THE BAHAMAS NATIONAL WETLANDS POLICY

Prepared by The BEST Commission
National Wetlands Committee

TABLE OF CONTENTS

FOREWORD 1

Development of the National Wetlands Policy of the Government of The Bahamas

1. INTRODUCTION 2
   a. What are wetlands?
      i. Definition
      ii. Functions of Wetlands
   b. Threats to Bahamian wetlands
   c. Economic Potential and Consequences of Wetland Loss
   d. Hurricanes

2. POLICY 5
   a. Why Is a Wetland Policy Needed?
   b. Purpose for the Policy
   c. Goal
   d. Objectives
   e. Guiding Principles
   f. Partnership and Cooperation

3. STRATEGIES 8
   a. Managing the Wetlands
      i. Classification
      ii. Duty of Landowners in Respect to Use of Wetlands
      iii. Restoration and rehabilitation
      iv. Monitoring
   b. Policies and Delivering Programmes 11
      i. Guidelines for Environmental Impact Assessments
      ii. Education, Public Awareness and Training Programme
      iii. Management Programme for Publicly-Owned Wetlands
      iv. Looking at Wetlands to Assist in Stormwater Management
   c. Involving the Bahamian People in Wetlands Management 13
   d. Working in Partnership with Local Government
   e. Ensuring a Sound Scientific Basis for Policy and Management
   f. International Actions

4. LEGISLATION 15
   a. Bahamian Laws
   b. International Conventions

5. IMPLEMENTATION OF THE POLICY 17

ANNEXES

ANNEX A: Guidelines for Environmental Impact Assessments A-1
ANNEX B: A Summary of the National Parks Regulations A-8
ANNEX C: List of “Protected Parks” A-10
ANNEX D: Definitions A-11

FOREWORD

DEVELOPMENT OF THE NATIONAL WETLANDS POLICY OF THE GOVERNMENT OF THE BAHAMAS

On June 7, 1997 The Bahamas signed the Ramsar Convention on Wetlands. Earlier in 1971, in the city of Ramsar Iran, a global agreement was reached when countries around the world recognized that globally wetlands were disappearing at an alarming rate. This loss was being felt in the areas of declining freshwater resources, declining fisheries, increasing flood episodes, and declining water fowl populations. Due to this intergovernmental treaty, a framework was established for national action and international cooperation for the conservation and wise use of wetlands and their resources worldwide. There are presently 146 Contracting Parties to the Convention, with 1429 wetland sites of which The Bahamas' Inagua National Park (Lake Rosa) is included.

In The Bahamas the administrative authority for the implementation of the Ramsar Convention is The BEST Commission and it is through its global obligations and in the national interest that the government pursued the development of a National Wetlands Policy. One unique approach to wetlands management within the convention is the concept of “Wise-Use”.

The Convention defines ‘wise use’ as:

> *Sustainable utilization [of wetlands] for the benefit of humankind in a way compatible with the maintenance of the natural properties of the ecosystem.*

The National Wetlands Policy of the Government of The Bahamas contains a goal, objectives and a number of guiding principles. These provide specific direction for the Government's actions that directly or indirectly affect wetlands. The objectives and principles recognize the national importance of wetlands and will serve to ensure that there is a consistent approach to wetlands management by all organizations with responsibilities in this area.

The National Wetlands Committee commenced public consultations in August, 2004. For an eight-month period, public meetings were held on the islands of Eleuthera, San Salvador, Mayaguana, Central and South Andros, Long Island, Grand Bahama and in New Providence. Based on input from the public meetings, stakeholder group meetings and input from Local Government and Central Government, a policy was drafted and circulated for comment before final submission to Cabinet for endorsement.

1. INTRODUCTION

WHAT ARE WETLANDS?

Definition

According to the Ramsar Convention, the term "wetlands" is defined as: *'areas of marsh, fen, peatland or water, whether natural or artificial, permanent or temporary, with water that is static or flowing, fresh, brackish or salt, including areas of marine water the depth of which at low tide does not exceed six meters"* including areas which *"may incorporate riparian and coastal zones adjacent to the wetlands, and islands or bodies of marine water deeper than six meters at low tide lying within the wetlands"*.

Wetlands mainly occur in transitional areas between terrestrial and aquatic systems. The associated aquatic systems may be tidal or nontidal, and may be freshwater, brackish, or marine systems. Wetlands may also occur in upland areas and areas unassociated with any open surface water bodies or aquatic systems. Areas not associated with aquatic systems may exhibit the characteristics listed above due to the flow of groundwater to surface, the presence of groundwater at the surface, the presence of groundwater near the surface, or the influx of precipitation. In addition to freshwater wetlands, there are coastal wetlands, brackish or salt, tidal creeks, blue holes and coral reefs.

Areas not directly associated with the marine environment that exhibit the characteristics listed above due to the flow of groundwater to the surface, or from an influx of rainfall, are also defined as wetlands. All wetlands in The Bahamas fit within the Ramsar definition.

Functions of Wetlands

Water is the source of all life as all organisms contain water and depend upon it for survival. Water is crucial for all biodiversity including man. Freshwater wetlands are vital for the provision of potable water and recharge of the aquifers.

- Wetlands are one of the most important eco-systems on Earth due to the vast biodiversity, nutrient rich soils. Wetlands are vital to the survival of a vast array of plants, animals, fish, birds, insects, reptiles and other flora and fauna. Coastal wetlands, including, tidal creeks, and coral reefs sustain most forms of marine life (e.g. grouper, lobster, crabs, etc.), which are important to the economy of The Bahamas.

