

DRAFT
OCHO RIOS MARINE PARK
PROTECTED AREA ZONING PLAN
2015-2020



Prepared by
National Environment and Planning Agency

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10 Caledonia Avenue
Kingston 5
Jamaica W.I.

Telephone: 1-876-7547540
Fax: 1-876-7547596
E-mail: pubed@nepa.gov.jm
Website: www.nepa.gov.jm

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The Community

Fishing interests and representatives from the following areas:

Mammee Bay

Sailor Hole

Ocho Rios

White River

Watersports Operators within Ocho Rios and its environs

Members of the Jamaica Hotel and Tourist Association

Government of Jamaica

Fisheries Division

Jamaica Constabulary Force, Marine Division

Port Authority of Jamaica

St. Ann Parish Council

Tourism Product Development Company Limited

Urban Development Corporation

List of Acronyms

BCA	Beach Control Act
EMB	Ecosystems Management Branch
MPA	Marine Protected Area
NEPA	National Environment and Planning Agency
NGO	Non-government Organization
ORMPPA	Ocho Rios Marine Park Protected Area

Executive Summary

Introduction

The Ocho Rios Marine Park Protected Area (ORMPPA) includes the area of approximately 2km² which was declared a protected area in 1966 under the Beach Control Act and designated a protected area under section 5(b)(1) of the Natural Resources Conservation Authority (NRCA) Act (16 August 1999). The ORMPPA covers approximately 133km² (13,385ha), and 13.5km of coastline between Mammee Bay in St. Ann and Frankfurt Point in St. Mary.

The marine resources within the ORMPPA support a range of commercial and recreational activities and competing resource users. Although ORMPPA was designated a protected area on 16 August 1999 under section 5(b) (1), a zoning plan (whilst developed) was never promulgated. This zoning plan will therefore seek to address the existing and potential user conflicts, as well as, facilitate the protection of sensitive habitats and species to support the management strategy for the ORMPPA.

The zoning plan was developed based on the results of scientific research has undergone a series of consultations and targeted activities with both governmental and non-governmental stakeholders as well as individual members of the user community. The zoning plan provides the framework for the management of uses within the ORMPPA over a five-year period (2015-2020), after which it will be revised based on recommendations arising from research, monitoring and evaluation activities.

The Purpose of Zoning Marine Protected Areas

Zoning is a system in which specific geographic areas within a protected area are classified according to its preservation requirements, and its ability to sustain certain human activities, by providing guidance as to what can and cannot occur within sections of the protected area with respect to its natural resources management, cultural resource management, human use and benefit, visitor use and experience, access, facilities and protected area development, maintenance and operations (NEPA, 2010).

Marine Protected Areas (MPAs) are “common property”, as the resources belong to the state. However, if these activities are not managed sustainably this “free access” of users can exceed the carrying capacity of the resources in the area. Zoning is one method used by managers to protect the natural resources within a MPA, as well as, reduce the user conflicts to ensure that the various users groups are able to benefit from the resources in a sustainable way.

Legislative Basis for Zoning the ORMPPA

Section 4(2) c of the NRCA Act, 1991 is the main piece of legislation which provides the basis for the zoning of the ORMPPA by the NRCA. It makes reference to the provision for the zoning of a protected area for specified purposes and for the licensing of persons carrying on any trade or business therein.

Objectives of the ORMPPA Zoning Plan

The objectives for zoning for MPAs are dependent on the characteristics and uses of the area. Within the ORMPPA the two main objectives of zoning are to 1) ensure the sustainable use of its natural resources, and 2) reduce the user conflicts while allowing all users to enjoy the benefits of the area while complying with the applicable environmental laws and regulations.

These objectives will be achieved by incorporating the following activities outlined in the EMB 2011 report, “Ocho Rios Marine Park: Draft Zoning Recommendations”

1. Regulate fishing, recreational and tourism related activities to ensure adequate space for users, safety of users, and the sustainable use of the resources.
2. Preserve important spawning and nursery areas for fish and establish no fishing zones.
3. Protect critical ecological habitats and restrict human use/access as necessary.
4. Provide a refuge for threatened species such as sea turtles.
5. Maintain industrial transportation/shipping corridors.
6. Regulate multiple uses within the ORMPPA.

Methodology for Developing Zoning Plan

The following are the methods used in determining the zones presented in this plan.

Primary Methods and Resources

- Resource Assessments
 - Marine Assessments
 - Fisheries
 - Water column
 - Coral reefs
 - Seagrasses
 - GIS and Remote sensing
- Stakeholder consultations and User Assessments

Secondary Methods and Resources

A literature review was done of existing documents and legislations pertaining to the area within the ORMPPA, and included:

- The Town and Country Planning (Kingston and Saint Andrew) Provisional Development Order, 2008 (Draft) unpublished.
- Draft Overwater Policy
- The Draft Ocho Rios Marine Park Management Plan by Friends of the Sea (undated).
- Report on the Socio-economic Assessment of the Ocho Rios Protected Area by PAB (2013)
- Socio-economic Valuation Study of the Ocho Rios Marine Park by Environmental Management Unit, University of the West Indies (2001).

The 2015-2020 Zoning Regime for ORMPPA

Arising from the ecological assessments, literature review and consultations, the proposed zones four (4) zones for the ORMPPA are:

1. Conservation Zone
2. No Wake Zone
3. Dive and Snorkel Sites
4. Multiple Use Zone

In addition to the zones to comply with present uses two channels were demarcated which are
 1) Port and Commercial Shipping Channel (designated by the Port Authority of Jamaica) and
 2) Jet Ski Launch Site designates by the Tourism Product Development Company.



FIGURE ES-1: DRAFT ZONING PLAN FOR ORMPPA (2015- 2020)
 (Source: Protected Areas Branch, NEPA 2015)

1. Conservation Zone

Three Conservation Zones were proposed. Conservation Zone A is protected area that was declared under the Beach Control Act in 1966, Conservation Zone B is on the western side of the park and Conservation C on the eastern side, adjacent to Conservation Zone A.

Objective:

1. To provide for the protection, preservation and/or restoration of ecologically significant or sensitive habitats, species.
2. To improve economic opportunities for fishers through the operation of these zones as managed fisheries to improve the viability of the fishery.
3. To increase the resilience of coastal and marine ecosystems to the effects of climate change.
4. To provide pristine/undisturbed environments for research and other educational activities

Box ES-1: User Activities for the Conservation Zone

Allowed

- Activities with environmental footprint that will not adversely impact the functionality of the area's ecosystems and that of adjacent zones.
- Swimming/snorkeling
- Non-motorized watersports
- Motorized vessels/activities (only for management activities and for the purposes of ingress and egress using designated channel)
- Ecological restoration/conservation activities.
- Research/educational activities.
- All activities associated with the NRCA's management of the area.

Not Allowed

- Activities with environmental footprint that will adversely impact the functionality of the area's ecosystems and that of adjacent zones.
- Anchoring and mooring.
- Motorized vessels/activities.
- Fishing/bait collection.
- Feeding of fish.
- Anchoring.
- Removal or disturbance of physical or biological features/specimens or habitats e.g. dune, sand, rock, reef, artifacts, flora and fauna.
- Coastal modifications, construction or maintenance of any encroachment which falls under the beach licensing regime.
- Any activity which contravenes local environmental laws and/or may have a deleterious effect on human safety or the environment.

2. No Wake Zone

The No Wake Zone is found between Rico Chico and Dunn's River Falls. This zone was created to accommodate the current boating activities within the area. It is 20m away from the current swim zone delineated by the operators of Dunn's River, and it is 50m in width, just wide enough for motorized vessels to traverse the area while picking up and dropping off visitors to Dunn's River Falls.

Objective:

To reduce wave action within the Conservation Zone B as the zone is only 20m from the swim zone, as well as to ensure safety of other users operating non-motorized vessels in the Conservation Zone.

Box ES-2: User Activities for the No Wake Zone

Allowed

- Activities with an environmental footprint that will not adversely impact the functionality of the area's ecosystems and that of adjacent zones.
- Motorized vessels/activities (for ingress and egress only, at a speed not exceeding 6 knots).
- Ecological restoration/conservation activities.
- Research/educational activities.
- All activities associated with the NRCA's management of the area.

Not Allowed

- Swimming/snorkeling.
- Non-motorized vessels/activities (with the exception of sail boats/catamarans specifically involved in the transportation of passengers from the Dunn's River dock to other sites).
- Speeds over 6 knots.
- Jet skis.
- Anchoring and mooring
- Fishing/bait collection.
- Feeding of fish.
- Anchoring.
- Removal or disturbance of physical or biological features/specimens or habitats e.g. dune, sand, rock, reef, artifacts, flora and fauna.
- Coastal modifications, construction or maintenance of any encroachment which falls under beach licensing regime.
- Activities with environmental footprint that will adversely impact the functionality of the area's ecosystems and that of adjacent zones.
- Any activity which contravenes local environmental laws and/or may have a deleterious effect on human safety or the environment.

3. Dive and Snorkel Sites

These sites are found within the Conservation Zones or on the perimeter of the zones. They will be marked by a buoy and no motorized vessel should be within 30m of the site if a dive flag is visible.

Objective:

To separate motorized activities from non-motorized activities such as snorkeling and SCUBA diving, as well as, to ensure the safety of these users of the ORMPPA. Also, to give these users the opportunity to enjoy views the marine environment in a fairly undisturbed state.

Box ES-3: User Activities for the Dive and Snorkel Sites

Allowed

- Non-motorized watersports (however not within 50m of a dive flag)
- Motorized vessels (however not at those sites located within the Conservation Zones and not within 50m of a dive flag)
- Diving & Snorkeling
- Swimming
- Activities with environmental footprint that will not adversely impact the functionality of the area's ecosystems and that of adjacent zones.
- Ecological restoration/conservation activities.
- Research/educational activities.
- All activities associated with the NRCA's management of the area.

Not Allowed

- Motorized boats (within 50 m of a dive flag and at Dive sites located within the Conservation Zones)
- Swimming/Snorkeling
- Non-motorized vessels (within 50m of a dive flag)
- Jet Skis
- Anchoring and Mooring
- Feeding of fish
- Fishing/bait collection
- Removal or disturbance of physical or biological features/specimens or habitats, e.g. dune, sand, rock, reef, artifacts, flora, fauna.
- Coastal modifications, construction or maintenance of any encroachment which falls under beach licensing regime
- Activities with environmental footprint that will adversely impact the functionality of the area's ecosystems and that of adjacent zones.
- Any activity which contravenes local environmental laws and/or may have a deleterious effect on human safety or the environment.

4. Multiple-use Zone

The Multiple-use Zone will allow for a range of uses such as fishing as well as recreational boating and all activities with an environmental footprint that will not adversely impact archaeological/heritage resources and the functionality of the area's ecosystems and that of adjacent zones.

Objective:

To allow motorized activities and other activities such as fishing and the operation of jet skis which are not allowed in the Conservation Zones within the ORMPPA.

Box ES-4: User Activities for the Multiple-use Zone

Allowed

- Fishing (except within the Ship Channel)
- Motorized and Non-Motorized vessels and activities
- Activities with environmental footprint that will not adversely impact the functionality of the area's ecosystems and that of adjacent zones.
- Ecological restoration/conservation activities.
- Installation of facilities/structures associated with the management of the area and permitted activities (e.g. anchor pins, mooring buoys, marker buoys, appropriate temporary sanitary and solid waste disposal facilities).
- Research/educational activities.
- Mooring
- Anchoring (except at reef sites)
- All activities associated with the NRCA's management of the area.

Not Allowed

- Jet skis (within Ship Channel and other restricted areas in the Ocho Rios Bay area).
- Fishing within the Ship Channel
- Activities with environmental footprint that will adversely the functionality of the area's ecosystems and that of adjacent zones.
- Removal or disturbance of physical or biological features/specimens or habitats, e.g. dune, sand, reef, rock, artifacts, flora, fauna.
- Anchoring on reefs.
- Coastal modifications, construction or maintenance of any encroachment which falls under beach licensing regime
- Any activity which contravenes local environmental laws and/or is deemed to be a potential threat to human safety or which may have a deleterious effect on the environment e.g. open burning, dumping.

