on the beaches.

**Threats:** There are no existing or foreseeable threats to the wetland habitat. Haitian refugees have, in the past, contributed to a litter problem on the beaches, and it is probable that the waterfowl are occasionally exploited by the refugees.

**Research and conservation:** On-going research by The Bahamas National Trust and the U.S. National Audubon Society consists of surveys (annual when possible) of sea-bird populations and the general condition of the environment.

**References:** IUCN (1982).

**Source:** The Bahamas National Trust.

**Criteria for inclusion:** 3a.

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#### Wetlands on Rum Cay (16)

**Location:** 23°40'N, 74°48'W; on Rum Cay, northeast of Long Island.

**Area:** 416 ha.

**Altitude:** 0m.

**Province and type:** 8.38.13; 07.

**Site description:** Five permanent land-locked brackish lagoons with some seasonal marshes, including Lake George (300 ha), Bay Pond (20 ha), Long Pond (20 ha), Lime Pond (20 ha), and one other pond (56 ha). The water levels fluctuate according to local rainfall.

**Principal vegetation:** Open scrub with seasonal marshes; mixed broad-leaf coppice on higher ground.

**Land tenure:** Almost exclusively state owned (Crown Land).

**Protection:** None.

**Land use:** There is little human activity in the area.

**Waterfowl:** No information.

**Other fauna:** No information.

**Threats:** No information.

**Source:** The Bahamas National Trust.

**Criteria for inclusion:** 0.

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#### Stuart Manor Wetlands (17)

**Location:** 23°37'N, 76°00'W; near the west end of Great Exuma, 30 km northwest of Georgetown.

**Area:** 1,350 ha.

**Altitude:** 0m.

**Province and type:** 8.38.13; 01, 03, 06, 07 & 08.

**Site description:** A shallow sea bay with extensive coastal flats and intertidal mudflats with very little vegetation (swashes), some mangrove swamps, and several small islands.

**Principal vegetation:** Brackish marshes and some mangrove swamps; mixed broad-leaf coppice and some open scrub on higher ground.

**Land tenure:** State owned (Crown Land).

**Protection:** None.

**Land use:** There is little human activity in the area.

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**Waterfowl:** No information.  
**Other fauna:** No information.  
**Threats:** Unknown, but probably none.  
**Source:** The Bahamas National Trust.  
**Criteria for inclusion:** 0.

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**Joe's Sound and Glenton Sound (18)**

**Location:** 23°38'N, 75°20'W; at the northern tip of Long Island.  
**Area:** 1,500 ha.  
**Altitude:** 0m.  
**Province and type:** 8.38.13; 01, 03, 05, 06, 07 & 08.  
**Site description:** A complex of coastal flats and intertidal mudflats with very little vegetation (swashes), scattered stands of mangroves, sandy beaches and tidal channels between Galliot Cay and the north end of Long Island.  
**Principal vegetation:** Brackish marshes and some mangroves; sandy scrub on Galliot Cay and predominantly mixed broad-leaf coppice on the Long Island coast.  
**Land tenure:** Mainly state owned (Crown Land), with some private holdings.  
**Protection:** None.  
**Land use:** There is an airstrip on Galliot Cay and a large settlement (Stella Maris) nearby.  
**Waterfowl:** No information.  
**Other fauna:** No information.  
**Threats:** There is a possible future threat to the wetlands from the expansion of tourist facilities in the area. Control of fish-eating birds at shrimp and fish farms near Deadman's Cay to the south may be affecting waterfowl populations.  
**Source:** The Bahamas National Trust.  
**Criteria for inclusion:** 0.

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**New Found Harbour and Grand Pa's Channel (19)**

**Location:** 23°08'N, 75°08'W; on the west coast of Long Island, near Deadman's Cay.  
**Area:** 5,700 ha.  
**Altitude:** 0m.  
**Province and type:** 8.38.13; 01, 03, 05, 06, 07 & 08.  
**Site description:** A complex of coastal flats and intertidal mudflats with very little vegetation (swashes) in a shallow sea bay, with several sandy islands and scattered patches of mangroves.  
**Principal vegetation:** Saline marshes and some mangrove swamps; mixed broad-leaf coppice and some areas of open scrub on the islands and coast of Long Island.  
**Land tenure:** Mainly state owned (Crown Land).  
**Protection:** None.  
**Land use:** Shrimp farming and fish farming, both on the increase.  
**Waterfowl:** No information.  
**Other fauna:** No information.  
**Threats:** A new shrimp and fish farming operation has recently been set up in the Deadman's Cay area. Some problems have arisen with fish-eating birds feeding in the ponds, and control measures may be affecting waterfowl populations island-wide.  
**Source:** The Bahamas National Trust.  
**Criteria for inclusion:** 0.

