

San Salvador National Parks

San Salvador Island, Bahamas



Management Plan

2017



Cover photo: Sandy Voegeli and Alex Mustard

SAN SALVADOR NATIONAL PARKS

Management Plan

2017

Bahamas National Trust

EXECUTIVE SUMMARY

The Management Plan for the San Salvador National Parks is intended to provide the long-term vision for the overall management of five national parks for the island of San Salvador, which collectively cover 25,750 acres of marine and freshwater habitats. This plan was an undertaking through numerous partnerships between the Bahamas National Trust (BNT), the San Salvador Living Jewels Foundation, the Gerace Research Centre (GRC) and Global Parks from grant funding from the Critical Ecosystem Partnership Fund (CEPF), and under the Bahamas Protected Project with funding from Oceans 5, through collaborative efforts between The Nature Conservancy (TNC), BNT, and the Bahamas Reef Environment Educational Foundation (BREEF). Activities under both project grants integrated a cooperative and participatory planning process involving the San Salvador Living Jewels Foundation partners, Local Government and the local communities on San Salvador.

This plan will balance sustainable traditional uses, facilitate managing invasive alien species, protect areas critical to the survival of the endemic and critically endangered San Salvador Rock Iguana, preserve seabirds nesting habitats with little to no human disturbance, and will encourage the development of an ecotourism sector for San Salvador residents. The plan presents ways to ensure sufficient capacity for effective park management and operations, conserving native species (with particular efforts to endemic and endangered species), natural processes, aesthetics, historical resources, and provide local and international visitors opportunities to explore and appreciate the natural wonders of the complex and unique ecology of San Salvador.

The management of the national parks on San Salvador calls for a staff compliment of 8 persons for on-site park management, operations, and to support science programmes and community education and outreach initiatives. Park headquarters will be located in Cockburn Town, where the Parks Administrator, Park Warden, Outreach/ Education Officer, Officer Manager/Financial Clerk and Gift Shop attendant will operate out of, along with a Security Officer. A Science Officer and an additional Park Warden will operate out of a sub-office at or near Graham's Harbour, through a partnership with the Gerace Research Centre.

The park units will be managed based on their significance against imminent threats, using management zoning with varying levels of human activity. All parrotfish species within the San Salvador National Parks will be fully protected to promote coral reef resilience, for recovery following elevated sea surface temperature events. Modest development will be done to provide standard park identification signs, a three sided shelter/kiosk, sanitary facilities, a parking area and a dock where appropriate. This plan will require collaborative management with the Department of Physical Planning, the Customs Department, Ministry of Agriculture and Marine Resources, enforcement officers of the Royal Bahamas Defence Force and the Royal Bahamas Police Force, other conservation agencies, and the local communities of San Salvador.

The management plan for the San Salvador National Parks covers the following five national parks declared on April 23rd, 2015:

1. Graham's Harbour Iguana and Seabird National Park
2. West Coast Marine Park
3. Pigeon Creek & Snow Bay National Park
4. Southern Great Lake National Park
5. Green's Bay National Park



Photo: Sandy Voegeli

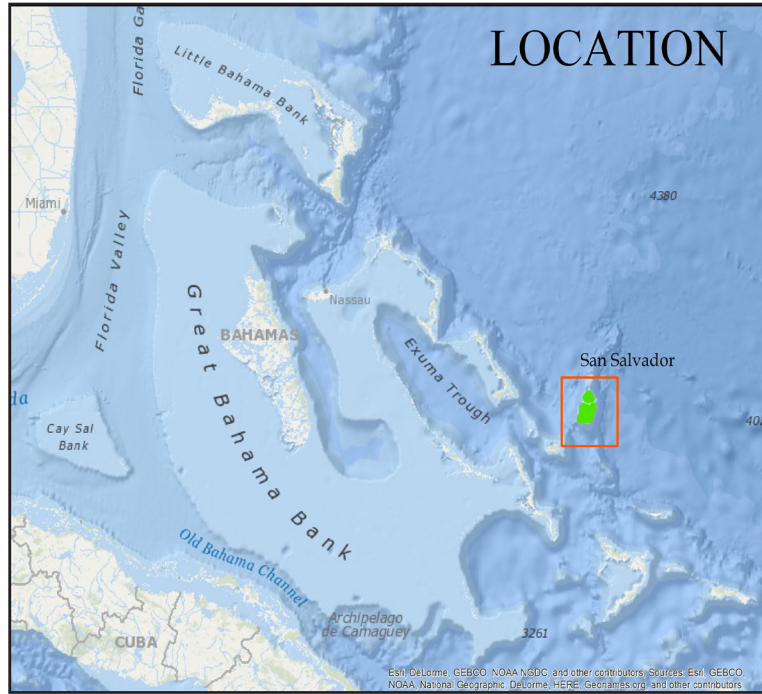


SAN SALVADOR NATIONAL PARKS
Bahamas National Trust

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Map of The Bahamas highlighting the location of San Salvador Island



INTRODUCTION

San Salvador Island Overview

San Salvador is approximately 7 miles wide by 13 miles long, oriented along a north-south axis and bordered by a narrow shelf that has an abrupt shelf-edge break leading to a very steep slope. Nearly a third of the total land area of 91 square miles consists of dune ridges with adjacent troughs forming brackish (hyper saline) lakes.

The land is protected by a series of fringing reefs that surround the island with a break in the vicinity of Cockburn Town on the west coast. This breach in the reef allows access to the island for shipping, dockage, and mooring during normal weather patterns.

As such, it is extremely difficult for species populations to become naturally re-established from same species populations on neighboring islands. Despite its vulnerability, the natural areas of San Salvador remain relatively untouched.

San Salvador is home to the critically endangered San Salvador Rock Iguana, one of the most impressive assemblage of nesting seabirds to be found anywhere in The Bahamas, two (2) Key Biodiversity Areas (KBAs) and exceptional dive sites that attract divers from all over the world. It also is the probable location where Columbus first set foot in the New World.

Geographic Location

San Salvador is a small island bordered by a narrow shelf with an abrupt shelf-edge break leading to a very steep slope (along the west side of the island, this slope is known to divers as “The Wall”). The island is surrounded by 4,000 meters deep waters and is exposed to waves from the Atlantic Ocean. It is pod shaped with a north-south orientation and measures 11.2 km east-west.

Almost 19.25 sq km of surface area, nearly a third of the total land area, consists of dune ridges with adjacent troughs forming brackish (hypersaline) lakes. A series of fringing reefs surround the island with a break in the vicinity of Cockburn Town on the West Coast. This breach in the reef provides access to the island for shipping, dockage, and mooring during normal weather patterns.

The coral reefs form several protected embayments including Graham’s Harbour and Rice Bay in the North, Long Bay in the East, Snow Bay and French Bay in the South, and Fernandez Bay and Bonefish Bay in the West.

San Salvador is similar in many respects to other islands of the Bahamian Archipelago, but it is unique in its position away from the Bahama Banks. The isolation of San Salvador influences its climate and ecology as well as its cultural history (see Shaklee, 2008; for a discussion of climate and cultural history). This isolation from the Bahamas basin in conjunction with the island’s narrow shelf makes the near shore environments extremely vulnerable. It is difficult, if not impossible, for populations of organisms to become re-established from populations existing on surrounding islands. The population replenishment is especially true for fringing and patch reefs which are the cornerstone for San Salvador’s diving operations.

History of San Salvador National Parks

The expansion of the Bahamas National Protected Area System is an undertaking supported by the National Implementation Support Programme (NISP) partners, to advance the Government’s commitments under international obligations for the development of a comprehensive and representative system of Protected Areas throughout the archipelago by 2020 (Caribbean Challenge Initiative - <http://caribbeanchallengeinitiative.org>). This commitment has spurred The Bahamas National Trust (BNT) to identify national priority sites of biological, ecological and cultural significance to be added to the National Parks System. This will be done through a systematic approach that involves the participation of local people.

The Bahamas National Trust, with support from conservation partner organizations, has long recommended and promoted areas of important marine and terrestrial habitats in and around San Salvador for protection. As early as 1983, sentiments were expressed to protect critical habitats on the island as part of the proposal submitted to the Government of The Bahamas, which recommended that 52 sites be designated as National Parks under mandate by BNT.

Notably, scientists consider San Salvador to be the most studied island in The Bahamian Archipelago. This is primarily due to the presence of the Gerace Research Center (GRC), which since 1971 has hosted thousands of international research scientists who have generated copious data on the natural and cultural history of the island. This data has been very useful in promoting and justifying the establishment of San Salvador National Park. *Appendix B* of this document is a partial compilation of publications that provided support data for the establishment of San Salvador National Parks.

In 2000, the Iguana Specialist Group (ISG) of the World Conservation Union (IUCN) held an iguana and seabird workshop on San Salvador. An outcome of this workshop was a document which, among the 26 sites



Photo: Sharrah Moss

considered in the Bahamas, ranked Graham's Harbour as the highest priority site for protection of iguanas and seabirds. Inland Lakes ranked seventh, while the East and South shore and cays came in seventeenth.

In 2005, the Bahamas National Trust and the San Salvador Living Jewels (SSLJ) Foundation embarked on an educational campaign to engage the communities of San Salvador in the development of a national park proposal. In February 2007, The BNT submitted to the Government of the Bahamas, a proposal for a San Salvador National Park system that incorporated five (5) sites for consideration. However, delays ensued that were later attributed to private land holding concerns.

In 2006, BREEF started an annual summer Sea Camp for children of San Salvador. This was carried out with the support of the Gerace Research Centre and the San Salvador Living Jewels Foundation, and involves over 35 children between the ages of 8-14 each year. Key Sea Camp themes include fisheries, shark conservation, sea turtles, coral reefs and Marine Protected Areas, with field study excursions to teach students about the value of critical areas such as Graham's Harbour, the West Coast Dive Sites and Pigeon Creek. In 2012, the Sea Campers collected petition signatures and created a video to advocate for the establishment of national parks on San Salvador.

In 2012, The Bahamas National Trust made it a priority to seek funding to rebuild the momentum of advancing San Salvador's National Park System through implementation of extensive education and outreach initiatives. The Critical Ecosystems Partnership Fund (CEPF) provided funding to advance park designations and management plan development. The goal of this effort was to establish a San Salvador National Park comprised of several separate national park units, to develop a park management plan to ensure that effective management prescriptions are put in place, and to assist The Bahamas in meeting the Government's 2020 Declaration to meet the obligation under the Caribbean Challenge Initiative.

In April 2014, BNT submitted a San Salvador National Park proposal that was based on scientific data, previous planning efforts, and fully considered community stakeholder interests. The proposal was fully endorsed by the people of San Salvador, the San Salvador Living Jewels Foundation, The Nature Conservancy (TNC), BEST Commission, The Department of Marine Resources, The Bahamas Reef Environment Educational Foundation (BREEF), other conservation partners, and a host of international supporters.

On April 23rd, 2015, The Deputy Prime Minister of The Bahamas and Member of Parliament for San Salvador, The Hon. Philip Brave Davis, announced the declaration of five (5) new national parks on and around the island of San Salvador, during a Park Announcement Reception on Almond Tree Park in Cockburn Town, San Salvador. A host of dignitaries and spectators gathered on this momentous occasion, including The Hon. Kenred Dorsett, Minister of Environment & Housing, Philip Smith, Former Member of Parliament for San Salvador, representatives from Local Government, the Bahamas National Trust, The Nature Conservancy, BREEF, and numerous residents of San Salvador.

The National Park units are limited to marine and freshwater environments, and crown owned islands (cays) within the park boundaries. It was based on the clear need to provide park status as a proactive measure to prevent the degradation of the marine and freshwater environment and cays due to inappropriate use, upland development and anthropogenic pressures.

The five sites declared were:

- ◆ Graham's Harbour Iguana and Seabird National Park — Size 5,723 acres
- ◆ West Coast Marine Park — Size 10,313 acres
- ◆ Pigeon Creek & Snow Bay National Park — Size 5,060 acres
- ◆ Southern Great Lake National Park — Size 4,068 acres
- ◆ Green's Bay National Park — Size 586 acres

Environmental Importance

San Salvador's Vegetation

Coastal

Along the shoreline there are two vegetation community types based on substrate. Shrubland/rocky shore (*Rhachicallis americana*) exists on exposed limestone rock. Sea oats (*Uniola paniculata*) dominate the dune system in areas that have sand substrate.

Nearshore

The nearshore vegetation is located farther inland where it is more protected from salt spray. The “coastal coppice” community inland from the rocky shore occurs on limestone and typically includes a variety of broadleaf evergreen species. Areas inland from the dune system may be dominated by silver thatch palm and occur on a sand substrate.

Interior

The interior vegetation includes a variety of saline and fresh water wetlands and upland coppice. Mangroves line the inland brackish lakes and are also found in protected areas of the coastline (French Bay) and estuaries such as Pigeon Creek. The height of the mangroves can be up to four (4) meters.

There are also sparsely vegetated flats with plants growing out of cracks in the rocks or in pits where soil has collected with an average shrub height less than 0.5 m.

The upland areas have the most extensive and diverse plant community on the island. It is similar to the coastal coppice but with taller vegetation (up to seven (7) meters). The vegetation occurs in areas of exposed limestone with large pockets of dark fertile soils. This community is characterized as having a wide variety of broadleaf evergreen species with no one species being dominant. Areas that have remained relatively untouched in recent years by human presence have high numbers of orchids and bromeliads.



