

**Draft Policy & Regulation for Mangrove & Coastal
Wetlands Protection**

EXECUTIVE SUMMARY

Wetlands commonly called morass represent less than two percent of Jamaica's total surface area, and occur for the most part in the coastal zone. These areas are among the most biologically productive ecosystems, and play a great part in ensuring coastal stability. Coastal wetlands that support mangrove growth are particularly important as marine nurseries and as sources for the harvesting of shellfish.

In addition to the national significance, government has a wider responsibility to conserve wetlands (especially those which are waterfowl habitats) as a signatory to the Ramsar Convention on Wetlands of International Importance.

Government has adopted the mangrove and coastal wetlands protection policy and regulation in order to promote the management of coastal wetlands to ensure that the many benefits they provide are sustained.

The policy sets the following five goals in support of the overall aim of sustainable use of wetlands:

- (i) Establish the guidelines by which wetlands can be developed in order to ensure their continued existence;
- (ii) Bring to an end all activities carried on in wetlands which cause damage to these resources;
- (iii) Maintain the natural diversity of the animals and plants found in wetlands;
- (iv) Maintain the functions and values of Jamaica's wetland resources;
- (v) Integration of wetland functions in planning and development of other resource sectors such as agriculture, forestry, fisheries, ecotourism, and waste management;

In pursuing the goals of the mangrove and coastal wetlands protection policy, government will be guided by the following established principles:

- (a) Wetlands are an important part of Jamaica's coastal resources and their preservation is a key component of coastal area management.
- (b) Wetlands protection can only be achieved by the combined and coordinated effort of individuals, organisations, and communities having an interest in these areas.
- (c) Improved public awareness of the vital functions of wetlands is necessary to ensure conservation of wetlands.

Twenty five specific policy statements are made on how the goals will be achieved, and general information on Jamaica's wetlands as well as recommended regulatory provisions are annexed.

Specifically the policy seeks to:

- * Provide protection against dredging, filling, and other development;
- * Designate wetlands as protected areas;

- * Protect wetlands from pollution particularly industrial effluent sewage, and sediment;

- * Ensure that all developments planned for wetlands are subject to an Environmental Impact Assessment (EIA);

- * Ensure that traditional uses of wetlands are maintained;

OVERVIEW

Wetlands, commonly called morass are among the most biologically productive of all Caribbean ecosystems. Low lying coastal wetlands that support mangrove growth are particularly important as marine nurseries and as sources for the harvesting of shellfish. The term "Wetlands" refers to a site where plants and animals have become adapted to temporary permanent flooding by saline brackish or fresh water. This document focusses on coastal wetlands and includes permanently or temporary flooded lands with sedge or grass morass, swamp forest or mangroves.

Wetlands represent less than two percent of Jamaica's total surface area, and occur for the most part in the coastal zone.

Awareness of the role played by wetlands in contributing to coastal resource productivity is relatively new, and formerly these areas were regarded as a source of disease, particularly malaria, and a menace to public health. Wetlands destruction was also hastened by draining in an attempt to create agricultural lands particularly for the planting of rice and other moisture-tolerant crops. Extensive marshlands in Jamaica, and elsewhere in the Caribbean, were also drained for crop cultivation including sugar cane.

More recently, the filling of wetlands, particularly coastal wetlands, has resulted from expanding tourism development, as well as from urban growth extending outward from congested central areas.

Marine terminals and warehouses, freeport sites for industry, and residential subdivisions have replaced coastal wetlands, particularly in estuarine locations. The greatest destruction has occurred in the larger estuaries now used for harbor facilities such as along Hunt's Bay and the Kingston waterfront.

Several attempts to convert wetlands to farmlands have been unsuccessful, and housing developments on drained wetlands are regarded as highly vulnerable to the effects of natural disasters.

The net result has been a major depletion of Jamaica's wetlands, and the degradation of other wetlands near urban areas. The management of these areas must be undertaken with urgency in order to ensure that we will continue to benefit from their many uses.

[back to contents](#)

1. FUNCTION AND USES OF WETLANDS

Despite representing less than two percent of Jamaica's total surface area, wetlands perform invaluable ecological functions in their natural state. The role of coastal wetland ecosystems in maintaining shoreline stability and preserving biodiversity is well established. In addition these areas provide direct socio economic benefits, through human exploitation.

1.1 NATURAL FUNCTIONS OF WETLANDS

(i) Shoreline Protection

Coastal wetlands protect the shoreline from erosion by acting as a buffer against wave action as in the case of coastal mangroves.

(ii) Flood Protection

Wetlands reduce the effect of floods on coastal areas by acting as a sponge and slowing down flood waters as in the case of coastal marshlands. In the absence of wetlands the full force of flood waters would cause erosion of river banks, and also kill coral reefs.

