

## READING PASSAGE 2

You should spend about 20 minutes on **Questions 14 - 26**, which are based on Reading Passage 2 below.

### Threats to the Great Barrier Reef

The Great Barrier Reef is well known as the world's largest system of coral reefs. Lying off the east coast of Australia, it covers an area larger than 300,000 square kilometres and is a unique habitat hosting billions of sea creatures. It also is a major source of income to people near the Reef, with tourism now being the key industry in the local towns.

Not all is well with the Great Barrier Reef; there are growing threats, the most serious being climate change. Organisations are working hard to impress upon the world's governments the need for urgent action to address climate change globally. To help boost the Reef's resilience to climate change, efforts are also being made to take action on the local effects of coastal development, such as from ports and agriculture.

Climate change threatens the Great Barrier Reef in different ways. Firstly, it can increase severe weather events, such as repeated cyclones and flooding. Cyclones can have devastating effects on the Great Barrier Reef, the immediate effect being the physical damage. Fast maturing coral is easily destroyed by storms, while slow maturing, more solid coral generally is spared. All coral though can be affected by the flooding caused by cyclones. Flooding on land can lead to large flood plumes from rivers being expelled into the sea that supports the Great Barrier Reef. Freshwater flood plumes can have a number of effects, including killing coral at shallow depths. Large scale flooding can carry various land-based pollutants, such as fertilisers, herbicides and the worst, pesticides, out to the Reef, which can have a devastating effect. A lesser-known problem is that earth or residue that is carried out to sea can affect coral growing in the deep water, as it can block out the light that coral needs to survive. In some locations, approximately 10 per cent of corals have bleached in shallow waters, indicating that the run-off is causing stress to reefs. Australian scientists have also observed sunken logs and terrestrial debris breaking up fragile corals in wave-exposed sections of the reefs. Although flood plumes are natural events, scientists predict that climate change worsens their impact. Expected increases in cyclone intensity will increase the size and frequency of flood events and thus the quantity of land-based runoff and pollutants making it to the Reef.

In the long-term, ocean acidification is likely to be the most significant impact of a changing climate on the Great Barrier Reef ecosystem. The oceans absorb carbon dioxide from the atmosphere and are estimated to have absorbed about half the excess carbon dioxide released by human activities in the past 200 years. This absorbed carbon dioxide is resulting in chemical