Marine Natural Values Study Summary

Bunurong 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.

Bunurong Marine National Park is one of two marine national parks and five marine sanctuaries in the Central Victoria bioregion.

Image left:
Dense diverse seaweed and seagrass at Shack Bay. Photo by Mark Norman, Museum Victoria.

Image right:
Eagles Nest rock formation. Photo by Mark Norman, Museum Victoria.

Description

The park covers 2,046 hectares extending from the high water mark to three nautical miles offshore along 6 kilometres of coastline east of Cape Patterson to just east of Eagles Nest. It abuts the Bunurong Coastal Reserve along its full length and on either side is the Bunurong Marine Park. Access to the park is via The Oaks, Twin Reefs, Shack Bay, Eagles Nest and by boat.

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 Boonwurrung.

Physical Parameters and Processes

The coastline of the park is protected from the storm waves of the Southern Ocean and tidal and wave currents are relatively small. The geology is sandstone and mudstone and it has a gently sloping bathymetry with the intertidal and subtidal rock platforms extending out to sea as a sloping rocky plain to a maximum depth of 56 metres. Prominent rock ridges form seaward extensions off Eagles Nest.

Surface water temperatures vary between an average 17.5 °C in the summer and 13 °C in the winter. Tidal variation is 2.1 metres for spring tides and 1.3 metres for neap tides.

No major estuaries run directly into the park, though one small intermittent stream discharges within the park boundaries. Substantial springs and seepage of water occur at the base of the cliffs along the whole of the Bunurong coast.

Marine Habitat Distribution and Ecological Communities

The main habitats protected by the park include intertidal and subtidal soft sediment, extensive sandstone intertidal reefs, subtidal reefs (including extensive shallow reefs) and the water column.

Beach drift on intertidal soft sediments is a food source for scavenging birds, and an important part of the detritus that nourishes invertebrates living in the sand. Crustaceans (e.g. *amphipods, isopods*) and *coleopterons* (beetles) are common in intertidal soft sediments. Insects such as dipterans (flies e.g. *Chaetocoelopa sydneyensis*) are confined to the upper beach zone and polychaetes (e.g. *Scolelepis lamellicincta*) are confined to the lower beach zone.

A wide variety of shorebirds are also found in or near the park, including many of conservation significance.

Subtidal soft sediments in the park include shallow and extensive deep sandy beds predominantly inhabited by infauna (small crustaceans and worms that burrow into the sand) and bottom-dwelling skates and rays.

Fish such as mullets, hardyheads and salmon Australian *Arripis trutta* are found offshore of sandy beaches and are usually transient. Numerous sharks, including gummy *Mustelus antarcticus*, school *Galeorhinus australis*, common saw *Pristiophorus cirratus*, southern saw *P. nudipinnis*, angel *Squatina australis* and elephant *Callorhynchus milii* are likely to occur in the park.

The intertidal sandstone reefs are home to one species of seagrass, *Amphibolis antarctica*, thirty species of algae, fifty-eight species of invertebrates and a small number of rock pool fish species. Common algae include Neptune's necklace *Hormosira banksii*, the green alga *Ulva compressa*, and the branched coralline red algae *Corallina officinalis*. The most common sessile invertebrate on the intertidal reefs of the park is the mat forming mussel *Limnoperna pulex*. Mobile molluscs are common and diverse on the reefs and include the periwinkle *Austrolittorina unifasciata*, and the striped *conniwink Bembicium nanum*.

The seastar *Patiriella exigua* and a range of other fauna including anemones, barnacles, crabs, sea squirts, urchins and the blue ring octopus can also be found on the intertidal reef.

Common rock pool fish include the toadfish *Tetractenos glaber*, the horned blenny *Parablennius tasmanianus* and the dragonet *Bovichtus angustifrons*.

The subtidal rocky reefs have a diverse algal assemblage including brown and red algae such as *Seirococcus axillaris*, *Cystophora* spp., *Sargassum* spp., *Acrocarpia paniculata*, *Haliptilon roseum*, *Plocamium angustum* and *Phacelocarpus peperocarpus*. Habitat forming beds of the seagrass *Amphibolis antarctica* are also found.