- Wetlands, including coastal wetlands and tidal creeks, provide natural flood control and coastline protection by absorbing water, trapping sediment and by stabilizing the shoreline.

- Wetlands, because of their importance to birds, animals and fish, provide recreational areas to many and offer the potential for an expanded eco-tourism industry along with educational opportunities.

THREATS TO BAHAMIAN WETLANDS

One of the primary threats to the Bahamian wetlands can be attributed to the lack of awareness. Most residents living near wetland features are unaware of the importance and vital functions that wetlands provide to their community. One of the contributors to this problem is that the benefits provided by wetlands are less obvious and difficult to quantify in economic terms. Historically, wetlands were considered wastelands or swamps. The low topographic relief of these areas in the islands is why wetlands were historically used as dumpsites, and even today some settlements continue this practice.

Development of resorts, housing, businesses, marinas and roads, constantly fragments the wetlands, contributing to the destruction of these precious resources. Each development may bring benefits such as jobs or services, but it also brings the potential for increased flood damage and loss of habitat for fisheries and wildlife if not done in an environmental conscience way.

Traditionally, throughout The Bahamas septic systems are used for sewage treatment. Unfortunately a vast number of them are built improperly or clustered in small areas, resulting in a non-point source of contamination that can potentially seep into the groundwater table, the marine environment and wetlands. Other forms of pollutants are fertilizers and pesticides utilized on farms, which cause agricultural run-off, another non-point source of contamination.

Another threat to wetlands is the introduction of foreign plants and animals to the systems. Foreign species are introduced intentionally and unintentionally through imported garden plants, ship ballast water and even on the hulls of boats and ships.

ECONOMIC POTENTIAL AND CONSEQUENCES OF WETLAND LOSS

Due to the numerous benefits that wetlands provide it is very difficult to place a measure on their economic value or loss. As The Bahamas expands its eco-tourism market, wetlands are utilized for canoeing, birding, nature walks and educational experiences. In 2004, utilizing small areas of wetlands, small business and organizations generated an estimated $30,000 from using the wetlands for recreational purposes on Grand Bahama and Inagua. This figure does not include the estimated $15 million from the Central Andros National Parks, which include several important wetland areas that contribute to the local Andros economy through its lucrative fly-fishing industry.

One of the reasons that the fishing industry has thrived in The Bahamas is because of the vast amount of coastal wetlands that serve as marine nurseries. As a direct result of these nurseries the fishing industry is the third largest industry in the Bahamas, generating millions of dollars annually in exports. The fishing industry currently contributes 1-3% of the Bahamian GDP.

HURRICANES

The Bahamas is no stranger to hurricanes and the damage caused as a result of these storms. Every year the number, frequency and intensity of hurricanes increase along with the destruction of wetlands by man. As the wetlands are degraded or lost, they lose their natural capacity to absorb water, retain sediment and protect the shoreline, increasing the threat of flooding. The Bahamas has seen an increase in the amount of infrastructure damage as a result of construction in and along wetlands and coastal areas. In 2004, the flood and surge damage from hurricanes was calculated to exceed an estimated $500 million. While wetlands will not prevent damage due to hurricane events they do offer a natural means of defense and remediation.

2. POLICY

WHY IS A WETLAND POLICY NEEDED?

In The Bahamas, despite the vital role they play in the ecosystem, wetlands are currently not being given proper consideration when it comes to conservation versus development. Therefore, due to the lack of a national policy decision with respect to wetlands protection, wetlands are being fragmented and lost in the face of growing national development. When faced with the decision of wetland development or protection, communities bear the majority of the cost associated with wetland lost as opposed to the individuals who gain as a result of its development. For this reason public education and awareness, as it relates to the importance and benefits that wetlands offer to communities, should be included in the decision-making process.

At present there is neither Government policy nor legislation that provides comprehensive protection to wetlands. The existing laws for wetlands protection are adhoc and based on a multitude of laws that do not specifically deal with wetlands.
Since every island in The Bahamas has wetlands, it is imperative that a policy be put in place to provide specific mandates for The Bahamas' actions that directly or indirectly affect wetlands.

PURPOSE FOR THE POLICY

The purpose for this document is to have an all encompassing wetland policy which would clearly outline the guidelines and objectives of the Government of The Bahamas for wetlands protection. It aims to provide those responsible for administering the existing laws and regulations related to wetlands with guidelines and a course of procedure to ensure wetlands are managed in a sustainable manner. It will provide a guide for activities which are likely to occur in and around wetlands.

GOAL

The goal of the National Wetlands Policy is to conserve, restore and manage wetlands wisely in conjunction with sustainable development practices.

OBJECTIVES

1. 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.

2. To promote the recognition and integration of wetland functions in resource management and economic development decision-making with regard to sector policies and programs.
3. To 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.
4. To develop a shared vision between all spheres of Government and promote the application of wise-use practices in relation to wetland management and conservation.
5. To meet The Bahamas' commitments, as a signatory to relevant international treaties, in relation to management of the wetlands.

