

Bermuda's Marine Spatial Plan



RESOURCE GUIDE

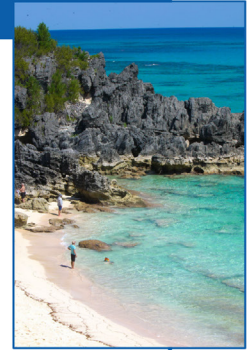
This section provides a summary for each of the nearshore fully protected marine areas introduced in the Marine Spatial Plan and why that area should be protected.

What are Marine Protected Areas (MPAs) and why are they important?

MPAs are specially designated parts of the ocean set aside for long-term conservation. The idea is to choose representative areas of the ocean and keep them as healthy as possible so they can continue to provide essential benefits, called ecosystem services, for current and future generations, including protecting our coastlines, supporting well-functioning fisheries, mitigating the impacts of climate change, enhancing the tourism industry, and many more.

How can MPAs benefit Bermuda?

- Protecting and restoring our marine environment
- Replenishing commercially important fish stocks
- Protecting fish nursery habitats and spawning grounds
- Maintaining the full variety of marine life
- Protecting unique underwater geologic features, such as seamounts
- Ensuring long-term sustainable use of natural resources
- Safeguarding underwater cultural heritage, such as shipwrecks
- Increasing revenue for tourism and ocean-related businesses
- Increasing job opportunities in ocean industries











What can I do in fully protected MPAs?

Designation as an MPA protects an area from activities that could have a negative impact on the ecosystem. Examples include potentially damaging activities, such as dumping or infrastructure development, and so-called "extractive activities", such as fishing and mining. Activities such as swimming, SCUBA diving, and snorkeling, or "non-extractive activities" that do not cause damage or remove anything from the ocean, are a great way to enjoy the animals and plants that live within the MPAs. See Use Chart 3 in the Blue Prosperity Plan for an extended list of activities.

Permitted activities include:

-  Non-extractive recreation
-  Vessel transit and boating
-  Non-extractive research
-  Restoration/enhancement for conservation

Prohibited activities include:

-  All types of fishing
-  Commercial Aquaculture
-  Extractive research
-  Dredging and dumping
-  Renewable energy generation
-  Infrastructure development
-  Untreated water discharge
-  Mining, oil and gas extraction



In this guide you will find **three different maps to represent the offshore, nearshore and coastal networks**. Together, these maps represent **Bermuda's MPA Network**, which was developed as part of the Marine Spatial Plan. *Please note that this MPA network aims to expand currently legislated marine areas in Bermuda. More information on currently legislated areas can be found on environment.bm.*

Bermuda's Marine Spatial Plan: Currently Legislated Areas

The Fisheries Act of 1972 provides for the creation of the Fisheries (Protected Areas) Order 2000, which prohibits the take of fish or the use of any anchor other than a Danforth (sand) anchor at several historic wrecks and other dive locations around the island. These areas are known as Protected Dive Sites and can be seen on the Currently Legislated Areas Map as yellow circles with red borders. Additionally, shipwrecks that are over 50 years old are governed under the Historic Wrecks Act 2001 which provides for the protection and scientific management of Bermuda's underwater cultural heritage assets.

The map below shows currently legislated areas in Bermuda's waters. These areas and legislation will remain unchanged under the proposed legislation, and have been considered in the MSP's design. These areas will work alongside and be expanded by the proposed MPA network.

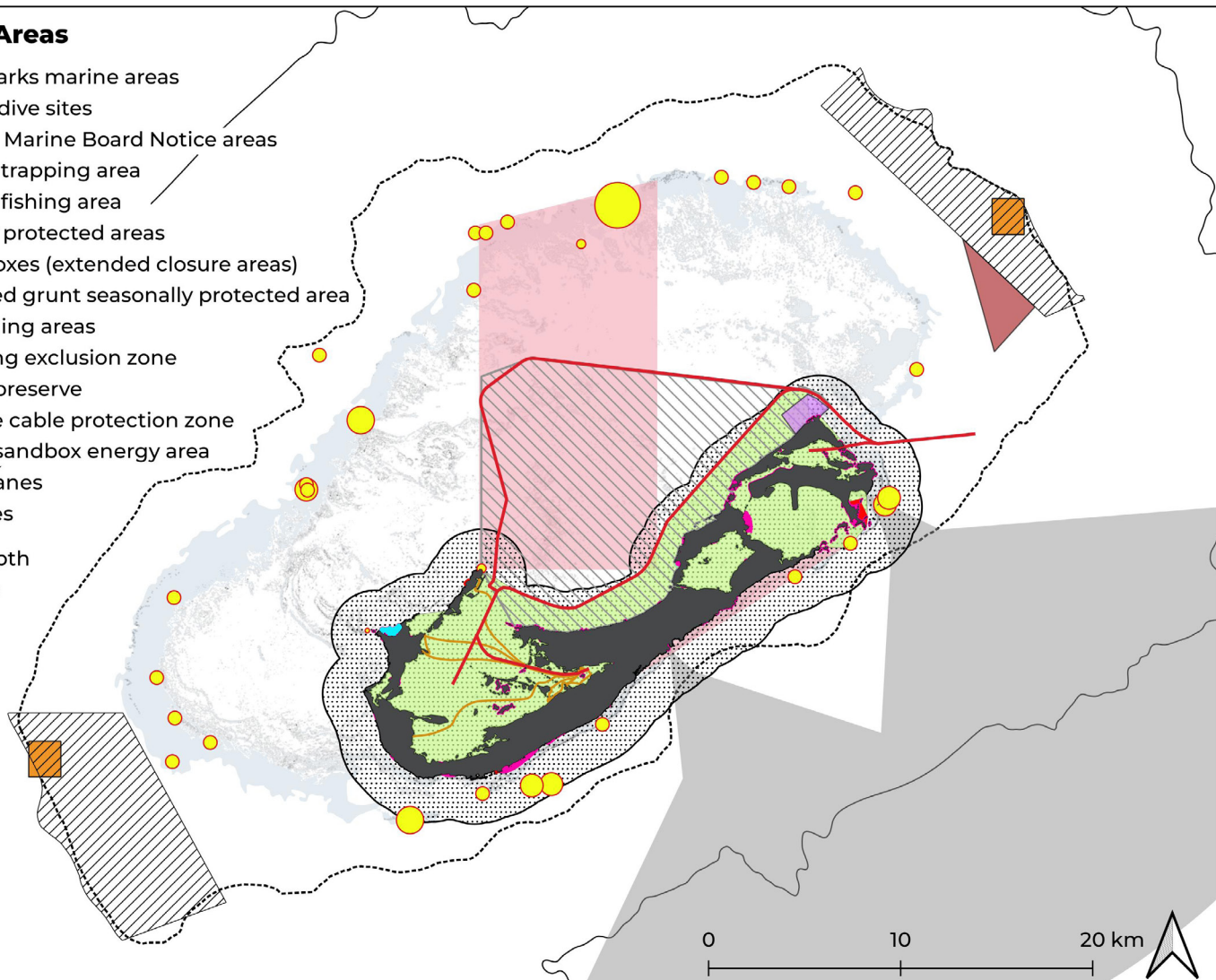


Dive site protections have been in place in Bermuda's waters for over 30 years.

