

Marine Natural Values Study Summary

Eagle Rock Marine Sanctuary



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.

Eagle Rock Marine Sanctuary is one of five marine sanctuaries and two marine national parks in the Central Victoria bioregion.

Image left:
The seagrass *Amphibolis antarctica* growing in a rockpool on intertidal reef. Photo by Jan Barton, Deakin University.

Image right:
Eagle Rock Marine Sanctuary with Eagle Rock on the far right. Photo by Jan Barton, Deakin University.



Description

The sanctuary covers 17.9 hectares and extends from the high water mark around the base of Split Point between Castle Rock and Sentinel Rock in the township of Aireys Inlet. It extends offshore for about 300 metres and includes the 20 metre high Eagle Rock and Table Rock.

The sanctuary is accessible down stairs from Split Point lighthouse visitors' car park onto Step Beach, or from the Painkalac Creek car park by walking past the creek mouth.

Parks Victoria acknowledges the Aboriginal Traditional Owners of Victoria – including its parks and reserves. Indigenous tradition indicates that the sanctuary is part of Country of Wadda wurrung.

Physical Parameters and Processes

The coastline is exposed to high wave energy and the resulting sand movement is from the south west in winter and south east in spring/summer.

The seafloor is predominantly less than ten metres deep. Surface water temperatures vary between an average 17.5°C in the summer and 13.5°C in the winter. Tidal variation is 1.7 metres for spring tides and 0.9 metres for neap tides.

Painkalac Creek discharges adjacent to the sanctuary and Sandy Gully Creek discharges 0.8 kilometres to the east. The geology of the sanctuary is sandstone and basalt. Split Point (cliffs) is geologically significant because of the Oligocene basalt together with pyroclastic and associated terrigenous sediments of the Angahook Member.

Marine Habitat Distribution and Ecological Communities

The main habitats protected by the sanctuary include intertidal and subtidal soft sediment, intertidal and subtidal reefs, and the water column.

The intertidal sandstone platform and basalt boulders are home to 25 species of algae.

The brown algae Neptune's necklace *Hormosira banksii* is a key habitat forming plant on the intertidal sandstone rocky reef. Articulating coralline algae forms a dense cover at the extreme low tide mark and in rock pools. Mixed brown and red algae, the seagrass *Amphibolis antarctica* and the green algae *Caulerpa* spp. are also found in the intertidal rock pools. The fringing bull kelp *Durvillaea potatorum* is also common.



Mussel beds, coralline algae mats and barnacles are generally sparse on the intertidal reefs. The sanctuary is home to over forty eight species of intertidal invertebrates. Grazers and deposit feeders, such as the black nerite *Nerita atramentosa*, are dominant in the basalt boulders.

The scavenger chequerboard snail *Cominella lineolata* is more abundant in the rock rubble habitat. The micrograzers, the variegated limpet *Cellana tramoserica* and siphon limpet *Siphonaria diemenensis*, and the predatory cartrut whelk *Dicathais orbita* are abundant.

Four regionally uncommon intertidal invertebrates and one alga have been found in Eagle Rock Marine Sanctuary including three crabs, the shore *Cyclograpsis granulosis*, spider *Notomitrax sp* and red swimmer *Nectocarcinus turberculosus*; the flame limpet *Notoacmea flammea* and green alga *Codium pomoides*.

The shallow subtidal rocky reefs are home to a relatively diverse range of small brown algae including *Seirococcus axillaris*, *Cystophora retroflexa* and *Acrocarpia paniculata*. Over forty five species of algae have been recorded on the subtidal reefs. The main canopy forming alga is the

large brown crayweed *Phyllospora comosa*. The assemblage of smaller brown algae is relatively diverse, including *Cystophora retroflexa* and *Acrocarpia paniculata*. Red and green understory algae is not abundant or diverse. High sand cover on the reef is thought to affect the subtidal flora.

The sanctuary has a high abundance of the warrener *Turbo undulatus*, with low numbers of other invertebrates such as the blacklip abalone *Haliotis rubra*, the sea stars *Tosia australis*, *Pentagonaster dubeni*, *Coscinasterias muricata* and *Fromia polypore*.

Of the twenty five species of fish found in the sanctuary, the most abundant include the blue-throated wrasse *Notolabrus tetricus*, herring cale *Odax cyanomelas*, scalyfin *Parma victoriae* and the yellow-striped leatherjacket *Meuschenia flavolineata*. Other fish species include the horseshoe leatherjacket *Meuschenia hippocrepsis* and sea sweep *Scorpius aequipinnis*, while the magpie morwong *Cheliodactylus nigripes* also occurs in low abundance.

Sharks and rays such as the Port Jackson shark *Heterodontus portusjacksoni*, necklace carpetshark *Parascyllium variolatum* and sparsely-spotted stingaree *Urolophus paucimaculatus* have been recorded on the subtidal reef.

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.

Species and Communities of Conservation Significance

The sanctuary has seven conservation listed seabirds and shorebirds including the Caspian tern *Hydroprogne caspia*, the white bellied sea eagle *Haliaeetus leucogaster*, the sooty shearwater *Ardenna grisea*, the short tailed shearwater *Ardenna tenuirostris*, the Pacific gull *Larus pacificus*, the black faced cormorant *Phalacrocorax fuscescens*, and the common diving petrel *Pelecanoides urinatrix*.

The Australian fur seal *Arctocephalus pusillus doriferus* occasionally uses the intertidal reef as a haul out area.

The sanctuary is home to seven biota that have been recorded or presumed to be at their distributional limit including five red algal species (*Muellerana watsii*, *Psilothallia siliculose*, *Lesueuria mindeniana*, *Ahnfeltiopsis humilis*, and *Rhodopeltis australis*) one crab (*Amarinus paracacustris*), and one marine snail

Barnacles *Tetraclitella purpurescens* growing on intertidal reef. Photo Jan Barton, Deakin University.



(*Belloliva leucozona*), though this may reflect collection effort in this area rather than actual Victorian distributions.

Major Threats

Measures to address or minimise threats identified for Eagle Rock Marine Sanctuary 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 marine pests and pathogens, illegal harvesting, nutrients and heavy metals from sewage outfall, man-made discharges of freshwater and stormwater, trampling, disturbance through recreation (e.g. dogs, horses, vehicles), increased shore-based development, litter from land or sea, oil pollution and impacts associated with

shipwrecks (physical damage, pollution or cleanup impacts).

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

Climate change 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 five ongoing research projects, one habitat mapping project and one subtidal reef monitoring program that are relevant to Eagle Rock Marine Sanctuary, while eight research projects and one habitat mapping project 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.

Mussels *Austromytilus rostratus* growing on the intertidal reef. Photo by Jan Barton, Deakin University.