(iii) Sediment Trap

Sediment produced by erosion from upland areas settles out when the water flow slows upon entering wetlands. This helps in preventing silting up of rivers, thus preventing flooding of adjoining areas. As a sediment trap, wetlands also protect marine resources such as coral reefs and sea grass beds from being smothered by silt brought down by rivers and streams.

(iv) Wildlife Habitat And Nursery Area

Jamaica's coastal wetlands support a rich indigenous flora, and fauna, with several of the species being endemic. These include, *Grias cauliflora*, the only native representative of the Brazil nut family *Lecythidaceae*, the swamp palm (*Roystonea princeps*), the thatch palm (*Sabal jamaicensis*), and the naseberry bullet (*Manilkara sideroxylon*).

Wetlands support various species of birds, crabs, fish, shrimps, and the American crocodile. The Black River Morass for example has been described as the best area in Jamaica for all water birds, and is known to be the only area where the flamingo still

nests occasionally. Commercially important species using the wetland as a breeding and nursery area include snapper, snook, tarpon, jack, and several species of fresh and brackish water shrimps.

(v) Land Building

Mangrove wetlands are regarded as land builders. Because of their submerged root system, mangroves retard water movement and trap suspended materials and the remains of organisms associated with the mangroves. The accumulation of this organic material contributes to raise the soil level. Continued accumulation of soil, particularly by sea-fringing mangrove stands, builds the shoreline seaward.

1.2 HUMAN EXPLOITATION OF WETLANDS

(i) Timber cutting

Wetland areas provide wood for the making of charcoal, fish pots, and to a lesser extent, racks for oyster farming.

(ii) Fishing/Shrimping

As a habitat for many species of fish and shellfish wetlands are important to Jamaica's fishing industry. The sustainability of Jamaica's fishery is directly dependant upon the habitat provided by wetlands and other coastal systems such as coral reefs. The Black River Lower Morass has traditionally supported an important local shrimp industry.

(iii) Recreation/Tourism

If properly managed, mangrove wetlands can be important in generating ecotourism. Wetlands offer recreational opportunities such as sight-seeing, boating, swimming, and sport fishing. Boat excursions into wetlands is gaining increasing popularity as a tourist attraction.

(iv) Scientific/Educational

Mangrove and coastal wetlands can serve as a living laboratory providing opportunity for education and research concerning the ecological, and possibly medicinal value of various species of plants and animals.

(v) Agriculture/Building

Fringe wetland areas may be used successfully for the cultivation of certain crops eg. sugar-cane, and vegetables. It is possible to do some construction in wetlands provided that it does not result in restriction of water flows.

2.0 ISSUES AFFECTING WETLANDS

The major issues affecting wetlands generally result from a lack of recognition of the wide range of benefits -- ecological, economic and scientific -- which they provide. This

has led to the conversion of large tracts of coastal wetlands, particularly mangrove communities with no attempt to replace these resources at other sites.

The following are among the major issues affecting wetlands:

(i) Pollution

Pollutants directly affecting wetlands include garbage, sewage, industrial waste (mainly from sugar factories), and oil spills. In addition wetlands are subject to the indirect effects of:

- Contamination by substances that are transported by run-off of storm waters in urban areas;
- Non-point source pollution by agro-chemicals, nutrients, and other materials used in agriculture that are released to streams and rivers and eventually into wetland areas;

- Large scale pumping from coastal aquifers which affects the water balance inducing saltwater intrusion;

Mangroves tend to trap and concentrate pollutants. The extent to which various types of pollutants, other than oil and sediments, contribute to mangrove destruction is uncertain. However, it is known that in mangrove-fringed estuaries, pollutants, and/or temperature and salinity changes, tends to upset the delicate balance of microscopic life, drastically altering the entire coastal ecosystem.

(ii) Land reclamation (Draining and filling)

Formerly, swamps were regarded mainly as a source of disease, particularly malaria, and a menace to public health. In an era when malaria posed a major threat, such a policy was clearly in the public interest.

More recently, the spiralling cost of land, and the ever increasing demand for dwelling space, has led to the building of extensive communities on cheaper "dumped up" land as one means of providing affordable housing.

Wetlands destruction has also been caused by draining of land for agriculture. Extensive tracts of wetlands in Jamaica, have been drained for the planting of rice and other moisture-tolerant crops, as well as for the cultivation of sugar cane.

Wetlands destruction has been shown to result in loss of fishery resources eg. in the Hunts Bay/Kingston Harbour system. Wetlands destruction is also known to result in the loss of unique species such as the phosphorescent algae, the source of Falmouth's once famous "Glistening Waters".

(iii) Reduced flood control

The draining of wetlands by widening and deepening of wetland rivers has reduced the value of these areas in slowing the run-off of flood waters. This has resulted in the increase of peak fresh water flows to coastal areas contributing to the die-off of coral reefs.

