

Oceans

Marine and Coast Booklet



An underwater photograph showing a diver in the background and a large, dark sculpture of a muscular man in the foreground. The sculpture is positioned as if it were a diver, with its arms crossed. The background shows the blue water and the surface of the ocean with sunlight filtering through.

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Eco-Schools Bahamas



The Eco-Schools programme is a student-led international initiative designed to encourage whole school action for the environment by raising awareness of environmental and sustainable development issues through activities linked to the curriculum. The Eco-Schools Bahamas programme is managed by the Bahamas Reef Environment Educational Foundation (BREEF) with the support of many benefactors and donors and is endorsed by the Ministry of Education.

BREEF is a non-profit, non-government Bahamian foundation established in 1993 that promotes the conservation of the Bahamian marine environment that sustains our way of life. This “Oceans, Marine & Coast Booklet” has been developed by BREEF for the Eco-Schools Bahamas programme, with funding from Rolex and their Perpetual Planet initiative. This theme provides pathways for schools to take action to promote ocean literacy, sustainable development and marine conservation in The Bahamas. In The Bahamas, we all live on or near the coast, thus, actions on land impact the health of our oceans. Every school in The Bahamas is invited to participate in

the Eco-Schools Bahamas programme. For more information, visit the programme website at [Eco-Schools Bahamas](#) or contact BREEF at (242)-327-9000.

The Eco-Schools themes provide a foundation for schools to assess and improve their environmental practice. All themes are linked to areas of national and global importance. Other themes investigated by students in the Eco-Schools Bahamas Programme include Biodiversity, Climate Change, Energy, Healthy Living, Litter, School Grounds, Waste and Water.

The Oceans, Marine & Coast Theme addresses the United Nations Sustainable Development Goal 14, (Life Below Water) and offers a safe exciting facility for outdoor education. Establishing links with neighboring mangrove wetlands, creeks, coastal and ocean environments is an ideal way to enhance students’ appreciation and care for the ocean and marine environment while protecting native marine and coastal organisms. This outdoor classroom model creates a stimulating learning environment and encourages students to appreciate the value of our coastal and marine environments, its resources and things Bahamian. By utilising the tools provided in this booklet, your school can help to conserve our marine and coastal environments and its native species which are of ecological, social and cultural importance.



Marine & Coast Booklet

This booklet is designed to help schools and the wider community to plan and implement actions that protect our oceans, its valuable marine and coastal resources and the environments. It includes planning tips, activities, digital resources, lesson plans and suggestions for lesson activities that tie in with the national curriculum at both the primary and secondary levels.

The ocean connects the small archipelagic nation of The Bahamas. It helps define who we are and how we live. Our marine and coastal environments influence every aspect of our lives. The entire Bahamas is a coastal nation. In The Bahamas we rely on marine and coastal ecosystems for food and to generate revenue for our economy.

Tourism and Fisheries are important components of the Bahamian economy and both rely heavily on healthy marine and coastal ecosystems.

The sea surrounding The Bahama Islands contains rich, diverse ecosystems such as coral reefs and mangroves. These ecosystems are important natural habitats for rare, endemic species that are critical to our livelihood, food and economic security. Coral reefs can break wave energy by 97% and the flexible prop roots of the red mangroves absorb wave energy and serve as a buffer between land and sea. Such ecosystems must be sustainably managed for present and future generations.

Climate change, habitat destruction, overfishing, pollution, invasive species, and trade have resulted in major impacts to the marine and coastal ecosystems of The Bahamas. Marine Protected Area are a critical tool for addressing many of these threats. There is an urgent need to educate and inform the next generation of environmental leaders to address the threats to the waters around us, and inspire action to protect them.

