

The Great Barrier Reef

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General Location

The Great Barrier Reef, Coral Sea, off the coast of Queensland, Australia. Stretches for over 2,300 kilometers (1,400 miles) over an area of approximately 344,400 square kilometers (133,000 square miles). The reef is a distinct feature of the East Australian Cordillera division and includes the smaller Murray Islands.

Climate

The Great Barrier Reef experiences lots of sunshine, warm ocean water, warm breezes and a comfortable climate year round. Winter begins in May and ends in October and is made up of warm temperatures with low rainfall. Summer lasts from November until April and is known as the “wet” season that consists of balmy temperatures and higher rainfall. It refreshes the region with tropical downpours and the occasional storm. Swimming is doable year around though traditional swimming season is from April until October.

Vegetation

Sea Grasses- 15 species. *Halodule uninervis* is an example of a common and widespread species. Found in shallow and protected lagoons known as back reefs, usually found between a coral reef and the shore. Known as “true plants”, unlike seaweed, with roots, flowers and seeds. Vast sea grass meadows are visible from space and home to diverse community of organisms. Also an important food source for many species.

Macroalgae- *Rhodophyta* is one of the oldest groups of algae. Over 400 species of marine algae in the GBR. Not “true plants” because they lack roots, stems and leaves. Require sunlight for photosynthesis and a hard surface such as a rock or dead coral to attach to.

Mangroves(*Rhizophora Mangle*)-39 species that cover an area of around 3800 kilometers squared of coastline. Serve as a buffer between land and reef. Benefit the reef by stabilizing shorelines, improving water quality by filtering out land runoff and pollutants. The extensive prop root systems of mangroves provide nursery habitats and protection for many reef animals.

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Animals

Carnivore- *Sphyrna barracuda*-
Barracuda are among the most notable carnivores found in the Great Barrier Reef. Their very large teeth allow them to cut large fish in half.

Herbivore- *Paracanthurus hepatus*-
The Blue Tang, sometimes referred to as surgeonfish are some of the most well known fish in the Great Barrier Reef. They primarily eat algae.

Omnivore- *Zanclus cornutus*-
The Moorish Idol is an omnivore, feeding on algae and other small things such as shrimp.

Endangered Species & Human Impacts

***Cheilinus undulatus*-**
Humphead wrasse, also referred to as napoleonfish. Feed primarily on fish, mollusks, sea urchins, crustaceans, echinoderms and other invertebrates.

***Dugong dugon*-**
A medium sized marine mammal, sometimes referred to as a sea cow. Feeds on large amounts of sea grasses.

***Eretmochelys imbricata*-**
Known as the Hawksbill Sea Turtle, is critically endangered and facing an extremely high risk of going extinct.
Climate change leads to coral bleaching, more extreme weather events and ocean acidification.

Poor water quality from land-based runoff leading to impacts like outbreaks of crown-of-thorns starfish.

Coastal development affecting coastal habitats that support the Reef and producing damaging urban runoff, litter and marine debris.
Fishing remaining impacts and illegal fishing and poaching.

The cumulative effect of these threats weakens the Reef's resilience, affecting its ability to recover from serious disturbances predicted to become more frequent in the future. Over the past 20 years, the number and intensity of extreme weather events affecting the Reef is substantial.

Conservation Action

Protecting Endangered Species- The Hawksbill Sea Turtle is a critically endangered species yet still faces much harm due to human impact. A major human impact that they face is fishing, due to getting caught in nets. The strategy that would best benefit these turtles is the idea of reintroduction/ captive breeding. This produces a stock to reintroduce into the wild. Captive breeding would allow turtles to thrive without dying as a result of human impacts. The condition of the Hawksbill Sea Turtle would improve significantly.

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Coral Bleaching



Healthy Reef



Climate

Month	Max Temp (C)	Min Temp (C)	Humidity %	Avg. Rain (mm)
Jan.	31.5	23.6	75	405
Feb.	31.1	23.7	78	434
Mar.	30.5	23.0	78	424
Apr.	29.2	21.5	78	197
May	27.5	19.9	77	99
Jun.	27.8	17.6	74	49
Jul.	25.6	17.0	74	30
Aug.	26.5	17.5	71	27
Sep.	27.8	18.6	67	35
Oct.	29.4	20.5	66	38
Nov.	30.6	22.2	67	89
Dec.	31.4	23.3	70	175

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Other Information

Coral Reefs are naturally resilient. By reducing threats and minimizing the impacts we enable the reef to thrive and return to its natural state.

Sources

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