To help maintain the beauty and diversity of Bermuda's marine environment, for everyone to enjoy, moorings are provided so that anchors do not damage corals, and fishing of all types is prohibited.

Legislated Areas

- National Parks marine areas
- Protected dive sites
- Prohibited Marine Board Notice areas
- No lobster trapping area
- No lobster fishing area
- Seasonally protected areas
- Grouper boxes (extended closure areas)
- Blue-striped grunt seasonally protected area
- No net fishing areas
- Spearfishing exclusion zone
- Coral reef preserve
- Submarine cable protection zone
- Proposed sandbox energy area
- Shipping lanes
- Ferry routes
- 2000m depth
- 55m depth
- Land
- Reef



Bermuda's Marine Spatial Plan: Offshore Network

The offshore MPA network covers Bermuda's waters from the 2,000 metre (m) depth contour around the Bermuda platform to the boundary of the island's EEZ, which extends 200 nautical miles (nm) from Bermuda's coastline.

MPAs far from shore can help protect whole ocean features, including seamounts, or submarine canyons, and support the conservation and management of highly mobile species, like tuna.

Offshore fully protected areas include the Muir Seamount Chain (A13), which protects unique seamounts, and the Southwestern EEZ (A14), which preserves rare deep-ocean ecosystems, including benthic habitats such as hills, plains and valleys, and their inhabitants.



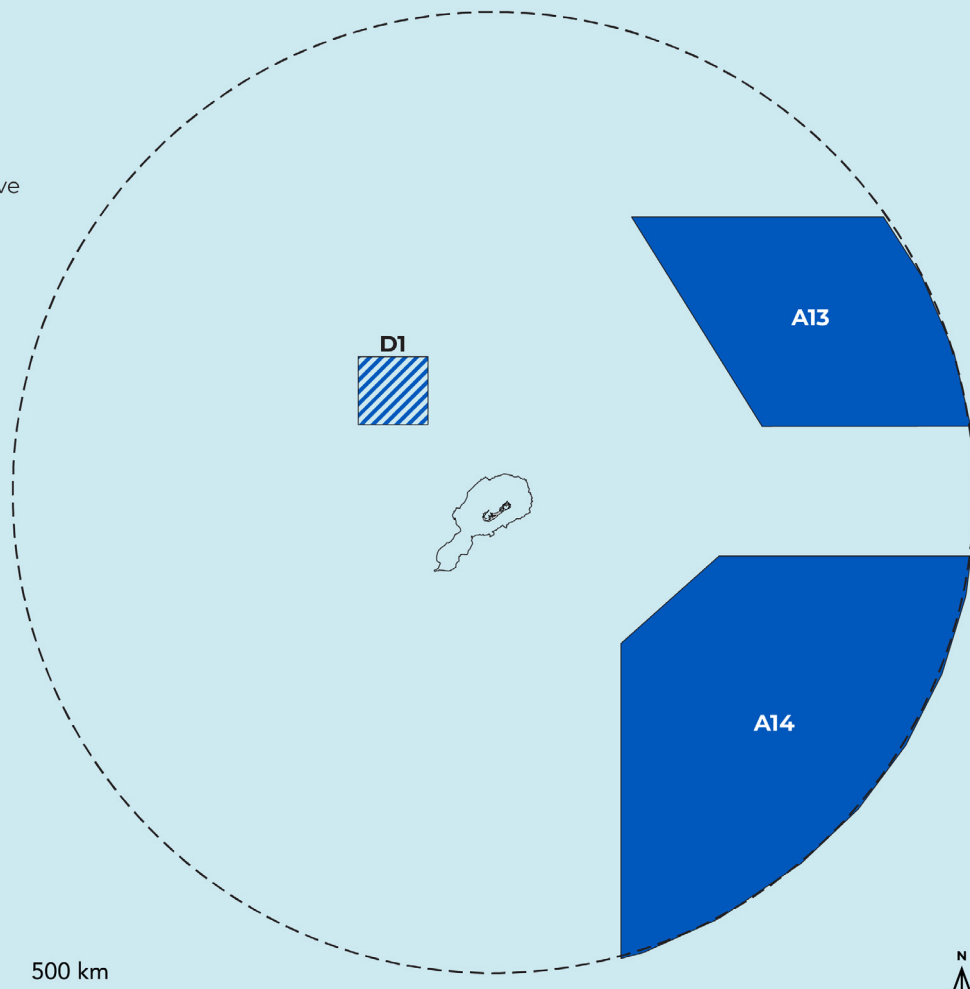
Fully protected MPAs in Bermuda's outer EEZ help **support global efforts to protect open ocean environments**. This is particularly important due to Bermuda's location in the Sargasso Sea, where these protected areas play a critical role in maintaining the biodiversity of this unique ecosystem.

Bermuda's Offshore Marine Protected Areas

- **Fully Protected Areas:**
 Allows all non-extractive or non-destructive uses (e.g., diving, boating) and prohibits all activities that would damage habitats or cultural heritage (e.g., mining, development) or remove marine life (e.g., fishing)

- ▨ **Lightly Protected Areas:**
 Surface fishing (including small-scale pelagic long lining) allowed, prohibits all other extractive or destructive activities

- Other map features:**
- Land
 - 2000m (1094 fathom) depth
 - - - - Exclusive Economic Zone (EEZ)



Bermuda's Marine Spatial Plan: Nearshore Network

What is protected in the nearshore MPAs?