1.0 Introduction

The Ocho Rios Marine Park Protected Area (ORMPPA) was designated a protected area under section 5(b) (1) of the Natural Resources Conservation Authority (NRCA) Act on 16 August 1999. The ORMPPA includes the area of approximately 2km² which was declared a protected area in 1966 under the Beach Control Act (Figure 1). ORMPPA covers approximately 133km² (13,385ha), and 13.5km of coastline between Mammee Bay in St. Ann and Frankfurt Point in St. Mary (Figure 2).

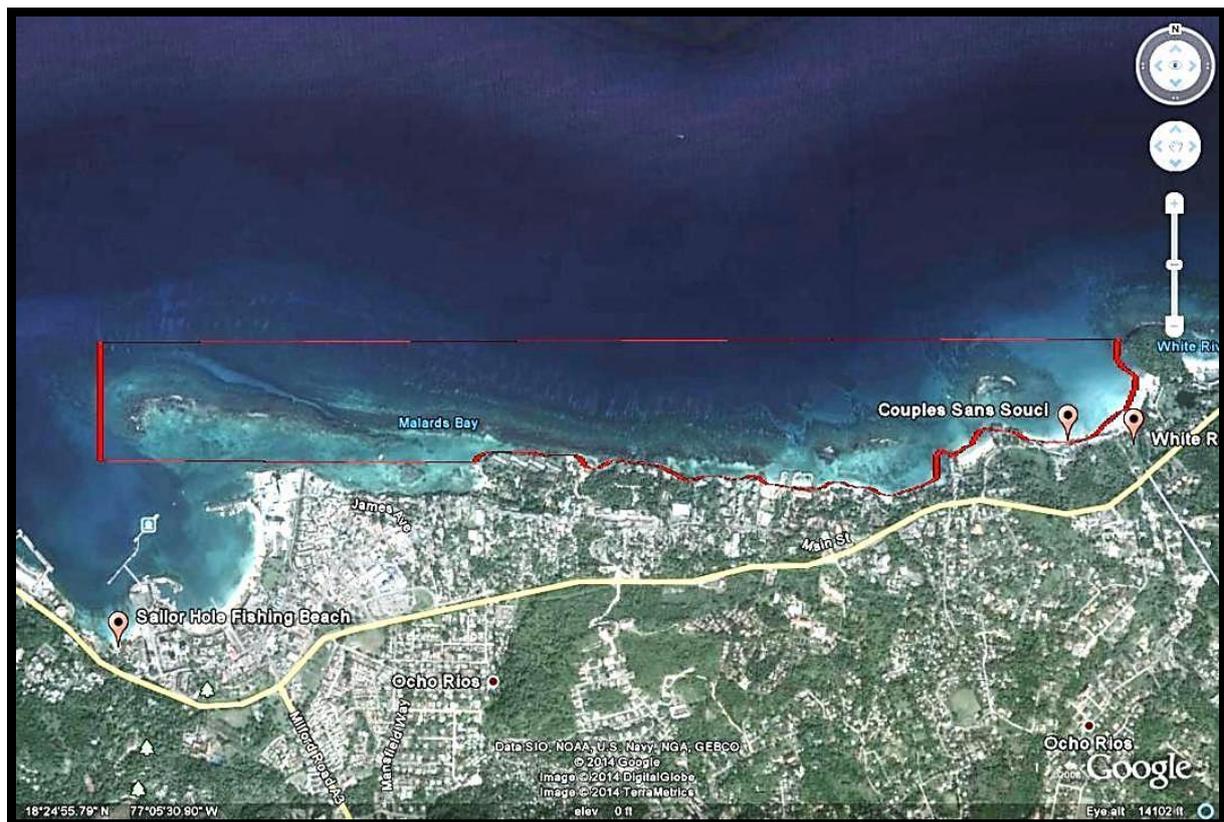


FIGURE 1: OCHO RIOS PROTECTED AREA (SOURCE PROTECTED AREAS BRANCH, 2014)

The coastline of the ORMPPA is characterized by natural and man-made beaches, limestone cliffs, and numerous coastal developments such as the commercial town of Ocho Rios, hotels and villas. Other coastal developments include a cruise ship pier, and the Reynolds Bauxite Pier from which sugar and limestone is exported. The coast rises into limestone hills inhabited by small communities and farm lands, and is the source of the rivers which flow into the ORMPPA including Dunn's River, Turtle River, White River and Roaring River.

The ORMPPA is characterized by fringing reefs, reef flats, and sea grass beds interspersed with mudflats. The marine resources within the ORMPPA support commercial activities such as fishing, shipping, and recreational activities such as water sports, SCUBA diving, and swimming. The key stakeholders within ORMPPA are fishers, watersports operators and hotel/villa owners who cater mainly to the visitors/tourists offering a variety of services which may cause user conflicts. Therefore, the zoning plan will address the existing and

potential user conflicts, as well as, protect sensitive habitats and species to support the management strategy for the ORMPPA.

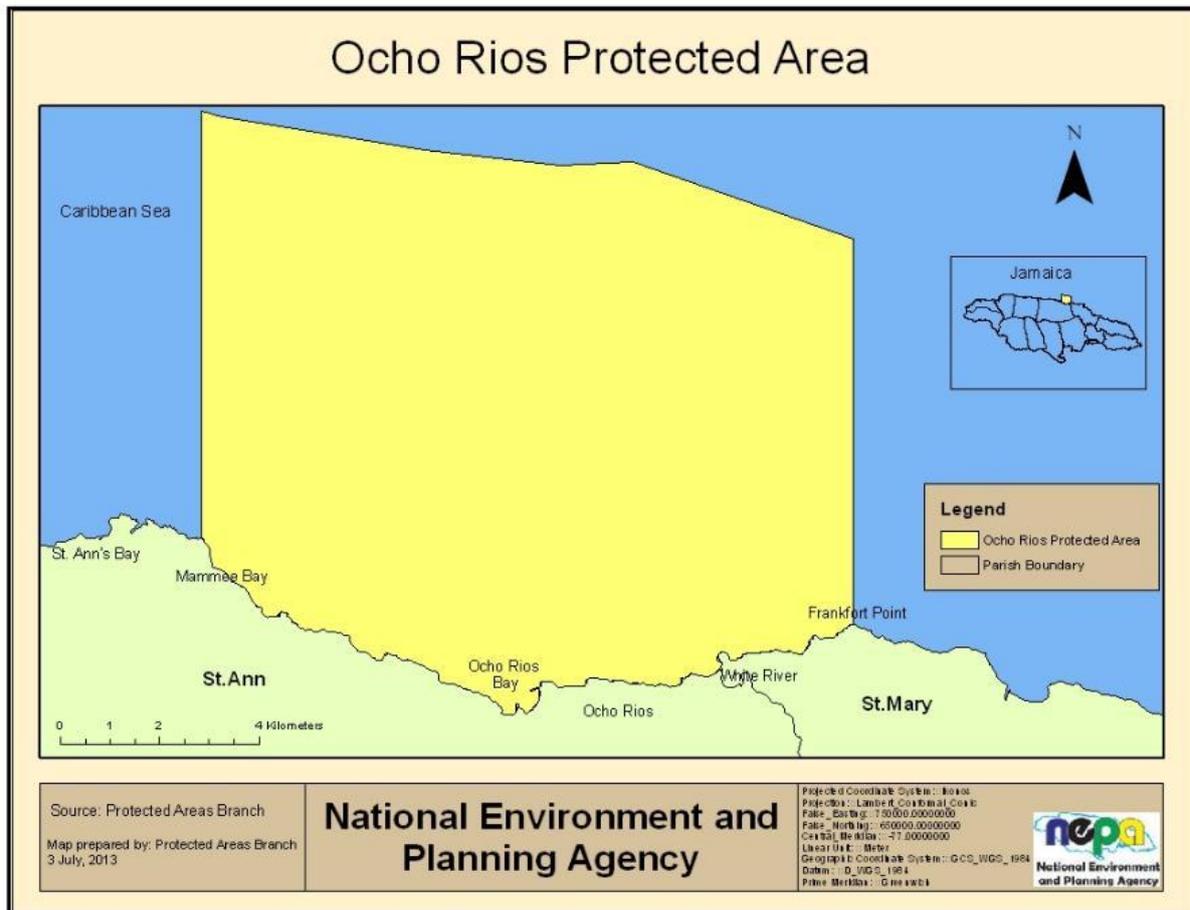


FIGURE 2: OCHO RIOS MARINE PARK PROTECTED AREA (SOURCE PROTECTED AREAS BRANCH, 2013)

The zoning plan for the ORMPPA is being developed to protect sensitive and threatened resources, species and habitats, as well as the fishery stock. Although ORMPPA was designated a protected area on 16 August 1999 under section 5(b)(1), a zoning plan was never implemented, although a draft copy was developed by the non-government organization (NGO), Friends of the Sea and included in their Draft Ocho Rios Marine Park Management Plan submitted in undated. Also, NEPA's Ecosystems Management Branch (EMB) in 2011 made recommendations for the zoning of ORMPPA based on empirical data collected on the park's marine resources.

This zoning plan has been developed based on the recommendations of these proposals, as well as, those made through consultations with the main current user groups, that is, the hotel/villa owners, fishers and water sports operators. The zoning plan provides the framework for the management of uses within the ORMPPA over a five-year period (2015-2020), after which it will be revised based on recommendations arising from research, monitoring and evaluation activities. The effective implementation of the zoning plan will require the requisite legislation, an effective enforcement framework, the engagement of

stakeholders, and a sound public education strategy to encourage compliance among the respective resource user groups.

2.0 The Purpose of Zoning Marine Protected Areas

Marine Protected Areas (MPAs) are “common property”, as the resources belong to the state. However, if these activities are not managed sustainably this “free access” of users can exceed the carrying capacity of the resources in the area. Zoning is one method used by managers to protect the natural resources within a MPA, as well as, reduce the user conflicts to ensure that the various users groups are able to benefit from the resources in a sustainable way.

Zoning is a system in which specific geographic areas within a protected area are classified according to its preservation requirements, and its ability to sustain certain human activities, by providing guidance as to what can and cannot occur within sections of the protected area with respect to its natural resources management, cultural resource management, human use and benefit, visitor use and experience, access, facilities and protected area development, maintenance and operations (NEPA, 2010). The zoning plan needs to be revised periodically, that is, every 5-years. Also, the zoning plan has to be revised as the marine environment is dynamic. The socio-economics of areas change over time and so will the demand on the resources and the user conflicts. Additionally research, monitoring and evaluation may provide new information for alternative measures to effectively manage the area.

2.1 Legislation for Zoning

Section 4(2) c of the NRCA Act, 1991 is the main piece of legislation which provides the basis for the zoning of the ORMPPA by the NRCA. It makes reference to the provision for the zoning of a protected area for specified purposes and for the licensing of persons carrying on any trade or business therein.

2.2 Objectives of the ORMPPA Zoning Plan

The objectives for zoning for MPAs are dependent on the characteristics and uses of the area. Within the ORMPPA the two main objectives of zoning are to 1) ensure the sustainable use of its natural resources, and 2) reduce the user conflicts while allowing all users to enjoy the benefits of the area while complying with the applicable environmental laws and regulations.

These objectives will be achieved by incorporating the following activities outlined in the EMB 2011 report, “Ocho Rios Marine Park: Draft Zoning Recommendations”

7. Regulate fishing, recreational and tourism related activities to ensure adequate space for users, safety of users, and the sustainable use of the resources.

8. Preserve important spawning and nursery areas for fish and establish no fishing zones.
9. Protect critical ecological habitats and restrict human use/access as necessary.
10. Provide a refuge for threatened species such as sea turtles.
11. Maintain industrial transportation/shipping corridors.
12. Regulate multiple uses within the ORMPPA.

3.0 Methodology for Developing Zoning Plan

Information for development of the ORMPPA zoning plan was compiled from a literature review, baseline research/assessments and consultations with key stakeholders within ORMPPA. The following are the methods used in determining the zones presented in this plan.

3.1 Primary Methods and Resources

In order to guide the development of the zoning plan, baseline research was conducted between 21 June and 24 June 2011 by the EMB and the findings presented in a report. The data collected included, but was not limited to, an assessment of fisheries and benthic marine environments such as seagrass beds and coral reefs. The assessments provided a broad basis for determining the dynamic factors which should be considered in developing the recommendations for this proposed zoning plan, as well as, identified the gaps and areas for further research and management.