Lignan vitae

Photo: Sandy Voegeli



Native orchid Photo: Sandy Voegeli

San Salvador's Birds

The offshore cays, main island bluffs, and interior lakes of San Salvador support some of the largest breeding colonies of seabirds to be found anywhere in The Bahamas. Remarkably, San Salvador hosts 14 of the 17 (or 82%) seabird species that breed in The Bahamas. This is the largest diversity of breeding seabirds anywhere in The Bahamas. Eight (8) of these species are of special concern because of declining numbers in the West Indies region, and their vulnerability to extinction. For some species, such as the Audubon's Shearwater and Double-crested Cormorant, a significant percentage of the entire West Indies population breeds on San Salvador.



Frigate birds

Photo: Dr. William Hayes

The fragility of San Salvador's seabird populations can be better appreciated from a broader perspective. Globally, seabirds are declining at an alarming rate. Approximately 20% of the world's seabird species are threatened by extinction. The loss of seabirds on tropical islands due to human disturbance has been estimated at a staggering 90 to 99%.

In addition to the seabirds, San Salvador is home to the critically endangered West Indian Woodpecker. The West Indian Woodpecker (*Melanerpes superciliosus*) occupies six (6) major Caribbean islands, representing a highly disjunctive distribution. Each island population in The Bahamas is generally recognized as a distinct subspecies. These populations are restricted to the islands of San Salvador and Abaco. The woodpecker is considered rare on San Salvador Island, and is one of the rarest woodpecker populations in the Caribbean (for more information regarding the birds of San Salvador, see Cummins et al. 2013 and White, 1998).

San Salvador Rock Iguana (*Cyclura rileyi rileyi*)

San Salvador is home to one (1) of the seven (7) sub-species of Bahamian rock iguanas, which make up the three (3) West Indian rock iguana species (genus *Cyclura*), that are endemic to The Bahamas. All Bahamian rock iguanas are highly endangered and protected by Bahamian Law (Wild Animals Protection Act) and by international law under the Convention of International Trade of Endangered Species (CITES).

We know from the fossil record that the main island of San Salvador was once teeming with iguanas. As the largest terrestrial vertebrates in The Bahamas, iguanas contribute to the uniqueness and health of Bahamian ecosystems. Iguanas are found elsewhere in The Bahamas, but those on San Salvador are unique as they have no other home in the world. At present, less than 600 iguanas likely remain, and these are now restricted to a mere fraction (0.2%) of their former range (Hayes et al., 1995, 2004). They are essentially confined to the most remote and inaccessible places available: four (4) tiny offshore cays and two (2) small islets within the hypersaline lakes (31.5 ha total).

Other Reptiles

San Salvador is home to five (5) other species of native reptiles, including the very rare Wormsnake (*Leptotyphlops columbi*). This is an endemic species to San Salvador.



San Salvador Rock Iguanas

Photo: Christian Dimitrius

San Salvador's Coral Reef System

San Salvador offers a wealth of attractions to the visiting diver. The island has shallow reefs and breathtaking wall dives first discovered by scuba divers in the 1970s. The waters are remarkably clear, with typical visibility of 100 to 150 feet, and more than 20 miles of dramatic vertical walls, beginning at a depth as low as 40 feet. Divers have been thrilled with encounters of grouper, hawksbill turtles, hammerhead and other species of sharks, spotted eagle rays, dolphins and whales.

San Salvador's reefs have been studied since the early 1970's and a wealth of information exists about both their present and past condition/health (see for example McGrath and Smith, 2003; McGrath et al. 2007; and Peckol et al. 2001). The first coral to be listed as an endangered species, *Acropora palmata*, more commonly known as elkhorn coral, is found in numerous reef locations around San Salvador. Occurrence of the coral hybrid, *Acropora prolifera*, a cross between *Acropora palmata* and *Acropora cervicornis*, was confirmed to also occur in San Salvador's marine environment.



Elkhorn Coral

Photo: Sandy Voegeli



Coral Hybrid

Photo: Sandy Voegeli



Photo: Dr. William Hayes

CRITICAL ISSUES & POTENTIAL THREATS

Management planning focuses on identifying and developing strategies to solve problems. This plan identifies and addresses the key issues and existing and potential threats relative to the San Salvador National Parks that were identified in the planning process. Additionally, this plan recommends zoning, water craft size and speed limits, sensitive species protection, resource monitoring and other actions to appropriately manage these issues. In implementing this plan, constructive and on-going dialogue will be necessary among all stakeholders to find mutually supported limits and uses that are consistent with the purposes of each park.

Climate Change & Natural Disasters

The impacts of climate change are already being experienced, and will continue for years to come. Increased intensity of storms, sea level rise, elevated sea surface temperatures and ocean acidification are a reality we are facing today, that will affect San Salvador's natural and cultural resources and beyond. The BNT is committed to integrating climate change adaptation into national park management, and actions will be included in this plan and will be ongoing to mitigate impacts to a changing climate.

One of the first steps in addressing climate change for the San Salvador National Parks, will be to prohibit the harvesting on all species of parrotfish and sea urchins, as they are critical to reef recovery following mass bleaching events caused by elevated water temperatures. Parrotfish are herbivores, and are therefore of ecological importance in controlling algae growth on coral reefs. Other actions will be considered in the Climate Change Action Plan for National Parks and Protected Areas managed by the Bahamas National Trust, including developing strategies for monitoring for coral reef resiliency, developing a bleaching response plan, and responding to mass bleaching events.

Watercraft Disturbances from Tour and Dive Operators

Watercraft provide the basic means by which consumptive and non-consumptive park users access and use of the parks. Properly used, watercraft and preserving natural resources can co-exist. Inappropriate speeds and noises can cause significant impact to breeding birds, turtles and fish. Solving this problem calls for collaborative and continuing communication between all users. Zoning for various types of watercraft and speed limits are necessary and are proposed in this plan.

Disturbance of Wildlife

Visitors, including tourists, scientists and students can pose a threat to nesting seabirds, sea turtles and iguanas. Access to crown owned cays will be limited and all students groups and researchers planning to enter sensitive areas closed to tourists, will be required to have a permit describing what they may and may not do.

Iguana Feeding

Feeding iguanas presents the potential for altering their natural behavior. National park regulations will emphasize that this activity is not permitted, and education and outreach efforts should include language and messages to provide knowledge on the importance of protected endemic iguanas found on the cays located within national park boundaries.

Commercial Fishing vs. Recreational Activities

Several of the national parks in San Salvador provide both traditional and commercial fishing as well as non-consumptive tourist related activities (diving and snorkeling). Collaboration between all stakeholders is critical. In this plan, sensitive areas are identified to ban consumptive uses.

Wildlife Trafficking

While endemic Bahamian iguanas are protected by Bahamian and international laws, they are subject to smuggling operations driven by the demand for rare and protected species. The recent smuggling of 13 endangered iguanas out of the country accentuates the need for conservation intervention. Establishing San Salvador National Parks with a focus on protecting the remaining San Salvador Rock Iguanas and their habitat is an important step in protecting this endangered species.

Recreational Uses of Pigeon Creek

Conflicts between unregulated powerboats (especially jet skis) and non-motorized crafts such as kayaks and canoes create visitor safety issues and aesthetic conflicts between users. This plan will recommend zoning and the active participation of tour operators in planning and monitoring national park areas.

Overfishing & Illegal Fishing Practices

During stakeholder consultations, concerns were raised regarding commercial fishing from visiting boaters and issues related to illegal resource harvest by tour operators in the park areas. Illegal fishing practices must be controlled. National park status will facilitate this through aggressive patrolling and enforcement, in conjunction with local enforcement agencies on San Salvador.

Invasive Alien Species

Invasive Lionfish (*Pterois* sp.) are already established in The Bahamas, and have been observed on reef sites. Plans to control and monitor Lionfish populations will be adopted from existing national strategies and in coordination with local partnerships. Assessments on the distribution of other invasive species (plant and animals) may be facilitated through the Gerace Research Center.

Incompatible Development Of Adjoining Lands

With increased interest in the development of private lands adjoining the national parks on San Salvador, there is a potential threat to the biological and aesthetic integrity of the parks. BNT will work with The BEST Commission, Department of Physical Planning and other relevant Government Agencies, to ensure that development does not provide a threat to the purpose of the parks.

Anchor Damage

Lack of knowledge and experience by recreational boaters increases the likelihood for damage to marine communities. Physical contact to marine habitats by anchoring causes damages to reefs and other benthic habitats (i.e. seagrass beds), and management measures will be implemented to safeguard against anchor damage through installing mooring buoys and instituting no anchor zones.

Boat Maintenance/Hull Cleaning

Pollutants generated from boat hull maintenance and cleaning may impair water quality and threaten the health of marine ecosystems. The discharge of toxic substances into Marine Park waters can directly or indirectly negatively impact marine life in a number of ways, and as such, is generally considered undesirable. While Graham's Harbour has been the most practical location for this practice, The BNT and SSLJ partners will work with local dive boat companies to locate a new site for hull maintenance. In the interim, this practice will be allowed under a permitting system, and guidelines will be developed in collaboration with the Department of Environmental Health Services (DEHS) to ensure the integrity of park resources remain intact.

Bioprospecting

Like the rest of the world, the San Salvador national parks are home to a vast array of biological diversity, which harbors an astonishing assortment of different chemicals for differing adaptation purposes. As island communities in The Bahamas have known for some time, many of these compounds found in the environment have medicinal and other useful properties. This knowledge is also known by scientists,

researchers and pharmaceutical companies, who seek to find new discoveries for profitable gains and it is the exploration of compounds in the species that they encounter that we refer to as bioprospecting.

Throughout history, bioprospecting and the resulting economic gains have been benefiting the research and development companies with little benefit to the host country or the indigenous people who have shared their culturally inherited knowledge about their environment. This is also true for The Bahamas, where a gorgonian coral known as Sea Plume (*Pseudopterogorgia elisabethae*), was discovered to possess compounds with anti-inflammatory properties and became targeted by the cosmetic industry; and subsequently is harvested extensively in the country for commercial gains. The greatest concern is that many companies patent these compounds; often do not disclose where the compound originated; and keep their research highly classified.

It has been recognized by the international community that there is a great need for ensuring that the host country and the local communities benefit from their natural resources and traditional knowledge of their beneficial properties. The United Nations' Convention on Biological Diversity (CBD) is the principal international regulatory body that speaks to bioprospecting, which was ratified in 1992. This convention not only recognizes each country's sovereign control over its own genetic resources but more importantly, gives countries like The Bahamas leverage for negotiating the terms of extracting biological resources and specifically calls for the shared benefit from any information or economic gains; referred to as Access and Benefits Sharing (ABS). However, many countries that are signatory to the CBD, have yet to develop and enforce a policy for ABS; including The Bahamas.

The national parks of San Salvador have extensive populations of economically important organisms including the highly sought-after Sea Plume. All bioprospecting and resultant harvesting activities will be strictly prohibited within the national park boundaries until The Bahamas finalizes its national policy on ABS. After which, The BNT will develop specific management guidelines that align with the national policy but also to the objectives of each national park.



Photo: Sandy Voegeli

PARK MANAGEMENT PLAN

Every national park unit needs a plan that provides clear guidance about how natural and cultural resources, visitor use, educational programmes, community relations, and park administration will be managed. Planning is a process by which policy is placed into a structure that enables implementation. A management plan is a tool that describes how a park is to be protected, used, developed and managed. It represents the desired future state or condition of the park and the most efficient path to that future.

The purpose of this Management Plan, for the San Salvador National Parks, is to provide the necessary tools for park administrators and staff to implement the purpose, vision, management goals and objectives established for the park. This plan addresses key issues and concerns related to consumptive and non-consumptive uses, visitor access to the parks, protection of rare and endangered species and sensitive habitats, the care of significant cultural features and educational programmes. The plan also addresses goals and objectives relating to zoning, sustainable tourism, administrative development, staffing and equipment needs.

Park Purpose

The park purpose reaffirms the reasons the park was set aside for protection. The purposes of San Salvador National Park include:

- ◆ To protect and manage the national and internationally important natural and cultural resources associated with San Salvador.

- ◆ In collaboration with local residents, the San Salvador Living Jewels Foundation, the Gerace Research Center, and off island partners, manage park resources in a way that sustainably accommodates traditional uses and life styles.
- ◆ Provide opportunities for Bahamians and foreign visitors to experience and enjoy the park's natural and cultural features in a sustainable way.
- ◆ Encourage scientists from around the world to study and monitor the parks natural resources.
- ◆ Develops educational opportunities and programmes for island residents and visitors.
- ◆ Protect the endemic and all other native species that represent the unique biodiversity of the park.
- ◆ Protect the natural beauty and aesthetic value of the relatively unaltered ecosystems for present and future generations

Park Significance

San Salvador has a known and well studied wealth of natural, cultural and historical resources that are recognized around the world. San Salvador is similar in many respects to other islands of the Bahamian Archipelago, except that it is located outside the Bahamas Banks. The isolation of San Salvador influences its climate, ecology and cultural history. Moreover, this isolation in conjunction with the island's narrow shelf makes the near shore environment extremely vulnerable to anthropogenic influences. As such, it is extremely difficult for species populations to become naturally reestablished from same species populations on neighboring islands. But despite its vulnerability, the natural areas of San Salvador remain relatively untouched

Key features include:

- ◆ the critically endangered San Salvador Rock Iguana,
- ◆ the largest diversity of breeding seabirds in the Bahamas,
- ◆ the only tidal mangrove creek on San Salvador, including a critical mangrove system and nursery area for the Nassau grouper, Queen conch and Spiny Lobster,
- ◆ the internationally important coral reefs and associated subsurface geomorphology,
- ◆ San Salvador is the probable location where Columbus first set foot in the New World.