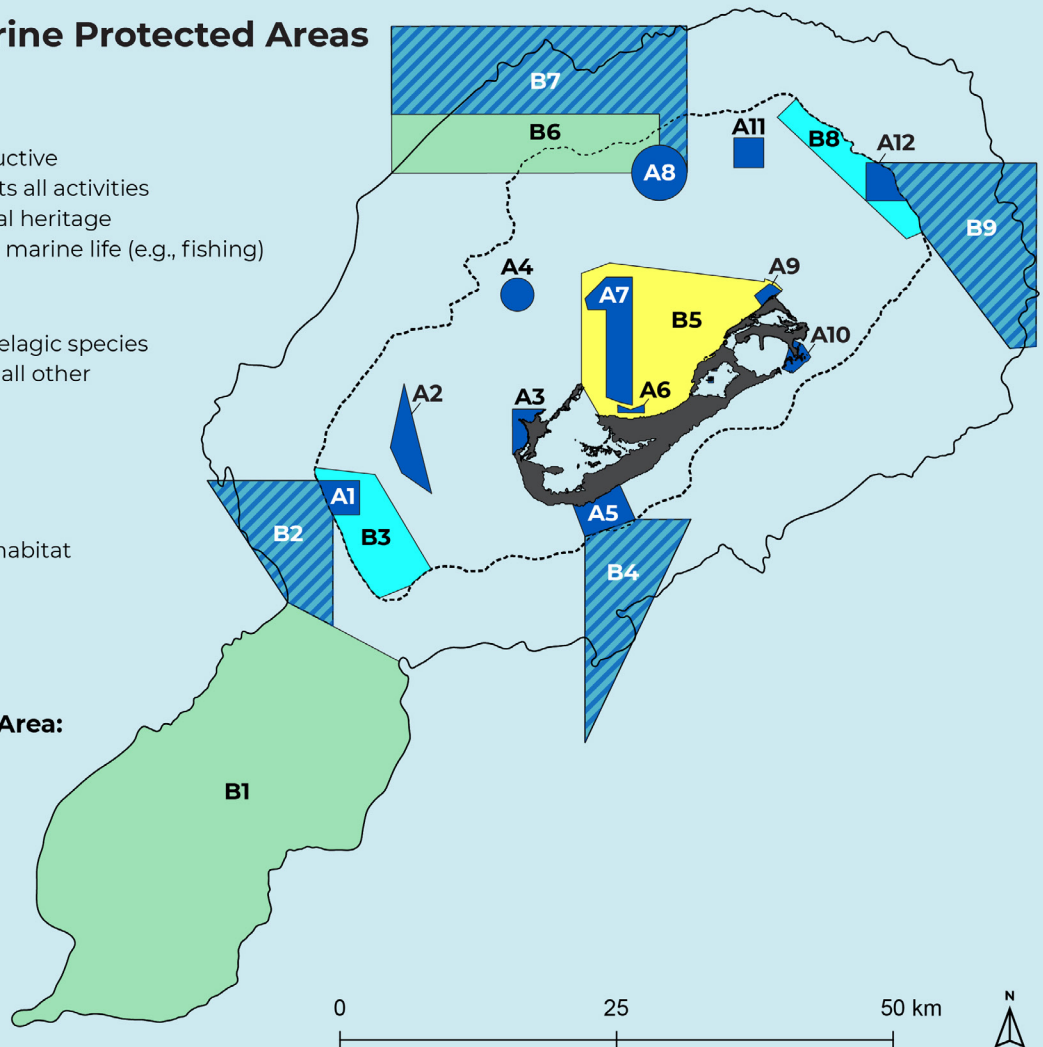
MPAs enhance adjacent fisheries via the 'spillover effect.' When an area is fully protected, all activities that could potentially harm the ecosystem are removed in order to keep the habitats and the marine life that lives there as healthy as possible. Studies have shown that over time, populations of species protected within MPAs become so abundant they 'spill over' into nearby areas where fishing is permitted.

Bermuda's Nearshore Marine Protected Areas

- **Fully Protected Areas:**
Allows all non-extractive or non-destructive uses (e.g., diving, boating) and prohibits all activities that would damage habitats or cultural heritage (e.g., mining, development) or remove marine life (e.g., fishing)
- ▨ **Pelagic Zones:**
Surface trolling and spearfishing for pelagic species allowed, prohibits bottom fishing and all other extractive or destructive activities
- **Fisheries Areas:**
Prohibits development and other destructive activities to safeguard important fishing areas and valuable habitat
- **Seasonal Closure Areas:**
Seasonal fishing is allowed as usual, prohibits development and shipping
- **North Shore Habitat Protection Area:**
Prohibits large scale development and lobster trapping (other types of fishing will continue as usual)

Other map features:

- Land
- 55m (30 fathom) depth
- 2000m (1094 fathom) depth

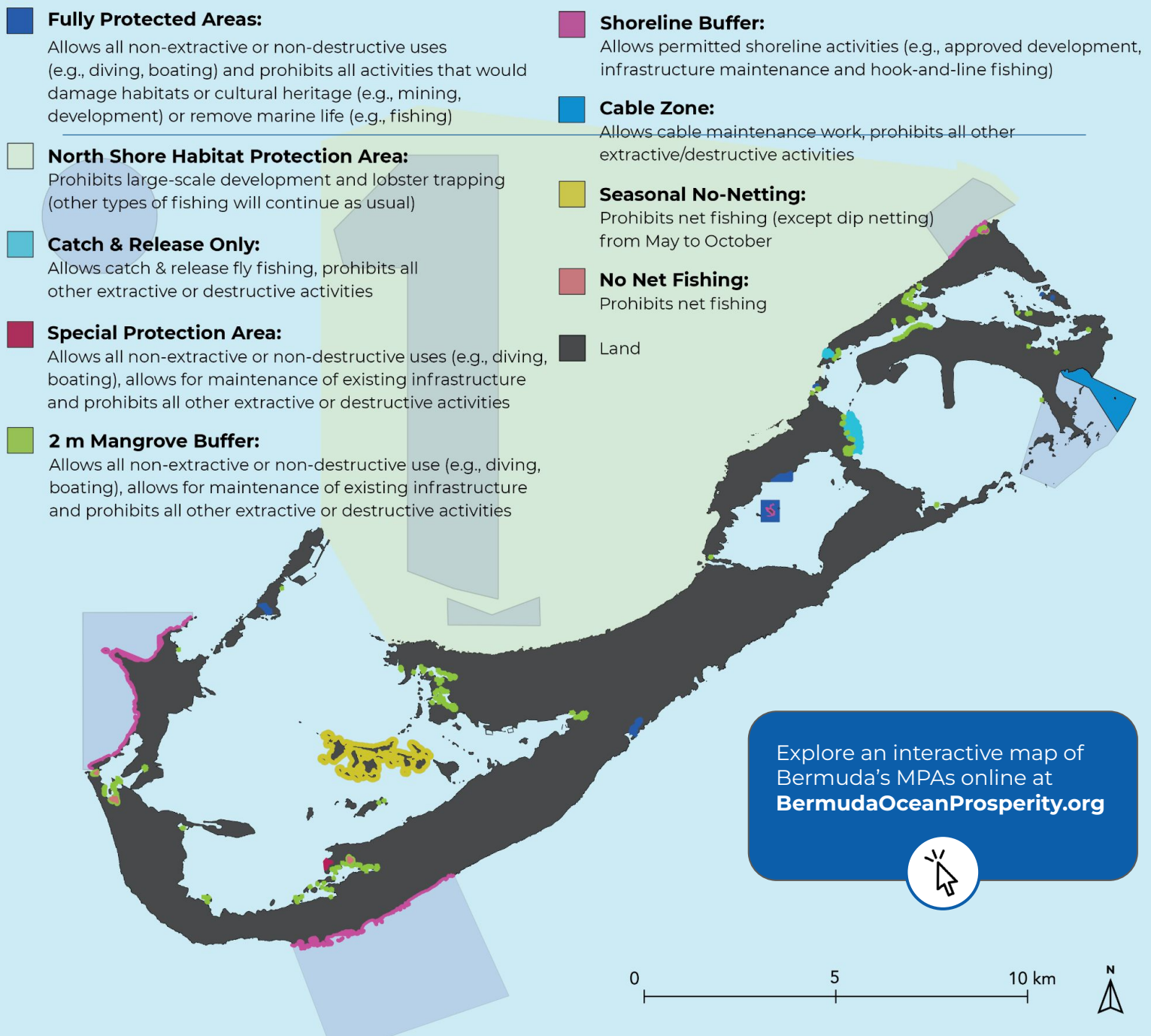


Bermuda's Marine Spatial Plan: Coastal Network

As with the offshore and nearshore networks, the coastal network builds upon currently legislated areas and existing management frameworks for fisheries and marine environmental protection, as well as regulatory procedures for development in Bermuda's marine waters.