The recommendations proposed in the 2011 EMB report are:

1. Reduce the administrative region of the ORMPPA by reducing the northern boundary to approximately 1 km north of any existing reef system. This will reduce the size of the protected area from 13.3ha and likely reduce the corresponding water depth from 1000m to 100m.
2. Designating a network of small and no-take areas that are no greater than 1km² where fish will be allowed to grow and take refuge. These no take zones should base on the locations known areas with a high fish biomass and density such as was reported at Carib Trenches, Jewels and Ocho Rios Reef.
3. With the use of expert opinion which includes consultations with local stakeholders the proposed zones within the ORMPPA should be simplified into less ambiguous zones that are easy to manage and police. The consultation process should consider clear boundary designations for the following areas:
 - Fishing
 - Fish Sanctuaries
 - Swimming
 - Anchoring of conveyances or vessels and mooring

- Port and Commercial Shipping
 - Use of motorized craft
 - Use of non-motorized craft
 - Use of personalized watercrafts (Jet Skis)
 - Environmental Restoration/Preservation or no use zones
4. Create a steering committee to guide the development and finalization of the ORMPPA zoning plan. The terms of reference of this committee would include but not be limited to:
- a. The preparation of government briefing on the progress of the zoning plan for the endorsement by the Cabinet;
 - b. Identifying data gaps;
 - c. Formulating policy directives for the management of the ORMPPA and
 - d. Conducting community outreach and education on the zoning plan.

3.2 Literature Review

A literature review was done of existing documents and legislation pertaining to the ORMPPA, and included:

- The Town and Country Planning (Kingston and Saint Andrew) Provisional Development Order, 2008 (Draft) unpublished;
- Draft Overwater Policy;
- The Draft Ocho Rios Marine Park Management Plan by Friends of the Sea (undated);
- Report on the Socio-economic Assessment of the Ocho Rios Protected Area by PAB (2013); and
- Socio-economic Valuation Study of the Ocho Rios Marine Park by Environmental Management Unit, University of the West Indies (2001).

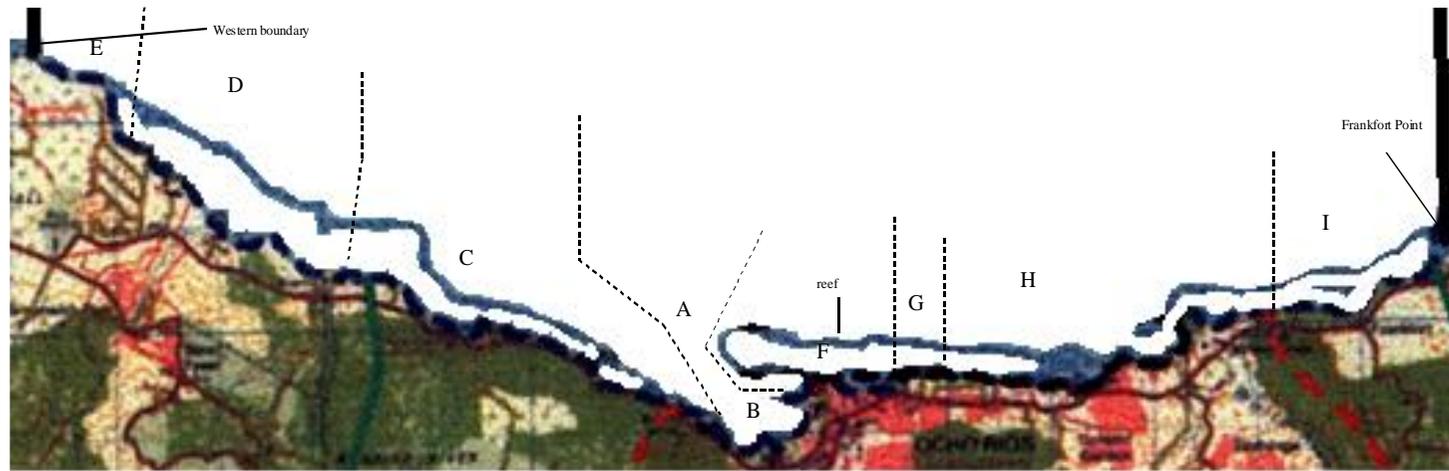
The draft zoning plan developed by Friends of the Sea and published in the The Draft Ocho Rios Marine Park Management Plan proposed eight (8) zones (Table 1, Figure 3).

TABLE 1: PROPOSED ZONES FOR ORMPPA BY FRIENDS OF THE SEA

Diving, Snorkeling, Restoration, and Research	Only diving, snorkeling, and research are permitted within this zone.
Multiple Recreational Use/No Fishing	Motorized and non-motorized recreational activities may take place within this zone. No fishing is permitted within this zone.
Multiple Recreational Use/No Jet Skis Zone	Motorized and non-motorized recreational activities may take place within this zone. No

	jet skiing is permitted within this zone.
Research Only	This is a no take zone, where only permitted research may take place.
No Wake Zone	Watercrafts within this area are not permitted to create a wake.
Shipping Channel Zone	This zone allows access for vessels to the piers located within the Ocho Rios Bay.
Transportation Channel Zone	No stopping is permitted within this zone.
Limited Recreational Use and Research Zone	Limited recreational use includes non-motorized activities. No fishing is permitted in this zone.

Map of Proposed Ocho Rios Marine Park Zones



A A shipping channel is already established, conveying vessels into the Ocho Rios Bay.

B A no wake zone and a fuelling depot will be situated within the Ocho Rios Bay.

C A transportation channel will extend west from the shipping channel to mid-way between Dunn's River and Roaring River. No stopping is permitted within the transportation channel. Dolphin Cove, which is a designated research area, is situated within the transportation channel.

D West of the transportation channel, extending to the centre of Mammee Bay Beach, a limited recreational use and research area is located within the fore reef.

E From the centre of Mammee Bay Beach to the western boundary of the ORMP a no go, research zone is located.

F East of the Shipping Channel, extending to Mahogany Beach, a multiple use zone with no jet skis is located within the fore reef.

G East of **F**, a research only zone extends to Sombra Apartments.

H East of **G**, a multiple recreation use/no fishing zone extends to the Grand Lido Sans Souci Beach.

I East of **H** to the eastern ORMP boundary a diving, snorkelling, restoration, and research zone is located.

FIGURE 3: ZONES FOR ORMPPA PROPOSED BY FRIENDS OF THE SEA

3.3 Consultations

Consultations with stakeholder groups are integral to developing a zoning plan as for the plan to be effective it will need the support for all the stakeholders, and so it important that they be involved in the planning process. The objective of the consultations as outline in the 2011 report by EMB, “Ocho Rios Marine Park: Draft Zoning Recommendations” are as follows:

1. A collective vision for the management of the park.
2. Conservation targets.
3. The socio-economic implications of the proposed zoning plan.
4. The management objectives for each proposed zones and identify the challenges associated with each objectives and recommend strategies to overcome these challenges.
5. Existing legislative gaps and recommending solutions.
6. Defining enforcement roles and responsibilities and creating a synergy between enforcers to achieve the enforcement objectives of the park.

Consultations were held with key stakeholders in the ORMPPA which are hotel/villa owners, fishers and watersports operators. The Port Authority of Jamaica was also consulted because of their responsibility for the transport and shipping channel within the Ocho Rios Bay. Three consultations were held in July 2014, one with each key stakeholder group, then a stakeholder meeting was convened on 3 October 2014 where a the group developed a draft zoning plan, and on 11 November 2014 representatives from each stakeholder group participated in a reconnaissance activity to further define the boundaries for the different zones.

4.0 Overview of ORMPPA

4.1 Geography

The ORMPPA is bordered by the Caribbean Sea to the north, and extends seawards to the 1000m depth contour, an average distance of 9.68km, and the southern boundary extends to the high water mark of the coastline for approximately 13.5km between Mammee Bay in St. Ann and Frankfurt Point in St. Mary. The coastline is characterized by natural and man-made beaches, limestone cliffs, and numerous costal developments such as the commercial town of Ocho Rios hotels and villas and a pier for cruise ship passengers and exportation of sugar and limestone. The coast rises into limestone hills which are the source of the rivers which flow into the ORMPPA including Dunn’s River, Turtle River, White River and Roaring River.

The ORMPPA is characterized by fringing reefs, reef flats, and sea grass beds interspersed with mudflats. The fringing reefs can easily been seen from shore, and south of the reef flat crest is a shallow protected lagoon with significant sea grass beds. North of the reef crest, is a narrow band coral reef where the sea floor slopes into deeper water and extends to the

Cayman Trench. The marine resources support a multiple of activities including a mixture of recreational and commercial activities such as fishing, shipping, and activities such as snorkeling, boating, diving, and swimming. The park is heavily used to support the main economic activities within Ocho Rios which is “sun, sand and sea” tourism.

4.1.1 Boundary Description

Commencing at a point “A” along the high water mark of the North Coast in the parish of St. Ann, where the northern shoreline boundaries of the properties of Drax Hall and Mammee Bay meet and which have approximate coordinates of 18⁰ 26’ 15” N and 77⁰ 10’ 19” W; thence in a meandering line generally south-east and north-west along the high water mark of the coastline for approximately 13.5 km to a point “B” along the high water mark at Frankfort Point, having approximate geographical coordinates of 18⁰ 25’ 18” N and 77⁰ 02’ 51”W; thence north to a point “C” in the sea that intersects with the 1000 m depth contour line; thence generally west and south-west along the 1000 m depth contour line to a point “D” where it intersects with the line running north from the point of the beginning; thence to the point of beginning “A”.¹ (Figure 2)

4.2 Marine Resources

An assessment completed by NEPA’s EMB in 2011 using remote sensing and rapid ecological assessment which revealed that the marine resources within the ORMPPA comprise mainly coral reefs and the shore is mostly sandy (Table 2).

TABLE 2: COASTAL AND BENTHIC RESOURCES IN ORMPPA

Coastal Habitat	Area / Length (ha)
Seagrass Beds	271.61
Reef	897.96
Mangrove	0
Rocky Shore	2593.17
Sandy Shore	6432.89

4.2.1 Coral Reef

Reef assessments were conducted at six (6) sites, Dunn’s River, Carib Trenches, Jewel, Jamaica Inn and Couples, San Souci by EMB in 2011. The data collected were collated with data from previous assessments conducted in 2009 and 2010 and used to analyze the reef structure of ORMPPA. The previously surveyed sites included Grande Reef, and Double Reef which were assessed in 2010 and Carib Trenches, Dickies Reef, Ocho Rios Reef, Maffessante Reef and Sandals Reef which were assessed in 2009. The sites surveyed were exposed to varying levels of environmental and anthropogenic impacts and human disturbance such as exposure to sediment and nutrient loading and high density tourism

¹ Natural Resources Conservation (Ocho Rios Marine Park Protected Area) Order 1999

activities. All assessments were conducted at depths ranging from 3.05m (10ft) to 11.7m (38.4ft), and the data analyzed to detect trends in overall reef ecosystem health and biodiversity within the ORMPPA (NEPA, 2011).

The higher the reef rugosity then more habitats is provided to shelter reef fish and other organisms. At the sites assessed the reefs were relatively low to medium relief. San Souci recorded the lowest index of 0.10 affording little shelter for foraging while all other sites assessed recorded values indicative of medium relief or reef complexity. However, no distinct relationship between species richness and rugosity at the sites were observed (Figure 4).