Two (2) of the national park sites, Graham's Harbour and Southern Great Lake, are classified as Key Biodiversity Areas (KBAs), which are sites identified nationally with global significance, supported by the International Union for the Conservation of Nature (IUCN), Birdlife International, Conservation International (CI), the Critical Ecosystem Partnership Fund (CEPF), and other conservation international organizations.

Park Mission

The mission is to protect a complex of world class marine and freshwater environments, that makes provisions for a sustainable level of human use that educates, inspires and develops an appreciation of these unique resources

Vision for the Future

The park vision is a set of conditions to strive for upon the completion of the objectives identified in this plan. The plan calls for actions that can make this vision a reality.

The San Salvador National Parks will:

- ◆ Protect the biological integrity and ecological processes that support the unique marine and freshwater resources, cay habitat and associated terrestrial life for the use and enjoyment of future generations.
- ◆ Become a vital element within the Bahamian National Park System.
- ◆ Be a source of enjoyment, inspiration, pride and education for the residents of San Salvador, other Bahamians islands, and international visitors.
- ◆ Provide positive and sustainable economic opportunities to the residents of San Salvador.
- ◆ Continue to provide opportunities for sustainable traditional uses among local residents.
- ◆ Continue to be an important resource for research projects involving Bahamian and international scientists.
- ◆ Provide park infrastructure that facilitates visitor information, education, interpretation, and administrative offices.
- ◆ Be managed to enable the San Salvador Living Jewels Foundation, Gerace Research Center, other local groups and individuals to feel an ownership of the park, and be engaged as partners, advisors and supporters.



Photo: Christian Dimitrius



Photo: Sandy Voegeli

PARK MANAGEMENT GOALS AND OBJECTIVES

Defining goals and objectives is the first step, and one of the most important steps in the management planning process. Goals are defined here as the broadly stated primary purposes for which the San Salvador National Parks were established. They identify **WHAT** we want to achieve. Objectives are the more explicit statements of how the goals will be accomplished. They also identify **HOW** we are going to get there.

In all cases, the goals and objectives must be consistent with the language and intent of the fundamental purpose of the park, as reflected in the legislation or decree establishing it.

The following goals and objectives apply to all of the park units in San Salvador National Park. Strategies specific to each national park unit will be described in the Section VI of this plan.

Goal # 1: Ensure sufficient capacity for effective park management and operations

Objectives

Park Administration

Staffing requirements include 8 individuals who will manage the Island's five National Parks. Park staff include a Parks Administrator who will oversee overall BNT operations on San Salvador, including concession and permit management, and two Deputy Park Wardens who will carry out a range of duties relative to general park maintenance, patrolling, resource protection, signage installation, trail development and infrastructure maintenance. An Office Manager/Financial Clerk will support Parks and office operations, and an Education Officer will be in charge of interpretation, and implementing community outreach and educational programmes. A Science Officer will implement a scientific monitoring programme within park units, and will work along with visiting researchers and professors to assist in such activities. A Gift Shop Attendant

will manage the sales of BNT merchandises and other inventory, and a Security Officer will be stationed at Park Headquarters to ensure BNT's assets are secure.

Boundary Identification

BNT in conjunction with NISP Partners, have collaborated with the Department of Lands and Surveys (DLS) to define national park boundaries, and further efforts will include demarcating signage at the boundary intersection between water and land, and on all major crown owned cays. It will include buoys or post markers in marine and inland water environments.

Administrative Facility Development

Working with Government, BNT will arrange for a headquarter office and educational space in or near Cockburn Town. The facility should be remodeled in a way to serve both as a visitor contact facility and as a park administrative office, to include information and interpretive exhibits that describe the park and its features. Renovations to an existing building for a Park Headquarters is recommended, rather than constructing a new facility, in which the BNT will work with the Ministry of Works and Local Government for the necessary structural repairs.

A sub-office will also be established near Graham's Harbour to facilitate science programmes in conjunction with the Gerace Research Centre, and park operations for Graham's Harbour Iguana and Seabird National Park and Green's Cay National Park.

Major Equipment

This plan recommends that the park be assigned two boats (including one flats boat), and two vehicles, one of which to be capable of pulling either boat. Both boats will be based at the administrative office and be outfitted with GPS navigation, communication, and emergency response equipment.

Emergency Preparedness And Visitor Safety

As San Salvador is subject to hurricanes and other major storms, the staff will develop an emergency preparedness plan which will be reviewed annually. The plan will address action checklist for the 4 levels of increasing readiness for Hurricanes as well as response protocol for other visitor safety related events.

Sustainable Financing

All management and operations depend upon financial support. While the foundation of many protected area systems has historically relied on public finance, this model is becoming more and more difficult to rely on. Over time, it must be recognized that there must be multiple sources of funding, including finding creative and equitable ways to access a portion of the foreign exchange that the tourist industry brings to the island.

BNT will develop a sustainable and recurring financial plan for supporting park operations. Existing and potential sources of funding include:

- ◆ Dive tag programme
- ◆ Grants from national and international organizations for specific projects
- ◆ Corporate contributions
- ◆ Fundraising efforts by the San Salvador Living Jewels Foundation and other local groups
- ◆ Scientific research permits
- ◆ Concession contracts and commercial permit fees
- ◆ Funding through the BNT and Bahamas Protected Area Fund (BPAF)

- ◆ User fees (i.e. park entrance, diving, commercial photography and videography)

Appendix D presents an estimate of initial capital costs and annually recurring funding needs.

Goal #2: Conserve and protect native species, ecological processes and aesthetics, with particular effort given to protecting endemic and endangered species.

Objectives:

Aquatic System Integrity

An essential function of Park Wardens is to protect the complex association of the reef structure, living organisms and the fish and wildlife that rely on a healthy environment. An important element of this goal is to understand and preserve the linkage between upland development and aquatic ecological process within park boundaries. BNT will consult with relevant government agencies in reviewing development permits and Environmental Impact Assessments for projects that could have an impact on park resources. BNT will coordinate with regulatory agencies to assure park resources are protected.

Fish and Wildlife

Healthy populations of reef organisms, fish, wildlife, large sea birds and the endangered San Salvador Rock Iguana, are at the core of the purpose of the San Salvador National Parks. Establishing patrols, various procedures to prevent illegal activities and bring those in violation of park bylaws to court, is a vital part of the warden's job. Park wardens will work with local enforcement agencies in San Salvador (Police Officers, Bahamas Customs), local fisherman, tour guides, and dive operators, to establish a diverse and robust monitoring programme. Commercial guides will be required to get a permit to operate in the parks, and if they do not comply with the provisions of their permit, the permit will be revoked.

BNT will continue to encourage and support research in the park by qualified scientists, including on-going cooperation with the Gerace Research Center. Where appropriate, BNT will identify particular problems and seek out researchers that can focus on the nature of the issues and how to address them. Researchers receiving permits will be required to provide an annual progress report and a final report to BNT and relevant government agencies.

Scenic Qualities And Natural Soundscapes

National parks are known for the quality of the visitor experience. Human presence is welcomed and vital to the support of national parks, but it is sometimes necessary to regulate their activities in order to maintain the aesthetic qualities of a park. It is well understood that the sound of motorized water craft is unavoidable for park users; however, high noise levels can have a serious impact on wildlife, particularly during nesting seasons, which cannot be ignored. Speed limits, motor size and routes will be assigned where necessary. BNT will carefully monitor noise, pollution and disturbance of wildlife within park boundaries.



Photo: Alex Mustard

Goal #3: Conserve historic resources of the park

Objectives

Columbus' Landfall Site

San Salvadorians have every right to be proud of the determination that Columbus first steps in the New World were taken on San Salvador. His point of landing is thought to be within the West Coast Marine Park near Bamboo Point. As such, a Memorial Plaque has been placed on the seabed at Longs Bay as a monument to commemorate Columbus' anchoring place. Park staff will consult with Antiquities, Monuments and Museums Corporation (AMMC) and others to tell this story, interpret his point of anchoring and coming to shore. This would be part of the Interpretive Plan identified in Goal #5.



Columbus Landing Site Memorial Plaque

Photo: Sandy Voegeli

Oral Histories

Documenting oral histories is becoming more and more important as time passes. BNT will initiate an oral history project to document the life stories of older, more experienced residents of San Salvador.

Goal #4: Promote positive relations with the San Salvador Living Jewels Foundation, Gerace Research Centre, and other community organizations and individuals.

Objectives

The San Salvador Living Jewels Foundation

It would have been impossible to know whether a plan for a San Salvador National Park would be necessary without the SSLJ. For 10 years, this dedicated group has been working tirelessly to identify, support and establish these national parks. Together with the Foundation members, BNT will establish a special partnership that continues to engage the energy and dedication of this group. The character of this relationship was developed and mutually agreed upon through a Memorandum of Understanding (MOU) between the BNT and SSLJ, signed June, 2015.

Gerace Research Center (GRC)

Since 1971, the GRC has hosted thousands of international research scientists who have developed extensive data on the natural history of San Salvador. The results of this work significantly contributed to the identification of these special sites for park status. Additionally, GRC has and continues to host students of all ages, to teach them

about the natural history and biological significance of San Salvador. The character of the future relationship between BNT and the GRC will be carefully thought out and mutually agreed to as this plan is implemented.

If all parties see value, it is also possible to consider a tripartite agreement between BNT, GRC, and LJJ.

General Community Outreach And Engagement

The San Salvador National Parks are products of community participation over a sustained period of time. *Appendix G* shows the history of community involvement in this effort. It is critical that park staff continue this engagement through sessions to address park issues, community concerns, and to foster question and answer sessions, etc.

Educational Programmes

Based on approved interpretive themes, the park's Education Officer will liaise with local schools and other organizations to assure that young people are informed about the importance of preserving the park's natural resources, and the value that it brings to the community.



Photo: BNT

Nature Tourism Based Economic Opportunities

BNT places a high priority on ensuring that the San Salvador National Park encourages and supports park related economic activities for the residents of San Salvador. This can significantly benefit the local economies, as well as strengthen and broaden local support for the parks. This may include, but not limited to kayaking, bird watching, guided tours via watercraft, fishing and diving. BNT will coordinate with the Ministry of Tourism (MOT) on Eco-Tourism Guide training workshops informing and building upon local skills for eco-tourism activities along with providing assistance in getting the necessary permits. Efforts will also include helping residents to apply for grants or special loans to start eco-tourism businesses.

Individual Practice Of Traditional Consumptive Resource Use Customs

For some residents of San Salvador, traditional resource use is a critical part of their income and life style. Consistent with the purpose of the park, these individuals must be allowed and enabled to continue these customs, once the activities do not undermine the purpose of the park. This will involve continuing dialogue between these park users, BNT staff, and tourism providers.

Goal #5: Provide visitors with opportunities to explore, learn, enjoy and appreciate the natural wonders, their complex ecology and its rich cultural heritage.

Objectives

Visitor information and interpretation

In order to inform the public about the parks and to assist visitors in planning their trip before they arrive, BNT will develop and maintain an interactive page on the BNT website for San Salvador National Park. The webpage will provide up to date information on the park, including links to local registered guides.

Primary Interpretive Themes

BNT will take the lead in developing an Interpretive Plan based on the following themes:

- ◆ The national and international significance of the park's geomorphology and living ecosystems.
- ◆ Description of rare and endangered species that inhabit the park and why their preservation is important.
- ◆ The importance of the park as a nursery for fish and other marine organisms that are harvested outside park boundaries.
- ◆ The features that make San Salvador National Park unique within the Bahamas.
- ◆ The historical story and significance of Columbus's visit to San Salvador.

On site visitor services and facilities

Wherever the proposed park administrative office is located, a significant part of this complex will be allocated to providing visitor information and interpretive displays consistent with approved interpretive themes and planning. Even though the park does not have a mainland base, anticipated access points from land may include a BNT standard sign identifying the site, a 3 sided shelter kiosk with current information posted, a composting or pump-out toilets and, where possible, a cleared area for parking.

Offsite education programmes

It is vital that the park's Education Officer make every effort to develop educational programmes for both children and adult residents. Public presentations and school programmes should be a major part of the park's outreach efforts.

Visitor Safety

Visitor safety must always be a top priority. Park wardens will be trained and equipped to assist with boat problems, search and rescue efforts, CPR and first aid. All commercial tour guides must have a permit which includes the safety of their clients.



MANAGEMENT ZONING

Management zoning involves decisions about what type of recreational or consumptive use should be allowed, and where. Typically it involves a range of spatial zones with varying levels and types of human activity.

Zoning requires two steps:

1. A descriptive step which identifies important values and opportunities. It requires an inventory of resource characteristics and existing uses.
2. An allocation/prescriptive step in which decisions are made about which opportunities and values should be provided, and where.

In short, the zoning process helps managers, operators, visitors and local communities understand what the park values are and where they are located, especially the sensitive resources.

The proposed management zones for San Salvador National Park's five (5) units take into account important resources, use patterns, opportunities for visitor use, and management needs. The management zones identified here combines BNT policies and the protocol used in the Andros West Side National Park management plan. However only three (3) of the management zones allocated in West Andros plan are appropriate for San Salvador National Parks, including a Conservation Zone, Sensitive Resource Zone and Visitor Service/Park Administration Zone (zoning maps can be found in the following section).