The coastal network introduces additional protection designations to account for the wide variety of activities that take place in Bermuda's coastal waters.

Bermuda's Coastal Marine Protected Areas



Bermuda's Marine Spatial Plan: Fisheries Areas

A large area that includes the Challenger and Argus Banks (B1) and a region near North Rock (B6) have been designated as "fisheries areas." Under this designation, all legal fishing activities can continue as permitted under existing regulations; however, development and other destructive activities, such as seabed mining, are now prohibited to protect the valuable habitat and fishing grounds.

The offshore banks are important habitat for several species of pelagic fishes and marine mammals. The deep slopes of the banks and the Bermuda Platform support distinct coral, sponge, and fish communities. Strong ocean currents bring in nutrients and a variety of top predator fishes, such as tunas and wahoo, and extensive fishing occurs on the banks and along the perimeter of the Bermuda Platform.



Within the fisheries area, **the banks are undersea mountains that are hotspots of biodiversity.** These "seamounts" rise high off the seafloor and force deep ocean water, rich in nutrients, toward the surface. This fuels a food chain that attracts marine life from miles around—tunas, whales, sea birds, and sharks. This phenomenon makes these areas ideal fishing grounds for a variety of pelagic species.

What can I do in fisheries areas?



Permitted activities:

All legal fishing activities



Prohibited activities:

All other extractive or destructive activities, including development



Proposed fully protected area

Western Grouper Box (A1)

Eastern Grouper Box (A12)

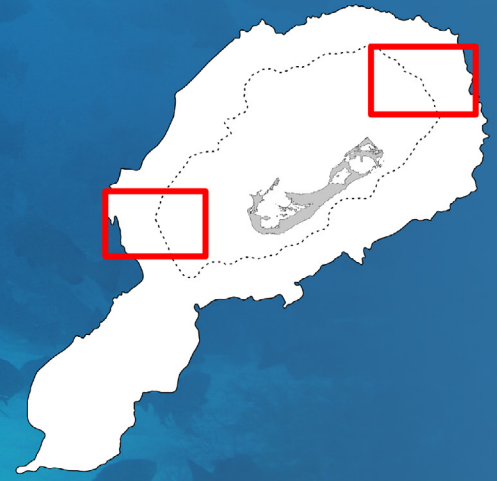


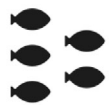
Photo credit: Triangle Diving Ltd.

The two grouper boxes protect spawning grounds of the black grouper, an important fishery species, and the coral reefs they use for shelter.

Why is this area protected?



Coral Reefs & Fish Habitat



Fish Spawning & Nurseries

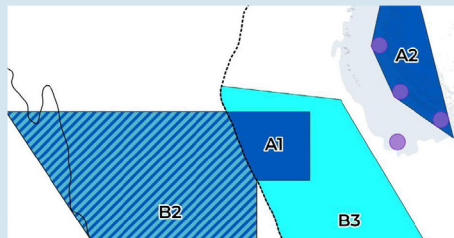
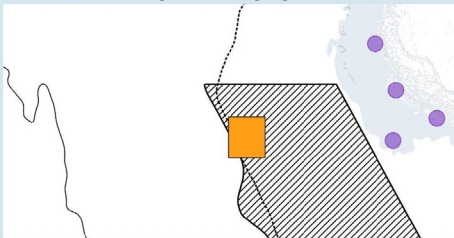


Commercially Important Fish Species

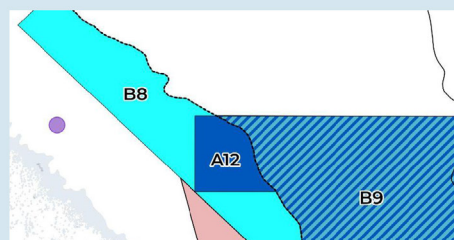
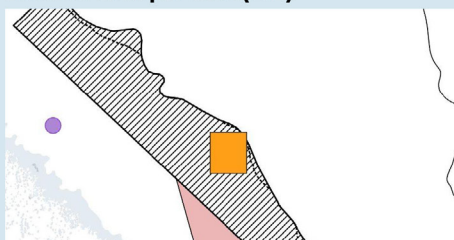
Black groupers are long-lived with a complex life cycle, making them particularly vulnerable to population decline. In Bermuda waters, Black groupers spawn monthly between April and November, forming large aggregations at these sites according to the lunar cycle. At present, these two key areas are closed to fishing during the critical spawning period. Protecting these important sites permanently, and prohibiting activities that might damage the habitat there, will help support the population of this valuable fishery species.



Western Grouper Box (A1)



Eastern Grouper Box (A12)



Current Legislation

Proposed Legislation

Map Legend



- Grouper Box
- Seasonally Protected Areas
- Protected Dive Sites
- Proposed Sandbox Energy Area
- Fully Protected
- Pelagic Zone
- Seasonal Closure Areas
- 55m (30 fathoms) depth
- 2000m (1094 fathoms) depth
- Land
- Reef

Proposed fully protected area Chub Heads (A2)



Recovering seagrass beds and good water quality support juvenile fishes and several rare and threatened species (e.g., queen conch and sea horses). This area also has more historic wrecks than anywhere else on the Platform.

Why is this area protected?

-  **Rare Species**
-  **Seagrass**
-  **Fish Spawning & Nurseries**
-  **Historic Shipwrecks**
-  **Tourism Hotspots**

Queen Conch are a species of large marine sea snail, or mollusc, that is related to clams, octopi, and squid. These animals can live 25 to 30 years and weigh up to 2.2 kilograms (5 pounds). This species is native to Bermuda and is legally protected, which means it should never be harvested or collected.

