

Marine Natural Values Study Summary

Twelve Apostles Marine National Park



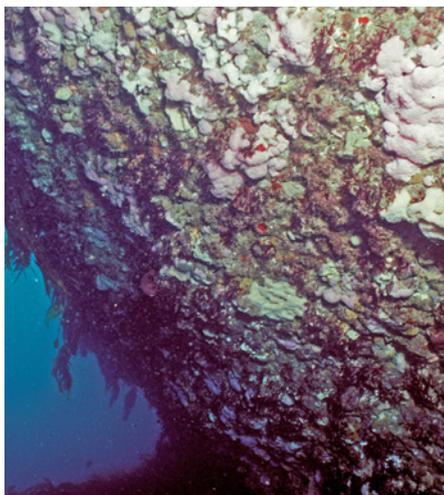
Australia's southern waters are unique. Ninety per cent of our marine plants and animals are found nowhere else on earth.

The system of Marine National Parks and Sanctuaries has been established to represent the diversity of Victoria's marine environment, its habitats and associated flora and fauna.

Victoria's marine environment has been classified into five bioregions according to a nationally agreed scheme based on physical and biological attributes.

The Twelve Apostles Marine National Park is one of two marine national parks and two marine sanctuaries in the Otway bioregion.

Image left:
Sessile invertebrate dominated subtidal reef. Photo by NRE.
Image right:
Twelve Apostles Marine National Park.
Photo by Australian Marine Ecology.



Description

The park covers 7510 hectares adjacent to Broken Head along the coast to Pebble Point and offshore to three nautical miles.

Most of the Twelve Apostles Marine National Park begins at the high tide mark but additional land areas above this are also included such as Mutton Bird Island and offshore rock stacks (including the Twelve Apostles). The wreck of the Loch Ard is also within the park.

Exclusions to the park are beaches west of Gibsons Steps to Clifton Beach, and east of Point Ronald to Rivernook, from the high water mark extending 100 metres out to sea.

Access is from Loch Ard Gorge, Gibson Steps, Clifton Beach, Princetown and Rivernook and by boat from Port Campbell.

Parks Victoria acknowledges the Aboriginal Traditional Owners of Victoria – including its parks and reserves. Indigenous tradition indicates that the park is part of Country of Kirrae Whurrong (to the west of Gellibrand River) and Country of Gunditjmara (to the east of Gellibrand River).



Physical Parameters and Processes

The park is exposed to south-westerly winds and swells of the Southern Ocean in winter and in spring/summer by those arising from Bass Strait in the south-east.

The West Wind Drift creates a current moving easterly through the park. Rock falls and sand movement can be influenced by high tides, storms and large swells contributing to changes in local hydrology.

Surface water temperatures vary between averages of 13.5°C in winter and 17.5°C in summer. Tidal variation is 0.9 metres for spring tides and 0.3 metres for neap tides.

The Gellibrand River discharges into the centre of the park and Sherbrooke River discharges 600 metres west.

Marine Habitat Distribution and Ecological Communities

The main habitats protected by the park include limestone cliffs, intertidal reef platforms, high profile subtidal rocky reefs (western and eastern areas), limited intertidal soft sediments and beaches, extensive sandy subtidal soft sediment and the water column.

The park is regarded as having the highest diversity of intertidal invertebrates on limestone reef in Victoria.

Beaches and intertidal soft sediments are restricted to pockets at the base of cliffs. A number of shorebirds are also found in or near the park, including some of conservation significance.

Subtidal soft sediments (present as a gently sloping sandy basin in the centre of the park) are usually devoid of visible biota although the deeper regions have areas of reef beneath a thin veneer of sand allowing sessile invertebrates to grow.

Crustaceans are the most dominant group found in the soft sediments including amphipods, isopods and cumaceans. Sparse seagrass *Heterozostera* spp. also grows in 10 metres to 30 metres on the shallow sandy plain providing habitat for fish and invertebrates.

Bull Kelp *Durvillaea potatorum* grows on the intertidal reef edge and can be seen at the base of the limestone rock stacks. The kelp *Ecklonia radiata* and the green algae *Caulerpa* spp. grow in depths less than 40 metres and red algae is found at all depths including: *Phacelocarpus peperocarpus*, *Melanthalia obtusata*, *Gelidium asperum*, *Sonderopelta coriacea* and *Haliptilon roseum*. Smaller brown algae including *Carpomitra costatum* grow in more sandy areas.