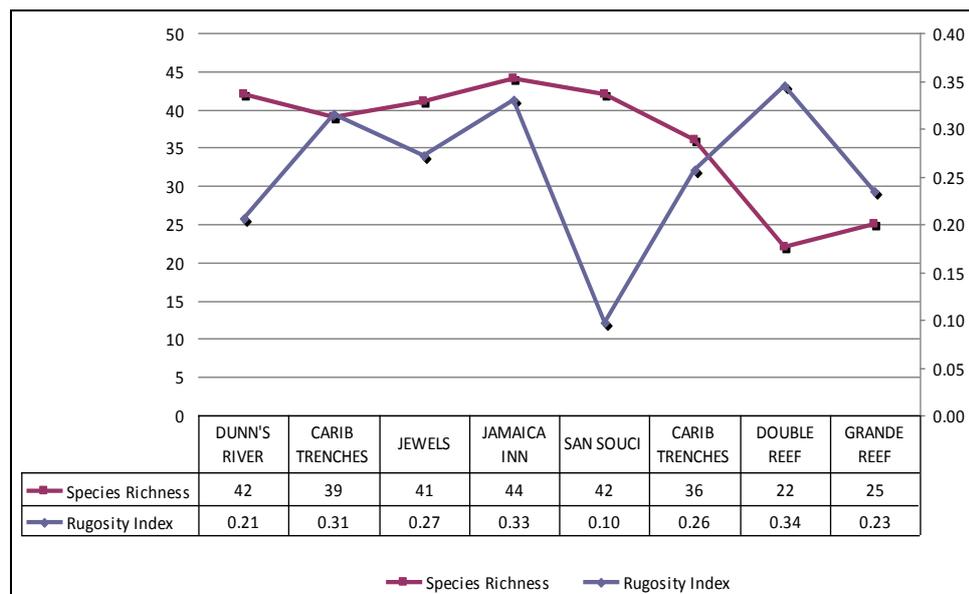


FIGURE 4: GRAPH SHOWING ASSOCIATION BETWEEN CORAL REEF RUGOSITY AND SPECIES RICHNESS

4.2.2 Fish Population

The analysis of commercial fish density, size and biomass indicates the status of the fish stocks and by extension fishing pressure in the area. The diversity of fish species on the reef indicates the community dynamics on the reef. The relative abundance of one trophic group to another will dictate species interactions; and the types of predators on the reef are determined by the relative availability of prey food items. Similarly, the amount of fleshy algae on a reef is determined to a significant extent on the abundance of herbivorous fish on the reef (NEPA, 2011)

The size of the commercially important fish species grunt, snapper, parrotfish, grouper and surgeonfish in ORMPPA were assessed by EMB in 2011. Results showed that the average size of the fish assessed was below the expected adult size range, and most of the fish measured were 6 – 10 cm, but a significant number of individuals also fell in the 11 – 20 cm size range, but none measured greater than 21 cm. Commercially important species such as the parrotfish, grunts and groupers had a high number of individuals in the 11-20 cm size class. This indicates that most of the fish within the ORMPPA are juveniles to sub-adults (Figure 5). Overall, there was also a low density of commercially important species.

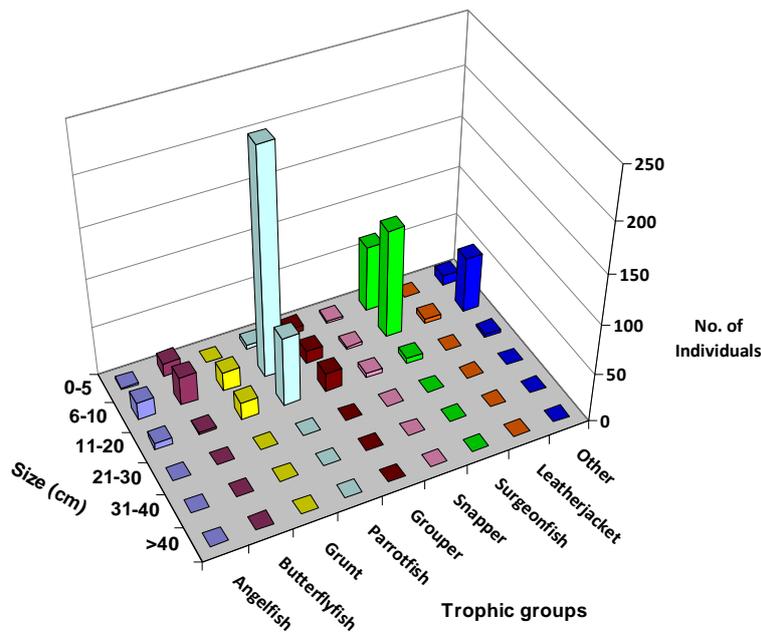


FIGURE 5: GRAPH SHOWING SIZE OF FISH SPECIES WITHIN ORMPPA

The fish biomass, which is length to weight ratio, was also assessed for commercially important species (Figure 6). The parrotfish had the highest density (8.15 parrotfish/100m²), but this is still low compared to other Caribbean reefs. The Snappers and Grunts recorded the lowest densities of 0.18 snapper/100m² and 1.09 grunts/100m² (NEPA, 2011).

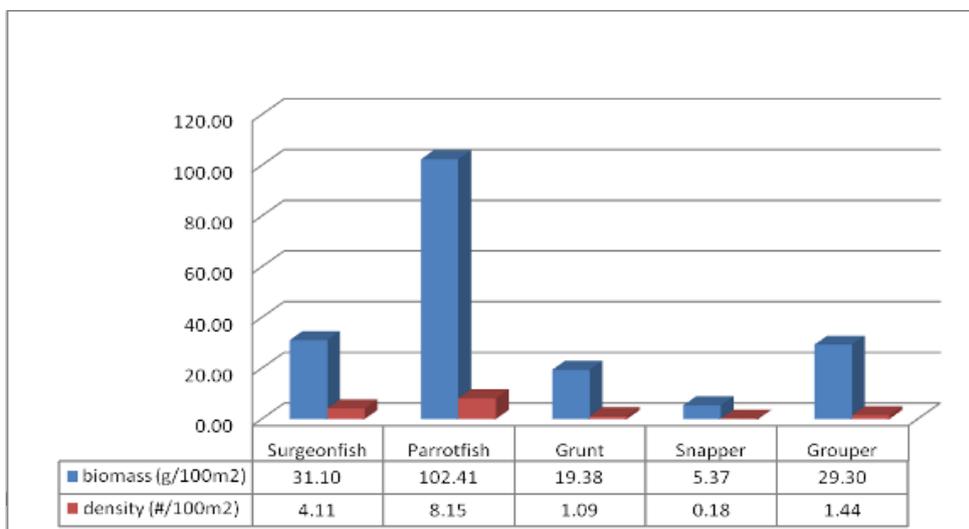


FIGURE 6: GRAPH SHOWING FISH BIOMASS AND DENSITY IN ORMPPA

4.2.3 Benthic Cover

The benthic cover of the reef includes corals, sponges, algae and other sessile invertebrates, and gives a good indication of the dynamics of competition on the reef. Benthic cover provides a good indicator of the process of reef competition among reef organism. The competition between live coral cover and fleshy algal cover is of concern too because the loss

of live coral cover will result in a shift from coral dominated reefs to algal dominated reefs. The loss of live coral cover will ultimately lead to a loss of the coral reef. Coral cover is an excellent indicator of reef health and is normally a proxy for net coral growth.

According to the EMB 2011 report, the percentage live coral cover ranged from a low of 5.77% at Jamaica Inn to a high of 18.11% at Dunn's River. However, in 2010 live coral cover data from the sites assessed (Carib Trenches, Double Reef and Grande Reef) ranged between 2.8 % and 11.26%, and in 2009 the range was from a low of 3.21% at Maffessante Reef to a high of 11.70 % at Ocho Rios Reef. Analysis of the data collected in 2011 showed that macroalgae was dominant benthic cover within the ORMPPA. However, at Dunn's River, Jewels and Ocho Rios Reef this was the opposite where live coral cover ranged from 11.70% - 18.11%, and macroalgae cover was the least abundant, thus illustrating the inverse relationship between macroalgae and coral cover. This supported the higher fish species richness found at these sites compared to the other sites within the ORMPPA. Analysis of the data indicated that the reefs within the ORMPPA are dominated by macroalgae which displays a mean percentage cover of 55% of the substrate, that is, a range of 33.77% to 68.83%, in contrast to live coral cover with ranges between 3.21% and 18.11%, an overall average of 8% live coral. The dominant coral species type recorded is *Porites astreoides* and in lower numbers species such as *Acropora palmata*, *Madracis mirabilis*, *Porites furcata*, *Agaricia agaricia*, *Siderastrea siderea*, *Montastrea faveolata* and *Montastrea franksi* (NEPA, 2011)

At sites such as Dunn's River, Jewels and Ocho Rios reef the data represented the highest live coral cover of all sites assessed ranging from 11.70 – 18.11%. These sites also displayed the lowest abundance of macroalgae. This demonstrates an inverse relationship between coral and macroalgae cover which provides an indication of fish abundance. This finding is also corroborated by the higher fish species richness at these sites when compared to other sites with higher macroalgae coverage (NEPA, 2011). The sites recommended in the EMB report as “no take” zones are Carib Trenches, Jewels and Ocho Rios Reef based on the high fish biomass and density as the maintenance of the ecological characteristics of these areas can enhance the ecological function of the ORMPPA.

4.3 Characteristics of User Groups

Most of the activities within the ORMPPA are centered on tourism, therefore the main user of the protected area's resources include watersports operators and operators of villas and hotels. The protected area also support fisher folks and includes four fishing beaches which are Mammee Bay, Sailor Hole, Ocho Rios Bay and White River. In January 2014 members of NEPA's Protected Areas Branch (PAB) conducted a socio-economic survey of the users of the ORMPPA. The survey groups were divided according to profession and were fisher folks, watersports operators and organizations which included hoteliers, commercial enterprises and government agencies. The characteristics of the user groups used in this survey are based on the survey conducted by NEPA in 2014. Representatives from the hotel/villa comprised

mainly tertiary institution graduates, and were mostly in the age bracket 26 to 55 years (NEPA, 2014).

4.3.1 Fisher Folks

The four (4) fishing beaches within ORMPPA are Mammee Bay, Sailor Hole, Ocho Rios and White River. Most of the 25 fishermen interviewed in NEPA survey conducted in 2014 have been fishing within the ORMPPA for 21 to 25 years, and most stated fishing is their main source of income. The dominant fishing method used is both hook and line and pot (72%), followed by spear fishing (36%), net fishing (32%) and other e.g. trolling (20%). Near shore fishing and deep-sea fishing are practiced relatively equally (72%) with most fisher folks fishing in both locations depending on the method chosen. The vessels used are mostly motorized (92%). Fifty-six percent of the fisher folks interviewed achieved primary educations, 40% secondary and 4% tertiary.

4.3.2 Water sports Operators

Most of the 13 watersports operators interviewed in the NEPA 2014 survey have been operating for five (5) years or less, and all had a valid licence from the Jamaica Tourist Board (JTB). Watersports operators participated in snorkeling (84.64%), sailing and glass bottom boat rides (54%), kayaking, jet skiing and SCUBA diving (46%), wind surfing (39%), catamaran cruises (31%), pedal boarding (23%) and fishing (15%). Most watersports activities were done in the vicinity of Mammee Bay and Sandals. The common locations for these activities include Ocho Rios Wall, Caribe Trenches, Mammee Bay, Dolphin Reef, Barracuda Reef, Double Reef, Dunn's River and Coral Gardens.

5.0 The 2015-2020 Zoning Regime for ORMPPA

Arising from the ecological assessments, literature review and consultations, the proposed zones four (4) zones for the ORMPPA are:

- Conservation Zone
- No Wake Zone
- Dive and Snorkel Sites
- Multiple-use Zone



FIGURE 7: DRAFT ZONING PLAN FOR ORMPPA 2015-2020 (SOURCE PROTECTED AREAS BRANCH 2015)

In addition to the zones, in order to comply with present uses two channels were demarcated which are 1) Port and Commercial Shipping Channel and 2) Jet Ski Launch Site (Plate1). The shipping channel is designated by the Port Authority of Jamaica and allows for cruise ships, commercial ships and boats transporting cruise ship passengers access the pier in Ocho Rios Bay (Appendix 2). No recreational activities and fishing is allowed within this channel for safety reason.

The Jet Ski Launch Site is delineated within the Ocho Rios Bay by red buoys 200m from shore which indicates the closest distance the jet skis can get to the shore (Appendix X). Within the 200m mark the jet ski operators have to use the ingress and egress channels to launch from shore. This is the only site from which they are currently allowed to launch within the ORMPPA. After launching they can operate anywhere within the Multiple-use Zone.