Bahamas Fast Facts

- The name Bahamas comes from the Spanish "Baja mar" which means shallow sea.
- The Commonwealth of The Bahamas consist of 700 islands and 2,400 cays with an area of 5,358 sq. miles (13,878 sq. km.).
- Our sovereign territory covers more than 100,000 square miles (260,000 sq. km.) of crystal blue seas in the Western Atlantic.
- Approximately 30 of the 700 Bahamian islands and cays are inhabited.
- The highest point in The Bahamas is Mount Alvernia (206 ft.) on Cat Island. Known to Cat Islanders as "Como Hill." Mount Alvernia overlooks The Bight.
- Population 306,611, 2010 Census [337,721 (July 2020 est.)]
- New Providence has 69.9 percent of the population, Grand Bahama and Abaco with 15.5 percent, and 10.3 percent are scattered on the remaining islands and cays
- Tourism now accounts for just over 40 percent of the country's gross domestic product.
- The Lignum Vitae is the National Tree of The Bahamas
- The Yellow Elder is the National Flower of The Bahamas.
- Blue Marlin is the National Fish of The Bahamas
- The Flamingo is The National Bird of The Bahamas
- The average temperature in the Bahamas ranges from 80 to 85°F / 27 to 32°C in the summer and 70 to 78°F / 21 to 27°C in winter.

Bahamian Marine Facts

- The Bahamas is known for its crystal blue seas and lays claim to the clearest waters in the world, with visibility down to approximately 200 feet.
- Andros is the largest island of The Bahamas and has the third-longest barrier reef in the world. It also has the highest concentration of blue holes (marine sinkholes) in the world.
- With over six miles of charted caverns, The Lucayan National Park on Grand Bahama island is home to one of the longest underwater cave systems in the world.
- Dean's Blue Hole is the second deepest blue hole in the world with a depth of 663 feet (202 m). Dean's Blue Hole can be found on Long Island. It's enclosed on three sides by a natural rock amphitheater, and on the fourth side by an amazing turquoise lagoon and a beautiful white beach.
- Harbour Island is home to stunning pink sand beaches. The fascinating pale pink color of the sand comes from microscopic coral single-celled organisms known as Foraminifera, which have a bright pink or red shells.
- Sweeting's Pond on Eleuthera is a sanctuary to the threatened lined seahorse species, *Hippocampus erectus*. Here the species is found in numbers never discovered elsewhere.
- Bahamas Shark Sanctuary was established in July 2011. The Bahamas declared its entire exclusive economic zone (an area that stretches 200 nautical miles from Bahamian shorelines) a Shark sanctuary.

Ocean Topics

Some examples of ocean topics include the following. Note that this is not an exhaustive list.

- Marine biodiversity
- Invasive species
- Marine ecosystems
- The fishing industry- commercial, recreational, subsistence fishing
- Overfishing
- Marine food security
- Navigation and nautical charts
- Eco-tourism
- Aquaculture
- Marine trades
- Coastal erosion
- The blue economy
- Coastal livelihoods
- Marine Protected Areas
- Coral restoration
- Coastal and marine pollution
- Marine recreational activities
- Impacts of climate change on oceans and coasts
- Sustainable partnerships between people and the ocean
- The protection of endemic and endangered marine species



School Projects

Conduct a survey on the types of fish or other marine species eaten at home over a given period. Afterward they could interview fishers to collect information on the difference between the past and present state of the population of fish and other marine species. Students could also gather information from previous research on marine species within The Bahamas and likely factors related to the increase or decrease of marine species. Findings could be shared in a school exhibition.

Compare Bahamian dishes using alternative marine food sources such as invasive lionfish and provide information on its nutritional value. Students could showcase information on the importance of using alternative food sources in response to decreasing fish populations. Special dishes could be sold to raise funds for the school.



Students can make fashionable clothes using recycled materials from the ocean. The school could then organize a fashion show to present some of the ideas. Information on recycled items used could be presented while students walk the runway.

Community Projects

Team up with local scientists and environmental organizations to get involved with citizen scientist projects. Examples might include turtle nesting monitoring, beach plastic surveys, coral monitoring, conch studies and water quality monitoring.



Students can get involved with local efforts to improve the coastal environment, for example coastal vegetation restoration, beach clean-up and coral restoration.

Community Projects



Schools can communicate their findings to the community by creating beach signs or setting up exhibitions

Curriculum Activities

- Choose a marine or coastal species to research and write an informative day in the life of a marine species article and present it to the class.
- Research the types of fish or other marine resources that are consumed in their community and then investigate if such species are being over-exploited or harvested from marine protected areas.
Findings could be shared in class or posted on the school's notice board, webpage and social media platforms.
- Find out what is being done in The Bahamas to safeguard marine protected areas. Findings might be presented in class or published in the local newspaper.
- Conduct a survey to determine the type and quantity of seafood consumed at home over a period of one week. Students could also investigate the nutritional value of eating seafood compared with other foods that are imported or locally grown.
- Research the different ways marine resources support their local economy; which species are important for fisheries, which for tourism? Students could find out how many different species are sold at fish markets and how much tourists pay to see marine species on a dive/snorkel/boat trip. Students can illustrate their results by using tables, pie-charts and graphs.