Coastline of Twelve Apostles Marine National Park.
Photo by NRE.

Mobile invertebrates on the subtidal reefs include seastars such as *Plectaster decanus*, and the Southern Rock Lobster *Jasus edwardsii*.

Subtidal reef fish in the park are typical of the region and include the blue-throated *Notolabrus tetricus*, rosy *Pseudolabrus psittaculus* and senator wrasses *Pictilabrus laticlavius*; the magpie perch *Cheilodactylus nigripes* and dusky morwongs *Dactylophora nigricans*; sea sweep *Scorpius aequipinnis*; barber *Caesioperca rasor* and butterfly perches *C. lepidoptera*; marble fish *Apodactylus arctidens*; and the bullseye *Pempheris multiradiata*.

The deep reefs (more than 40 metres) are dominated by sessile invertebrates (e.g. erect sponges, gorgonians and the large hydroid fan *Solanderia fusca*) and are an important natural value.

The water column is home to a variety of planktonic and pelagic organisms. Those that make their permanent home in the water column include sea jellies, salps, many fish, and phytoplankton and zooplankton. A number of marine mammals and seabirds are also found in or use the water column in the park.

Species and Communities of Conservation Significance

The water column of the park is important habitat for threatened fish

including the migratory southern bluefin tuna *Thunnus maccoyii* and is likely to be used by two shark species: the grey nurse shark *Charcharias taurus* and the great white shark *Carcharodon carcharias*.

The park provides important feeding and roosting habitat for eleven threatened bird species including the wandering albatross *Diomedea exulans*, little egret *Egretta garzetta*, and Australasian bittern *Botaurus poiciloptilus*.

A large breeding colony of little penguins *Eudyptula minor* between the Twelve Apostles and London Bridge is considered a significant site, and two significant hooded plover *Thinornis rubricollis* nesting sites exist on Clifton and Rivernook beaches. Mutton Bird Island also supports a breeding colony of short-tailed shearwaters *Puffinus tenuirostris*.

The park is important for a number of resident and migrating marine mammals including Southern right whales *Eubalaena australis*, humpback whales *Megaptera novaeangliae*, New Zealand fur seals *Arctophoca forsteri*, and Australian fur seals *Arctocephalus pusillus doriferus*.

Major Threats

Measures to address or minimise threats identified for Twelve Apostles Marine National Park form part of the



park management plan. Parks Victoria also uses an adaptive management approach which includes periodic reviews of priority natural values and threats through processes such as the State of the Parks evaluation and setting of desired conservation outcomes. Through these processes Parks Victoria has identified emerging threats and developed appropriate management responses.

Serious threats include oil spills, terrestrial inputs of poor water quality, marine pests and diseases, litter and debris, and seismic testing.

Evidence of abalone viral ganglioneuritis which can kill a large proportion of abalone populations in affected areas has been observed in much of the Otway bioregion.

Japanese kelp *Undaria pinnatifida* has recently been found in Apollo Bay Harbour and there are concerns about its possible spread.

Climate change also poses a serious medium to long term threat to natural values. Parks Victoria will use an adaptive management approach to develop responses and actions that

focus on priority climate change issues such as extreme weather events and existing risks that will likely be exacerbated by climate change.

Research and Monitoring

Parks Victoria has established extensive marine research and monitoring programs that address important management challenges for the marine national parks and sanctuaries. These focus on improving baseline knowledge, as well as applied management questions.

Since the establishment of the parks in 2002 our knowledge and understanding of natural values and threats for the system have improved significantly through the marine science program. Much of the research has been undertaken as part of the Research Partners Program involving collaboration with various research institutions.

There are four ongoing research projects and one habitat mapping project that are relevant to the Twelve Apostles Marine National Park, while six research projects and two habitat mapping projects have already been completed.

While recognising there are still knowledge gaps Parks Victoria will continue to focus on addressing the information needs that will assist management.

For more information, including marine habitat mapping products, please see the full versions of the Marine Natural Values reports on www.parks.vic.gov.au.

Sessile invertebrate dominated subtidal reef. Photo by NRE.