Conservation Zone

In this zone, waters, and in some cases cays, will be managed to conserve natural resources and processes while accommodating uses and experiences that do not adversely affect the ecological integrity or scenic quality of the area. Regulations on levels and methods of traditional and commercial sports fishing will continue, and may be amended in the future as future conditions dictate. Scientific monitoring of the status of key features of the aquatic marine and freshwater environments (fish populations, coral cover, benthic community), bird species and population, and the populations of the endangered San Salvador Rock Iguana, will guide future use characteristics and levels. The vast majority of the San Salvador Parks will be designated as Conservation Zone.

Sensitive Resource Zone

This zone consists of places in the park that support resources that are (1) unusually fragile, (2) limited geographically and (3) would benefit from area-specific protection. Areas in this zone will be managed to restore where appropriate, perpetuate target species and their habitats, and to limit and remove potentially disruptive activities. The following areas will be designated in this zone:

Pigeon Creek and Snow Bay National Park

- ♦ *The entire Pigeon Creek aquatic marine environment*

Graham's Harbour Seabird and Iguana National Park

- ♦ *Green, Catto, Gaulin and White Cays, including a 100 ft. buffer zone around each cay*
- ♦ *Selected dive sites*

West Coast Marine Park

- ♦ *All dive sites, including a 100 ft. buffer zone around each site*

Green's Bay National Park

- ♦ *None identified in this plan*

Southern Great Lakes National Park

- ♦ *All of the cays within the park boundary, including a 100 ft. buffer around each cay*

Visitor Services/Park Administration Zone

This zone will consist of buildings, grounds, docks and marina space leased or purchased for staging mainland park operations, educational programmes, access to parks, and other visitor services.

It is important to note that the San Salvador National Park does not encompass any privately owned land. The areas being considered for the Administration Zone classification however, are located adjacent to or outside of park boundaries, which includes an administrative headquarters based in or near Cockburn Town and will be situated in a leased building or purchased land.

BNT will work with the Administrator's Office, Local Government and private landowners to permit modest development at key access points to each national park. If possible, with land owner agreement, each of these areas may have a standard park identification sign, a three sided shelter/kiosk, sanitary facilities, a parking area for 3 to 5 cars, and a dock as appropriate to the site.

The following section profiling individual national parks offers more details on access points for each area.

Recognizing the absence of any mainland base within park boundaries, future planning may consider slight boundary adjustments that would consider specific uses for vacant crown owned land that would enhance access or provide critical habitat of wildlife.

NOTE: In terms of IUCN protected area classification, the conservation zone used by this plan is comparable to IUCN category #2, the sensitive resource zone is comparable to IUCN category #1a, and the visitor use/park administrative zone does not have a comparable IUCN category.

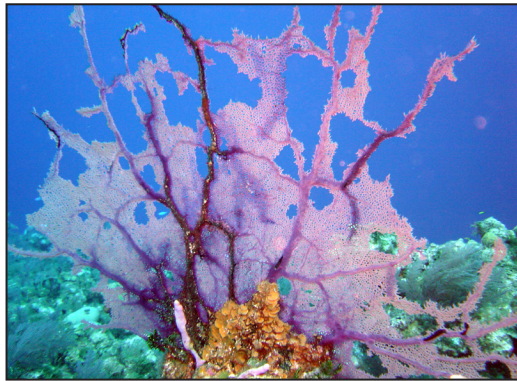


Photo: Sandy Voegeli



Photo: Sandy Voegeli

NATIONAL PARK PROFILES AND STRATEGIES

Graham's Harbour Iguana and Seabird National Park

Location

Graham's Harbour /Rice Bay trends from Barker's Point north to Green Cay, northeast along the fringing reef toward and around White Cay, heading southeast towards the Three Sisters Rocks. All cays within park boundaries are crown land, and are included in the park.

Graham's Harbour Physical Resources

A dock is located at Graham's Harbour, and restroom facilities, parking, and recreational area are located at the adjacent community park, that is privately owned.

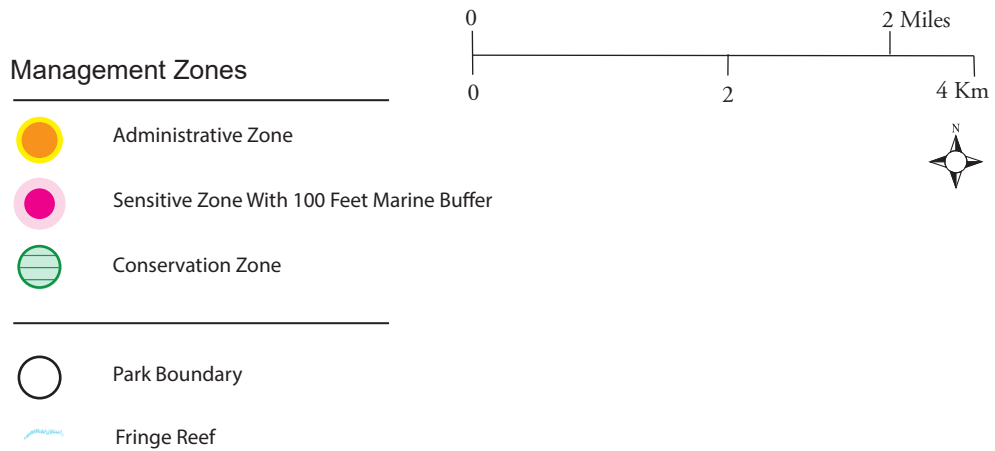
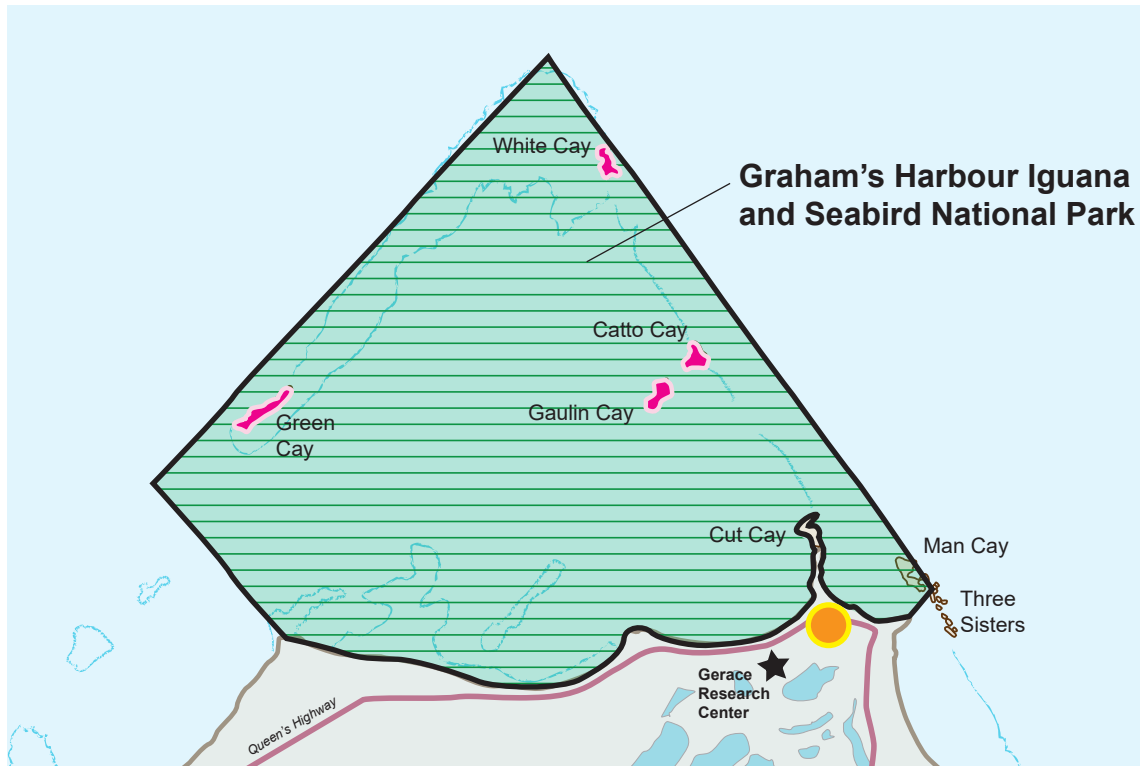
Graham's Harbour Biological Resources

Protected by fringing reefs, Graham's Harbour contains the most stable and extensive seagrass meadows around the island. It is buffered against extremes in water current velocity and is approximately 9 feet deep at mean low tide. As a unit of San Salvador National Park, Graham's Harbour protects the largest remaining iguana population (Green Cay), the largest and most diverse seabird colonies (Catto, Gaulin, Green and White Cays) in San Salvador, and protects the extensive eelgrass beds and coral reefs that serve as important marine nurseries.

Species of significance found at Graham's Harbour, include the critically endangered San Salvador rock iguana (*Cyclura rileyi rileyi*), nesting seabirds and waterbirds such as the Brown Booby (*Sula leucogaster*), Red-footed Booby (*Sula sula*), Bridled Tern (*Sterna anaethetus*), Roseate Tern (*Sterna dougallii*), Royal Tern (*Thalasseus maximus*), Sooty Tern (*Onychoprion fuscatus*), Least Tern (*Sternula antillarum*), Magnificent Frigatebirds (*Fregata*

GRAHAM'S HARBOUR IGUANA AND SEABIRD NATIONAL PARK

Management Zones



SAN SALVADOR NATIONAL PARKS
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magnificensis), Brown Noddy (*Anous stolidus*), Audubon's Shearwaters (*Puffinus lherminieri*), White-tailed Tropicbird (*Phaethon lepturus*), Gull-billed Terns (*Sterna nilotica*), Double-crested Cormorant (*Phalacrocorax auritus*), and Laughing Gulls (*Larus atricilla*).

Graham's Harbour Existing Uses

- ◆ Scientific research, some snorkeling and diving, commercial and subsistence fishing (including boats from other islands),
- ◆ Jet ski tours around San Salvador island pass through this park unit.

Management Strategies

- ◆ In order to protect native seabirds, establish a 100 ft. buffer zone around all cays except Green Cay. This Sensitive Resource Zone will only be assessable to visitors with special permits, e.g. research. There will be power boat speed limits applied within 100 ft. of the primary reef areas.
- ◆ Provide information signage at the existing community park and two other ramps west of this developed area that offer boat access. In cooperation with local owners, upgrade dock, sanitary, parking and a shelter that already exist at this site.
- ◆ Provide 5 mooring buoys at Green Cay. Visitor use will be limited to marked foot trails except for those with special permits, to provide increased protection to sensitive areas of the cay for nesting seabirds and iguanas.
- ◆ Establish no anchorage zones, especially for large yachts, to protect critical marine habitats (reef and seagrass areas).
- ◆ Set speed limits/no wake zones to avoid disturbances to sensitive resources.
- ◆ Continue to engage private landowners where property borders park boundaries (i.e. Community park)
- ◆ Prohibit visitation to offshore cays during bird nesting season.

Graham's Harbour Threats

- | | |
|---|---|
| ◆ Recreation | ◆ Invasive Alien Species (marine and terrestrial) |
| ◆ Wildlife Trafficking | ◆ Iguana Feeding |
| ◆ Watercraft Disturbances from Tour Operators | ◆ Disturbance of Wildlife |
| ◆ Lack of infrastructure/signage | ◆ Lack of communication |
| ◆ Anchor damage | ◆ Bioprospecting |
| ◆ Incompatible Coastal Development | ◆ Overfishing & Illegal Fishing Practices |
| ◆ Boat Maintenance/Hull Cleaning | ◆ Climate Change & Natural Distasters (sea level rise, elevated sea surface temperatures, hurricanes) |

Graham's Harbour Purpose

The park protects the largest remaining population of the San Salvador rock iguana, the largest and most diverse seabird colonies found in The Bahamas, and extensive seagrass beds and reef system important for fisheries.

West Coast Marine Park

Location

Boundary along the west side extends out from the high water mark adjacent to the international airport runway and out to the drop off, or “wall”, with an additional buffer zone of 100 feet beyond the wall or buoy. Boundary continues south along the wall and around the southern point of Snow Bay, including marine waters surrounding Low Cay (private). The park boundary ends at the southern point of Snow Bay.

Physical Resources

Several mooring buoys are location throughout the park, that are utilized and maintained by local dive tour operators.

West Coast Biological Resources

San Salvador offers a wealth of attractions to the visiting diver. The island has shallow reefs and breathtaking wall dives which were first discovered by scuba divers in the 1970's. West Coast Marine park is unique for its stunning water clarity, with a typical visibility of 100-150 ft, and more than 20 miles of dramatic vertical walls, beginning at a depth as low as 40 feet. The rocky southern shoreline at French Bay provides vital nesting habitat for White-tailed Tropic birds and Audubon's Shearwaters.

The critically endangered hawksbill turtle is the predominant sea turtle observed at West Coast Marine Park, with nesting activity on the southwest point of Sandy Point. Recent observations confirm the deep channels in the park, is a migratory route for species of whales, especially the humpback whale (A. Minkus, 2014).

Historical Resources

West Coast Marine Park is the anchorage location for Christopher Columbus' first landfall to The Bahamas, and as such, a commemorative plaque sits on the seafloor in the park to recognize this historical site. Considering this significance, West Coast Marine Park is eligible for a UNESCO World Heritage Site designation, which would be the first in The Bahamas.