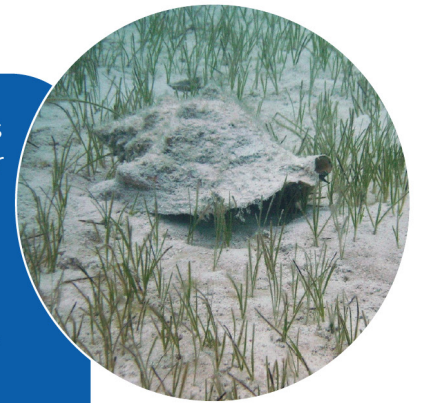
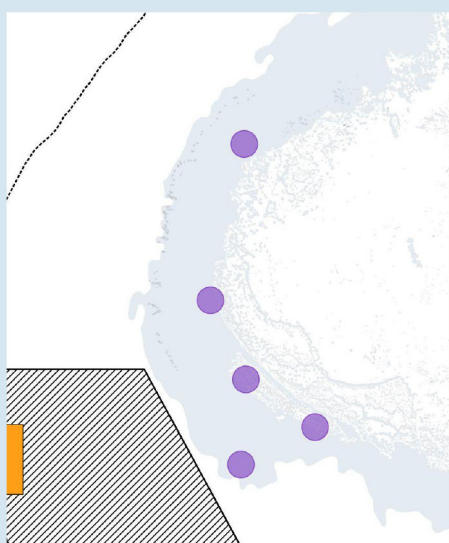
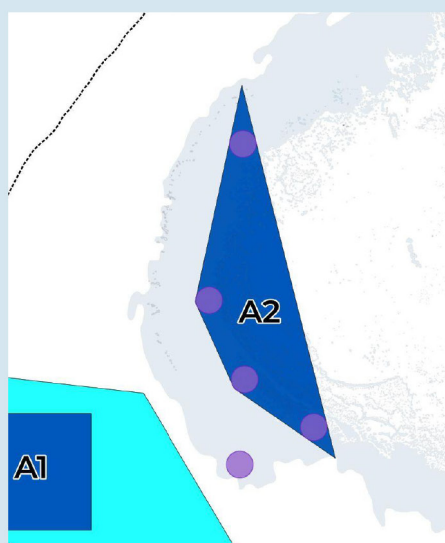


Photo credit:
Department of
Environment and
Natural Resources



Current Legislation



Proposed Legislation

Map Legend

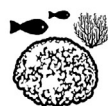
-  Protected Dive Sites
-  Grouper Box
-  Seasonally Protected Areas
-  **Fully Protected**
-  **Seasonal Closure Areas**
-  --- 55m (30 fathoms) depth
-  Land
-  Reef



Proposed fully protected area Daniel's Head (A3)

Daniel's Head is an important nursery and juvenile fish recruitment area that links mangrove, seagrass and patch reefs.

Why is this area protected?



Coral Reefs & Fish Habitat

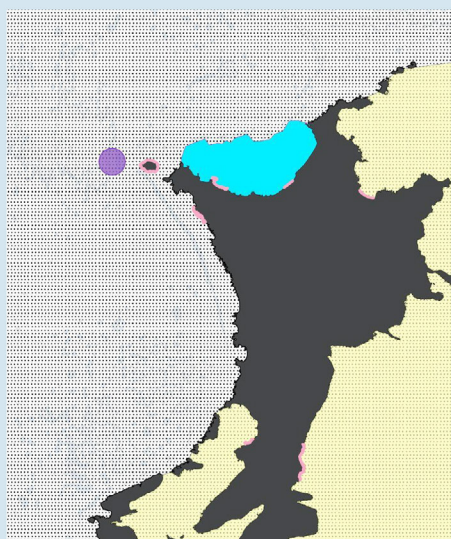
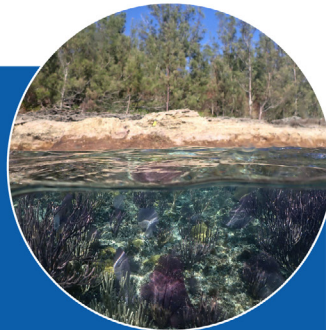


Seagrass

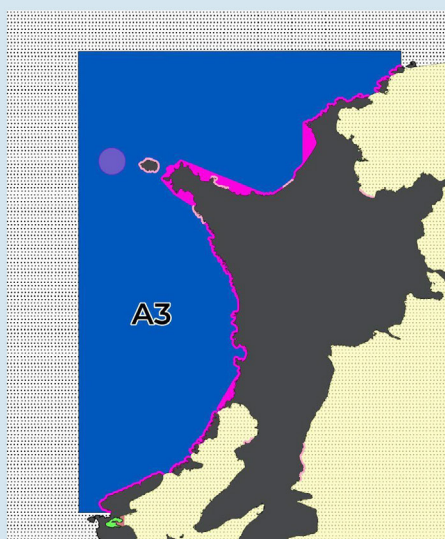


Fish Spawning & Nurseries

The nearshore MPA network offers protection to many coastal nursery areas used by juvenile fishes and protected marine species. A **highly protected buffer zone** will permit shoreline activities that are compatible with the adjacent fully protected MPA to provide flexibility for tourism-related activities (subject to EIA and EIS requirements) while still protecting the ecological integrity of the MPA.



Current Legislation



Proposed Legislation

Map Legend

- Protected Dive Sites
- No Lobster Fishing Area
- Spearfishing Exclusion Zone
- No Net Fishing Area
- Fully protected**
- No Net Fishing**
- Shoreline Buffer**
- 2 m Mangrove Buffer**
- 55m (30 fathoms) depth
- Land
- Reef



Proposed fully protected area
Eastern Blue Cut (A4)

Photo credit: Philippe Rouja

Eastern Blue Cut is one of the most popular dive and snorkelling spots in Bermuda. Incorporating a smaller area that is already protected from fishing, this proposed area would expand the protection to other nearby reefs and prohibit any extractive or destructive activities.

Why is this area protected?



Coral Reefs & Fish Habitat



Tourism Hotspots

Due to a natural break in the reef, clear, nutrient-rich water from the open ocean flows inside the reef system, attracting a variety of marine life, including large fishes and spotted eagle rays.

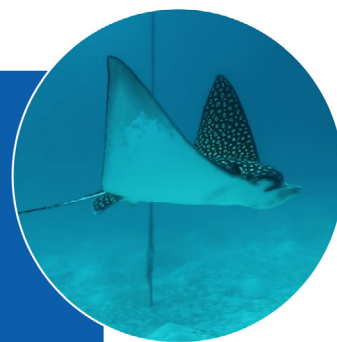
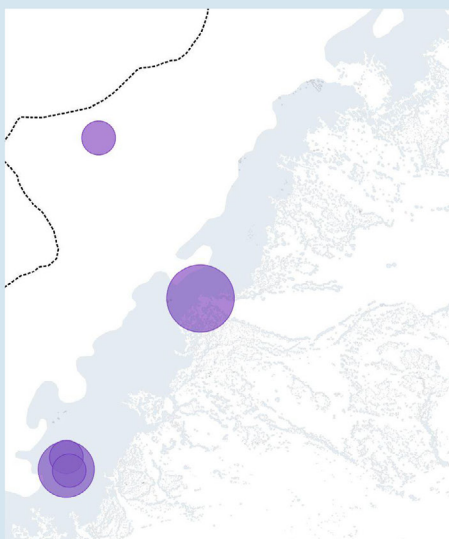
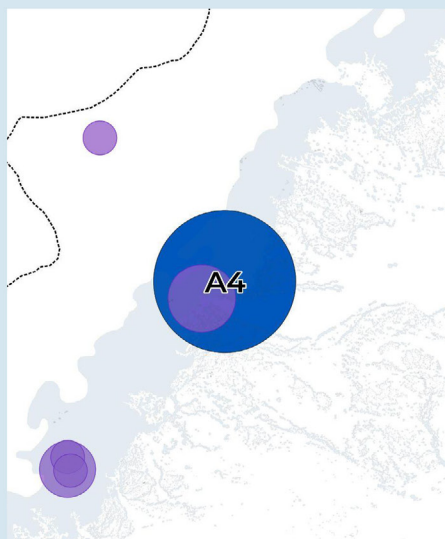