GUIDING PRINCIPLES

The basic principles of wetland management are the following:

- The conservation of wetlands and their basic ecological functions is essential to the environmental and economic well-being of The Bahamas;

- Wetlands in The Bahamas will be managed in a sustainable manner, so that current and future generations of The Bahamas citizens and visitors will be able to benefit from these resources;

- Wetlands management in The Bahamas will embrace the" wise use of wetlands" concept adopted under the Ramsar Convention on Wetlands. This concept includes:

    - “sustainable utilization of wetlands for the benefit of human kind in a way compatible with the maintenance of the natural properties of the ecosystem”; and

    - “human use of wetlands may yield the greatest continuous benefit to present generations while maintaining their potential to meet the needs and aspirations of future generations”.

- An environmental impact assessment (EIA) will be required for all activities in wetlands where such activities are likely to have an adverse impact on the wetlands.

- For wetland conservation and management it is vital that the present attitudes and perceptions of Bahamians regarding wetlands be changed.

PARTNERSHIP AND COOPERATION

The Government of The Bahamas is committed to having its agencies, departments and corporations working cooperatively, in partnership, and to achieve sound wetland management outcomes. The Government has recognized the need to define the roles and responsibilities of the relevant government agencies for the protection, mitigation and wise-use of the wetlands.

The success of this Policy is reliant upon the development of a cooperative partnership approach with all spheres of government, community groups, private landholders and the business sector. Through the Policy, the government can set the framework for working cooperatively with these other players to meet a common goal.

The Ramsar Convention on Wetlands is of international importance, especially as to waterfowl habitats. An important fact that is overlooked is that some of the species that reside in the wetlands are migratory. In an attempt to address this, international partnerships will be sought between the Government of the Bahamas and non-government organizations. Through these partnerships a wider range of resources and expertise can be utilized in dealing with wetlands.

3. STRATEGIES

MANAGING THE WETLANDS

Classification

Wetlands are characterized as: “Protected wetlands”, “Partially Protected wetlands” or subjected to conservation by the local community and “Developed Wetlands”.

A wetland declared “protected” shall be an area of international and national importance because of its biological diversity, ecological importance, landscape, natural heritage or recreational purposes in which the following activities may be allowed only after the granting of a permit:

a. Research;
b. Limited Ecotourism (only includes birding, wildlife viewing and walking); and
c. Restoration or enhancement of the wetland.

The following rules must be observed for “Protected Wetlands”:

a. A minimum 150-ft buffer around the wetland from any permanent structure;
b. No watercrafts are allowed with in the wetlands;
c. No dredging or filling (except for restoration purposes)
d. No dumping; and
e. No construction.

A “partially protected” wetland may be declared as being capable of conservation by the local community and be in areas where persons who have property rights inland may carry out traditional activities, subject to such restrictions as may be imposed by the permitting agency and other relevant government agencies. These wetlands shall be areas where regulated activities may be permitted. Some of those activities are listed:

1. Ecotourism;
2. Research;
3. Restoration or enhancement of the wetlands;
4. Recreational activities such as spot fishing;
5. Maintenance of green spaces;
6. Drainage and/or coastal protection;
7. Commercial exploitation of wetland resources;
8. Construction of transport and communication facilities such as roads, railways, telephone lines; and
9. Construction of benches, boardwalks and jogging trails.

The following rules must be observed for "Partially Protected Wetlands":

a. A 100-ft buffer around the wetland;
b. Limited dredging or in-filling possibilities (require an environmental assessment)
c. Limited use of watercrafts; and

d. No dumping.

A “developed wetland” is a wetland that has already been or will be impacted by development. These wetlands can be modified but the developer will be required to either establish wetlands elsewhere or provide compensation in another form.

No person shall carry out any activity in a wetland without a permit. An application for the use of wetlands may be rejected where impacts are likely to be significant to communities and/or the environment.

It is implied that in any permit issued, the holder thereof shall:

a. Not substantially affect the hydrological and ecological characteristics of the wetland beyond the terms and conditions contained therein;
b. Keep and maintain the margins of the wetlands;
c. The permit is non-transferable;
d. If within a period of one year after the expiration or revocation of the permit under which the intend of the permit was not completed, the holder shall restore the wetland to as near the state it was in immediately before the commencement of the permitted activities, if such a state would prevent impacts to communities or damage to the environment.
e. Any deviation from the conditions of the permit can result in the termination of the project and the permit and a fine levied.

Duty of Land Owners in Respect to Use of Wetlands

Every landowner, occupier or user whose property is adjacent or contiguous with a wetland shall have a duty to prevent the degradation or destruction of the wetland and shall maintain the ecological and other functions of the wetlands within the limits of their boundaries.

Any land owner, occupier or user of land which is adjacent or contiguous with a wetland, which undertakes activities which degrades, damages, negatively impacts, or fails to take actions which will prevent impacts to the wetland based on those activities shall commit an offence that is punishable by a fine that would cover the cost to restore the wetland back to its original state.

Restoration and Rehabilitation

The goal of restoration is to restore an ecosystem structure, composition and natural processes of the wetlands biotic communities and its physical environment to near its natural state. Restoration of the natural functions can be achieved by altering the system, by removing stresses from the system, by excavation, by using vegetation (native species

and avoiding non-native species), dams, dikes, levees, water control structures, substrate seals, and accessory structures (gabions).