Existing Uses

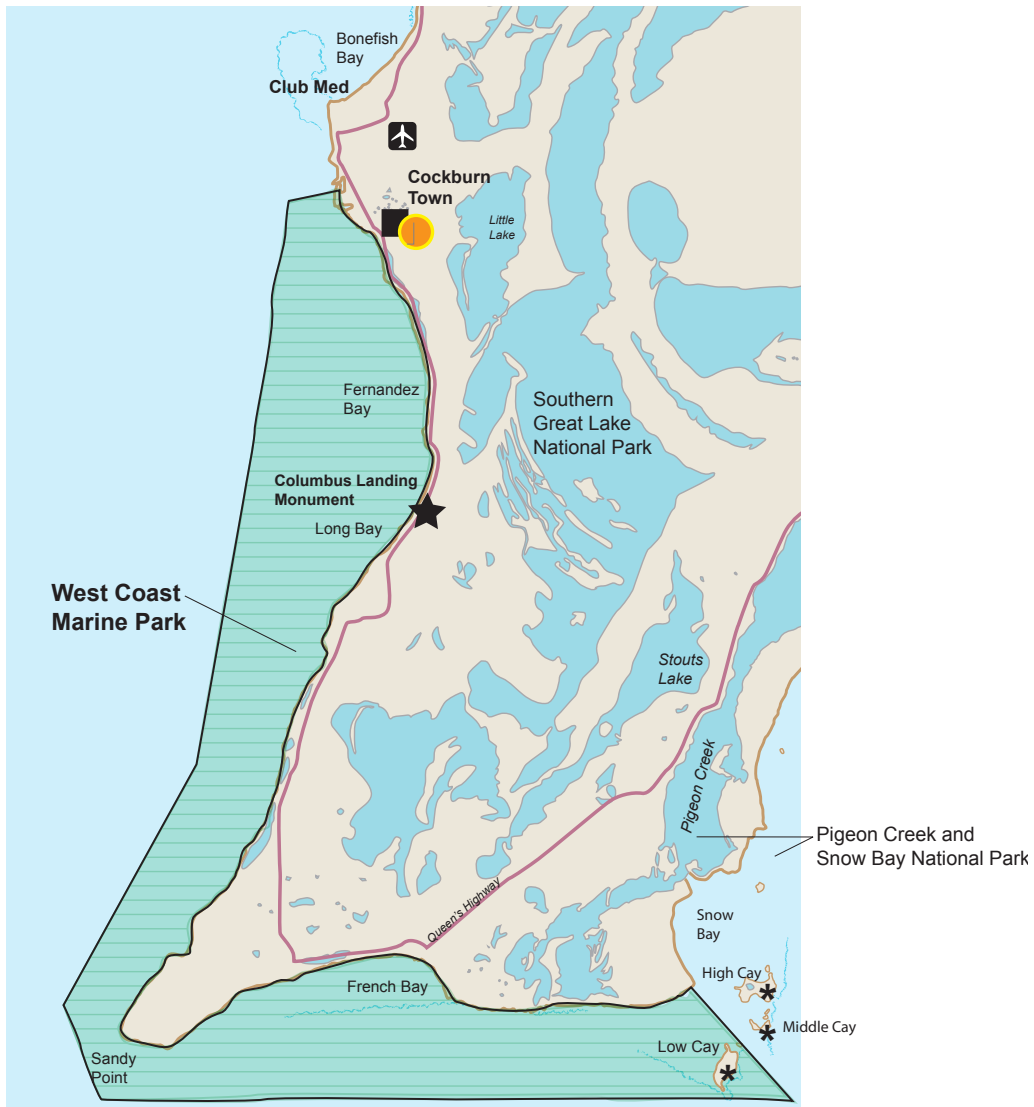
- ◆ Primarily diving and snorkeling and some fishing.
- ◆ Existing boat access is limited. Most access is via the established resort dive operators.
- ◆ Jet ski tours around the island pass through this park.

Management Strategies


- ◆ Establish park administrative headquarters in or near Cockburn Town.
- ◆ Provide parking and information signage adjacent to the site recommended for park headquarters. Explore to improve public access at this site.
- ◆ Identify primary dive sites (30) and close adjacent waters to commercial and subsistence fishing in order to preserve resources and reduce conflict between divers and fishermen.
- ◆ Working with private landowners, explore additional opportunities for public access to this park.
- ◆ Provide 5 mooring buoys in the area north of Cockburn Town, and install moorings to accommodate larger vessels/yachts at Longs Bay.

WEST COAST MARINE PARK

Management Zones




Management Zones

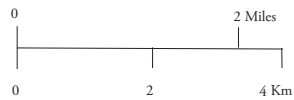
 Administrative Zone

 Conservation Zone

 Park Boundary

 Fringe Reef

 Cay privately owned and not included in park management zone



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- ◆ Prohibit harvesting of all parrotfish species, to ensure reefs are able to recover from elevated water temperatures.
- ◆ Establish no anchorage zones, especially for large yachts, to protect critical marine habitats (reef and seagrass areas).

West Coast Threats

- ◆ Overfishing & Illegal Fishing Practices
- ◆ Lack of infrastructure/signage
- ◆ Anchor damage
- ◆ Incompatible Coastal Development
- ◆ Poaching
- ◆ Invasive Alien Species (marine)
- ◆ Lack of communication
- ◆ Groundings
- ◆ User conflicts between dive operators and fishermen
- ◆ Climate Change and Natural Disasters (sea level rise, elevated sea surface temperatures, hurricanes)

West Coast Purpose

The park protects some of the most dramatic and breathtaking coral wall formations in The Bahamas, that attract repeat divers annually, and rocky southern shorelines provides nesting habitat for seabirds.



Photo: BNT

Pigeon Creek and Snow Bay National Park

Location

The park includes the natural open water through the entire length of Pigeon Creek and the mangroves to the high water mark. This includes the waters surrounding the offshore Low, Middle, and High Cays, which are privately owned and not included in the park. Snow Bay extends from the high water mark to the wall, beginning at the northern point of the Bay and ending at the southern point of Snow Bay. It includes Nancy Cay and the marine areas surrounding Middle and High Cays (privately owned).

Pigeon Creek and Snow Bay Biological Resources

Pigeon Creek is the island's only tidal creek, making it an invaluable resource and a primary conservation area. National Park status for the creek and the waters surrounding the cays just offshore protects the island's most important nursery area. The creek includes mangroves, seagrasses, hard bottom corals and sponges. It is home to the island's main population of sea urchins. It is the only nursery area for the Nassau Grouper and is a nursery area for spiny lobster and numerous other reef fish. The island's fisheries rely primarily on this nursery area.

Snow Bay is the sea connection to Pigeon Creek. The bay supports a high diversity of coral reefs and queen conch populations. Reef species eventually spawn and seed the areas downstream. This area also has a high value as an important fisheries location for local residents.

Existing Uses

- ◆ Catch and release bonefishing, and subsistence fishing.
- ◆ Limited kayaking, canoeing, and sightseeing by tour guides using jet skis.
- ◆ Picnicking tours for hotel guests.
- ◆ Existing access is available at Pigeon Creek Settlement and Snow Bay.

Management Strategies

- ◆ In order to protect sensitive species, Pigeon Creek will be closed to all fishing activities, with the exception of Catch and Release bonefishing.
- ◆ A combination of power boat engine size and speed limits will be imposed as appropriate.
- ◆ Working with landowners, maintain the existing car parking area and dock at Pigeon Creek Settlement.

Pigeon Creek and Snow Bay Threats

- ◆ Invasive Alien Species (marine and terrestrial)
- ◆ Lack of infrastructure/signage
- ◆ User conflicts
- ◆ Recreation
- ◆ Anchor damage
- ◆ Wildlife disturbance
- ◆ Incompatible Coastal Development
- ◆ Overfishing and Illegal fishing practices
- ◆ Iguana Feeding
- ◆ Climate Change & Natural Distasters (sea level rise, elevated sea surface temperatures, hurricanes)

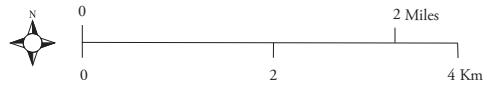
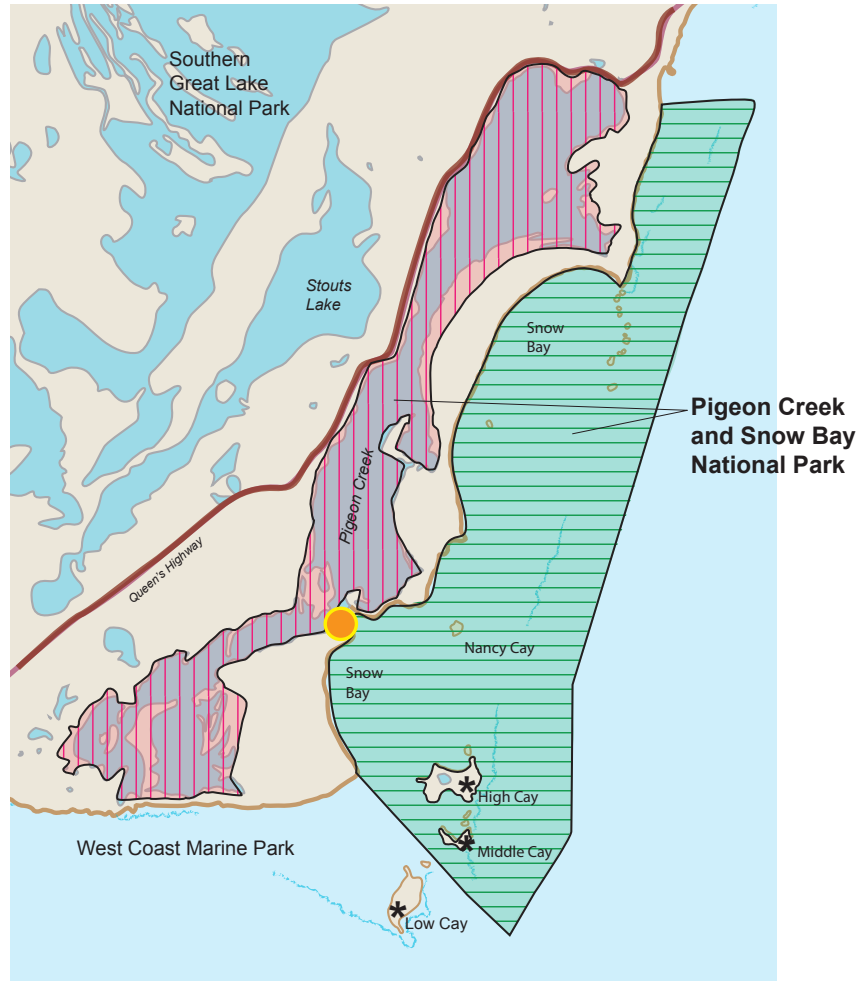
Pigeon Creek and Snow Bay's Purpose

The park protects the island's only tidal creek, and the connectivity between the mangrove forests, seagrass beds and offshore reef system.









PIGEON CREEK AND SNOW BAY NATIONAL PARK

Management Zones



Management Zones

-  Administrative Zone
 -  Sensitive Zone
 -  Conservation Zone
-
-  Park Boundary
 -  Fringe Reef
 -  Cay privately owned and not included in management zone

SAN SALVADOR NATIONAL PARKS
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Southern Great Lake National Park

Location

Southern Great Lake is located in the center of the island, and include the mangrove areas up to the high water mark.

Southern Great Lake Biological Resources

Located in the center of San Salvador island, this park features an extensive mangrove ecosystem. There are four species of nesting seabirds within this lake area, such as the Double-crested cormorants (*Phalacrocorax auritus*), Laughing gull (*Leucophaeus atricilla*), Gull-billed terns (*Gelochelidon nilotica*), Least Tern (*Sternula antillarum*). There are at least three species of reptiles, including the critically endangered San Salvador rock iguana, and several species of unique fishes. This area is still very pristine and relatively unscathed by human use. The cays within the lake are one of the few available habitats for the iguanas and are critical for sustaining this species. Other bird species found in the park include Green herons (*Butorides virescens*), Reddish egrets (*Egretta rufescens*), Great blue herons (*Ardea herodias*), and Little blue herons (*Egretta caerulea*).

Existing Uses

- ♦ Minimal, some kayaking, canoeing and small power boat use.
- ♦ Existing access is primarily by boat via Little Lake.

Management Strategies

- ♦ In order to protect sensitive species, all cays and waters within a 100 feet buffer zone will be closed to visitor use except for special permit holders, e.g. scientists.
- ♦ At Little Lake, on vacant crown land, provide 3-5 car parking area, park identification and interpretative signs, and sanitary facilities.
- ♦ Provide entrance sign and improve and maintain existing portage connecting Little Lake to Great Lake.

