

## Temperate marine ecosystems

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1. Mitigate, as far and as fast as possible, the concentration of atmospheric greenhouse gases which, in the oceans, leads to both climate change and ocean acidity.
2. Embrace inevitable change – induced by climate change and other processes.
3. Recognise, and develop our ways of coping with, sliding baselines.
4. Implement a systematic approach to marine biodiversity conservation.
5. Adopt complementary management of human activities in the sea, at all scales.
6. Continue to develop a comprehensive Integrated Marine Observing System for Australia.
7. Identify key attributes of temperate systems or regions, predict system behaviour, monitor, manage and distribute data well, and openly discuss objectives.
8. Think about major activities such as fishing, mining, oil and gas extraction, not only as **uses** of ecosystems but as massive and cumulative **changes** in systems; we have to make ‘seascape-use’ decisions.
9. Engage everyone in information gathering, objective setting and scenario evaluation.
10. Cooperate with other nations to tackle problems on regional and global scales.

### Introduction

Australia has the third largest Exclusive Economic Zone (EEZ) in the world, much of it still in good shape, but we do have significant, well-recognised issues in managing our temperate marine systems, especially near the coasts. Many reports, such as those of the Marine Biodiversity Decline Working Group (2008) and the State of the Environment Committee (2011), cover these issues: climate change including sea-level rise, ocean acidification, over-exploitation, pollution (artificial chemicals and spills, but especially nutrients), marine debris and biosecurity (threatened species and invasive species). Exploitation (fishing), invasive species, and diffuse pressures due to increased human numbers both onshore and directly in the marine environment, are the biggest threats but, as noted by the State of the Environment Committee (2011), it is inadequate to consider each threat individually: cumulative pressures are rapidly growing, and we need to develop effective ways of achieving integrated, ecosystem-based management.