Photo credit: Philippe Rouja



Current Legislation



Proposed Legislation

Map Legend

- Protected Dive Sites
- Fully Protected**
- 55m (30 fathoms) depth
- Land
- Reef



Proposed fully protected area South Shore Reefs (A5)

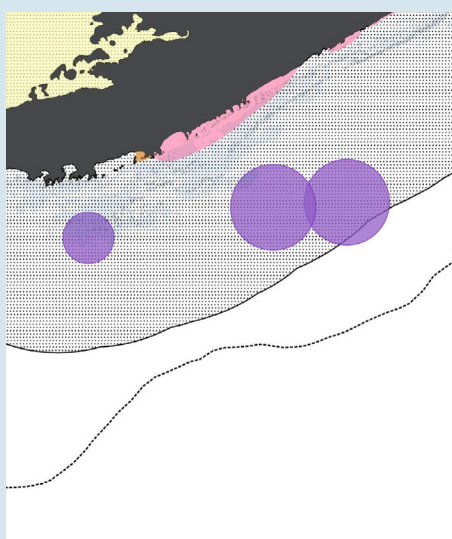
Photo credit:
Andrew Stevenson

Lush coral reefs provide a home for many types of fish. Along with multiple historic wrecks, the reefs in this area help support the island’s tourism industry and local businesses. This site builds upon an existing prohibited marine board notice area and national park marine areas between East Whale Bay and Warwick Long Bay to create ecological corridors for marine species.

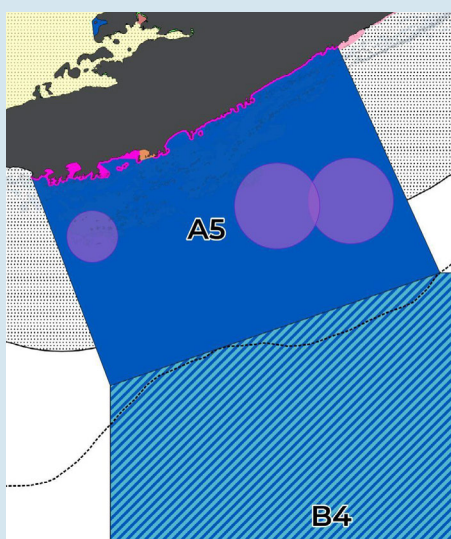
Why is this area protected?

-  **Coral Reefs & Fish Habitat**
-  **Fish Spawning & Nurseries**
-  **Historic Shipwrecks**
-  **Tourism Hotspots**

This area includes **historic wrecks and popular dive sites**, such as the Mary Celestia, Minnie Breslauer and others. These underwater heritage sites act as artificial reefs and habitats and, in this way, serve as “islands” of marine biological diversity.



Current Legislation



Proposed Legislation

Map Legend











-  Protected dive sites
-  Submarine cable protection area
-  National Parks marine area
-  No lobster fishing area
-  **Fully Protected**
-  **Pelagic Zone**
-  **Shoreline Buffer**
-  --- 55m (30 fathoms) depth
-  Land
-  Reef



Photo credit: Department of Environment and Natural Resources

Proposed fully protected area North Shore Nursery (A6)

The North Shore Nursery is an important area of patch reef habitat in calm water close to shore. The many branching corals, which are less common on more exposed reefs, provide shelter for juvenile fish. It also links this nursery habitat and the protective corridor A7 in the North Lagoon, providing a protected pathway for juveniles to migrate to different habitats as they develop to maturity. The area is also located near the remaining seagrass beds at Spanish Point, providing a mosaic of habitats for good biodiversity.

Why is this area protected?



Rare Species



Coral Reefs & Fish Habitat

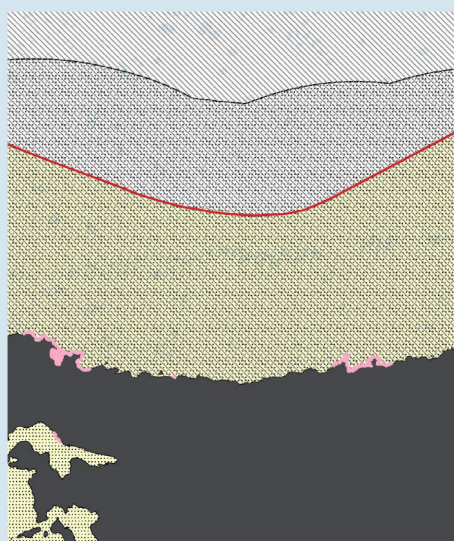


Fish Spawning & Nurseries

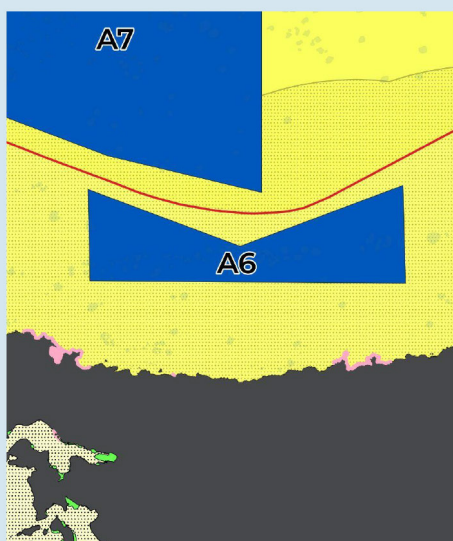


While rim reefs and terrace reefs grow around the edge of the Bermuda platform, **patch reefs** grow on top of it. These smaller, isolated reef structures form in shallow water where the currents are not as strong. Their shape allows more water to flow around the corals.

Photo credit: Department of Environment and Natural Resources



Current Legislation



Proposed Legislation

Map Legend

- Protected Dive Sites
- Shipping Lanes
- No Lobster Fishing Area
- Spiny Lobster Reservoir
- Spearfishing Exclusion Zone
- Fully Protected
- North Shore Habitat Protection Area
- 2 m Mangrove Buffer
- 55m (30 fathoms) depth
- Land
- Reef

Proposed fully protected area North Lagoon (A7)

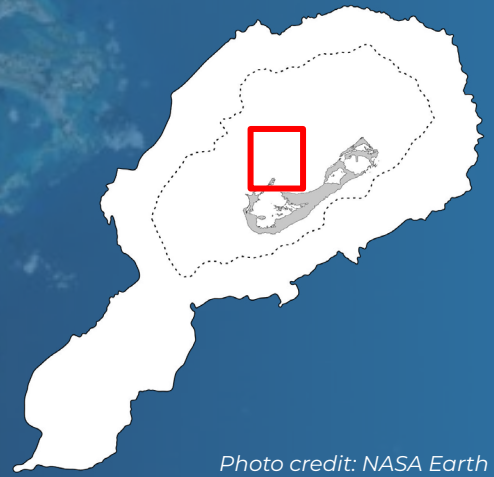
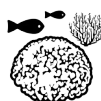
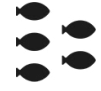




Photo credit: NASA Earth Observatory images by Jesse Allen

The North Lagoon protected area links together a variety of ecologically valuable patch reefs. The area creates what is referred to as “ecological connectivity” or a “protective corridor,” an important concept in the design of MPAs. Ecological connectivity considers the ability of organisms to move around within the MPA network throughout their life cycle in order to survive.

