

Case Study: Marine Conservation in Action

Title: Saving the Great Barrier Reef: A Global Effort

Introduction to the Great Barrier Reef

The Great Barrier Reef, located off the coast of Queensland, Australia, is the largest coral reef system in the world, stretching over 2,300 kilometres. It is home to an astonishing variety of marine life, including over 1,500 species of fish, 400 species of coral, and endangered species like the green sea turtle and the dugong.

The reef is a UNESCO World Heritage Site and supports not only marine ecosystems but also the livelihoods of local communities through fishing, tourism, and cultural heritage for Indigenous Australians. However, the reef is under threat due to climate change, pollution, overfishing, and coral bleaching. Scientists, conservationists, and communities are working together to preserve this natural wonder for future generations.

The Threats Facing the Reef

Climate Change: Rising sea temperatures have caused mass coral bleaching events.

When water temperatures become too high, corals expel the tiny algae that live in their tissues, losing their colour and their main source of energy.

Pollution: Runoff from agriculture contains chemicals like pesticides and fertilisers, which flow into the ocean and harm coral and marine life.

Overfishing: Excessive fishing disrupts the balance of marine ecosystems, leading to declines in key species.

Coastal Development: Human activities like construction and dredging near the coastline damage fragile coral habitats.





Marine Conservation in Action: Coral Restoration

One significant marine conservation activity taking place on the Great Barrier Reef is coral restoration. This innovative approach aims to repair damaged reef areas and strengthen their ability to survive future threats.

Steps in Coral Restoration:

Collecting Coral Fragments: Scientists collect healthy fragments from resilient coral species.

Coral Nurseries: These fragments are grown in underwater nurseries or in specialised tanks on land until they are strong enough to be transplanted.

Transplanting Corals: Mature coral fragments are carefully attached to damaged areas of the reef using eco-friendly adhesives or special frames.

Monitoring and Maintenance: The restored areas are regularly monitored to track growth and ensure survival rates.



Inquiry Questions

General Questions:

- Why is the Great Barrier Reef important to marine life and humans?
- What are the main threats to coral reefs around the world?
- How does coral bleaching occur, and why is it harmful?

Focused Questions on Coral Restoration:

- 4. What steps are involved in coral restoration, and why is each step important?
- 5. How do underwater coral nurseries help damaged reefs recover?
- 6. What role do local communities and Indigenous knowledge play in reef conservation?
- 7. What are the challenges faced in coral restoration projects, and how can they be overcome?

Impact Questions:

- 8. How does restoring coral reefs benefit marine biodiversity?
- 9. In what ways can tourism support conservation efforts on the reef?
- 10. What are some global organisations involved in marine conservation, and how do they contribute?

