

# Where Is The Great Barrier Reef

## Environmental threats to the Great Barrier Reef

The Great Barrier Reef is the world's largest reef systems, stretching along the East coast of Australia from the northern tip down at Cape York to the town of Bundaberg, is composed of roughly 2,900 individual reefs and 940 islands and cays that stretch for 2,300 kilometres (1,616 mi) and cover an area of approximately 344,400 square kilometres (133,000 sq mi). The reef is located in the Coral Sea, off the coast of Queensland in northeast Australia. A large part of the reef is protected by the Great Barrier Reef Marine Park.

According to the 2014 report of the Australian Government's Great Barrier Reef Marine Park Authority (GBRMPA), says that climate change is the most significant environmental threat to the Great Barrier Reef, while the other major environmental pressures are listed as decreased water quality from land-based runoff, impacts from coastal development and some persistent impacts from fishing activities. The reef is also threatened by storms, coral bleaching and ocean acidification. The 2014 report also shows that, while numerous marine life species have recovered after previous declines, the strength of the dugong population is continuing to decline. Terry Hughes, Federation Fellow, ARC Centre of Excellence for Coral Reef Studies at James Cook University, wrote in a 14 August 2014 Conversation piece that harmful government policies and ongoing conflicts of interest over mining royalties are risks of an equivalent magnitude.

The GBRMPA consider climate change, poor water quality, coastal development, and some impacts from fishing to be the area's major threats, but reef scientists Jon Day, Bob Pressey, Jon Brodie and Hughes stated that the "cumulative effects of many combined impacts" is the real issue.

In a Conversation article, Mathieu Mongin, a biogeochemical modeller at CSIRO and colleagues mapped parts of the Great Barrier Reef that are most exposed to ocean acidification. This map of pH on the Great Barrier Reef presents the exposure to ocean acidification on each of the 3,581 reefs, providing managers with the information they need to tailor management to individual reefs. The Great Barrier Reef is not a singular reef nor a physical barrier that prevents exchange between reefs; it is a mixture of thousands of productive reefs and shallow areas lying on a continental shelf with complex oceanic circulation.

In March 2022, UNESCO launched a monitoring mission to assess the impact of pollution, fishing, climate change and coral bleaching. The report concluded that the Great Barrier Reef should be included on the list of World Heritage in Danger, which would probably have had an impact on tourism. In May 2023, after years of warnings from UNESCO, Australian Environment Minister Tanya Plibersek promised in a letter to UNESCO Director Audrey Azoulay a "combined investment of A\$4.4 billion" to protect the reef. In the letter, Australia committed to following UNESCO's recommendations, creating no-fishing zones in one third of the site by the end of 2024, completely banning gillnetting by 2027 and meeting targets for improving water quality by 2025. The Albanese government has pledged to set targets for reducing CO2 emissions, in order to align with the objective of limiting global temperature rise to 1.5 °C.

## Tourism on the Great Barrier Reef

Tourism is one of the major industries in the Great Barrier Reef region. Approximately 2.19 million people visit the Great Barrier Reef each year. According to the Australian Bureau of Statistics, Tourism is one of the major industries in the Great Barrier Reef region. Approximately 2.19 million people visit the Great Barrier Reef each year. According to the

WWF, tourism of the area contributes \$5.89 billion a year to the Australian economy, and employs approximately 69,000 people. Biologist Ove Hoegh-Guldberg believes that the Great Barrier Reef's key competitive advantage over other nearby reef tourism destinations is its reputation as "the most pristine coral reef on the planet". The Great Barrier Reef Marine Park Authority states that careful management, which includes permits for camping and all commercial marine tourism within the Great Barrier Reef Marine Park, ensures that tourists have minimal impact on the reef. However, rising incidences of widespread coral bleaching, coastal development, and tourism have taken a toll the biodiversity of the reef.

### Mesoamerican Barrier Reef System

The Mesoamerican Barrier Reef System (MBRS), also popularly known as the Great Maya Reef or Great Maya Reef, is a marine region that stretches over 1,126 kilometres (700 mi) along the coasts of four countries – Mexico, Belize, Guatemala, and Honduras – from Isla Contoy at the northern tip of the Yucatán Peninsula south to Belize, Guatemala and the Bay Islands of Honduras. It is the second-longest reef system in the world.

It includes various protected areas and parks including the Belize Barrier Reef, Arrecifes de Cozumel National Park, Hol Chan Marine Reserve (Belize), Sian Ka'an biosphere reserve, and the Cayos Cochinos Marine Park. Belize's coastline, including the Belize Barrier Reef, is home to approximately 30% of the Mesoamerican Barrier Reef System.

It begins near Isla Contoy on the northern tip of the Yucatán Peninsula and continues south alongside the Riviera Maya including areas like Cozumel and Banco Chinchorro. It then continues south along the eastern coast of Belize including many cayes and atolls. It extends to the north-east corner of Honduras. It is the largest barrier reef in the Western Hemisphere.

### Coral reef

the corals grow around the coast to form fringing reefs, and can eventually grow to become a barrier reef. Where the bottom is rising, fringing reefs - A coral reef is an underwater ecosystem characterized by reef-building corals. Reefs are formed of colonies of coral polyps held together by calcium carbonate. Most coral reefs are built from stony corals, whose polyps cluster in groups.

Coral belongs to the class Anthozoa in the animal phylum Cnidaria, which includes sea anemones and jellyfish. Unlike sea anemones, corals secrete hard carbonate exoskeletons that support and protect the coral. Most reefs grow best in warm, shallow, clear, sunny and agitated water. Coral reefs first appeared 485 million years ago, at the dawn of the Early Ordovician, displacing the microbial and sponge reefs of the Cambrian.