Links to The Bahamian National Curriculum

Grade Level	Subject	Topic	Eco-School theme integration
1 - 2	Mathematics	Measurements	Climate change, Energy, Litter, Waste
	English	Essay writing - Pollutants and their effect on marine life	Climate change, Energy, Litter, Waste, Marine and Coast
3 - 4	Social Studies	Climate effects on man	Climate change, Energy, Litter, Waste, Marine and Coast
	Science	Life science, Exploring the ocean and Weather	Healthy living, Waste, Litter, Water, Marine and Coast
	Physical Education	Fitness and Flexibility	Healthy living,
5 - 6	Science	Nutrition and Digestion	Healthy living
		Fishing	Healthy living, Biodiversity, Marine
	English	Comprehension	Marine and Coast, Energy, Waste, Litter
	Spanish	Vocabulary words- Energy	Energy and Healthy living
		Conversation	Waste, Water
	Science	Earth Science	Biodiversity, Waste, Litter, Climate Change
	Social Studies	Marine Processes, Marine and Wetland ecosystems	Marine and Coast, Biodiversity
	Physical Education	Fitness and Nutrition	Healthy living

Links to The Bahamian National Curriculum cont.

Grade Level	Subject	Topic	Eco-School theme integration
7 - 9	General Science	Living Organisms, Ecology, Pollution, Nutrition	Marine and Coast, Healthy living, Waste, Litter, Water
	Social Studies	Mapping, Climate & Weather, Fishing, Culture	Marine and Coast, Climate Change, School Grounds
	Physical Education	Swimming and Water Safety	Marine and Coast, Climate Change, School Grounds
10 - 12	Biology	Environmental Biology	Marine and Coast, Healthy living
		National Parks	Marine and Coast, Healthy living, Biodiversity
		Nutrition and Supply (Fishing and Diet)	Marine and Coast, Biodiversity
	Geography	Marine Processes	Marine and Coast, Energy, Waste, Litter
		Coral reefs role in coastal processes	Marine and Coast, Energy, Healthy living
		Effects of wave action on The Bahamas coastline	Marine and Coast, Waste, Water
		Characteristics of Marine & Wetland ecosystems, Marine Food Resources	Marine and Coast, Biodiversity, Waste, Litter, Climate Change
	Physical Education	Swimming and Water Safety	Marine and Coast

Environmental Days & Events

Environmental Day	Date	Details
Nassau Grouper closed season	December 1st - February 28th	Nassau groupers are currently listed as critically endangered on the IUCN's Red list. In an effort to save this species, a closed season was implemented during the peak months of their spawning season. To find out more about grouper closed seasons and the rules and regulations governing this species visit www.breef.org .



World Wetlands Day

February 2nd

Wetlands provide a habitat for a wide variety of plant and animal species. However, recent studies show a global decline of biodiversity and that wetlands are disappearing three times faster than forests.



Environment Day

Date

Details

Are there any wetlands near the school or community? Design activities that could help students learn more about wetlands: their importance for the protection of the coast and for the population of marine species that depend on this fragile ecosystem to reproduce and grow.

Crawfish closed season

April 1st - July 31st

Crawfish also known as Spiny Lobsters, make up 60% of the total fishery products landed by fishers in The Bahamas. Data over the years has raised concern about the health of the crawfish industry with evidence of decline in the catch per unit effort. In an attempt to ensure the sustainability of the spiny lobster industry, a closed season along with other regulations have been put in place. Students can learn more about regulations and the science behind them by visiting www.breef.org



World Heritage Day

April 18th

Celebrate the natural beauty, diverse culture and marine life of The Bahamas on World Heritage Day! Visit local historic sites like Clifton Heritage Park that is home to the BREEF Sir Nicholas Nuttall Coral Reef Sculpture Garden or visit a national park near you.