Southern Great Lake Threats

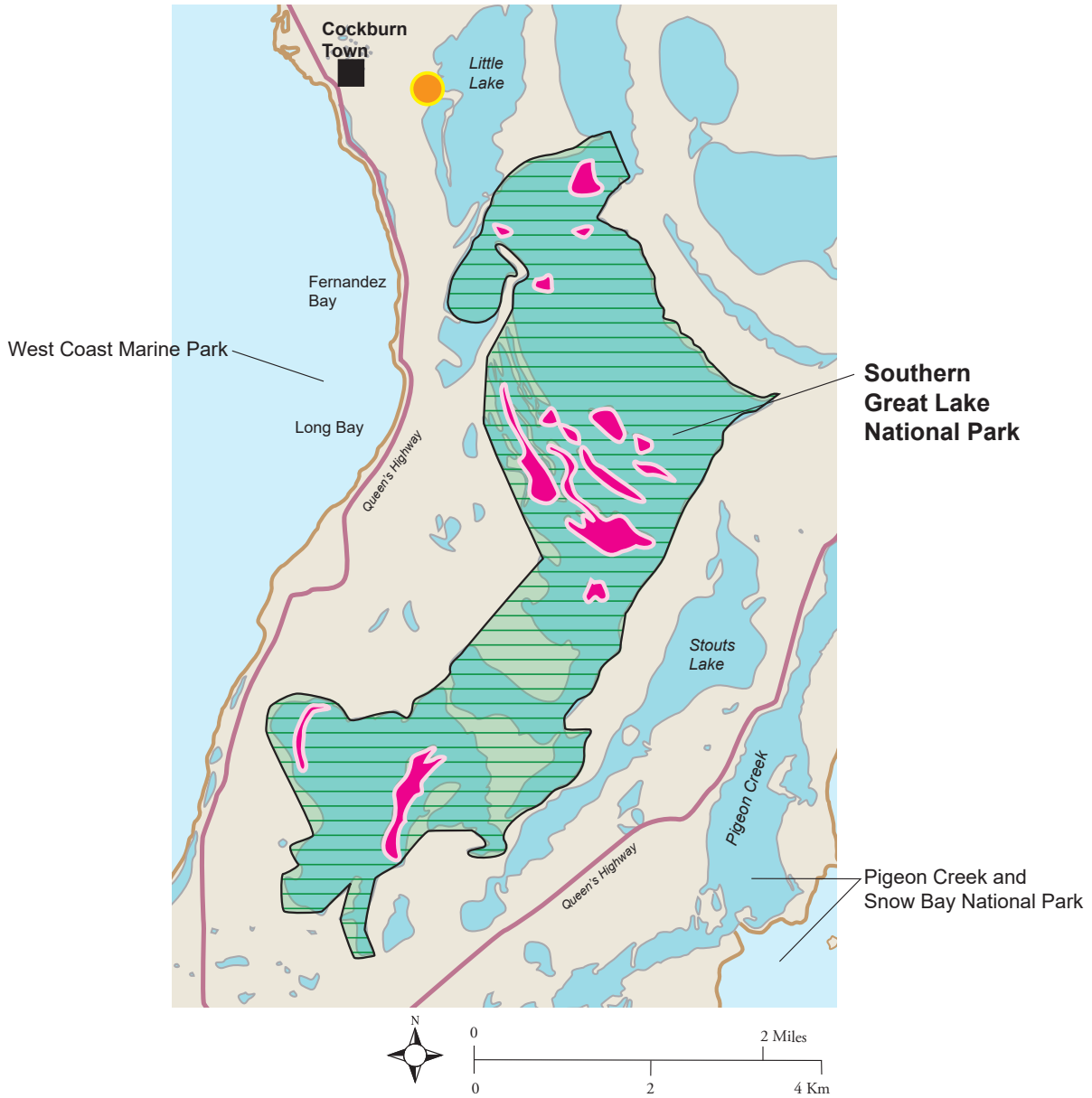
- ♦ Invasive Alien Species (marine and terrestrial)
- ♦ Wildlife trafficking
- ♦ Wildlife disturbance
- ♦ Lack of infrastructure/signage
- ♦ Incompatible Development
- ♦ Climate Change & Natural Distasters (sea level rise, hurricanes)

Southern Great Lake's Purpose





This park protects an important population of the critically endangered and endemic San Salvador rock iguana, and nesting sites for large colonies of cormorants, gulls, and herons.

SOUTHERN GREAT LAKE NATIONAL PARK

Management Zones



Management Zones

-  Administrative Zone
 -  Sensitive Zone With 100 Feet Marine Buffer
 -  Conservation Zone
-
-  Park Boundary

SAN SALVADOR NATIONAL PARKS
Bahamas National Trust

Green's Bay National Park

Location

Green's Bay at the high water mark beginning at the northern point and ending at the southern point, and including marine areas surrounding Goulding Cay.

Significance with Green's Bay Biological Resources

National Park status would better protect another major iguana population on Goulding Cay (privately owned), the rocky shoreline that supports shearwaters and tropic bird nesting sites along the peninsulas that create the bay.

Existing Uses

- ♦ The only reasonable access at this time is via boat, whose occupants carry out commercial and traditional fishing. A portion of the fisherman reportedly come from other islands.
- ♦ Hotel guests using jet skis and other boats pass through Green's bay while circumnavigating the island.

Management Strategies

- ♦ Upgrade protection of marine resources through better enforcement of existing regulations.
- ♦ Establish no anchorage zones, especially for large yachts, to protect critical marine habitats (reef and seagrass areas).
- ♦ Prohibit harvesting of all parrotfish species, to ensure reefs are able to recover from elevated sea surface temperature events.

Green's Bay Threats

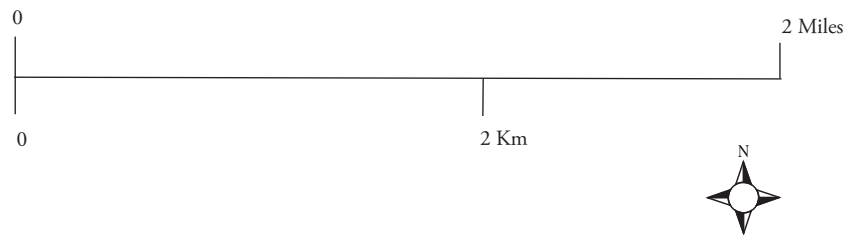
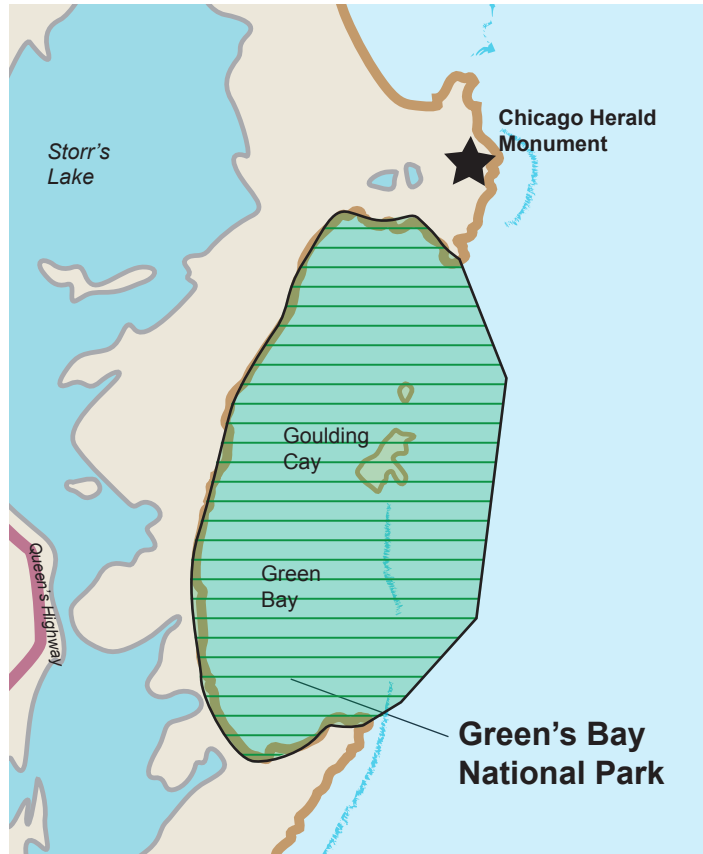
- ♦ Climate Change & Natural Disasters
- ♦ Sedimentation (from opening of Storrs Lake)
- ♦ Overfishing and illegal fishing
- ♦ Anchor damage (to reef and seagrass beds)
- ♦ Invasive Alien Species (marine)
- ♦ Incompatible Development (both residential and commercial)

Green's Bay Purpose

The park protects another major population of the San Salvador rock iguana, rocky shoreline that support shearwaters and tropicbirds, and a reef system.

GREEN'S BAY NATIONAL PARK

Management Zones



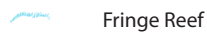
Management Zones



Conservation Zone



Park Boundary



Fringe Reef

SAN SALVADOR NATIONAL PARKS
Bahamas National Trust

APPENDICES

APPENDIX A: RELEVANT NATIONAL POLICIES AND LEGISLATION

There are several national policy and legislative instruments that are relevant to the management of the NSMP. These are detailed below.

National Environmental Policy

The goal of this policy is the sustainable use of the environment of The Bahamas to meet the needs of the present and future generations through the following specific objectives:

- ◆ to prevent, reduce, or eliminate various forms of pollution to ensure adequate protection of the environment and the health of its citizens;
- ◆ to conserve the biological diversity of the country and the stability, integrity, resilience and productivity of ecosystems; and
- ◆ to provide for the environment to be fully integrated into policy, plans, programmes and development project decisions that might be detrimental to the continued health safety and productivity of the country's environment.

National Wetlands Policy

The goal of this policy is to conserve, restore and manage wetlands wisely in conjunction with sustainable development practices. The specific objectives are to:

- ◆ Manage human activity on or near wetlands in a manner which will achieve no loss of significant wetland habitat and no net loss of wetland functions;
- ◆ Promote the recognition and integration of wetland functions in resource management and economic development decision-making with regard to sector policies and programmes;
- ◆ Promote and facilitate the development of wetland stewardship, awareness and education through government initiatives, and cooperative relationships with local citizens, private sector stakeholders, and municipal, provincial and local governments;
- ◆ Develop a shared vision between all spheres of government and promote the application of wise practices in relation to wetland management and conservation;
- ◆ Meet The Bahamas' commitments as signatory to relevant international treaties, in relation to the management of wetlands.

National Invasive Species Strategy (NISS)

The objectives of the NISS approved in 2003 and revised in 2013 include:

- ◆ Identification of priority species for eradication.
- ◆ Identification of priority species for control.
- ◆ Increasing awareness of invasive species through the development of an invasive alien species (IAS) database;
- ◆ Building capacity amongst officers within the public service about invasive species and how to identify, safely handle, hold or transfer these species. Officers to be targeted are those within the Customs Department, Ministry of Agriculture and Fisheries, enforcement officers of the Royal Bahamas Police Force and Royal Bahamas Defence Force.
- ◆ Prioritization of those sites to be monitored for invasive species. These were identified as all public areas, national parks, protected areas, freshwater sources and field stations.

The Bahamas 2020 Declaration

The Government of the Commonwealth of The Bahamas, as representatives of the people, is committed to the following:

- ◆ Ensuring that critical ecosystem services provided by our forests and oceans are kept intact;
- ◆ Acting responsibly as stewards of unique biodiversity;
- ◆ Ensuring that we act to sustain our livelihoods and the livelihoods of Bahamians in generations to come;
- ◆ Ensuring that our children and our children's children may enjoy the quality of life and beauty that our islands have provided us;
- ◆ Contributing to global targets set out in the Millennium Development Goals, the Johannesburg Plan of Implementation for the World Summit on Sustainable Development, the Mauritius Strategy for Small Island Developing States and the relevant Programmes of Work of the Convention on Biological Diversity and related regional and sub-regional initiatives and obligations.

The Bahamas also agrees, among other things, to undertake a commitment to preserve the marine and terrestrial environments by meeting the targets established by the Convention for 2010 and 2012, and further commits to effectively conserve at least 20% of the near-shore marine resources across The Bahamas by 2020 and ensure a minimum of 50% of existing marine and 50% of existing terrestrial national parks and protected areas are effectively managed by 2020 through provision and facilitation of necessary core staff, infrastructure, policies, regulations, bylaws and management plans to make them functioning protected areas where sustainable activities occur inclusive of research, education, habitat rehabilitation and conservation, as deemed appropriate.

The Bahamas National Trust Act (1959)

This Act establishes The Bahamas National Trust and provide for its operation, including the acquisition of properties, terrestrial or marine, and the development of regulations (bylaws) for their management. Lands or buildings vested in the Trust are to be held for the benefit of The Bahamas and are inalienable.

Amendment to the Bahamas National Trust Act (2010)

This amendment to the BNT Act serves to strengthen the organization's duties and responsibilities to protect Bahamian natural resources. It confirms BNT's role as an advisor to the Government and private sector on development, conservation and biodiversity issues. It reduces the risk of encroachment on Trust lands and gives the Trust the ability to control activities occurring in the marine environment of its parks, such as dredging and film making. Other aspects of the amendment relate to operation of the Trust with respect to membership, procedures for Annual General Meetings and execution of contracts for goods and services.