(iv) Fires

Wetlands are destroyed by fires some of which are spontaneous, while some are deliberately set by humans.

(v) Disruption of wildlife habitat

The operation of recreational (guided) tours in wetlands like those being carried out in the Black River lower morass, can have a disruptive effect on local wildlife if not properly controlled;

3.0 GOVERNMENTS ROLE/RESPONSIBILITY AND RESPONSE

The conservation of wetlands can only be achieved by the combined effort of individuals, communities, and government. Nevertheless government must play a leading role in the proper management of these areas. An understanding of the functions and uses of wetlands, as well as the issues affecting wetlands is necessary in order to ensure the sustainable use of these resources.

Government also has a wider responsibility to conserve wetlands (especially those which are waterfowl habitats) as a signatory to the Ramsar Convention on Wetlands of International Importance.

To fulfill these responsibilities with respect to wetlands conservation, government has stated broad aims, to be achieved by accomplishing certain specific goals. Also presented are the key principles guiding the development of the specific policy strategies.

The mangrove and coastal wetlands protection draft policy and regulation complements other coastal zone management initiatives concerning coral reefs, mariculture, pipelines and conduits, marinas, and protected areas.

The policy supports the Draft "Green Paper" Proposals for a System of Protected Areas which identifies coastal habitats and wetlands as among those resources and areas requiring protection. In addition the policy supports the objectives of the National Environment Policy which include providing for the protection and conservation of plants and animal species, particularly endemic species.

4.0 AIM OF THE POLICY

The aim of this policy is to promote the management of coastal wetlands to ensure that the many benefits they provide are sustained.

5.0 GOALS

This overall aim will be achieved by pursuing the following five goals :

- (i) Establish the guidelines by which wetlands can be developed in order to ensure their continued existence;
- (ii) Bring to an end all activities carried on in wetlands which cause damage to these resources;
- (iii) Maintain the natural diversity of the animals and plants found in wetlands;

- (iv) Maintain the functions and values of Jamaica's wetland resources;
- (v) Integration of wetland functions in planning and development of other resource sectors such as agriculture, forestry, fisheries, ecotourism, and waste management;

6.0 KEY PRINCIPLES

In pursuing the goals of the mangrove and coastal wetlands protection policy, government will be guided by the following well established principles:

- (a) Wetlands are an important part of Jamaica's coastal resources and their preservation is a key component of coastal area management.
- (b) Wetlands protection can only be achieved by the combined and coordinated effort of individuals, organisations, and communities having an interest in these areas.
- (c) Improved public awareness of the vital functions of wetlands is necessary to ensure conservation of wetlands.

7.0 SPECIFIC POLICY STRATEGIES

The stated goals of the policy will be pursued by developing specific strategies to address the main issues and problems affecting Jamaica's wetlands.

7.1 Protection Against Dredging, Filling, and Land Development

Large tracts of coastal wetlands have been drained and filled for agriculture, and urban development. The effect of this on wetland productivity, as well as on the productivity of associated ecosystems has been well documented noticeable.

Strategy

- (i) Any activities which alter the surface hydrology, drainage, tidal ebb and flow or any activities affecting the vegetation, topography, or soil characteristics of coastal wetlands shall be prohibited except by permit certified jointly by NRCA and the local Planning Authority.
- (ii) Issuance of a permit shall be contingent upon the preparation by the applicant of a mitigation plan approved by the permitting authority.

Explanation: Activities subject to regulation include dredging, excavating or removing soil, silt or sand, flora, fauna or any type of aggregate from coastal wetlands; the filling or depositing of dredged material, marl, aggregates or any type of sewage sludge, garbage or solid waste either directly or indirectly in any coastal wetlands; materially affecting mangrove or other wetlands flora or fauna; or the construction of any structure which directly or indirectly affects the quality or quantity of surface and/or ground water in wetlands.

7.2 Special Protection Status

Presently there is no specific legislation or mechanism which protects wetlands from indiscriminate and inappropriate exploitation.

Strategy

- (i) All mangrove and coastal wetlands in Jamaica are deemed to be of national interest and are to be accorded protected status.
- (ii) An island-wide wetland management plan designating priority areas for which site specific management and operational plans shall be prepared NRCA.
- (iii) Site specific management and operational plans shall be prepared by NRCA jointly with local planning authorities and environmental NGOs.

Explanation: The Government of Jamaica has limited resources available for mangrove protection and management, and so it is necessary to concentrate those resources on mangrove wetlands that are deemed to be of priority concern. Although the most important mangrove and coastal wetlands shall be designated as priority protected areas, other mangrove and coastal wetland ecosystems are of sufficient importance to warrant protection against avoidable destruction or degradation.