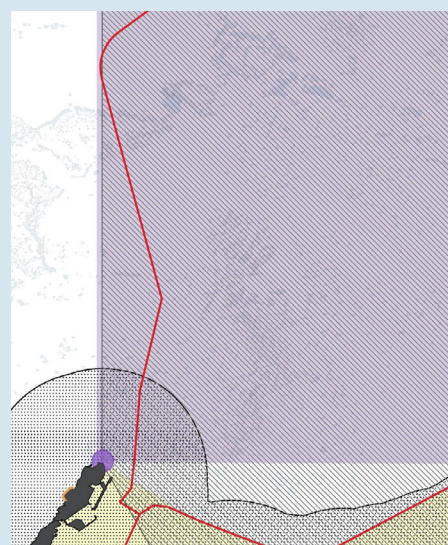
Why is this area protected?

-  **Coral Reefs & Fish Habitat**
-  **Fish Spawning & Nurseries**
-  **Lobster Habitat**
-  **Seagrass**

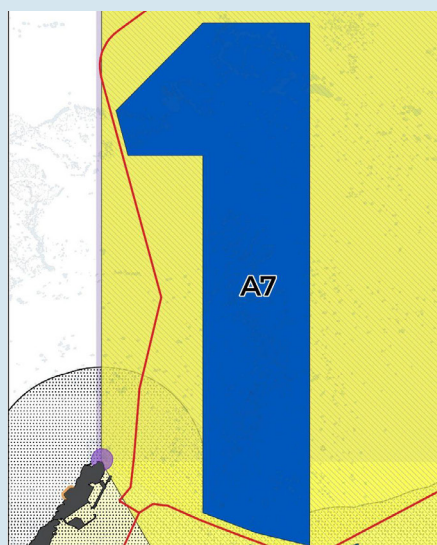
A7 links the nursery habitats in A6 to the outer rim reef. It falls within the **North Shore Habitat Protection Area**, which prohibits lobster trapping and large-scale development. In that area, other types of fishing will continue as usual.



Photo credit: Department of Environment and Natural Resources



Current Legislation



Proposed Legislation

Map Legend

-  Protected Dive Sites
-  Shipping Lanes
-  No Lobster Fishing Area
-  Spiny Lobster Reservoir
-  Spearfishing Exclusion Zone
-  **Fully Protected**
-  **North Shore Habitat Protection Area**
-  **Seasonal No Net Fishing**
-  --- 55m (30 fathoms) depth
-  Land
-  Reef

Proposed fully protected area North Rock (A8)

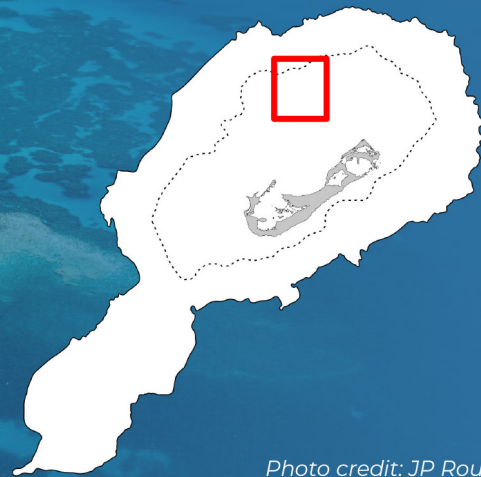
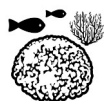


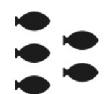
Photo credit: JP Rouja,
Nonsuch Expeditions

The North Rock fully protected area contains large healthy corals as well as an important and world-famous dive site. Expanding this existing protected dive site would help improve the ability of this ecosystem to withstand both human and natural disturbances.

Why is this area protected?



**Coral Reefs
& Fish Habitat**



**Fish Spawning
& Nurseries**

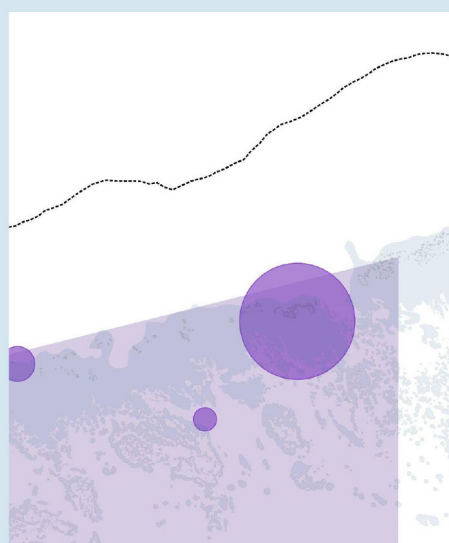


**Tourism
Hotspots**

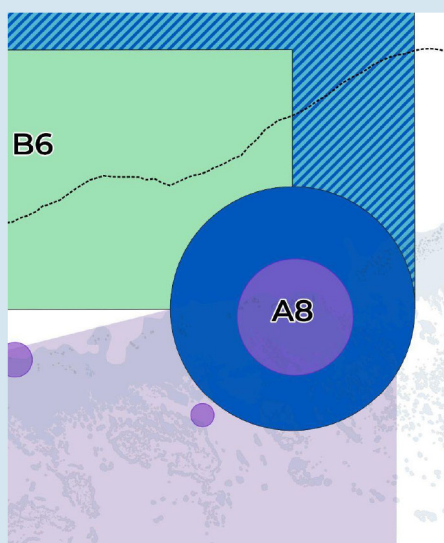
North Rock is a national treasure. It was declared as an MPA in 1990 to preserve marine life and cultural resources.