Planning and Subdivision Act (2010)

This Act provides for:

- ◆ A land use planning based development control system led by policy, land use designations and zoning
- ◆ Prevention of indiscriminate division and development of land
- ◆ Promotion of sustainable development in a healthy natural environment
- ◆ Maintenance and improvement of the quality of the physical and natural environment
- ◆ Protection and conservation of the natural and cultural heritage of The Bahamas
- ◆ Planning for the development and maintenance of safe and viable communities

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APPENDIX C: PARKS AND PROTECTED AREAS SELECTION CRITERIA WITH MATRICES FOR SAN SALVADOR NATIONAL PARKS

1. NATURAL RESOURCE VALUES

1.1 Biogeographic Importance

- ♦ Rare biogeographic qualities or represents a biogeographic type or types
- ♦ Unique or unusual geological features
- ♦ Characteristic of the biogeographic province or region in which it is located (the degree to which the area exemplifies undisturbed habitat types, ecological processes, biological communities, physiographic features, or other natural attributes associated with the province or region)

1.2 Ecological Importance

- ♦ Essential part of ecological processes or life-support systems
- ♦ Area's integrity or the degree to which either the area by itself or in association with other protected areas encompasses a complete ecosystem
- ♦ The variety of ecosystem
- ♦ Presence of habitat for rare or endangered species
- ♦ Presence of feeding, courtship, breeding, rest or migration areas
- ♦ Rare or unique habitat for any species
- ♦ Genetic diversity
- ♦ Characterized by its high level of primary and/or secondary production and attendant higher trophic level communities

1.3 Biodiversity Importance

- ♦ Significant in relation to the variety and number of life forms and communities that occurs within the specified habitat type or within the biogeographic province or region
- ♦ Contains a representative variety of species or an important sample of the diversity of ecosystems, communities, species, populations, and gene pools found within the prescribed region or habitat

1.4 Naturalness and/or Habitat Structure or Features Importance

- ♦ Extent to which the area has been protected from, or has not been subject to human-induced change
- ♦ Characterized by unique, rare, or unusual chemical, physical, geological, and/or oceanographic features, structures, or conditions

2. ECONOMIC IMPORTANCE

Existing or potential economic value by virtue of its protection (for example, protection of an area for recreation, subsistence, use by traditional inhabitants, appreciation by tourists or others, as a refuge nursery area or source of economically important species)

3. SOCIAL IMPORTANCE

Existing or potential economic value to local, national or international communities because of its heritage, historical, cultural, traditional, aesthetic, educational or recreational qualities

4. SCIENTIFIC IMPORTANCE

Value for research and monitoring

5. INTERNATIONAL OR NATIONAL IMPORTANCE

Potential to be listed on the World (national) Heritage List, declared a Biosphere Reserve, or included on a list of areas of international or national importance, or is the subject of an international or national convention agreement

6. PRACTICALITY/FEASIBILITY

- ◆ Degree of insulation from external destructive influences
- ◆ Social or political acceptability, degree of community support
- ◆ Accessibility for education, tourism, recreation
- ◆ Compatibility with existing uses, particularly by locals
- ◆ Ease of management or compatibility with existing management regimes

SITE NAME: Graham's Harbour/Rice Bay including offshore cays

Criteria	High Value	Medium Value	Low Value
Biogeographic Importance	X		
Ecological Importance	X		
Biodiversity Importance	X		
Naturalness/Habitat Structure	X		
Economic Importance	X		
Social Importance	X		
Scientific Importance	X		
International/National Importance		X	
Practicality/Feasibility	X		

Biogeographic Sub-Criteria	High Value	Medium Value	Low Value
Presence of rare biogeographic qualities or representative of a biogeographic type	X		
Unique or unusual geological features	X		
Characteristic of the biogeographic province or region	X		

Ecological Sub-Criteria	High Value	Medium Value	Low Value
Essential part of ecological processes or life-support systems	X		
Area's integrity encompasses a complete ecosystem	X		
Variety of ecosystems	X		
Habitat for rare or endangered species	X		
Nursery or juvenile area	X		
Feeding, courtship, breeding, rest or migration areas	X		
Rare or unique habitat for species	X		
Genetic diversity	X		
High level of primary and/or secondary production and attendant higher trophic level communities		X	

SITE NAME: Pigeon Creek Mangrove Lagoon

Criteria	High Value	Medium Value	Low Value
Biogeographic Importance	X		
Ecological Importance	X		
Biodiversity Importance	X		
Naturalness/Habitat Structure	X		
Economic Importance	X		
Social Importance	X		
Scientific Importance	X		
International/National Importance	X		
Practicality/Feasibility	X		

Biogeographic Sub-Criteria	High Value	Medium Value	Low Value
Presence of rare biogeographic qualities or representative of a biogeographic type	X		
Unique or unusual geological features			X
Characteristic of the biogeographic province or region	X		

Ecological Sub-Criteria	High Value	Medium Value	Low Value
Essential part of ecological processes or life-support systems	X		
Area's integrity encompasses a complete ecosystem	X		
Variety of ecosystems	X		
Habitat for rare or endangered species	X		
Nursery or juvenile area	X		
Feeding, courtship, breeding, rest or migration areas	X		
Rare or unique habitat for species	X		
Genetic diversity	X		
High level of primary and/or secondary production and attendant higher trophic level communities	X		

SITE NAME: Pigeon Creek including offshore cays

Criteria	High Value	Medium Value	Low Value
Biogeographic Importance	X		
Ecological Importance	X		
Biodiversity Importance	X		
Naturalness/Habitat Structure		X	
Economic Importance	X		
Social Importance	X		
Scientific Importance	X		
International/National Importance			X
Practicality/Feasibility			X

Biogeographic Sub-Criteria	High Value	Medium Value	Low Value
Presence of rare biogeographic qualities or representative of a biogeographic type		X	
Unique or unusual geological features	X		
Characteristic of the biogeographic province or region	X		

Ecological Sub-Criteria	High Value	Medium Value	Low Value
Essential part of ecological processes or life-support systems	X		
Area's integrity encompasses a complete ecosystem	X		
Variety of ecosystems	X		
Habitat for rare or endangered species	X		
Nursery or juvenile area	X		
Feeding, courtship, breeding, rest or migration areas	X		
Rare or unique habitat for species	X		
Genetic diversity	X		
High level of primary and/or secondary production and attendant higher trophic level communities	X		

SITE NAME: Snow Bay

Criteria	High Value	Medium Value	Low Value
Biogeographic Importance	X		
Ecological Importance	X		
Biodiversity Importance	X		
Naturalness/Habitat Structure			
Economic Importance	X		
Social Importance	X		
Scientific Importance	X		
International/National Importance	X		
Practicality/Feasibility	X		

Biogeographic Sub-Criteria	High Value	Medium Value	Low Value
Presence of rare biogeographic qualities or representative of a biogeographic type		X	
Unique or unusual geological features	X		
Characteristic of the biogeographic province or region	X		

Ecological Sub-Criteria	High Value	Medium Value	Low Value
Essential part of ecological processes or life-support systems	X		
Area's integrity encompasses a complete ecosystem	X		
Variety of ecosystems	X		
Habitat for rare or endangered species	X		
Nursery or juvenile area	X		
Feeding, courtship, breeding, rest or migration areas	X		
Rare or unique habitat for species	X		
Genetic diversity	X		
High level of primary and/or secondary production and attendant higher trophic level communities	X		

SITE NAME: Green's Bay including offshore cays

Criteria	High Value	Medium Value	Low Value
Biogeographic Importance	X		
Ecological Importance	X		
Biodiversity Importance	X		
Naturalness/Habitat Structure	X		
Economic Importance	X		
Social Importance		X	
Scientific Importance		X	
International/National Importance			X
Practicality/Feasibility			X

Biogeographic Sub-Criteria	High Value	Medium Value	Low Value
Presence of rare biogeographic qualities or representative of a biogeographic type			X
Unique or unusual geological features	X		
Characteristic of the biogeographic province or region			X

Ecological Sub-Criteria	High Value	Medium Value	Low Value
Essential part of ecological processes or life-support systems			X
Area's integrity encompasses a complete ecosystem			X
Variety of ecosystems	X		
Habitat for rare or endangered species	X		
Nursery or juvenile area	X		
Feeding, courtship, breeding, rest or migration areas	X		
Rare or unique habitat for species	X		
Genetic diversity			X
High level of primary and/or secondary production and attendant higher trophic level communities			X

SITE NAME: Great Lake (southern region)

Criteria	High Value	Medium Value	Low Value
Biogeographic Importance			
Ecological Importance	X		
Biodiversity Importance	X		
Naturalness/Habitat Structure	X		
Economic Importance			X
Social Importance	X		
Scientific Importance	X		
International/National Importance			X
Practicality/Feasibility			X

Biogeographic Sub-Criteria	High Value	Medium Value	Low Value
Presence of rare biogeographic qualities or representative of a biogeographic type	X		
Unique or unusual geological features	X		
Characteristic of the biogeographic province or region		X	

Ecological Sub-Criteria	High Value	Medium Value	Low Value
Essential part of ecological processes or life-support systems		X	
Area's integrity encompasses a complete ecosystem		X	
Variety of ecosystems	X		
Habitat for rare or endangered species	X		
Nursery or juvenile area	X		
Feeding, courtship, breeding, rest or migration areas	X		
Rare or unique habitat for species	X		
Genetic diversity	X		
High level of primary and/or secondary production and attendant higher trophic level communities			X

APPENDIX D: CONSERVATION TARGETS

The IUCN Protected Area Management Category for the San Salvador National Parks has not yet been confirmed, however will require recommendations by the NISP committee of the IUCN working group.

Conservation targets for the SSNP are based on those outlined in the Master Plan for The Bahamas National Protected Area System, and are listed below.

Conservation Targets for the San Salvador National Parks

Conservation Target	Definition
Terrestrial Target	
Rock Iguana	There are three known species – <i>Cyclura cyclura</i> , <i>Cyclura carinata</i> , and <i>Cyclura rileyi</i> – and seven subspecies of Rock Iguanas (large lizards) in the islands of The Bahamas. The largest populations can be found in small isolated areas where predators like wild hogs, feral cats and dogs are not a threat to them. Subspecies of Rock Iguanas are found on Andros, San Salvador, Acklins, Mayaguana, and in the Exuma Cays.
Important Bird Area (IBA)	Sites identified by regular birders and ornithologists that regularly hold significant numbers of a globally threatened species, other species of global conservation concern, or hold a significant component of the restricted range species whose breeding distribution can be defined as an Endemic Bird Area (EBA) or Secondary Area (SA). In the Bahamas, endemics are: Bahama Woodstar, Bahama Swallow, Bahama Oriole, Bahama Warbler, and Bahama Yellowthroat . Other species of concern: Bahama Mockingbird, West Indian Whistling Duck, Bahamas Parrot, Olive-capped Warbler, West Indian Woodpecker, Kirtland’s Warbler, Brown-headed Nuthatch and the Piping Plover.
Freshwater Targets	
Inland Lake	A lake or other body of seasonally fresh to hyper-saline water not bordered by the sea.
Marine Targets	
Seabird Nesting	Known seabird nesting sites in The Bahamas, including the Audubon Shearwater, White-tailed Tropic bird, Brown Pelican, Crested Cormorant, Magnificent Frigate bird, White Ibis, Great Egret, Tri-color Heron, Red Egret, Great Heron, Black Crowned Night Heron, Laughing Gull, Royal Tern, Least Tern, Bridled Tern, Sooty Tern, and the Brown Noddy.
Dense seagrass	This habitat is dominated by the seagrass <i>Thalassia</i> , also called Turtle Grass, but may contain the tube-like seagrass <i>Syringodium</i> . Dense Seagrass habitats have high density and a low amount of visible sand and silt.

Medium density seagrass	This habitat is dominated by the seagrass <i>Thalassia</i> , also called Turtle Grass, but may contain the tube-like seagrass <i>Syringodium</i> and the thin-bladed seagrass <i>Halodule</i> . Occasionally one also finds small coral colonies within the seagrass. Medium Density Seagrass habitats have medium biomass (medium plant height, medium density) and a medium amount of substratum is visible, when compared to Dense and Sparse Seagrass. This habitat is found in lagoonal environments.
Sparse seagrass	This habitat is dominated by the seagrass <i>Thalassia</i> , also called Turtle Grass, but may contain the tube-like seagrass <i>Syringodium</i> and the thin-bladed seagrass <i>Halodule</i> . Occasionally one also finds small coral colonies within the seagrass. Sparse Seagrass habitats have relatively low biomass (short plants, low density) and a high amount of substratum is visible. This habitat found in lagoonal environments where sediment is deep enough for the seagrasses to take.
Mangroves	Mangrove trees grow in shallow, brackish waters along coasts and up creeks of Bahamian islands. Their roots provide nursery habitat for many important fish species. Mangroves in and around estuaries also trap sediments that might otherwise flow onto reefs and smother corals to death.
Tidal creeks	Wetlands situated in channels where water flows both directions due to the tides.
Sand	This habitat includes both clean sand and sand with a sparse algal community. It is found in lagoonal areas and near reefs.
Reef flat	All geomorphic reef types occurring on the shelf in less than 20m of water.
Non-reef flat	All geomorphic reef types occurring on the shelf break in 20-30m of water.
Coral walls 30-200	Coral reef face which plunges from 30-200 meters.
Coral walls 200-1000	Coral reef face which plunges from 200-1000 meters.
Marine mammal habitat	Habitat modeled from Blainville beaked whale, dwarf sperm whale, and Cuvier's beaked whale sightings data and bathymetry (all slopes between 7 and 10 degrees and depths from 400m to 1700m).
Rocky shore	Consolidated sediments, typically porous grey or black rock. There are distinct zones up from the water line starting with the rocky shore, bluff and ridge. The rocky shores can be low relief (less than 4 meters from mid tide line to ridge) and high relief (greater than 4 meters).
Sandy beach	Unconsolidated shorelines which, depending on wave energy, can vary in width and height of the dunes. Shore profiles on beaches begin at the high tide mark, and are characterized by distinct zones. Starting from the water, there is a sparsely vegetated pioneer zone, a grassy or shrubby foredune, back dune, and then swale.