7.3 Minimizing Sedimentation from Construction Activities

Significant sediment loads are transported to wetland areas in gullies, rivers and streams, particularly during periods of heavy rain.

Strategy

- (i) Mangrove and coastal wetlands will be protected from excessive sediment flow from uplands by imposing protective conditions on construction projects.
- (ii) All development on sites of two or more acres must follow prescribed conditions for controlling and minimizing erosion and sedimentation.
- (iii) Periodic monitoring at the building site during construction will be carried out to ensure that prescribed controls and conditions are not ignored.

Explanation: NRCA can protect some mangrove and coastal wetlands from excessive uplands sediment flow by imposing protective conditions during construction. In the past, controls often recommended in the review of environmental impact statements are frequently ignored during construction.

7.4 Effluent Discharge

Wetlands receive industrial waste waters and sewage directly and indirectly. Some effluent discharges have been occurring for several decades. There are distinct signs that the environment is being overloaded by these discharges.

Strategy:

(i) No part of a surface or subsurface sewage system including septic tanks, tile fields, soak-aways, settling basins or lagoons can be located within 150 feet of a mangrove ecosystem or coastal wetland.

(ii) The use of dry toilets will be encouraged as well as small scale community systems that provide for maximum removal of nutrients.

(iii) Discharge standards for industrial effluent will be developed to ensure that assimilative capacity of the environment is not exceeded.

Explanation: Mangrove and coastal wetlands are important habitat for fish and shellfish, so it is essential that sewage and industrial waste inflow into these areas be reduced to the absolute minimum. In the case of preexisting development, measures will be taken to provide technical assistance and other support to mitigate conditions that result in nutrient enrichment in wetlands and near shore coastal waters.

7.5 Innovative Strategies To Protect Wetlands

The providing of incentives can have a positive influence on wetlands conservation.

Strategy

(i) Financial/Tax incentives will, be provided to private individuals and developers who undertake programs or activities which are deemed to significantly restore, enhance or create wetlands.

Explanation: These measures shall include, but not be limited to: reduced land or other taxes, building bonuses, technical assistance, reduced fees and charges.

7.6 Public Ownership and Custody

Several agencies of the Government, through the Commissioner of Lands (including the Ministry of Agriculture, the Urban Development Corporation, and the PCJ) own or exercise custody over significant mangrove and coastal wetland holdings that are of strategic importance to long-term sustainable development. It is important that these resources be protected bearing in mind the development mandate of these agencies.

Strategies

(i) Wetlands controlled by government agencies are deemed to be public trust holdings that can not be alienated except through Cabinet decision following public hearings in the affected parishes.

(ii) Activities conducted by any agency of the Government of Jamaica involving significant alteration and/or any action involving the transfer of ownership or custody of Crown owned mangrove or coastal wetlands must be reviewed and certified by NRCA as being consistent with national mangrove and wetlands protection policy.

Explanation: An activity is considered to result in significant alteration of a wetland if it affects either habitat, vegetation or hydrology.

7.7 Development in Coastal High Hazard Areas

Construction in coastal high hazard areas, including coastal wetlands, increases the risk of property damage and personal injury.

Strategy:

(i) Hazard mitigation techniques shall be incorporated in the site plan and structural design of developments approved for wetlands and/or adjacent areas.

7.8 Environmental Impact Assessment And Monitoring

Development activities can have a negative effect on the environment. Assessment of such impacts as a part of the planning process can minimize the social and economic costs by preventing damage. This compares to the more expensive alternative of taking corrective action after carrying out the development, or restoring degraded wetland areas.

Strategy

(i) All proposed modifications, and restoration of wetlands will be subject to an Environmental Impact Assessment (EIA) the result of which will determine whether the proposed action takes place and if so, to what extent.

(ii) All new development projects planned for wetlands, or adjacent to wetlands will be subject to an EIA to determine the kind of controls necessary.

(iii) Projects subject to an EIA will be monitored periodically after implementation to assess actual impact, and make a determination as to the continuance of the development.

Explanation: An EIA is a technical document used as the basis for determining the legally binding environmental management measures to be included into a development plan. The EIA is now recognized as an essential tool in achieving sustainable development.

7.9 Improving Public Awareness

Increasing understanding of the benefits derived from wetlands, will contribute to a change in attitude towards these areas which continue to be regarded as wastelands by most individuals.

Strategy

- (i) Design and implement a National Public Awareness programme on the values and benefits derived from wetlands, focusing on wetland users, and adjacent communities.
- (ii) Integrate public awareness campaign on wetlands with awareness programmes which target users of other resources.

- (iii) Multimedia dissemination of information on the importance of wetlands.

- (iv) Ensure wide distribution of development guidelines, and regulations for wetland developers.

- (v) Develop and implement pilot demonstration project aimed at improving the management capability of local communities.