Sometimes called rainforests of the sea, shallow coral reefs form some of Earth's most diverse ecosystems. They occupy less than 0.1% of the world's ocean area, about half the area of France, yet they provide a home for at least 25% of all marine species, including fish, mollusks, worms, crustaceans, echinoderms, sponges, tunicates and other cnidarians. Coral reefs flourish in ocean waters that provide few nutrients. They are most commonly found at shallow depths in tropical waters, but deep water and cold water coral reefs exist on smaller scales in other areas.

Shallow tropical coral reefs have declined by 50% since 1950, partly because they are sensitive to water conditions. They are under threat from excess nutrients (nitrogen and phosphorus), rising ocean heat content and acidification, overfishing (e.g., from blast fishing, cyanide fishing, spearfishing on scuba), sunscreen use,

and harmful land-use practices, including runoff and seeps (e.g., from injection wells and cesspools).

Coral reefs deliver ecosystem services for tourism, fisheries and shoreline protection. The annual global economic value of coral reefs has been estimated at anywhere from US\$30–375 billion (1997 and 2003 estimates) to US\$2.7 trillion (a 2020 estimate) to US\$9.9 trillion (a 2014 estimate).

#### List of reefs

mouth". The Guardian. Retrieved April 23, 2016. "Definition of GREAT BARRIER REEF". Edison Lobão; Fernando César de Moreira Mesquita (11 June 1991), Decreto - This is a list of notable reefs.

#### Barrier Reef (TV series)

broadcast. Barrier Reef was about a group of marine biologists on board a sailing ship called the New Endeavour, researching around the Great Barrier Reef, off - Barrier Reef was an Australian television series that was first screened domestically in 1971. However, 19 episodes had already premiered on British television on BBC1 between 5 October 1970 and 15 February 1971 and four more aired between 5 April and 3 May 1971 in advance of Australian broadcast.

#### Amphiprion akindynos

Amphiprion akindynos, the Barrier Reef anemonefish, is a species of anemonefish that is principally found in the Great Barrier Reef of Australia, but also - Amphiprion akindynos, the Barrier Reef anemonefish, is a species of anemonefish that is principally found in the Great Barrier Reef of Australia, but also in nearby locations in the Western Pacific. The species name 'akindynos' is Greek, meaning 'safe' or 'without danger' in reference to the safety afforded amongst the tentacles of its host anemone. Like all anemonefishes it forms a symbiotic mutualism with sea anemones and is unaffected by the stinging tentacles of the host anemone. It is a sequential hermaphrodite with a strict size-based dominance hierarchy: the female is largest, the breeding male is second largest, and the male non-breeders get progressively smaller as the hierarchy descends. They exhibit protandry, meaning the breeding male will change to female if the sole breeding female dies, with the largest non-breeder becomes the breeding male. The fish's natural diet includes zooplankton.

#### Great Blue Hole

000 years ago. As the ocean began to rise again, the cave was flooded. The Great Blue Hole is a part of the larger Belize Barrier Reef Reserve System, a - The Great Blue Hole is a large marine sinkhole off the coast of Belize. It lies near the center of Lighthouse Reef, a small atoll 70 km (43 mi) from the mainland and Belize City. The hole is circular in shape, 318 m (1,043 ft) across and 124 m (407 ft) deep. It has a surface area of 70,650 square metres (760,500 sq ft). It was formed during several phases of the Quaternary glaciation when sea levels were much lower. Analysis of stalactites found in the Great Blue Hole shows that formation took place 153,000, 66,000, 60,000, and 15,000 years ago. As the ocean began to rise again, the cave was flooded. The Great Blue Hole is a part of the larger Belize Barrier Reef Reserve System, a UNESCO World Heritage Site.

#### Cakaulevu Reef

continuous barrier reef in the world after the Great Barrier Reef in Australia and the Mesoamerican Reef off Central America. When combined with the nearby - Cakaulevu Reef (also called the Great Sea Reef) is a coral reef located off the northern shore of the island of Vanua Levu in Fiji. It is the third longest continuous barrier reef in the world after the Great Barrier Reef in Australia and the Mesoamerican Reef off Central America. When combined with the nearby Pascoe Reef, Cakaulevu Reef is about 200 kilometres (120 mi)

long. On its own, the Cakaulevu Reef covers 202,700 square kilometres (78,300 sq mi).

The marine ecosystem of the reef contributes to its national significance as outlined in Fiji's Biodiversity Strategy and Action Plan.

### Lady Musgrave Island

Island is a 14 hectares (35 acres) coral cay on Australia's Great Barrier Reef, with a 1,192 hectares (2,950 acres) surrounding reef. The island is the second - Lady Musgrave Island is a 14 hectares (35 acres) coral cay on Australia's Great Barrier Reef, with a 1,192 hectares (2,950 acres) surrounding reef. The island is the second southernmost island in the Great Barrier Reef chain of islands, the first (southernmost) being Lady Elliot Island. The Island is named after Lady Lucinda Musgrave, the wife of Sir Anthony Musgrave, a colonial governor of Queensland.

Lady Musgrave Island, and the immediate surrounds, is a national park and can be reached by excursion boat from Bundaberg (located approximately 4 hours north of Brisbane) and from the Town of 1770, Queensland (located approximately 5 hours north of Brisbane). The island is part of the Capricornia Cays Important Bird Area.

Lady Musgrave Island is referred to as Wallaginji by local Australian Aboriginal tribes. The name Wallaginji means 'beautiful reef'.

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