PLATE 1: JET SKI LAUNCH SITE IN OCHO RIOS BAY

5.1 Conservation Zone

Three Conservation Zones were proposed. Conservation Zone A is the protected area that was declared under the Beach Control Act (BCA) in 1966, Conservation Zone B is on the western side of the protected area and Conservation C is on the eastern side, adjacent to Conservation Zone A.

5.1.1 Objective of Conservation Zones:

5. To provide for the protection, preservation and/or restoration of ecologically significant or sensitive habitats and species.
6. To improve economic opportunities for fishers through the operation of these zones as managed fisheries to improve the viability of the fishery.
7. To increase the resilience of coastal and marine ecosystems to the effects of climate change.
8. To provide pristine/undisturbed environments for research and other educational activities

5.1.2 Boundary Description for Conservation Zone A

The boundary description of Conservation Zone A (Figure 8) is as follows:

1. The boundary description begins at point *A*; a land-based mark at coordinates 18°24'43.56"N; 77° 6'29.03"W
2. From point *A* the boundary runs in a straight line to point *B* a water-based mark at coordinates 18°24'49.94"N; 77° 6'34.06"W
3. From point *B*, the boundary continues to point *C*, a water-based mark, at coordinates 18°24'49.91"N; 77° 6'43.72"W
4. From *C*, the boundary runs to point *D*, a water-based mark, at coordinates 18°25'5.91"N; 77° 6'43.83"W
5. From *D*, the boundary runs straight to *E*, a land-based point at coordinates 18°25'6.31"N; 77° 4'20.33"W
6. From *E*, the boundary follows the coastline back to point *A*.

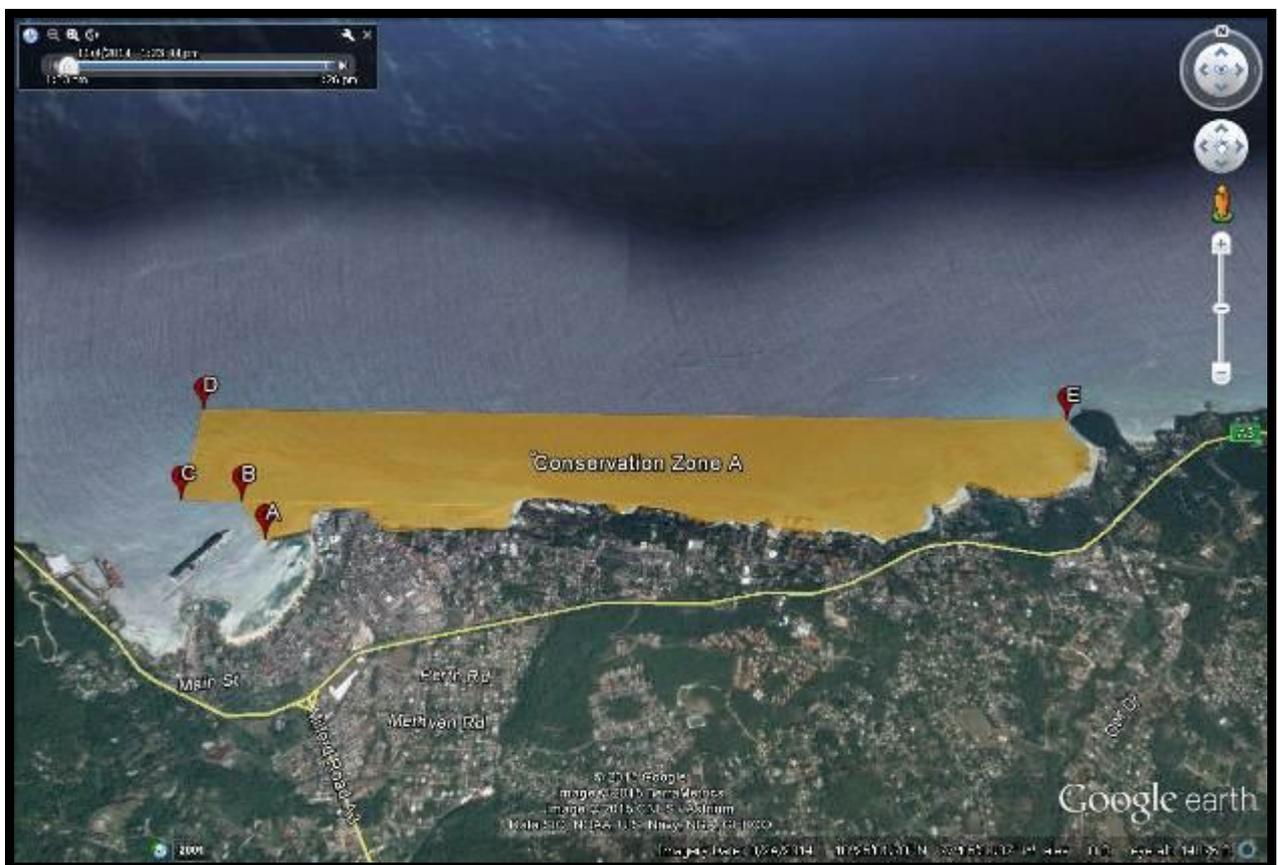


FIGURE 8: BOUNDARY FOR CONSERVATION ZONE A (SOURCE: PROTECTED AREAS BRANCH, 2015)

5.1.3 Boundary Description for Conservation Zone B

The boundary description of Conservation Zone B (Figure 9) is as follows:

1. The boundary description begins at point *A*, a land-based mark at coordinates 18°26'24.37"N; 77°10'15.27"W
2. From point *A* the boundary runs in a straight line to point *B* a water-based mark at coordinates 18°26'26.17"N; 77°10'15.21"W
3. From point *B*, the boundary continues to point *C*, a water-based mark, at coordinates 18°25'57.48"N; 77° 9'31.65"W
4. From *C*, the boundary runs to Point *D*, a water-based mark, at coordinates 18°25'36.90"N; 77° 8'48.94"W
5. From *D*, the boundary runs straight to *E*, a water-based point at coordinates 18°25'16.33"N; 77° 8'13.00"W
6. From *E*, the boundary runs to point *F*, a water-based point at coordinates 18°25'8.68"N; 77° 7'48.16"W
7. From *F* the boundary runs in a straight line to point *G* a water-based mark at coordinates 18°25'1.10"N; 77° 7'33.34"W
8. From point *G*, the boundary continues to point *H*, a land-based mark at coordinates 18°24'56.22"N; 77° 7'35.95"W
9. From *H*, the boundary follows the coastline back to point *A*.

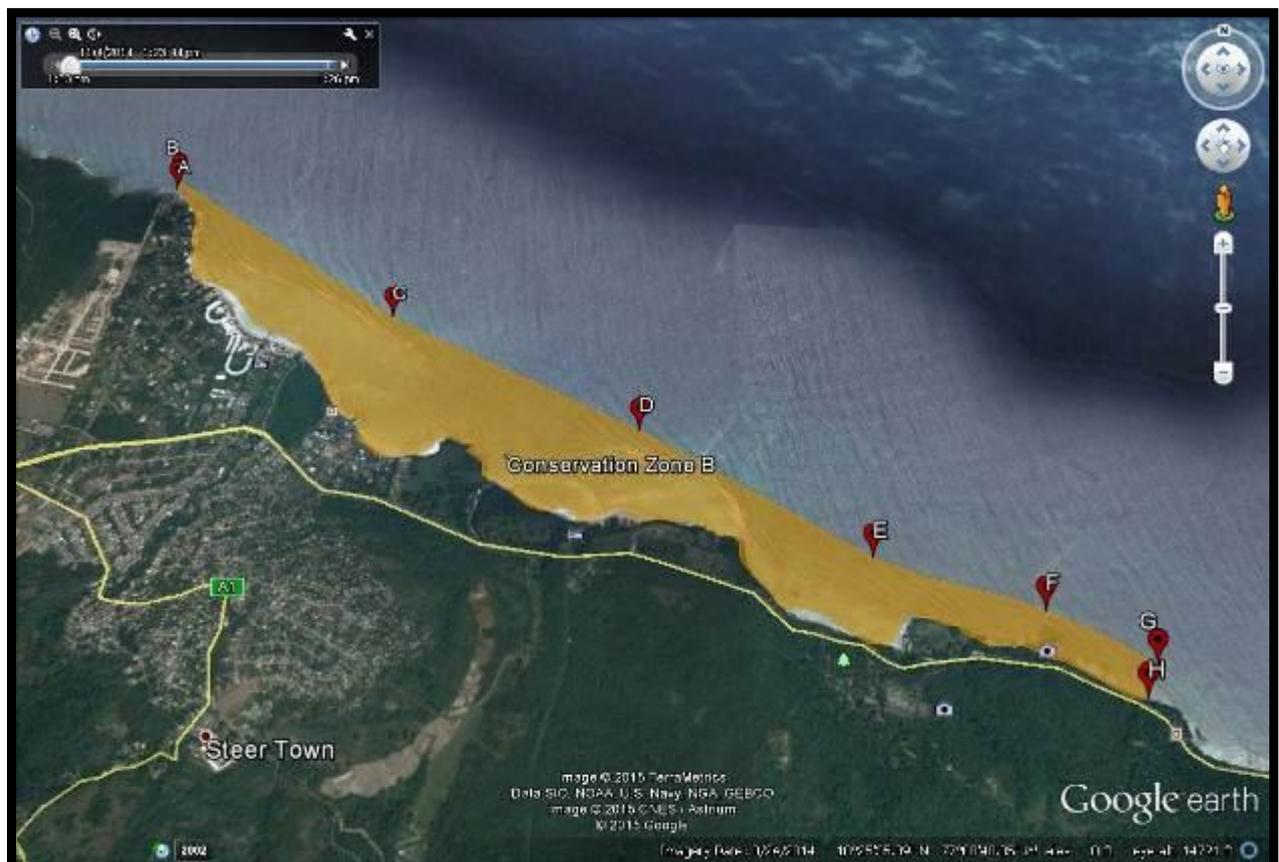


FIGURE 9: BOUNDARY FOR CONSERVATION ZONE B (SOURCE: PROTECTED AREAS BRANCH, 2015)

5.1.4 Boundary Description for Conservation Zone C

The boundary description of Conservation Zone C (Figure 10) is as follows:

1. The boundary description begins at point *A*; a land-based mark at coordinates 18°25'4.48"N; 77° 4'20.86"W.
2. From point *A* the boundary runs in a straight line to point *B* a water-based mark at coordinates 18°25'10.80"N; 77° 4'26.94"W.
3. From point *B*, the boundary continues to point *C*, a water-based mark at coordinates 18°25'13.49"N; 77° 4'24.47"W.
4. From *C*, the boundary runs to point *D*, a water-based mark, at coordinates 18°25'16.30"N; 77° 4'19.13"W.
5. From *D*, the boundary runs straight to *E*, a water-based point at coordinates 18°25'15.16"N; 77° 4'0.65"W.
6. From *E*, the boundary runs to point *F*, a water-based point at coordinates 18°25'16.95"N; 77° 3'46.72"W.
7. From *F* the boundary runs in a straight line to point *G* a water-based mark at coordinates 18°25'21.61"N; 77° 3'36.62"W.
8. From point *G*, the boundary continues to point *H*, a water-based mark at coordinates 18°25'20.38"N; 77° 3'25.95"W.
9. From *H*, the boundary runs to point *I*, a water-based mark, at coordinates 18°25'21.29"N; 77° 3'19.80"W.
10. From *I*, the boundary runs straight to *J*, a water-based point at coordinates 18°25'30.71"N; 77° 3'3.57"W.
11. From *J*, the boundary runs to point *K*, a water-based point at coordinates 18°25'35.84"N; 77° 2'47.27"W.
12. From point *K*, the boundary continues to point *L*, a land-based mark, at coordinates 18°25'27.22"N; 77° 2'47.09"W.
13. From *L*, the boundary follows the coastline back to point *A*.