## The Bight of Acklins (20)

**Location:** 22°40'N, 74°05'W; the south coast of Crooked Island and northwest coast of Acklins Island.

**Area:** 14,200 ha.

**Altitude:** 0m.

**Province and type:** 8.38.13; 01, 03, 05, 06, 07 & 08.

**Site description:** A complex of coastal flats and intertidal mudflats with very little vegetation (swashes), offshore cays and scattered stands of mangroves around a large shallow sea bay (The Bight of Acklins).

**Principal vegetation:** Saline marshes and mangrove swamps; mixed broad-leaf coppice on the cays and mainland coast.

**Land tenure:** State owned (Crown Land).

**Protection:** None.

**Land use:** Possibly some subsistence fishing, but generally very little disturbed.

**Waterfowl:** No information.

**Other fauna:** No information.

**Threats:** Unknown, but probably none.

**Source:** The Bahamas National Trust.

**Criteria for inclusion:** 0.

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 Inagua National Park and Lake Rosa (21)

**Location:** 21°05'N, 73°30'W; Great Inagua Island.

**Area:** 32,600 ha.

**Altitude:** 0m.

**Province and type:** 8.38.13; 01, 03, 05, 06, 07 & 08.

**Site description:** Lake Rosa is a permanent shallow brackish lake, up to 1.5m deep, with small islands scattered throughout, and a fringe of brackish marshes; there are dense mangrove swamps on the northern and eastern borders, and the lake is surrounded by a broad belt of open scrub with seasonal marshes. Other wetlands in the National Park include: (a) Union Creek, a saline lagoon with opening to the sea, extensive salt marshes and scattered mangroves; (b) a permanent brackish marsh with many scattered pools and some mangroves, south of Palacca Point; and (c) Close in Point Lakes, a permanent brackish marsh with dense mangrove swamps, northwest of South East Point.

**Principal vegetation:** Brackish to saline marshes, mangrove swamps with *Avicennia germinans* and *Conocarpus erectus*, and open scrub with seasonal marshes; some broad-leaf coppice on higher ground.

**Land tenure:** State owned (Crown Land); under the jurisdiction of The Bahamas National Trust on a 99 year lease (until 2062).

**Protection:** Most of the island's wetlands are completely protected within the Inagua National Park (74,333 ha) established in 1965, but the west end of Lake Rosa is apparently unprotected. The National Park is patrolled by three National Trust wardens.

**Land use:** None.

**Waterfowl:** A very important area for breeding, passage and wintering waterfowl of a wide variety of species, and particularly important for its large breeding colony of the Caribbean Flamingo *Phoenicopterus ruber ruber*. The Inagua population was estimated at about 21,000 birds (6,000 breeding pairs) in the early 1970s, but under close protection, the population has risen to an estimated 40,000-50,000 birds in recent years. Other breeding species include *Pelecanus occidentalis* (100-200 pairs), *Phalacrocorax olivaceus*, *Nyctanassa violacea*, *Butorides virescens*, *Egretta caerulea*, *E. tricolor*, *E. rufescens* (200 pairs), *E. alba*, *Ajaia ajaja* (50 pairs), *Dendrocygna arborea* (tens of birds), *Anas bahamensis*, *Charadrius vociferus*, *C. alexandrinus*, *Himantopus himantopus*, *Gelochelidon nilotica* and *Sterna albifrons* (several colonies including one of 300 pairs). *Eudocimus albus* and *Plegadis falcinellus* occur on passage, and *Ardea herodias* is common in winter.

**Other fauna:** The endangered Inagua Island Turtle *Chrysemys malonei*, endemic to Great Inagua, is restricted to a few fresh or brackish pools on the island. The rare Bahama Parrot *Amazona leucocephala bahamensis* occurs only on this island and on Abaco.

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**Threats:** There is no foreseeable threat to the wetland habitat other than the ever present natural threat of hurricane damage. Waterfowl populations are threatened to a very limited extent by introduced Wild Boars *Sus scrofa*.

**Research and conservation:** A number of avifaunal surveys have been conducted in the National Park, and there is a Green Sea Turtle *Chelonia mydas* captive breeding project at Union Creek.

**References:** Allen (1956); Sprunt (1975 & 1984); IUCN (1982); WWF Red Data Book.

**Source:** The Bahamas National Trust.

**Criteria for inclusion:** 123.