The following steps should be followed for restoration and rehabilitation of wetlands:

1. Preserve and protect existing ecosystems (preventive measures are cheaper than reactive measures);
2. Site selection;
3. Develop clear, achievable and measurable goals
    i. Define the problem.
        - Topography, soils, hydrology, etc.
    ii. Identify types of solutions needed
    iii. Develop a strategy and goals for restoration and rehabilitation
    iv. Design for self sustainability
4. Determine feasibility
5. Address ongoing causes of degradation
    i. Identify ongoing stresses
    ii. Eliminate/remediate ongoing stresses
6. Use passive restoration that requires removal or remediation of the stresses on the system, and then the system is monitored for a designated time period to determine if the system has naturally restored itself.
7. Monitor and adapt where changes are necessary.
8. Utilize a skilled and multi-disciplinary team for the projects.

Monitoring

- Short and long-term goals for monitoring of the wetlands are to be established for a reasonable period after any works are complete in or around a wetland which might have an impact.

- Methods and standards for monitoring are to be established for works completed in or around a wetland which might have an impact.

- Partnerships with educational institutes, community groups and non-government organizations for monitoring will be established.

- Information collected on the systems will be developed into a database.

POLICIES AND DELIVERING PROGRAMMES

The following policies, guidelines and programmes shall be implemented to facilitate the management of the wetlands:

- Guidelines for Environmental Impact Assessments
- Education, Public Awareness and Training Programme
- Management Programme for Publicly-Owned Wetlands
- Wetlands Study Programme

Guidelines for Environmental Impact Assessment

An essential part of wise use related to wetlands is to have an established criterion which can be employed in determining whether the impacts associated with a proposed project on wetlands is acceptable and therefore whether the project as proposed is acceptable and meets the further environment, social and cultural development goals of The Bahamas.

Details are outlined in Annex A.

Education, Public Awareness and Training Programme

The following steps should be undertaken to improve public awareness regarding wetlands:

- To develop a National Wetlands Awareness Campaign that will communicate the importance and values of wetlands.
- To promote wetland conservation in the formal educational system.
- To provide the public with information on the sustainable use of wetlands.
- To provide opportunities for the public and community-based organizations to be involved in wetland conservation.
- To provide training and capacity-building within the educational system.

Management Programme for Publicly -Owned Wetlands.

- Encourage actions which enhance and preserve wetland functions on publicly-owned lands.
- To develop guidelines for mitigation of wetland conversions on publicly-owned lands.
- To expand and enhance government policies, programmes and regulations which have a positive effect on wetland conservation.
- To eliminate or reduce government policies, programmes and regulations, which have a negative effect on wetland conservation.

Wetlands Study Programme

- Develop a programme for the educational system to utilize the wetlands for a research and study area.
- Create partnerships with local and international universities to develop study programmes for the wetlands.
- Provide incentives for the private sector to develop and undertake research projects in the wetlands.
- Develop monitoring systems for wetland rehabilitation projects.

Looking at Wetlands to Assist in Stormwater Management

A vital component to the hydrological cycle and a known interface between the surface waters and groundwater, are wetlands. In the context of The Bahamas, wetlands are the vital component between the coastal zone/marine waters and the groundwater reserves. Certain wetland areas naturally have a beneficial role in pollution control, the attenuation of flood peaks, and erosion and sediment control. In addition to these environmental benefits, the social and cultural aspects are also a key component to their protection and artificial development. Due to the decreasing natural areas for groundwater recharge, wetlands along with storm water must therefore be recognized in the management of water resources.

In the context of climate change and gradual rising sea levels, wetlands are the primary defense for the vulnerable groundwater resources. They serve as the transitional areas between the wet (sea/marine water) and dry (land-overlying freshwater resources) environments.

In the Bahamian context, the relationship between groundwater and associated wetlands is still not fully understood or at least adequately documented. Aside from their support of biodiversity, the importance of their point of exchange between groundwater and the atmosphere through precipitation, infiltration, ex-filtration, and evapotranspiration has not successfully been documented. A sustainable approach to the functional roles of wetlands can assist in the reduction of costs associated with both stormwater management and groundwater recharge structures.

Wetland retention and their creation offer a more sustainable approach to flood management. Additionally, the requirement of flood defenses such as walls, culverts, canals, and man-made ponds can be condensed in controlling the impacts of flooding. Wetlands can act as retention areas since surplus water is absorbed and retained by them. Once the storm water being channeled to the wetland area is filtered/ screened, it can then be retained within the wetland for long-term groundwater recharge.

Wetlands for hydrological balance must be explored in The Bahamas. Water managers should make the effort to disclose how a ‘Bahamian wetland’ can assist in the attenuation

of flood peaks, erosion and sediment control, and potential recharge of the Ghyben-Herzberg lens. This will require a detailed analysis of the typical oils and organics (peat) from specific wetland areas, to determine precise composition and retention characteristics. Natural coastal flood protection, and the associated protection of the inland areas (including the freshwater resources) by the wetland should also be emphasized.

INVOLVING THE BAHAMIAN PEOPLE IN WETLANDS MANAGEMENT

Effective ways of involving Bahamians in wetland management:

- Provide incentives for the communities to maintain and upkeep the wetland systems.
- Encourage private eco-tourism companies to enhance the area by adding signage, boardwalks, nature trails, and look-out points, etc.
- Create educational programmes that include tours into the wetlands to make the public more aware of the importance of the wetlands.
- Have meetings with private land-owners that have wetlands and develop a management plan for the use and maintenance of the wetlands.

WORKING IN PARTNERSHIP WITH LOCAL GOVERNMENT

- Establish training sessions for local government representatives to raise awareness and to develop management strategies for the wetlands in their islands.
- Develop measures to strengthen the links between the relevant government agencies.
- Develop programs in conjunction with local governments where such programmes can be hosted by local government.
- To ensure that local government is aware of their vital role in monitoring activities near or in wetlands within their municipal boundaries.
- To allow local government access to all related project plans and permit requirements to facilitate monitoring of wetland activities; to increase compliance and provide additional influence over local wetland management.