APPENDIX E. ESTIMATED INITIAL AND ANNUAL FUNDING NEEDS

1. PARK ADMINISTRATION AND OPERATIONS				
Program	Actions	Initial Non-recurring Costs	Annual Costs	Total 10-year Life Cycle Costs
1.1 Staff Recruitment and Development	Appoint or hire 8 staff members		\$ 180,000.00	\$ 1,800,000.00
	Provide training and development			
1.2 Administrative Facility Development	BNT Office/Welcome Centre	\$ 300,000.00	\$ 9,750.00	\$ 397,500.00
	Rehab existing structures (dock)	\$ 150,000.00		\$ 150,000.00
	Docks	\$ 20,000.00		\$ 20,000.00
	Trails and Boardwalks	\$ 40,000.00	\$ 2,000.00	\$ 60,000.00
1.3 Park Administration	Boundary Demarcation	\$ 55,000.00		\$ 55,000.00
	Computers and Office Supplies	\$ 4,000.00	\$ 10,000.00	\$ 104,000.00
	Signage	\$ 99,000.00	\$ 6,400.00	\$ 163,000.00
	Mooring Buoys	\$ 63,000.00		\$ 63,000.00
1.4 Major Equipment	Supplies and Equipment		\$ 19,000.00	\$ 190,000.00
	Vehicles	\$ 70,000.00	\$ 140,000.00	\$ 1,470,000.00
	2 Boats (outfitted) and trailers	\$ 120,000.00	\$ 30,000.00	\$ 420,000.00
1.5 Sustainable Finance	Develop finance plan	\$ 7,000.00		\$ 7,000.00
TOTAL		\$ 928,000.00	\$ 397,150.00	\$ 4,899,500.00

2. NATURAL RESOURCES				
Program	Actions	Initial Non-recurring Costs	Annual Costs	Total 10-year Life Cycle Costs
2.1 Fish and Wildlife	Establish baseline info. and distribution of fishing in park	\$ 10,000.00	\$ 2,000.00	\$ 30,000.00
	Develop a reporting system with fishermen and guides	\$ 1,500.00		\$ 1,500.00
	Coordinate fisheries management w/Enforcement Agencies, local fishermen and guides	\$ 3,000.00	\$ 500.00	\$ 8,000.00
TOTAL		\$ 14,500.00	\$ 2,500.00	\$ 39,500.00
3. CULTURAL RESOURCES				
Program	Actions	Initial Non-recurring Costs	Annual Costs	Total 10-year Life Cycle Costs
3.1 Archeological and Historic Resources	Columbus' Landing: Assess access to and demarcation of probable site of landing.	TBD		
3.2 Oral History	Record and archive interviews	\$ 1,000.00	\$ 500.00	\$ 6,000.00
TOTAL		\$ 1,000.00	\$ 500.00	\$ 6,000.00

4. COMMUNITY OUTREACH				
Program	Actions	Initial Non-recurring Costs	Annual Costs	Total 10-year Life Cycle Costs
4.1 Community Awareness & Education	Marketing, brochures, developing tours		\$ 25,000.00	\$ 250,000.00
	Hold periodic, scheduled meetings with community residents		\$ 2,500.00	\$ 25,000.00
	Publish park information for local people and visitors	\$ 2,000.00	\$ 500.00	\$ 7,000.00
	Arrange presentations, displays, and events with school and community organizations	\$ 4,000.00	\$ 2,500.00	\$ 29,000.00
	Engage and organize local volunteers in park projects	\$ 4,000.00	\$ 500.00	\$ 9,000.00
	Education Centre			
TOTAL		\$ 10,000.00	\$ 31,000.00	\$ 320,000.00

5. TOURISM AND RECREATION				
Program	Actions	Initial Non-recurring Costs	Annual Costs	Total 10-year Life Cycle Costs
5.1 Visitor Awareness and Interpretation	Establish and maintain interactive website for San Salvador National Park	\$ 4,000.00	\$ 500.00	\$ 9,000.00
	Provide park information at access points and tourist accommodations	\$ 4,000.00	\$ 1,000.00	\$ 14,000.00
	Collaborate with tourist service providers			
	Partner (consider concession contracts) with tour operators to assure quality service			
	Draft Interpretive Plan on approved interpretive themes	\$ 5,000.00		\$ 5,000.00
5.2 Visitor Services & Facilities	Working with local land owners develop signage, docks, sanitary facilities and parking space at park access points	\$ 10,000.00	\$ 2,000.00	\$ 30,000.00
5.3 Visitor Safety	Draft Emergency Services plan	\$ 5,000.00		\$ 5,000.00
TOTAL		\$ 28,000.00	\$ 3,500.00	\$ 63,000.00
GRAND TOTAL		\$ 981,500.00	\$ 434,650.00	\$ 5,328,000.00

APPENDIX F: GLOSSARY

A large number of words are used for different kinds of protected areas, which can cause confusion. Below is a definition of the most common terms.

Benthic

Of or per pertaining to the bottom of the sea, or ocean.

Biodiversity

The entire variety of life on this planet.

Biogeographic

The geographical distribution of animals and plants.

Buffer zone

A neutral area separating conflicting forces.

Bylaw

A rule made by the Bahamas National Trust to regulate activities in national parks and protected areas.

Conservation

The preservation and protection of the environment and the wise use of natural resources.

Consumptive use, Non-consumptive use

Consumptive use of an area means that activities take place there that involve removing living or non-living things from the area. This would include all kinds of fishing except catch-and-release, collecting conch, land crabbing, hunting, forestry, etc. Non-consumptive use involves activities that do not remove anything from the area, such as diving and snorkeling, catch-and-release fishing, bird watching and most forms of ecotourism.

Compatible development

This is a critical element of protection within any park. It means that any development within OR near the park boundaries must be compatible with the objectives of the park (i.e., compatible with conserving the environment in a pristine condition). It must also be compatible with existing uses of the park (ecotourism, bonefishing, crabbing, etc.). This means not only ensuring that development keeps to the highest environmental standards, but also (critical for ecotourism) that the perception of San Salvador as an unspoiled island can be maintained. It also depends on the location of the proposed development, for example, new development close by areas that are already developed is preferable to development in untouched areas.

The environmental compatibility of a proposed development will depend on:

- ◆ Site of development: near existing developments or urban areas or in the wilderness, near critical habitat areas or particularly sensitive areas, inside or near the boundaries of a park or protected area
- ◆ Size and scale of development
- ◆ Size and scale of associated infrastructure such as access roads, power lines, freshwater supply, docks and jetties, etc.
- ◆ Habitat lost, fragmented or changed

- ◆ Construction related issues (pollution, siltation, land clearance, noise, fumes, etc.)
- ◆ Operation related issues (waste water treatment, waste disposal, disturbance of natural areas)
- ◆ Resources consumed both during construction and during operation (water, power, etc.)
- ◆ Activities associated with the development (watersports, fishing, etc.)
- ◆ Visual impact of development
- ◆ Disruption to existing activities such as ecotourism and fishing.

Coppice

Thick stand or dense forest of mixed broad-leaved trees.

Critical habitat

Living areas that are crucial for a species survival.

Ecology

Study of the relationships between organisms and their environment.

Ecotourism

Nature-based tourism which involves education and interpretation of the natural environment and is managed to be ecologically sustainable.

Endangered

A plant or animal species which is in danger of extinction throughout all or a significant portion of its range because its habitat is threatened with destruction, drastic modification, severe curtailment, or because of overexploitation.

Endemic

Native or confined naturally to a very restricted geographic area or region.

Extinct

A species of plant or animal that is no longer living.

Fringing reef

A coral reef consisting of a sea-level flat built out from the shore of an island or continent.

Genetic diversity

A characteristic of ecosystems and gene pools that describes an attribute which is commonly held to be advantageous for survival.

Gene pool

The genetic information of a population of interbreeding organisms.

Geographic Information System (GIS)

An organized collection of computer hardware, software, geographic data and personnel designed to efficiently capture, store, update, manipulate, analyse and display all forms of geographically referenced information that can be drawn from different sources both statistical and mapped.

Hypersaline

Used to describe waters of greater salinity (>35-37ppt) than typical seawater.

Intertidal

The coastal zone measuring from the lowest to the highest mark.

Marine

Of or relating to the sea.

Mooring

A rope, cable, or chain secured at the seabed with a float at the surface, used to secure a vessel from drifting away.

Participatory

A process involving/providing the opportunity for an individual person to participate in management.

Productive

Producing something abundantly and efficiently.

Replenishment zone, No-take zone

Marine areas where no fishing or other consumptive uses are permitted. They include areas where exploited species such as grouper and crawfish can be allowed to recover and increase numbers in surrounding areas. An entire marine park may be a replenishment zone, or it may be a smaller area within a park.

Saline

Consisting of or containing salt.

Sedimentation

The settling out of any solid material from a state of suspension in liquid.

Substrate

The base on which an organism lives.

Spawn

To produce young especially in large numbers.

Scientific monitoring zone

In this proposal, this is used to mean an area set aside for scientific work, where no consumptive or non-consumptive uses are permitted.

Terrestrial

Living on land, as opposed to marine or aquatic.

APPENDIX G: COMMUNITY PARTICIPATION AND INPUT

2013-2014 Community Meetings

The management planning process for the five San Salvador National Parks was initiated in 2013, under the Critical Ecosystem Partnership Fund (CEPF) project entitled San Salvador Island: Designation of Key Biodiversity Areas, Graham's Harbour and Great Lakes, as National Parks in The Bahamas. This process was a significant step in addressing the many concerns of resource users regarding the management prescriptions and regulations, prior to formal designations for the new national parks, which followed in April 2015. A series of meetings were held between April 2013 and November 2014, affording for the participation of key stakeholders in the decision making process, where rules and regulations were identified to protect park values, while allowing visitor use. Approximately 120 community members and key stakeholders from eight (8) local communities participated in four (4) meetings, held in the settlements of Cockburn Town and United Estates.

2017 Community Meeting

The Bahamas National Trust in partnership with The Nature Conservancy and the Bahamas Reef Environment Educational Foundation (BREEF) under the Oceans 5 funded project entitled Bahamas Protected: Realizing the 2020 Goal to Effectively Manage & Expand Bahamian Marine Protected Areas, concluded the management planning process. In July 2017, BNT in conjunction with the San Salvador Living Jewels Foundation hosted a community meeting with thirty (30) participants, to review key elements of the management plan. Focus was specifically given to the management strategies and park rules and regulation, that will govern the five (5) national parks.

Local stakeholders provided substantial input to the development of the management plan for the San Salvador National Parks during the course of developing the management plan. A summary of their comments are found below.

- ◆ Pigeon Creek being the only tidal creek on the island, should be a fisheries replenishment area (no-take zone), however catch-and-release fly-fishing should be allowed and managed under a permitting process.
- ◆ Particular restrictions on tilting of boat engines, weight limits, and vessel size should be considered for sensitive areas i.e. Pigeon Creek.
- ◆ Spearfishing should be allowed as per the existing Fisheries Legislation, which states that spearfishing is prohibited within 200 yards from shore (for all island except New Providence and the south-side of Grand Bahama, where spearfishing limits is 1-mile).
- ◆ Institute mandatory fees for commercial diving in the marine parks.
- ◆ No traps or pots should be deployed less than 50ft from dive sites.
- ◆ Jet ski use in Pigeon Creek is an issue, where some locals are against it and others want to run jet ski tours in the creek.
- ◆ Western winds cause this site (Pigeon Creek) to become the only access point to the eastern side of San Salvador.
- ◆ Hand line fishing from the coast/shore for lane snapper should be allowed (brought up when community members considered western winds and poor weather). Line fishing is the most sustainable and easiest to manage.
- ◆ Establish a buffer zone around sensitive areas and dive sites, i.e. 100ft.

- ◆ Access to offshore cays should be restricted, and only allowed under a research permit. This will ensure the cays that are critical to the survival of seabirds and the endemic San Salvador rock iguana are effectively managed.
- ◆ Train local tour guides and issue special permits to allow them to gain access to Green Cay with their guests/clients. This will
- ◆ Restrict access to certain cays during the active and nesting bird season.
- ◆ Investigate iguanas returning to Low Cay.
- ◆ Increase enforcement during the Nassau grouper closed season (1st Dec – 28th Feb), as there are several grouper spawning sites around San Salvador.
- ◆ Locals, tourist, and fishermen from other islands need more education and awareness about the San Salvador National Parks, especially on the park significance and park regulations.
- ◆ There is a strong need for collaboration amongst local enforcement agencies, to increase capacity for patrolling the Marine Parks on San Salvador.
- ◆ There is a major issue with fishermen from other Bahamian islands practicing unsustainable fishing practices, especially on the dive sites.
- ◆ Tour guides are harassing sea turtles as part of their tours with guests.

ACKNOWLEDGMENTS

The Management Plan for the San Salvador National Parks was accomplished through collaborative efforts between the Bahamas National Trust and the San Salvador Living Jewels Foundation, with support from Global Parks. Funding was provided by the Critical Ecosystem Partnership Fund under the project “San Salvador Island: Designation of Key Biodiversity Areas, Graham’s Harbour and Great Lakes, as National Parks in The Bahamas”, and from Oceans 5 through The Nature Conservancy under the “Bahamas Protected” project.

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