FIGURE 10: BOUNDARY FOR CONSERVATION ZONE C (SOURCE: PROTECTED AREAS BRANCH, 2015)

5.1.5 Justification for Conservation Zones

The Conservation Zones are concentrated along the ORMPPA coastline on the coral reefs. These areas were chosen as the groups from the consultation meetings suggested that there be no fishing on the reefs, that the conservation areas should encompass the reef ecosystem, and that a nursery be established between White River and Couples San Souci. They also recommended that recreational activities be kept closer to hotels and the shoreline, and activities such as snorkeling can be near the reef where marine fauna are in abundance. Therefore, these areas will restrict fishing activities, but allow recreational activities such as snorkeling and non-motorized sports. Although diving and snorkeling will be accommodated in the conservation zones the primary focus is still to maintain the habitat in as much a pristine state as possible, therefore no anchoring and feeding of the fish will be allowed. The designation of these areas as conservation zones was also done based on the findings of the EMB survey in 2011 which indicated that the fish population within the ORMPPA is mostly juvenile to sub-adult and that the coral reef cover for most sites is relatively low. Therefore, these areas will act as fish sanctuaries allowing the fish population to recover as well as take the pressure of the coral reefs.

Conservation Zone A encompasses the entire protected area which was declared a under the BCA in 1966. It is currently used mostly for dive and snorkel activities by most watersports

operators who say that some days there could be up to 300 guests swimming in the area. Under the BCA the activities which are not allowed in the area include:

- fishing with nets, traps or spears.
- boats except those propelled by wind or oars.
- water skiing, except in areas designated by the Authority.
- the dredging or disturbance in any way of the floor of the sea.

Not allowing any motorized boats and no anchoring in this area is consistent with the condition under the BCA.

The Conservation Zone A has two (2) of the three (3) “no take” zones proposed by EMB in their report based on assessment done in 2011 which are Carib Trenches and Ocho Rios Reef, and Conservation Zone B, has one, Jewel. The “no take” zones were recommended due to high fish biomass and density to allow the fish population to recuperate, as most of the sites surveyed in 2011 by EMB were populated by juvenile fish and the dominate substrate was macroalgae.

5.1.6 Activities Guide

The areas comprising the Conservation Zone within this plan are reserved for the purposes of ecological conservation and restoration. The zones will allow for those compatible activities with an environmental footprint that will not adversely impact the area’s values. All activities are subject to the granting of relevant approvals. The activities that will be allowed and those to be prohibited are outlined in Box 1 below.

Box 1: User Activities for the Conservation Zone

Allowed

- Activities with environmental footprint that will not adversely impact the functionality of the area's ecosystems and that of adjacent zones.
- Swimming/snorkeling
- Non-motorized watersports
- Motorized vessels/activities (only for management activities and for the purposes of ingress and egress using designated channel)
- Ecological restoration/conservation activities.
- Research/educational activities.
- All activities associated with the NRCA's management of the area.

Not Allowed

- Activities with environmental footprint that will adversely impact the functionality of the area's ecosystems and that of adjacent zones.
- Anchoring and mooring.
- Motorized vessels/activities.
- Fishing/bait collection.
- Feeding of fish.
- Anchoring.
- Removal or disturbance of physical or biological features/specimens or habitats e.g. dune, sand, rock, reef, artifacts, flora and fauna.
- Coastal modifications, construction or maintenance of any encroachment which falls under the beach licensing regime.
- Any activity which contravenes local environmental laws and/or may have a deleterious effect on human safety or the environment.

5.2 No Wake Zone

The No Wake Zone is found between Rico Chico and Dunn's River Falls. This zone was created to accommodate the current boating activities within the area. It is 20m away from the current swim zone delineated by the operators of Dunn's River, and it is 50m in width, just wide enough for motorized vessels to traverse the area while picking up and dropping off visitors to Dunn's River Falls.

5.2.1 Objective of No Wake Zone

To reduce wave action within the Conservation Zone B as the zone is only 20m from the swim zone, as well as to ensure safety of other users operating non-motorized vessels in the Conservation Zone.

5.2.2 Boundary Description

The boundary description of the No-Wake Zone (Figure 11) is as follows:

1. The boundary description begins at point *A*; a water-based mark at coordinates 18°25'11.42"N; 77° 8'27.54"W.
2. From point *A* the boundary runs in a straight line to point *B* a water-based mark at coordinates 18°25'12.83"N; 77° 8'26.73"W.
3. From point *B*, the boundary continues to point *C*, a water-based mark at coordinates 18°25'11.38"N; 77° 8'25.47"W.
4. From *C*, the boundary runs to point *D*, a water-based mark, at coordinates 18°25'11.33"N; 77° 8'22.17"W.
5. From *D*, the boundary runs straight to *E*, a water-based point at coordinates 18°25'9.65"N; 77° 8'18.17"W.
6. From *E*, the boundary runs to point *F*, a water-based point at coordinates 18°25'7.35"N; 77° 8'15.23"W.
7. From *F* the boundary runs in a straight line to point *G* a water-based mark at coordinates 18°25'6.53"N; 77° 8'13.55"W.
8. From point *G*, the boundary continues to point *H*, a water-based mark at coordinates 18°25'10.57"N; 77° 8'10.63"W.
9. From *H*, the boundary runs to point *I*, a water-based mark, at coordinates 18°25'10.50"N; 77° 8'5.37"W.
10. From *I*, the boundary runs straight to *J*, a water-based point at coordinates 18°25'9.92"N; 77° 8'3.83"W.
11. From *J*, the boundary runs to point *K*, a water-based point at coordinates 18°25'8.22"N; 77° 8'4.17"W.
12. From point *K*, the boundary continues to point *L*, a water-based mark, at coordinates 18°25'9.01"N; 77° 8'7.10"W.
13. From *L*, the boundary runs to point *M*, a water-based mark, at coordinates 18°25'8.96"N; 77° 8'9.95"W.
14. From *M*, the boundary runs to point *N*, a water-based mark, at coordinates 18°25'5.50"N; 77° 8'12.06"W.
15. From *N*, the boundary runs straight to *O*, a water-based point at coordinates 18°25'4.86"N; 77° 8'12.87"W.
16. From *O*, the boundary runs to point *P*, a water-based point at coordinates 18°25'4.94"N; 77° 8'14.36"W.
17. From *P* the boundary runs in a straight line to point *Q* a water-based mark at coordinates 18°25'6.22"N; 77° 8'16.54"W.
18. From point *Q*, the boundary continues to point *R*, a water-based mark at coordinates 18°25'8.23"N; 77° 8'19.04"W.

19. From *R*, the boundary runs to point *S*, a water-based mark, at coordinates 18°25'9.82"N; 77° 8'22.80"W.
20. From *S*, the boundary runs straight to *T*, a water-based point at coordinates 18°25'9.84"N; 77° 8'26.50"W.
21. From *T*, the boundary runs back to point *A*.



FIGURE 11: BOUNDARY OF NO WAKE ZONE (SOURCE: PROTECTED AREAS BRANCH, 2015)

5.2.3 Justification for No Wake Zone B

This area is currently used to pick up and drop off visitors at Dunn's River Falls who would like to proceed to other watersports or sightseeing activities within the ORMPPA after visiting the Falls. Therefore the designation of the zone is accommodating a present use within the area.

5.2.4 Activities Guide

With the primary objective of safeguarding the activities of swimmers in adjacent areas, the No-Wake Zone regulates the type and mode of operation of vessels in the Dunn's River Beach area. As such, the zone only allows for the ingress and egress (at reduced speed) of motorized craft involved in the transportation of cruise ship and other visitors from the dock at Dunn's River Falls to other recreational and watersports sites. The regulated activities are outlined in Box 2.

Box 2: User Activities for the No-Wake Zone

Allowed

- Activities with an environmental footprint that will not adversely impact the functionality of the area's ecosystems and that of adjacent zones.
- Motorized vessels/activities (for ingress and egress only, at a speed not exceeding 6 knots).
- Ecological restoration/conservation activities.
- Research/educational activities.
- All activities associated with the NRCA's management of the area.

Not Allowed

- Swimming/snorkeling.
- Non-motorized vessels/activities (with the exception of sail boats/catamarans specifically involved in the transportation of passengers from the Dunn's River dock to other sites).
- Speeds over 6 knots.
- Jet skis.
- Anchoring and mooring
- Fishing/bait collection.
- Feeding of fish.
- Anchoring.
- Removal or disturbance of physical or biological features/specimens or habitats e.g. dune, sand, rock, reef, artifacts, flora and fauna.
- Coastal modifications, construction or maintenance of any encroachment which falls under beach licensing regime.
- Activities with environmental footprint that will adversely impact the functionality of the area's ecosystems and that of adjacent zones.
- Any activity which contravenes local environmental laws and/or may have a deleterious effect on human safety or the environment.

5.3 Dive and Snorkel Sites

These sites are found within the Conservation Zones or on the perimeter of the zones. They will be marked by a buoy and no motorized vessel should be within 30m of the site if a dive flag is visible.

5.3.1 Objective:

To separate motorized activities from non-motorized activities, such as snorkeling and SCUBA diving to ensure the safety of these users of the ORMPPA. Also, to give these users the opportunity to enjoy views the marine environment in a fairly undisturbed state.

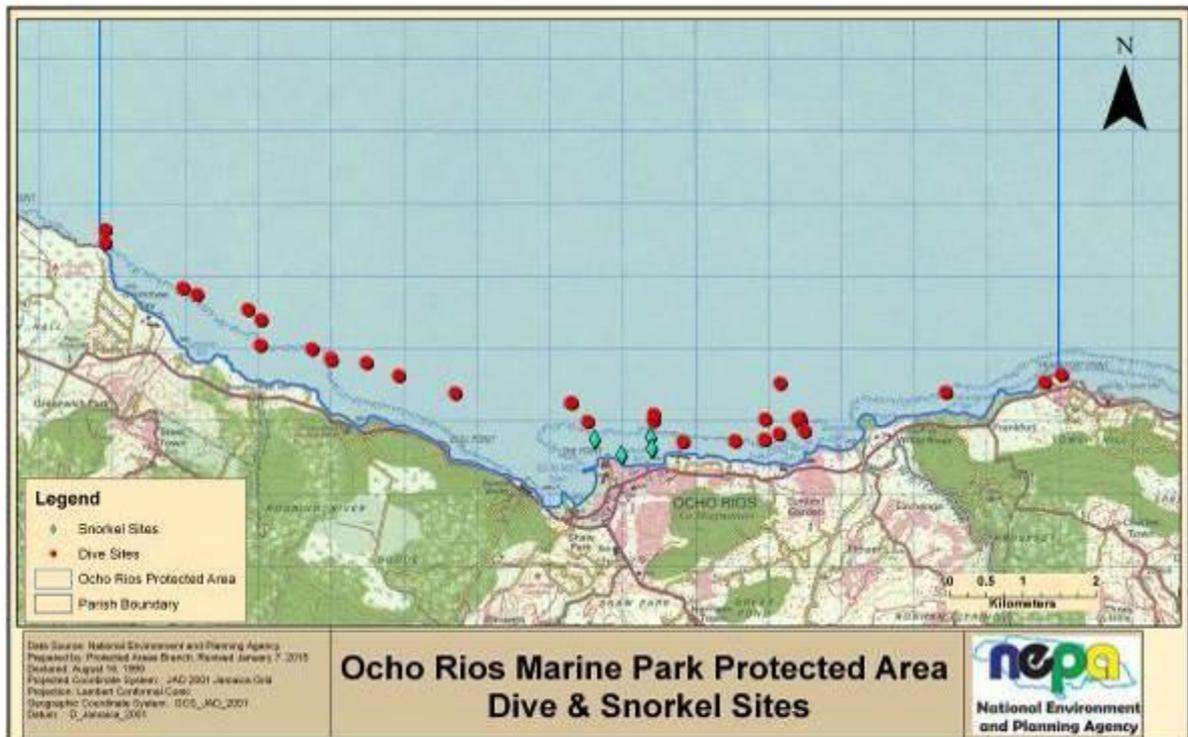


FIGURE 12: DIVE AND SNORKEL SITES WITHIN THE ORMPPA (SOURCE: PROTECTED AREAS BRANCH, 2015)

5.3.2 Justification for Dive and Snorkel Sites

The designation of these sites was based on the current areas used for these activities. These sites are mainly within or on the perimeter of the Conservation Zones on the coral reef.