ENSURING A SOUND SCIENTIFIC BASIS FOR POLICY AND MANAGEMENT

- Develop standard methods/criteria for:
    - assessing the health of wetlands; and
    - defining the size of the wetlands.

- Develop programmes in conjunction with educational institutions to study aspects of the wetlands that are not well understood; for example, hydrology, nutrient cycling, etc.
- Develop programmes with the private sector and NGO's to study aspects of the wetlands and to lend technical expertise and resources.

INTERNATIONAL ACTIONS

- Maintain partnerships with international donors.
- Encourage foreign investments that adhere to the wetlands policies and sustainable development.
- Develop partnerships with other countries and international non-governmental organizations.
- Develop regional and international programmes that deal with the wise use and sustainability of wetlands.

4. **LEGISLATION**

BAHAMIAN LAWS

Acts relevant to wetlands and waterfowls:

Statue Law

- Volume 1 (Constitution) Chapter 37: Local Government Act
  This legislation allows local government to develop planning boards in some districts to assume the responsibilities of the Town Planning Committee, empowering the local committees to be responsible for local planning matters.

Subsidiary Legislation

- Chapter 248: Wild Animals (Protection)
  The legislation deals with the taking or capturing of wild animals.

- Chapter 249: Wild Birds Protection
  The legislation outlines areas which have been preserved as habitats for wild birds.

- Chapter 255: Town Planning Act
  The legislation deals with zoning of land through subdivisions, zoning orders, issuance of licenses, and approval of applications.

- Chapter 260: Conservation and Protection of The Physical Landscape of The Bahamas
  The legislation deals with the harvesting of protected trees and the filling in of water bodies.

Other Regulations

- National Parks Regulations (Annex B)
  The regulations state the activities that can and cannot occur in the national parks.

INTERNATIONAL CONVENTIONS

1. The Ramsar Convention on Wetlands (Ramsar, Iran, 2 February 1971)
   The Ramsar Convention on Wetlands is an intergovernmental treaty that provides the framework for action and international cooperation for the sustainable use and management of wetlands. The primary focus of the treaty is to curtail the systematic loss of wetlands of international importance. Lake Rosa, in Inagua is the designated Ramsar site for The Bahamas. The Bahamas became a signatory on 7 June 1997.

2. Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) (Washington, DC, 3 March 1973).
   This treaty deals with the regulating of imports and exports of endangered flora and fauna to help prevent over-exploitation of the species. This is carried out through an agreed list of species and through the monitoring and regulating of trade in other species that might become endangered. The Bahamas became a signatory on 20 March 1979.

3. United Nations Convention on the Law of the Sea (Montego Bay, Jamaica, 10 December 1982).
   This convention regulates the seabed by a set of rules agreed upon by the international community. The Bahamas became a signatory on 29 July 1983.

4. Agreement for the Implementation of the Provisions of the United Nations Convention on the Law of the Sea 10 December 1982. (New York, United States, 11 August 1995).
   This agreement deals with the conservation and management of straddling fish stocks and highly migratory fish stocks. The Bahamas became a signatory 16 January 1997.

5. Convention on Biological Diversity (Rio de Janeiro, Brazil, Earth Summit 1992)
   This convention deals with the preservation of biological diversity as it relates to food security, medicines, fresh air and water, shelter and the state of the environment. The Bahamas became a signatory on 2 September 1993.

6. The United Nations Convention to Combat Desertification (Paris, France, 15 October 1994).
   This convention addresses the degradation of land in arid, semi-arid and dry sub-humid areas which is caused mainly by human activities and climatic variations. The Bahamas became a signatory on 10 November 2000.

5. IMPLEMENTATION OF THE POLICY

- Establish national standards and guidelines for assessing the quantity and quality of wetlands in the Bahamas.
- Create maps for the islands indicating the location, size and classification of the wetlands.
- Develop an inventory/database (location, size, state/condition) of the wetlands on each island and classify them according to the policy.
- The inventory list and maps will be distributed to the relevant government agencies and made available to the public.
- Ensure the wetlands of national significance are included in the system of national parks and other protected areas and designated as Environmentally Sensitive Areas.
- Research the ownership rights for the land where the wetlands are located and add this information to the inventory list.
- Private land owners and developments bordering wetlands will be distributed guidelines governing their activities surrounding and in the wetlands.

ANNEX A

GUIDELINES FOR ENVIRONMENTAL IMPACT ASSESSMENTS

Criteria Defining Acceptable Impacts on Wetlands

The following basic criteria will be applied in determining whether the impacts associated with a proposed project on wetlands are acceptable, and therefore whether the project as proposed is acceptable with regard to its impacts on wetlands. Projects must meet all four of these criteria in order to be deemed acceptable. The subsequent sections of this guidance document explain each criterion in more detail, and provide guidance for assessing whether a given project meets each criterion.

Criterion 1:

Projects may not significantly impact or alter unique or sensitive wetland areas. Any project that would be located in or significantly impact or alter a unique or sensitive wetland area is unacceptable.