The park has very diverse subtidal reef invertebrate communities including the blacklip abalone *Halitiotis rubra*, the warrener *Turbo undulatus* and a variety of seastars. Common fish found on these reefs include blue-throated wrasse *Notolabrus tetricus*, purple wrasse *Notolabrus fucicola*, senator wrasse *Pictilabrus laticlavius* and sea sweep *Scorpis aequipinnis*. Deep subtidal reefs within the park are home to sessile invertebrates including sponges, stalked ascidians and bryozoans.

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 marine mammals and seabirds are also found in or use the water column.

Species and Communities of Conservation Significance

The Bunurong Marine National Park has thirty-one conservation listed seabirds and shorebirds including species such as the southern giant-petrel *Macronectes giganteus*, the wandering albatross D*iomedea exulans*, the yellow-nosed albatross, the *Thalassarche chlororhynchos* and the white-faced storm-petrel *Pelagodroma marina* among others. The listed sea cucumber *Pentocnus bursatus*, which is only known from the Cape Patterson area, may also be found in the park.

Marine mammals of conservation significance sighted in the park include the humpback whale *Megaptera novaeangliae*, southern right whale *Eubalaena australis*, subantarctic fur seal *Arctophoca tropicalis*, and the Australian fur seal *Arctocephalus pusillus doriferus*.

Rock ledges at Twin Reefs teeming with fish life. Photo by Mark Norman, Museum Victoria.

The park is home to twenty-one biota recorded or presumed to be at their distributional limit including brown algae, green algae, sea cucumbers, a seastar, a chiton and crab species.

Major Threats

Measures to address or minimise threats identified for Bunurong 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 and actions.

Serious threats for Bunurong Marine National Park include physical disturbance such as human, vehicle or animal/pet trampling; marine pests and diseases; lack of education; increased coastal development; terrestrial inputs of poor water quality and poaching.

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 are likely to 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.

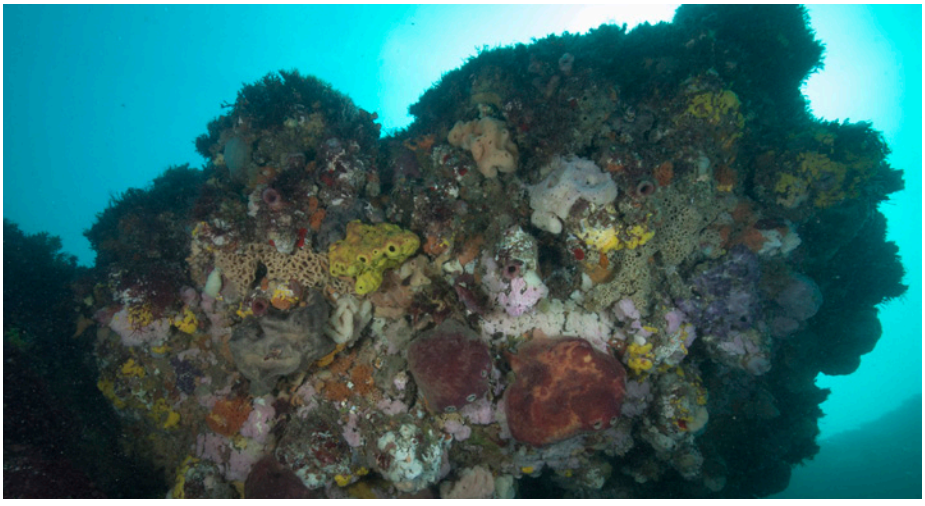
There are six ongoing research projects and one habitat mapping project relevant to Bunurong Marine National Park, while five research projects and one habitat mapping project have already been completed. The park has ongoing intertidal and shallow subtidal reef monitoring programs.

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.

Image left:
Shack Bay looking east towards Eagles Nest. Photo by Mark Norman, Museum Victoria.

Image right:
Giant rock formations covered in encrusting growth in the waters at Twin Reefs. Photo by Mark Norman, Museum Victoria.



Parks VICTORIA

Healthy Parks Healthy People®

State Government Victoria

Parks Victoria
Phone 13 1963
www.parks.vic.gov.au