5.3.3 Activities Guide

The Activities Guide stipulates the mode of operation allowed at all dive and snorkel sites located throughout the protected area. The designated sites (Appendix 4) will allow for recreation associated with dive and snorkel activities. All non-motorized and motorized craft (inclusive of jet skis) are required to steer clear of these areas when in use. Box 3 details the activities allowed and prohibited at the sites.

Box 3: User Activities for the Dive and Snorkel Sites

Allowed

- Non-motorized watersports (however not within 50m of a dive flag)
- Motorized vessels (however not at those sites located within the Conservation Zones and not within 50m of a dive flag)
- Diving & Snorkeling
- Swimming
- Activities with environmental footprint that will not adversely impact the functionality of the area's ecosystems and that of adjacent zones.
- Ecological restoration/conservation activities.
- Research/educational activities.
- All activities associated with the NRCA's management of the area.

Not Allowed

- Motorized boats (within 50 m of a dive flag and at Dive sites located within the Conservation Zones)
- Swimming/Snorkeling
- Non-motorized vessels (within 50m of a dive flag)
- Jet Skis
- Anchoring and Mooring
- Feeding of fish
- Fishing/bait collection
- Removal or disturbance of physical or biological features/specimens or habitats, e.g. dune, sand, rock, reef, artifacts, flora, fauna.
- Coastal modifications, construction or maintenance of any encroachment which falls under beach licensing regime
- Activities with environmental footprint that will adversely impact the functionality of the area's ecosystems and that of adjacent zones.
- Any activity which contravenes local environmental laws and/or may have a deleterious effect on human safety or the environment.

5.4 Multiple-use Zone

The Multiple-use Zone will allow for a range of uses such as fishing as well as recreational boating and all activities with an environmental footprint that will not adversely impact archaeological/heritage resources and the functionality of the area's ecosystems and that of adjacent zones.

5.4.1 Objective:

To allow motorized activities and other activities such as fishing and the operation of jet skis which are not allowed in the Conservation Zones within ORMPPA?

5.4.2 Boundary Description

The Multiple-use Zone is situated behind the reef and Conservation Zone. It includes fishing and all motorized and non-motorized activities

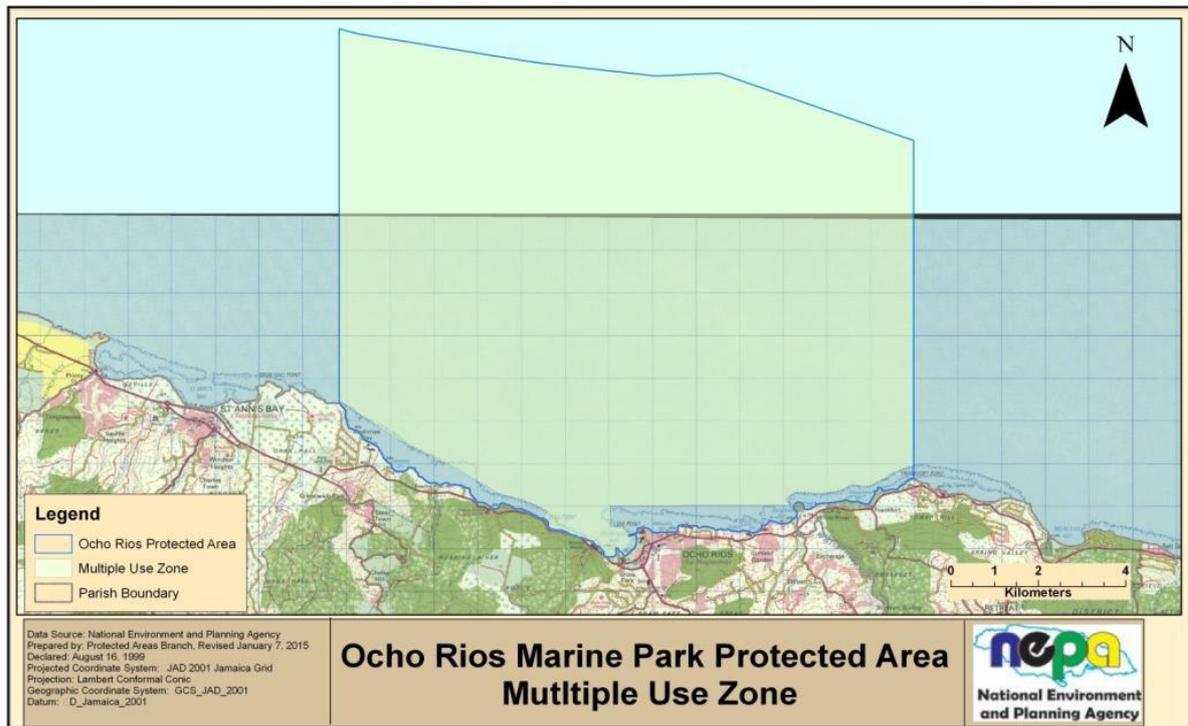


FIGURE 13: MAP SHOWING MULTIPLE-USE ZONE IN ORMPPA (SOURCE: PROTECTED AREAS BRANCH, 2015)

5.4.3 Justification for Multiple-use Zone

To allow for commercial activities such as fishing and other recreational activities such as jet skiing. This area was designated to reduce conflicts between non-motorized and motorized watersports activities by providing an area for such activities, as well as to protect the divers and snorkelers who use the reef area.

5.4.4 Activities Guide

The Multiple-use Zone will allow for a range of uses such as fishing as well as recreational boating and all activities with an environmental footprint that will not adversely impact the functionality of the area's ecosystems and that of adjacent zones.

Box 4: User Activities for the Multiple-use Zone

Allowed

- Fishing (except within the Ship Channel)
- Motorized and Non-Motorized vessels and activities
- Activities with environmental footprint that will not adversely impact the functionality of the area's ecosystems and that of adjacent zones.
- Ecological restoration/conservation activities.
- Installation of facilities/structures associated with the management of the area and permitted activities (e.g. anchor pins, mooring buoys, marker buoys, appropriate temporary sanitary and solid waste disposal facilities).
- Research/educational activities.
- Mooring
- Anchoring (except at reef sites)
- All activities associated with the NRCA's management of the area.

Not Allowed

- Jet skis (within Ship Channel and other restricted areas in the Ocho Rios Bay area).
- Fishing within the Ship Channel
- Activities with environmental footprint that will adversely the functionality of the area's ecosystems and that of adjacent zones.
- Removal or disturbance of physical or biological features/specimens or habitats, e.g. dune, sand, reef, rock, artifacts, flora, fauna.
- Anchoring on reefs.
- Coastal modifications, construction or maintenance of any encroachment which falls under beach licensing regime
- Any activity which contravenes local environmental laws and/or is deemed to be a potential threat to human safety or which may have a deleterious effect on the environment e.g. open burning, dumping.

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APPENDIX 1 Legislation for Ocho Rios Marine Park Protected Area



THE
JAMAICA GAZETTE
SUPPLEMENT

PROCLAMATIONS, RULES AND REGULATIONS

383

Vol. CXXII

MONDAY, AUGUST 16, 1999

No. 78

No. 117

THE NATURAL RESOURCES CONSERVATION AUTHORITY ACT

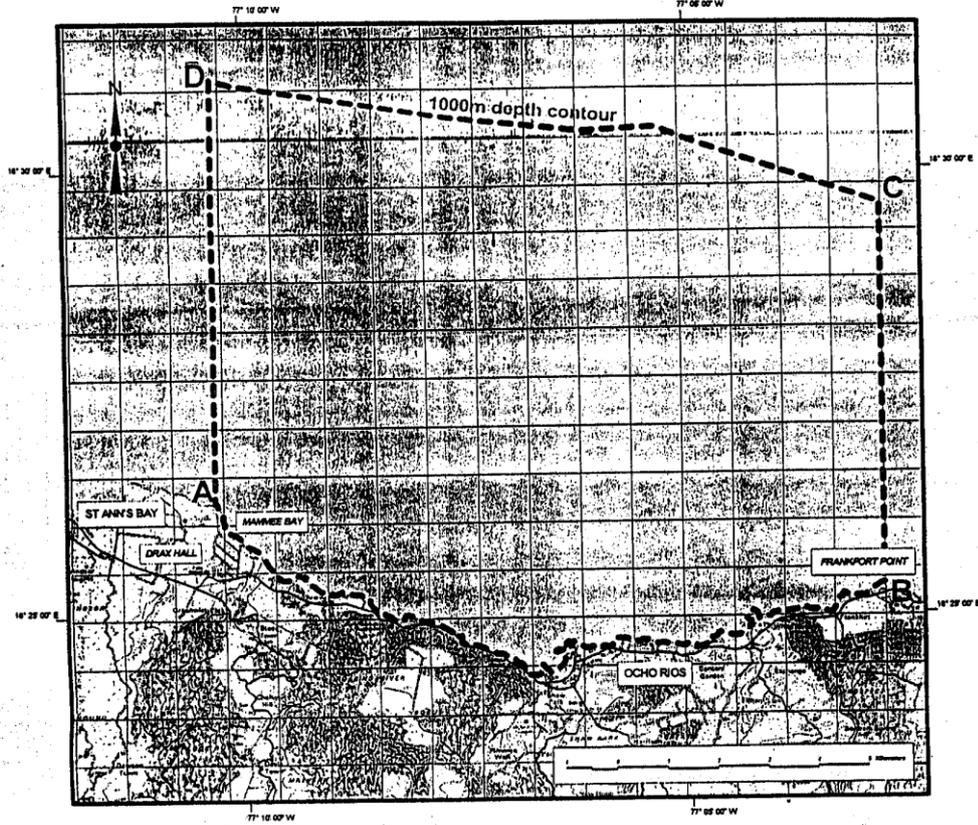
**NATURAL RESOURCES CONSERVATION (OCHO RIOS MARINE PARK PROTECTED AREA)
ORDER, 1999**

In exercise of the power conferred upon the Minister by section 5 (1) (b) of the Natural Resources Conservation Authority Act, and of every other power hereunto enabling, the following Order is hereby made, on the recommendation of the Natural Resources Conservation Authority after consultation with the Jamaica National Heritage Trust:—

1. This Order may be cited as the Natural Resources Conservation (Ocho Rios Marine Park Protected Area) Order, 1999.
2. The area specified in Part I of the Schedule, which is delineated on the map set out in Part II thereof, is hereby designated as a protected area and shall be known as the Ocho Rios Marine Park Protected Area.

PART II—Map of Ocho Rios Marine Park Protected Area

OCHO RIOS MARINE PARK

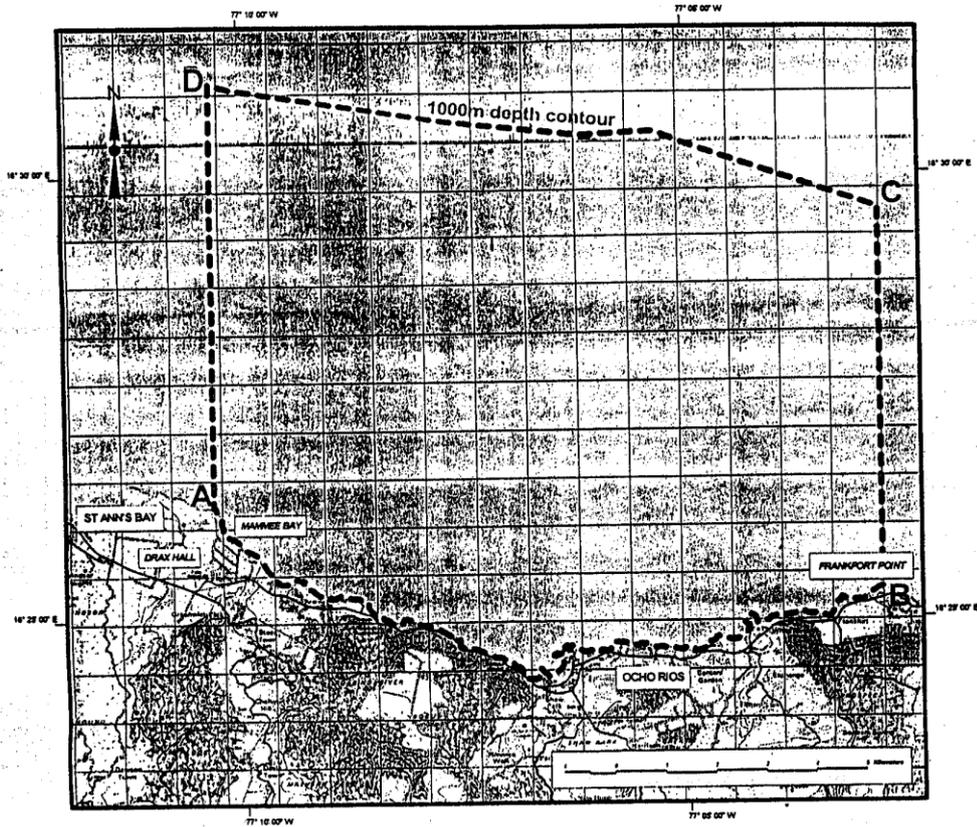


Dated the 16th day of August, 1999.