Environment Day

Date

Details

Think of ways people can work together to preserve and protect our natural history. Check these [Bahamian heritage sites](#).



Earth Day

April 22nd

In 1970, 20 million people mobilized to call for better protection of our planet. Today, about 1 billion people unite on this day with new sustainable ideas on how to protect our home. To join millions around the world, students could undertake projects highlighting the importance of earth systems in sustaining life and environmental issues in need of immediate action.



Environment Day	Date	Details
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Endangered Species Day

May 15th

Endangered Species Day is a day dedicated to learning about endangered species and how to protect them. Endangered species are critical to the health of our oceans. The loss of endangered species often results in significant ecosystem and food web changes.



World Oceans Day

June 8th

World Oceans Day calls on world leaders to protect 30% of our blue planet by 2030. By safeguarding at least 30% of our ocean we can help ensure a healthy home for all. The ocean plays a fundamental role in many of the earth's systems such as weather and climate. As islanders, we are very dependent on the ocean. Therefore, we must consider ways to sustainably manage the ocean and its marine organisms that call it home.



Environmental Day

Date

Details

International Shark Day

September 14th

There are over 400 species of shark in the world. Sharks play an important role in the marine ecosystem and the life of island communities. They help maintain reef biodiversity and contribute to the local economy through tourism. The Bahamas is recognized as 'the shark diving capital of the world.' Take the opportunity this day brings to learn more about sharks in your country and celebrate this amazing creature.



Case Studies

Exuma Cays Land & Sea Park

The Exuma Cays Land and Sea Park was the world's first protected area of its kind, when created in 1959 by the same legislation that established the Bahamas National Trust. The Exuma Land and Sea Park was established in 1958 to preserve and protect this unique environment – serving as a breeding area for the interests of the local Bahamian fishing industry and providing a unique experience for visitors to the Bahamas. “Covering 112,640 acres of land and sea, it is renowned for its breathtaking beauty, species biodiversity, secluded beaches, amazing views and safe anchorages.” [BNT] Exuma Cays Land and Sea Park.

Marine Protected Areas are critically important tools for sustaining marine ecosystems. The Bahamas has committed to establishing and maintaining a network of MPAs for the benefit of current and future Bahamians.



BREEF Sir Nicholas Nuttall Coral Reef Sculpture Garden

BREEF Sir Nicholas Nuttall Coral Reef Sculpture Garden was deployed in 2014 and it includes the largest underwater sculpture in the world, Ocean Atlas. BREEF has also installed a coral nursery at their coral reef sculpture where coral propagation units host endangered Staghorn Coral that is being transplanted to help restore local reefs. The site also became part of a network of Bahamian Marine Protected Areas. The sculpture garden is a one-of-a-kind snorkeling and SCUBA diving experience for Bahamians and visitors that serves as a multipurpose hub for the marine environment. BREEF received funding from the United Nations Global Environment Facility Small Grants Programme, and generous support from many other donors who sponsored sculptures and reef balls.



The project recognises BREEF founder Sir Nicholas Nuttall and draws attention to the international and local challenges of taking care of our oceans. BREEF Coral Reef Sculpture Garden



Sample Lesson Plans

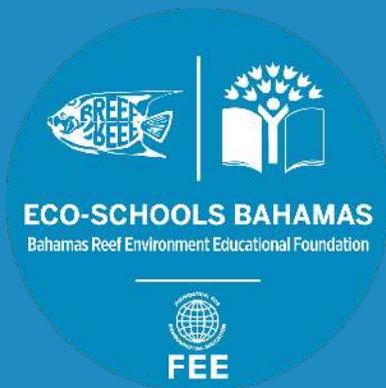


To access the oceans lessons plan, you will need to download a QR code reader to your mobile device. Once downloaded, open the QR code reader and hold your device over the QR code above. This will scan the code and take you to the lesson plans.

*Note: IOS users can open their camera and the QR code will automatically scan.

Links to educational resources related to the theme of the ocean and coast:

[BREEF](#)
[BREEF Resources](#)
[Eco-Schools.Global Lesson Plans](#)
[Bahamas Ministry of Agriculture & Marine Resources](#)
[NOAA Educational Resources](#)
[Sea Change Project](#)
[hOcean Literacy](#)
[Bahamas National Trust](#)
[Friends of the Environment](#)





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