Criterion 2:

Project impacts must not substantially reduce the capacity a wetland or wetland system to provide key ecological or environmental functions to the associated service area. Where functional capacity can be quantified, substantial reduction is defined as the reduction of the functional capacity of the assessed wetlands to a level of less than 70% of the original functional capacity of these wetlands. Any project that would result in substantial reduction in wetland functional capacity is unacceptable.

Criterion 3:

The value of the project to society must exceed the value of the wetland functions lost due to the impacts of the project. Any project that would cause losses in wetland functions of a greater value than the value of the project to society is unacceptable.

Criterion 4:

The impacts of any project on wetlands must be kept to the absolute minimum feasible, consistent with the viability and objectives of the project. Any project that would needlessly impact wetlands, or that overlooks or forgoes opportunities to avoid or minimize impacts on wetlands, is unacceptable.

Approach for Assessment of Impacts on Wetlands

Determining Whether Wetlands are Unique or Sensitive - Criterion 1

Elaboration of the Criterion

In keeping with The Bahamas' policy of wise use of wetlands, wetlands with certain unique or sensitive characteristics will be protected from any form of development or negative impacts. Unique or sensitive wetlands are wetland areas that:

- constitute a unique biogeophysical or ecological system;
- constitute or contain critical habitat for species of special concern (unique, culturally important, rare, threatened or endangered species);
- support rare or unique plant communities;
- are within or provide critical wetland functions to marine reserve areas, or any other form of protected areas or human communities;
- constitute floodplains, floodways, or flood prone areas;
- receive high public use; or are popular cultural, religious, or recreational areas;
- contain structures or artifacts of historic or archeological significance;
- have been set aside as a green belt, conservation corridor, or other form of protected or natural area by any national or local land use plans or coastal zone management plans.

As this list suggests, wetlands falling into the unique or sensitive category include not only those wetlands with unique biogeophysical characteristics that require preservation, but also wetland areas that are not amenable to development (e.g. flood-prone areas) or in which development is undesirable for sociological or cultural reasons (e.g. areas of high public use or important cultural significance).

In assessing the compliance of a proposed wetland use with Criterion 1, a reasonable and thorough effort must be made to determine whether the subject wetland exhibits any of the characteristics listed in Section 6.1. Sources of information should include: Department of Agriculture (Wildlife Division); Department of Fisheries; Department of Lands and Surveys, The Bahamas National Trust; authorities of the local government with jurisdiction over the wetland area, and members of local communities.

Wetland areas that fall into the unique and sensitive category must be left undisturbed. No project may be located within or cause any discernable impact on these wetland areas. Projects that would do neither of these are in compliance with Criterion 1.

Assessing Whether a Project Substantially Reduces Wetland Functional Capacity – Criterion 2

Elaboration of the Criterion

The objective of Criterion 2 above is to maintain a certain minimal level of wetland function for a given service area. In many cases, the wetland area immediately impacted by a project (the "impacted wetland area, or IWA") is the sole wetland area providing a particular function to the associated service area. Any reduction in the functional capacity within the IWA brings about a direct, equal reduction in functional benefits to the service area. In such cases the reduction in the functional capacity of the IWA itself must be assessed with regard to criterion No. 2 above. If the proposed project would result in a substantial reduction of the functional capacity of the IWA, the project is unacceptable.

Often, however, the IWA is only one of many wetland areas (or only a portion of a larger wetland area) providing the same function to a common service area (for example, where numerous coastal wetland areas provide recruitment populations to a single, large marine system). The full set of wetland areas providing the same function as the IWA to the same service area as the IWA is termed in these guidelines the "cohort wetland area". In such cases, any reduction in functional capacity within in the IWA causes only an incremental change in the provision of that function to the service area, since the capacity of the remainder of the cohort wetland area to provide that function remains unchanged. In such cases it is the reduction in the functional capacity of the *entire cohort wetland area* that must be assessed with regard to criterion No. 2 above. The functional capacity of the IWA may well be substantially reduced, or even eliminated, without substantially reducing the functional capacity of the cohort wetland area.

Note, however, that the substantial reduction measure applies to past and current alterations to the cohort wetland area, as well as to the projected future impacts associated with the proposed project. The baseline functional capacity against which reduction in cohort wetland area functional capacity is measured is the estimated natural functional capacity of the cohort wetland areas prior to any human intervention.

Hence, if the functional capacity of the cohort wetland area has already been substantially reduced from its natural state by past development (e.g., if >30% of the historic wetland area within the cohort wetland area has already been eliminated by filling) then no further reduction in functional capacity can be tolerated within the IWA. In areas where wetlands have already been seriously degraded by past development, new projects that would further impact wetlands are unacceptable.

For purposes of these interim guidelines, assessment of functional capacity will be on a qualitative basis, and will be based largely on scientific judgment. Reduction in functional capacity from the natural baseline, in particular, can not be quantified in the absence of reference baseline data for the various biogeophysical categories of wetlands in The Bahamas. This reference information, and more detailed procedures for quantifying wetland functional capacity and functional capacity loss will be developed as a part of the wetland management program developed pursuant to The Bahamas wetland

policy. For purposes of these interim guidelines, impacts on wetland functional capacity can be assessed in general terms, such as mild, moderate, substantial, or severe.