Photo credit:
Shayna Brody



Current Legislation



Proposed Legislation

Map Legend

- Protected Dive Sites
- Coral Reef Preserve
- Fully Protected**
- Pelagic Zone**
- Fisheries Area**
- 55m (30 fathoms) depth
- 2000m (1094 fathoms) depth
- Land
- Reef



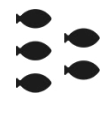



Proposed fully protected area
Coot Pond Area (A9)

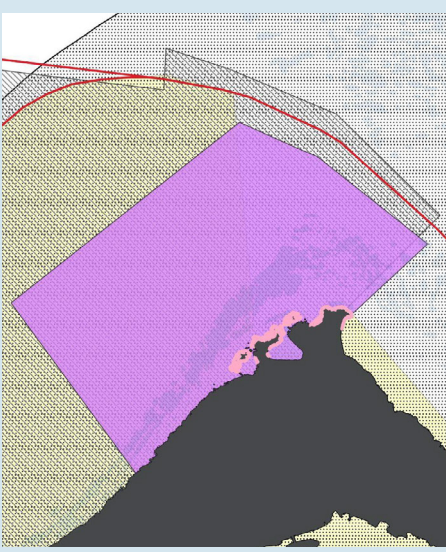
Photo credit: Andrew Stevenson

This area creates an ecological corridor so that fishes can travel between mangroves and patch reefs during their life cycle. It also contains a spawning site for the blue-striped grunt, a commercially and recreationally valuable fish species.

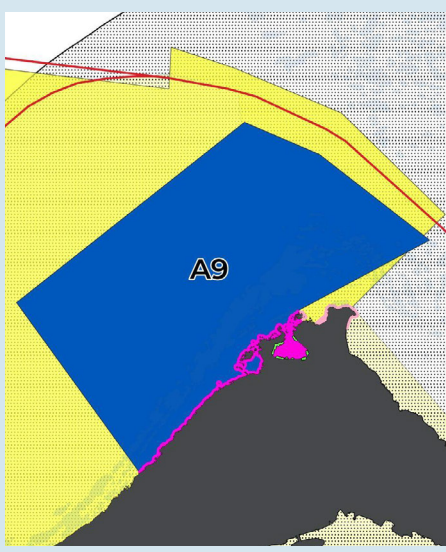
Why is this area protected?

-  **Coral Reefs & Fish Habitat**
-  **Mangroves**
-  **Fish Spawning & Nurseries**
-  **Commercially Important Fish Species**

Blue-striped grunts gather in this area during the new moon in May and/or June to spawn. Their larvae settle in seagrass beds and mangroves to develop. Giving the grunts a safe place to spawn ensures they can continue to act as prey species for larger fish and support a healthy fishery.



Current Legislation



Proposed Legislation

Map Legend

	Shipping Lanes		Fully Protected
	No Lobster Fishing Area		Shoreline Buffer
	Spiny Lobster Reservoir		North Shore Habitat Protection Area
	Spearfishing Exclusion Zone		2 m Mangrove Buffer
	National Parks Marine Areas		Land
	Blue-striped Grunt Seasonally Protected Area		Reef



Proposed fully protected area Castle Harbour Islands and Reefs (A10)



Photo credit: Shayna Brody

The Castle Harbour Islands and Reefs fully protected area connects nursery habitat for juvenile reef fishes and small baitfish in Castle Harbour with South Shore coral reefs. Baitfish support commercial fisheries and are a food source for many native seabirds.

Why is this area protected?



Coral Reefs & Fish Habitat



Fish Spawning & Nurseries



Seabirds



Baitfish



Historic Shipwrecks

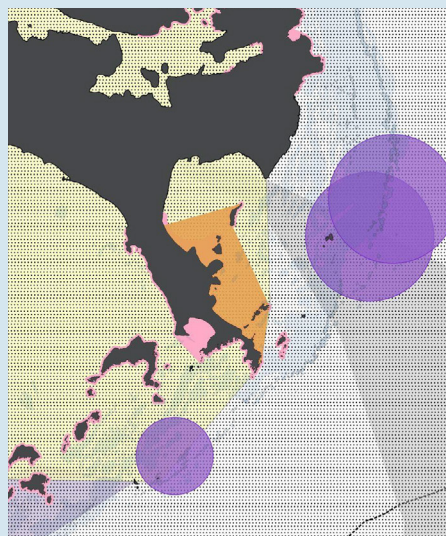


Seagrass

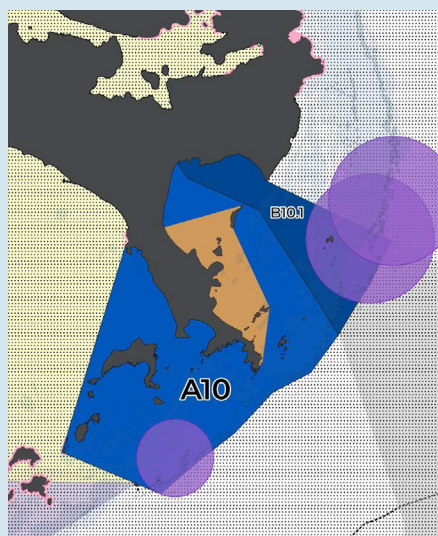
Bermuda's national bird, the **Cahow**, is an endemic, critically endangered species believed to be extinct for 330 years before a few pairs were rediscovered nesting on isolated rocks in Castle Harbour. A rigorous conservation programme, which includes restoring the entirety of Nonsuch Island to pre-colonial forest, is allowing their population to be restored.



Photo credit: JP Rouja, Nonsuch Expeditions



Current Legislation



Proposed Legislation

Map Legend

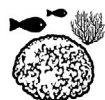
- No Lobster Fishing Area
- National Parks Marine Areas
- Spearfishing Exclusion Zone
- Protected Dive Sites
- Prohibited Marine Board Notice Areas
- Fully Protected**
- Cable Zone**
- 2 m Mangrove Buffer**
- Land
- Reef



Proposed fully protected area
North East Breaker (A11)

North East Breaker is an area of high coral cover with an existing protected dive site that contains the wreckage of multiple ships, including the 17th century *Eagle* and the 18th century *Manilla*. This area helps the MPA network maintain representative coverage of critical habitats and protect areas that are important nursery grounds or migratory routes.

Why is this area protected?



**Coral Reefs
 & Fish Habitat**



Seabirds

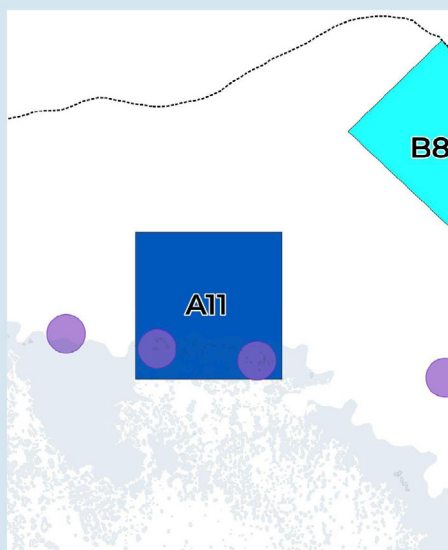


**Historic
 Shipwrecks**

Why protect coral?
 Corals are among the first marine organisms to be impacted by climate change due to their sensitivity to changes in water temperature, light, and pH (a measure of water acidity).



Current Legislation



Proposed Legislation

Map Legend

- Protected Dive Sites
- Seasonally Protected Areas
- Fully Protected**
- Seasonal Closure Areas**
- 55m (30 fathoms) depth
- Land
- Reef