EASTON DOUGLAS,
Minister of Environment and Housing.

PART II—Map of Ocho Rios Marine Park Protected Area

OCHO RIOS MARINE PARK



Dated the 16th day of August, 1999.

EASTON DOUGLAS,
Minister of Environment and Housing.

APPENDIX 2 Commercial and Shipping Channel

Coordinates:

A - 18°24'53.73"N B - 18°24'32.74"N C - 18°24'38.64"N D - 18°24'43.53"N
77° 7'8.64"W 77° 6'43.89"W 77° 6'31.58"W 77° 6'33.44"W

E - 18°24'44.39"N F - 18°24'47.76"N G - 18°25'3.21"N
77° 6'32.94"W 77° 6'32.46"W 77° 6'56.62"W

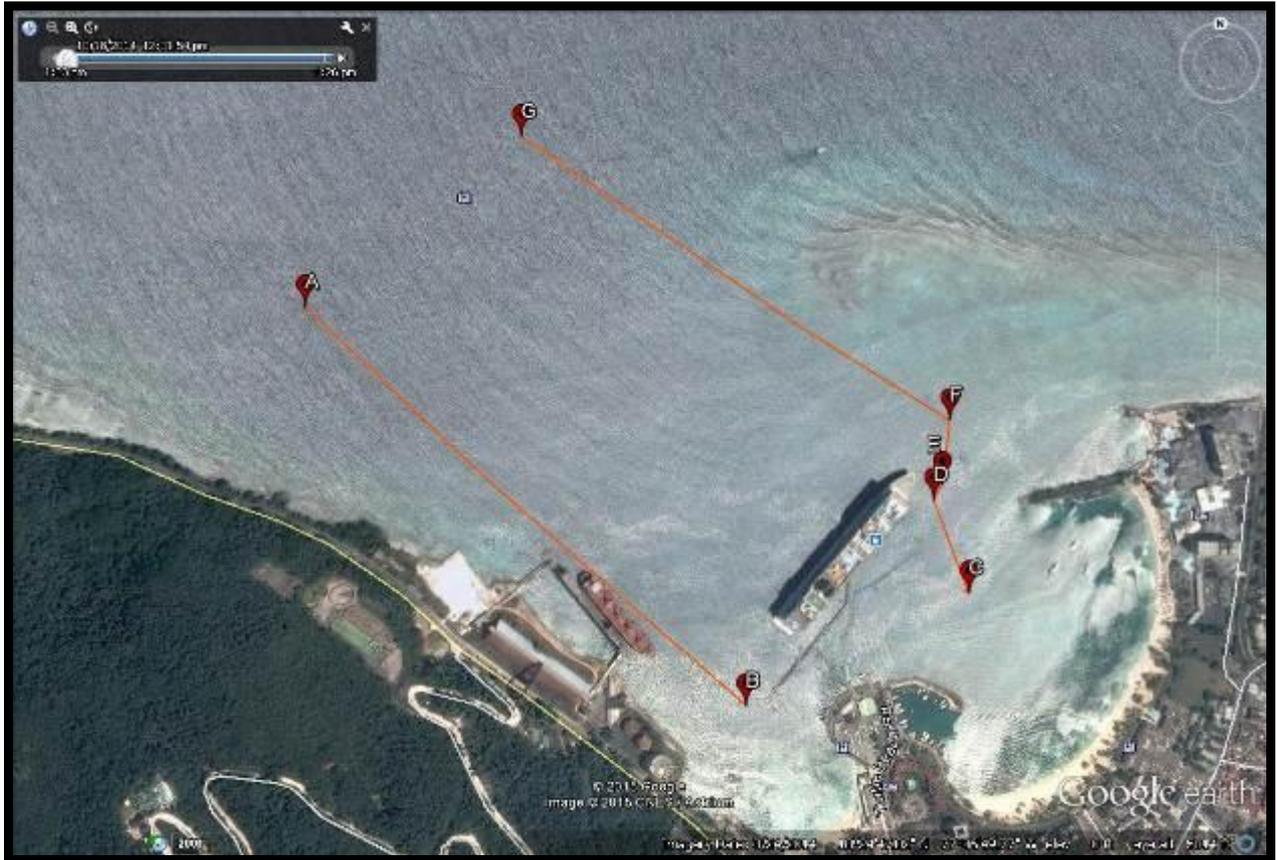


FIGURE 14: BOUNDARY FOR PORT AND SHIPPING CHANNEL (SOURCE: PROTECTED AREAS BRANCH, 2015)

APPENDIX 3 Jet Ski Launch Site



FIGURE 15: IMAGE SHOWING DESIGNATED JET SKI LAUNCH SITE (SOURCE: PROTECTED AREAS BRANCH, 2015)

APPENDIX 4 Dive and Snorkel Sites

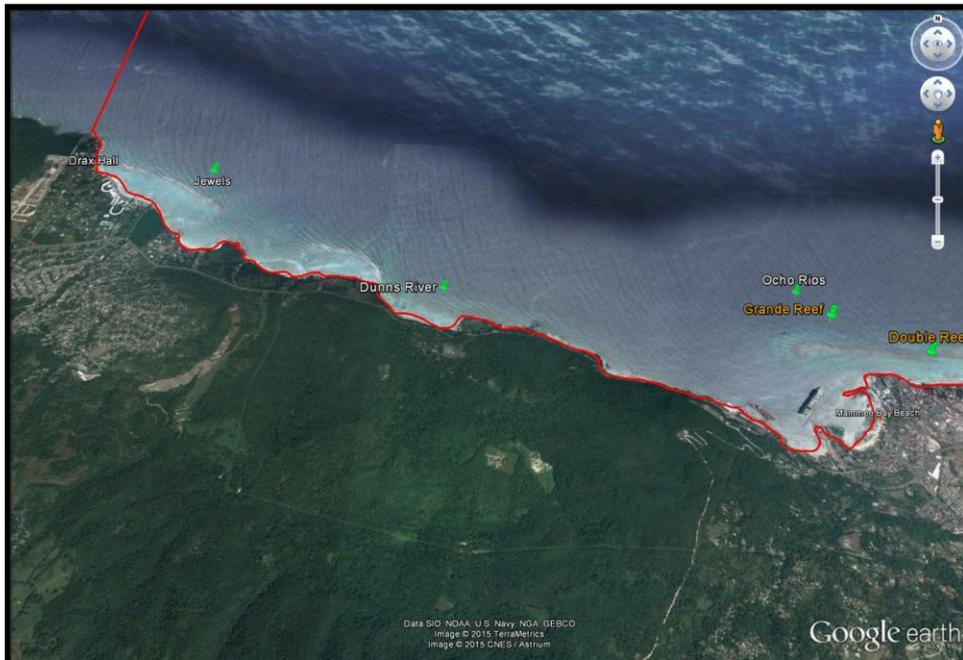


FIGURE 16: DIVE SITES IN THE WESTERN SECTION OF ORMPPA (SOURCE: PROTECTED AREAS BRANCH, 2015)

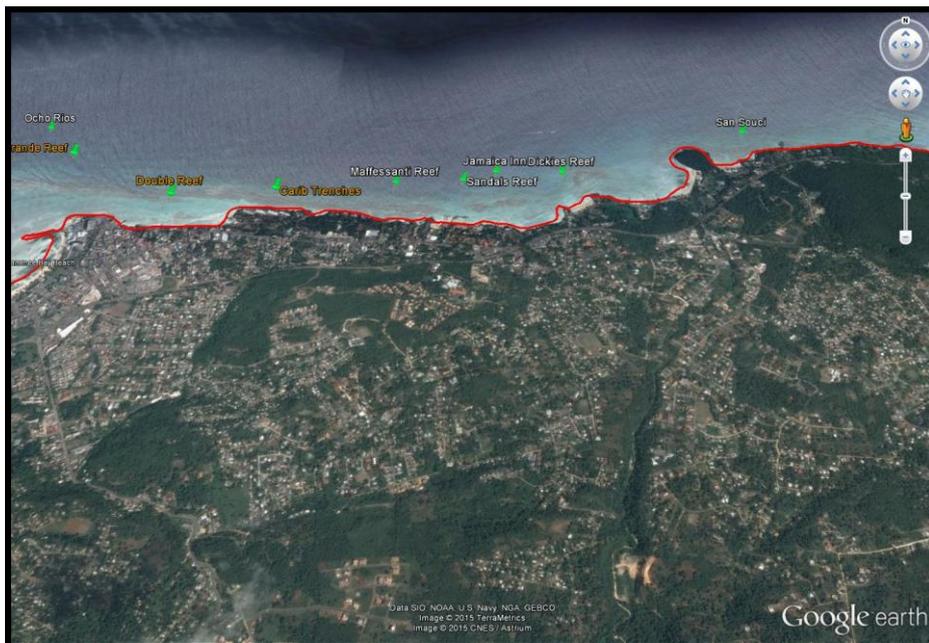


FIGURE 17: DIVE SITES IN CONSERVATION ZONE A (SOURCE: PROTECTED AREAS BRANCH, 2015)

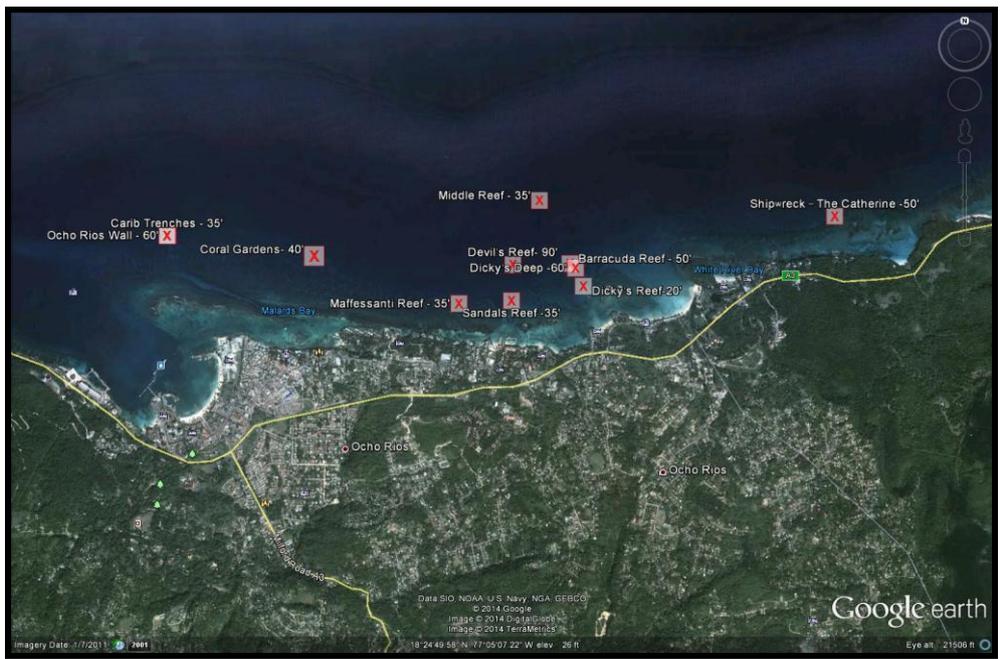


FIGURE 18: DIVE SITES SURVEYED BY NEPA IN CONSERVATION ZONE A (SOURCE: ECOSYSTEMS MANAGEMENT BRANCH, 2011)