Steps in Assessing Compliance with Criterion 2

The steps in determining whether a project meets Criterion 2 are as follows:

(a) assess the activities of the proposed project, and identify and describe all activities that would affect wetland areas in any way;

(b) assess the areal extent of each of the proposed projects' effects on wetlands, and delineate the wetland area that will be impacted by the project - i.e., the IWA;

(c) identify the key functions provided by the IWA (refer to Table 1);

(d) for each function, identify and delineate the cohort wetland area;

(e) for each function, assess the extent to which the functional capacity of the cohort area has already been reduced by past and current human activity (i.e., the baseline condition of the cohort area before the proposed project);

(f) for each function, determine what percent of the total cohort area the IWA represents;

(g) for each function, determine the extent to which the proposed project would reduce the functional capacity of the IWA itself;

(h) Determine whether:

- the functional capacity of the cohort area has already been substantially affected by past and current human activity; or
- the incremental loss in functional capacity of the cohort area caused by the impacts of the project on the IWA and resultant loss in functional capacity within the IWA will bring the cohort area to the point that its functional capacity is substantially affected.

(i) if neither of the conditions in (h) is true, the project meets Criterion No. 2.

Assessing Whether the Value of the Project to Society Exceeds the Value of the Wetland Functions Lost Due to the Impacts of the Project – Criterion 3

Elaboration of the Criterion

The objective of Criterion 3 is to prevent wetland development or conversion that constitutes a net, long-term loss to the people of The Bahamas. A quantitative, dollar and cents evaluation is generally not possible since many of the amenities and functions provided by wetlands can not be fully evaluated in dollar terms. The value of these amenities to society, and, therefore, compliance with Criterion 2, are therefore ultimately assessed on the basis of scientific and economic judgment.

However, the value of several of the key functions and amenities provided by wetlands can be roughly estimated. Table 1 indicates the relationship of several key wetland functions to economic goods and services. Estimation of the value of a given wetland area to society generally begins with an estimate of the value of goods and services that are provided by the wetland (Table 1), and is then modified with judgment-based estimates of the value of other amenities provided by the wetland that can not be evaluated in dollar terms.

Steps in Assessing Compliance with Criterion 3

The general steps in assessing whether a proposed project complies with Criterion 3 are as follows:

(a) determine the extent to which the proposed project would reduce the functional capacity of the IWA for its various key functions;

(b) based on Table 1, identify the goods and services lost or reduced in extent as a result of the reduction in functional capacity of the IWA, and the rough level of reduction in these goods and services;

(c) estimate the cost of providing or replacing these goods and services by alternate means;

(d) estimate the value of the development proposed, focusing on those components of the development that rely on or result in wetland conversion or impacts. Where a non-wetland development alternative exists, the value of the proposed wetland development = (value of developed wetland site) - (value of next best alternative site, developed in same manner). Where no non-wetland development alternative exists, the value of the proposed wetland development = (value of developed wetland site) - (cost of development)[1];

(e) Consider the non-quantifiable benefits of wetlands in their undisturbed state (e.g. aesthetic value, biodiversity conservation value, etc);

[1] USACE/WES 1994. *Procedures for Evaluating Wetlands Non-Market Values and Functions.* US Army Corps of Engineers Waterway Experiment Station. Wetlands Research Program Technical Note WG-EV-2.1

Table 1: Relationship of Wetlands Functions to Economic Goods and Services

Functions	Value of Functions	Economic Goods and Services
Detain, remove, and transform contaminants	Maintain surface and groundwater quality	Wastewater treatment/water quality
Detain and remove sediments	Maintain surface water quality	Wastewater treatment/water quality
Provide ecosystem, landscape and global integrity	Maintain ecosystem, landscape, and global processes	Educational/Cultural Habitat
Provide wetland ecosystem structure	Maintain populations of wetland dependent plants and animals species, preserve endangered species, maintain biodiversity, provide dispersal corridors	Fish and wildlife habitat
Provide a setting for cultural activities	Produce food and fiber, provide recreational opportunities, provide education and research opportunities, provide aesthetic enjoyment, preserve archaeological/historic sites	Commercial fisheries; agriculture, timber, peat production; Education/Cultural Habitat
Store surface water	Reduce flood-related damage	Flood control
Reduce the energy level of surface water	Reduce erosion from storms and floodwater	Land development
Recharge groundwater	Maintain pumpable supplies of groundwater	Water supply
Discharge groundwater	Maintain stream and lake water levels	Water supply
Stabilize soils	Reduce erosion of shorelines and stream banks from storms and floods	Land development
Detain, remove, and transform nutrients	Maintain surface and groundwater quality	Wastewater treatment/water quality

Source: USACE/WES 1994

(f) Compare (1), the value of the IWA and its functions without the proposed development, to (2), the value of the wetland-reliant portions of the proposed development. If the latter value exceeds the former, the project is in compliance with Criterion 3.

Determining Whether Impacts to Wetlands Are Kept to the Absolute Minimum Feasible – Criterion 4

Elaboration of the Criterion

The purpose of Criterion 4 is to ensure that every effort is made to conserve wetlands and their functions to the greatest extent possible, consistent with development goals. Where projects have been shown to comply with Criteria 1 through 3, the final consideration is whether any adjustments can be made in the project to minimize its impacts on wetlands. Where any such adjustments or mitigation measures can be identified and are shown to be feasible, they must be adopted in order for the project to be in compliance with Criterion 4.

In many cases mitigation measures or alternative project plans will have been adopted in order to ensure that proposed projects comply with Criteria 1 through 3. However, in assessing compliance with Criterion 4, it is necessary to determine whether any further impact-mitigation measures are available that may not be necessary for compliance with the previous 3 criteria, but that help to minimize impacts on the IWA.

