



# **Coral Reefs**

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**<https://www.youtube.com/watch?v=ZiULxLLP32s>**



# What are Coral Reefs?

They are the second most biodiverse( has many different species of plant and animals) ecosystem, the rainforest being first. They have a large range of animal and plant species. Coral Reefs are large underwater structures that consist of many fish and coral. A single coral is called a polyps. Corals belong to the cnidaria (pronounced ni-DAR-ee-uh group) which is also the same group that jellyfish and sea anemones belong to. Coral Reefs are a biome in which nature thrives .



# Location of Coral Reefs





# Location of Coral Reefs

Coral Reefs are located around the equator and are mainly located in the Eastern hemisphere, for example the Great Barrier Reef. However there are a few Coral Reefs in the Western hemisphere, for example the Mesoamerican Reef which lies within the Caribbean sea. Coral Reefs can be found in over 100 countries and normally lie on the shores of land. Indonesia, Australia and the Philippines are the largest reef nations. Coral reefs only make

up about 1% of the ocean floor. Continents with many coral

Reefs include Asia and North

America, but there are

no coral reefs in Europe. Coral Reefs normally

lie in the tropics (the regions on Earth that lie roughly

In the middle of the globe).



# Conditions of the location of Coral Reefs

Coral Reefs generally form in waters about 45 metres deep, this is because they need sunlight to survive. They live in hotter waters which can range between 20 and 28 degrees Celsius. They are most often found in warm, clear, shallow water where there's plenty of sunlight to nurture the algae that the coral rely on for food.

# How does latitude affect temperature

Coral Reefs are located in the tropics and subtropics (between 30° North latitude and 30° South latitude). This means that they are near the equator where it is hot. (Latitude is the angular distance of a place north or south of the Earth's equator.)

# An idea of how much biodiversity coral reefs contain

The Indo–Pacific is a region where there is lots of biodiversity. Here is an example of what a difference Coral Reefs make to biodiversity. If you compare biodiversity, the Indo-Pacific is roughly ten times more diverse than the western Atlantic. The Indo-Pacific contains 75 percent of the world's coral reefs and has the highest coral diversity in the world. This shows how many more species live underwater where there are coral reefs, and also why coral reefs are so important .



# Reef dwellers







# Clown Fish

Clown fish are fish that can grow up to 18 centimetres. They are normally orange, yellow and sometimes look a little red. They are born males but as they get older some turn into females.

Clownfish usually live in coral reefs. They live in the Indian Ocean, Pacific Ocean, from north west Australia, the coast of South East Asia and as far north as Japan. They live in anemones which are like plants under the sea. Anemones eat fish by killing them with their tentacles which are poisonous. Scientists believe that clown fish are protected from the poison because they are coated in a type of mucus.

# Red Lionfish



Red lionfish are predatory scorpionfish which live in coral reefs. They get their name from the long colourful fin rays which resemble a lion's mane. The red lionfish is an ambush predator. Its spines are filled with venom. They are able to survive in a range of habitats from depths of 2 to 140 m deep. It can grow as large as 18 inches.



# Damselfish

There are many different species of damselfish. Damselfishes are lively and quick, and are usually territorial and aggressive. Some feed mainly on plant matter or small animals suspended in the water; others are omnivorous. Most damselfishes live along reefs, but certain species, the anemone fishes, are noted for living among the stinging tentacles of sea anemones.



A close-up photograph of a clownfish with orange, white, and black stripes swimming near a green, porous coral reef. The fish is positioned in the center-right of the frame, facing right. The coral has a distinct bumpy texture. The background is a soft-focus view of the reef extending into the distance.

**Why are Coral  
Reefs so  
Important?**



# The importance of Coral Reefs for the environment:

Protect coastlines from damaging effects like wave action.

Source of nitrogen and other nutrients for marine food chains.

Assist carbon and nitrogen fixing.

Provides habitats and shelter for marine organisms.

Helps with nutrient recycling.

Nearly 25% of ocean life live in coral reefs.

# The importance of Coral Reefs for humans:

Provides us with natural resources such as food and drugs.

Provides us with social cultural and recreational activities.

Fishing industry depends on coral reefs as many fish spawn there.

The Great Barrier Reef generates more than 1.5 billion dollars every year for the Australian economy, from fishing and tourism.

Services we depend upon, such as recycling and purification of water and air, the creation of soil, and the break-down of pollutants.

They can help scientists to investigate the climate in the past as they are built in a way which can tell them what the climate was like in the past.





# Threats to Coral Reefs



# What are the threats to Coral?

Actions taken thousands of miles away can affect what happens on reefs. Reefs are a very important part in everybody's life and provides not only environmental benefits but also economical ones like jobs for people who live near coral reefs. We need to take care , look after and nurture our coral reefs as they play an important part in our lives and the environment.

For example the green house effect. This is a process that occurs when gases in Earth's atmosphere trap the Sun's heat. This process makes Earth much warmer. It is caused by the presence of water vapour, carbon dioxide, methane, and certain other gases in the air. Humans do this by burning fossil fuels for heat and energy and raising livestock along with many other things. This means that there may be more frequent storms washing away and damaging coral , create ocean acidification which mean that it is hard for coral to grow and more.

# Global threats

**Global climate change-** sea levels rise and coral reefs need to be near the sun as sunlight is very important , also this results in altered sea current meaning that there will be a lack of food for coral.

**Rising levels of CO<sub>2</sub>-** This can result in ocean acidification where some of the excess CO<sub>2</sub> emissions are being absorbed by the worlds oceans

**Diseases and Plagues-**linked to human disturbances in the environment.

**Coral bleaching-**caused by elevated sea surface temperatures due to global climate change



# Local threats

**Over-fishing (and global market pressures)**—including the use of damaging practices (bomb and cyanide fishing).

**Sediments**—from poor land use, deforestation, and dredging.

**Nutrients and Chemical pollution**- polluting the sea.

**Development of coastal areas**—for urban, industrial, transport and tourism developments, including reclamation and mining of coral reef rock and sand beyond sustainable limits.



# So what can you do to minimise effects on Coral Reefs?



- Reduce your carbon footprint- you can walk or take public transport when you travel instead of getting a car or taxi
- Conserve water to reduce pollution- All water eventually end up in the sea and by using less water you are minimising these effects
- Support sustainable fishing- overfishing is a cause of coral reefs being destroyed by supporting fishers who fish sustainably it may be a little more expensive but it protects our environment
- Help inform the public- tell and educate others about what they can do to help coral reefs being damaged
- Donate to a charity- there are many charities that you can donate to like: Oceana, Coral Reef Alliance, Sea Shephard Conservation Society





# Thoughts about Coral Reefs



# Conclusion

**Coral Reefs are very important to us and we should try our hardest to look after them and conserve them. Although they are small they are where 25% of ocean life lives. Others may believe that we should be exploiting our coral reefs, although 25% of life under water comes from coral reefs the other 75% doesn't, so they may think that we should use the coral reefs to our benefit and potentially ruin them for future generations.**

**However I disagree. Coral Reefs are an important part of our lives, and the loss of coral reefs would not only affect us as humans but also many animals. The world works together and if coral reefs go, it has many affects not only on the marine life but on us as well. We should conserve our reefs. They provide us with a lot and we can still use them but sustainably to make sure that future generations will be able to use them too.**





**Thank you for listening.**