

We can all do something to cut down on the resources we use, but there is a limit to how much individuals can achieve. Governments and organisations also need to play a part in looking after the environment. Take the Great Barrier Reef in Australia, for example.

The Great Barrier Reef Marine Park

The Great Barrier Reef, located off Australia's eastern coast, is the largest coral reef system on the planet – it measures over 2500 km in length (map A). More than 2 million people visit the reef every year. The majority (up to 90 per cent) are domestic tourists from within Australia. Large numbers of people also come from New Zealand, Japan, the UK, Germany and other European countries. These tourists stay at hotels on individual islands, go diving, arrive by cruise ship or fly in for the day by helicopter. Many come to see the great range of wildlife (figure B) – some species are not found anywhere else in the world.



Case study



A Australia's Great Barrier Reef

- 30 species of whales, dolphins, and porpoises recorded
- 6 species of sea turtles come to the reef to breed
- 215 species of birds (including 22 species of seabirds and 32 species of shorebirds) visit the reef or nest or roost on the islands
- 17 species of sea snake
- More than 1500 fish species
- At least 330 species of ascidians (sea squirts)

B Natural attractions of the reef

Topic link

For more general information about coral reefs see Topic 2.3 pages 86–89.



Tourists spend around US\$5 billion a year, contributing money to the local economy and creating jobs. However, the large number of people can cause considerable damage to the environment. This can be by using polluting vehicles or damaging the coral when snorkelling and diving.

There are other pressures on the environment. Large towns along the coast have factories and power stations. There is large-scale coastal agriculture using fertilisers and other chemicals. These industries can pollute the sea and destroy the fragile coral. People from the towns located near the reef use the surrounding waters for commercial fishing, and the local Torres Strait islanders have depended on the sea for food for centuries. Overfishing is a potential risk. Meeting the needs of all these users makes conservation of the reef very difficult.

The Great Barrier Reef Marine Park Authority (GBRMPA)

The Australian government has made the Great Barrier Reef into a protected area by declaring it a 'marine park'. The GBRMPA is the organisation responsible for looking after the reef (figure C).

One of the most important developments by the Marine Park Authority has been to divide the whole reef into zones, creating areas where people are allowed to use the reef in different ways. There are areas for local people to fish, other areas for tourists to dive, and so on.

The GBRMPA has been praised for the way it has communicated with all the people who want to use the park – from tourist companies to local fishermen. It has won many international awards for helping to protect the environment while allowing sustainable development to take place.

The problem of climate change

One of the biggest threats to the Great Barrier Reef comes from climate change. Rising sea temperatures can kill the coral and have a damaging effect on fish and other marine life. Extreme weather events can also affect the area. In 2011, huge floods caused by Cyclone Yasi washed damaging sediments and pollutants over large parts of the reef (photo D).

There is little the GBRMPA can do to stop climate change but it is helping local people prepare for the possible negative effects on the environment and their lifestyles and jobs.

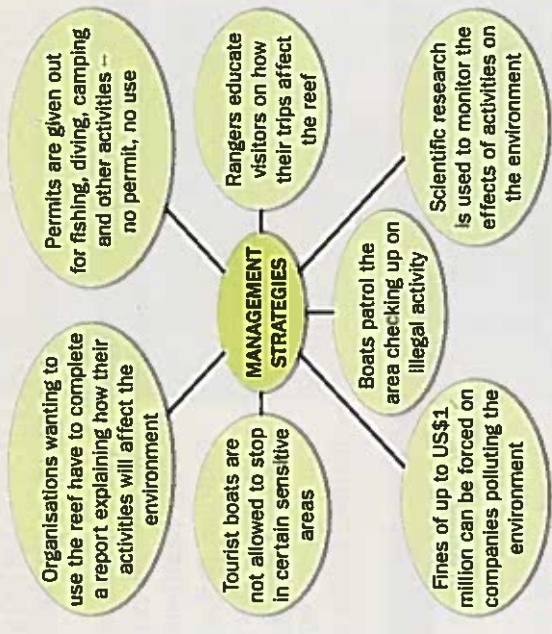
Now Investigate

1 Assuming there are 200 000 overseas visitors to the Great Barrier Reef every year, complete a copy of the following table to show the number of visitors from selected countries.

| Country | Percentage of total visitors | Number of visitors (total 200 000) |
|--------------------------|------------------------------|------------------------------------|
| United Kingdom | 30 | 60 000 |
| Germany | 10 | |
| Other European countries | 21 | |
| Japan | 15 | |
| USA | 11 | |
| Other countries | 13 | |

2 Display the information shown in your table as (a) a correctly labelled pie chart and (b) a bar graph. Think of the effects all these visitors could have on the sustainable development and conservation of the reef.

- 3 a Explain why Australia's Great Barrier Reef needs to be protected.
b Explain how this protection is being carried out.



C Strategies used by the GBRMPA



D Damage to the Great Barrier Reef

Further research

Search for 'Great Barrier Reef Marine Park Authority' to find much more official information on the work of the GBRMPA. Create a factfile displaying the information you find.