In many cases the feasibility of an impact mitigation measure is based on its cost relative to the value of the proposed development project. Some mitigation measures, while technically feasible, are too costly to be viable. Criterion 4 requires adoption of that every available impact mitigation measure that is feasible and consistent with the viability and objectives of the project. Mitigation measures that would render the project financially nonviable, therefore, are not required under this criterion. Similarly, project mitigation measures or alternatives that would substantially alter the nature of the project or preclude the project from achieving its objectives are also not required.

In assessing compliance with Criterion 4, a reasonable and thorough effort must be undertaken to identify all feasible impact mitigation measures and alternatives, based on international standards and state of the art in wetland impact mitigation and avoidance.

Approach to Assessing Compliance with Criterion 4

Assessment compliance with Criterion 4 consists of two key steps:

(a) identification of any alternatives to the project plan that would still meet the project objectives but would not involve conversion of or impact on wetlands. Where such alternatives can be identified, clear justification must be provided for proceeding with the proposed project plan that involves wetland impacts;

(b) identification of any modifications to the proposed project plan that would reduce the project's impacts on wetlands, and that are readily available, and feasible.

If no feasible alternatives, modifications, or mitigation measures are identifiable, and it can be demonstrated that every available measure has been taken to minimize the proposed project's impacts on the wetlands, then the project is in compliance with Criterion 4.

ANNEX B

A SUMMARY OF THE NATIONAL PARKS REGULATIONS BAHAMAS NATIONAL TRUST

1. These rules may be cited as the rules of the Land and Sea Parks of The Bahamas National Trust and are made under Section 24 of The Bahamas National Trust Act.

2. The bye-laws operate in conjunction with all other laws of The Bahamas

3. The Land and Sea Parks have been designated marine replenishment areas and nurseries for The Bahamas therefore the hunting, trapping, netting, capture, or removal of any fish, turtle, crawfish, conch, whelk, in or form the Parks is prohibited.

4. The destruction, injury or removal of any living or dead plant life, beach sand, coral, sea fan or gorgonian from the Parks is prohibited.

5. The molestation, injury or destruction of any land animal or bird life or the eggs of any animal or bird is prohibited as is the use of nets or snares for the taking or destruction of any animal or bird life in the Parks.

6. Permission may be granted in individual instances for the capture or removal of any designated number of land or sea animals or plants required for valid scientific research. In each instance the scientific institution concerned must obtain a permit from The Bahamas National Trust prior to capture or removal of the specimens.

7. Dumping of any wastes, oil or rubbish either on land or in the sea is prohibited.

8. No person shall injure, deface, or remove any building, structure, sign, ruin, or other artifacts within the Parks.

9. The posting of any sign, placard, advertisement or notice within the Parks is prohibited as is the erection of any building, shed, tent or other structure.

10. No person shall display/use fire or discharge any explosives, firearm or harpoon gun within the Parks.

11. With reference to privately owned property, these bye-laws do not affect the existing rights of any person acting legally by virtue of any estate, right or interest in, over or affecting the land of the Parks.

12. Willful obstruction, disturbance or annoyance of anyone in the proper use of the lands and submarine areas or of any officer of The Bahamas National Trust in the exercise of his or her duties is prohibited.

13. Any person charged with an offence against any of these bye-laws shall be liable on summary conviction to a penalty not exceeding $500 and to the confiscation of any boat, vessel or aircraft and all equipment, stores, provisions or other effects used for the purpose of committing the offence.

ANNEX C

LIST OF "PROTECTED PARKS"

Currently there are 25 National Parks throughout The Bahamas that occupy more than 700,000 acres consisting of marine and terrestrial sites. Below is a partial list of ten national parks.

Name of the Park	Acreage	Comments
Abaco National Park	20,500	- Important bird area - Bahama parrot habitat - 5,000-pine forest
Central Andros National Park	286,080	- Mangroves - Wetland nursery area
Exuma Cays Land and Sea Park	112,640	- First land and sea park in the Caribbean
Harrold & Wilson Pond National Park	250	- Largest rockery on New Providence for certain wetland avian species
Inagua National Park	183,740	- Lake Rosa (the national Ramsar site)
Lucayan National Park	40	- One of the longest-known underwater cave systems in the world
Moriah Harbour Cay National Park	13,440	- Mangroves creek
Rand Nature Center	100	- Habitat for a variety of avian species
The Retreat	11	- one of the largest private collections of palms in the world
Union Creek National Reserve	4,940	- Important sea turtle research site

ANNEX D

DEFINITIONS

CONSERVATION: The wise use and protection of natural resources.

ECOTOURISM: Tourism which involves traveling to relatively undisturbed or uncontaminated natural areas with the specific objective of studying, admiring and enjoying the scenery with its wild plants and animals as well as existing cultural areas.

ENVIRONMENTAL IMPACT ASSESSMENT (EIA): The process by which predictions are made of the environmental consequences of development activity. Its aim is to ensure that potential environmental risks are foreseen and necessary measures to avoid, mitigate or compensate for damage are identified.

MITIGATION: Actions taken during the planning, design, construction, operation and decommissioning of projects or programmes to alleviate potential adverse effects on the ecological character or any natural area over time.

MONITORING: The process of measuring changes in the ecological character or any natural area over time.

PROTECTED AREA: A legally established land or water area under either public or private ownership that is regulated and managed to achieve specific conservation objectives.

REHABILITATION: Actions taken to assist in the recovery of specific ecosystem services in degraded ecosystems or habitats.