

Marine Natural Values Study Summary

Cape Howe 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.

Cape Howe Marine National Park is one of three marine national parks and one marine sanctuary in the Twofold Shelf bioregion.

Image left:
The sea tulip *Pyura* sp. on subtidal reef.
Photo by Mark Norman, Museum Victoria.

Image right:
An adult cat shark in sponges, sea whips and algae
at about 30 metres depth. Photo by the Coastal CRC.

Description

The park covers 4,060 hectares and is around 15 kilometres east of Mallacoota. It borders the coastline from approximately 1 kilometre east of Telegraph Point and Gabo Island to the New South Wales border, excluding a section of coast and sea around the Iron Prince Reef, extending offshore to state limits from the high water mark.

Abutting the Cape Howe Wilderness Zone of Croajingolong National Park, it is Victoria's most easterly marine national park. The park can be accessed from the adjoining beach.

Aboriginal tradition indicates that the park is part of Bidwell Country. The Yuin Nation people also have an association with the coastal region of this area.

Physical Parameters and Processes

The park is subject to high energy waves and swells, and twice daily tides. Prevailing winds and swells are generally from the south-west and north-east. The park is influenced by both the warm East Australian Current, and cool productive waters upwelling at the edge of the continental shelf.

Surface water temperatures vary between an average 19°C in the summer and 14°C in the winter.

Tidal variation is 0.9 metres for spring tides and 0.6 metres for neap tides. The geology of the park is sandstone and granite. A small intermittent estuary, the outflow from Lake Wau Wauka, runs directly into the park.

Marine Habitat Distribution and Ecological Communities

The main habitats protected by the park are intertidal and subtidal soft sediments, intertidal and subtidal reef, and the water column. Over 85 per cent of the subtidal area of the park is deeper than 20 metres.

The dominant intertidal reef algae includes sea lettuce *Ulva australis*, Neptune's necklace *Hormosira banksii* and various red coralline algae. The bull kelp *Durvillaea potatorum* occurs on the intertidal fringe, while most of the upper intertidal rocks are unvegetated. Invertebrate fauna includes barnacles *Tesseropora rosea*, *Chthamalus antennatus* and mussels *Xenostrobus pulex*, with Sydney rock oyster *Saccostrea glomerata*, red bait crabs *Plagusia chabrus*, keyhole limpets *Fissurellidae* and hermit crabs *Paguridae* occurring in rock pools.

In deeper pools, the elephant snail *Scutus antipodes*, abalone *Haliotis rubra* and *Haliotis coccoradiata*, seastars *Patriella* spp. and swift-footed crab *Leptograpsus variegatus* are common. Little is known about



intertidal fish, although sea mullet *Mugil cephalus* are sometimes found in rockpools in the park.

The subtidal reef is a mixture of solid reef and boulders. Eastern and southern temperate species co-occur, as a result of the mixing of warm eastern and cool southern waters. The shallow subtidal reef is dominated by a mixture of crayweed *Phyllospora comosa* and bull kelp *Durvillaea potatorum*, the reef further offshore tends to be dominated by a *P. comosa* canopy with encrusting coralline algae dominating the understory. Other understory macrophytes include browns (e.g. *Carpomitra costata*, *Zonaria turneriana*) and reds (e.g. *Delisea pulchra*, *Phacelocarpus peperocarpus*, *Arthrocardia wardii* and *Haliptilon roseum*).

Deeper waters have macroalgal beds on sand covered reef, including large beds of the green algae *Caulerpa* spp. in the north-east of the park. On these reefs the herbivorous sea urchin *Centrostephanus rodgersii*, can remove all erect algae to create 'urchin barrens'.

Common invertebrates on subtidal reefs include the blacklip abalone *Haliotis rubra*, the warrener *Turbo undulatus* and another turban shell

The introduced New Zealand screw shell *Maoricolpus roseus* in high densities on deep soft sediments.

Astraliium tentoriformis. The deep (30 metres to 50 metres) sandstone reefs are heavily covered with a diverse array of sponges, ascidians and gorgonians.

Subtidal reef fish assemblages include herring cale *Odax cyanomelas*, rock cale *Crinodus lophodon*, leatherjacket *Meuschenia freycineti*, striped mado *Atypichthys strigatus*, banded morwong *Cheilodactylus spectabilis*, Maori wrasse *Ophthalmolepis lineolatus* and the damselfishes *Parma microlepis* and *Chromis hypsilepis*. The eastern hulafish *Trachinops taeniatus* and the yellow tail mackerel *Trachurus novaezelandiae* can be numerically dominant at individual sites. Large long-finned pike *Dinolestes lewini* occurs widely on the shallow subtidal reefs.

In waters deeper than 10 metres the velvet leatherjacket *Meuschenia scaber* and butterfly perch *Caesioperca lepidoptera* are common over both reef and sediment covered reef. The eastern blue groper *Achoerodus viridis* is strongly associated with solid reef and boulders.

Subtidal soft sediments include *Caulerpa* spp. dominated macroalgal beds at 30 metres to 40 metres depth. Sponges dominate sediment deeper than 40 metres, with orange ball sponges of the genus *Tethya*

dominating sediments in 40 metres to 60 metres depth. Sampling of the invertebrate fauna has found crustaceans were the dominant taxa including amphipods, cumaceans, isopods and ostracods. Polychaetes were also common.

In deeper waters (> 10 metres) the most common fish over sediments is yellow scad *Trachyrurus novaezelandiae*. The ocean leatherjacket *Nelusetta ayraudi*, Grubfish *Paraperca* sp. and flathead *Platycephalus* are associated with deep sediments whilst schools of whiting *Sillago* spp. are commonly sighted over more shallow areas.

The eastern blue-spotted flathead *Platycephalus caeruleopunctatus* is found throughout the relatively shallower depths of the park (<68m). The velvet leatherjacket *Meuschenia scaber* and the butterfly perch *Caesioperca lepidoptera* are common over both sediment and reef.

The draughtboard shark *Cephaloscyllium laticeps* is also common across the park. It mainly lives over sediment and reef in <59 metres, but it can be found down to the deepest depths (105 metres) of the park.

The water column is the largest habitat in the park and 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, reptiles and seabirds are also found in or use the water column.

Species and Communities of Conservation Significance

One fish of conservation significance is present in Cape Howe Marine National Park – the protected eastern blue groper *Achoerodus viridis*. Thirty-eight conservation listed shorebirds or seabirds have been sighted in the park or in the immediate surrounds. Twenty-six of these are recognised as threatened in Victoria. Four species including the sooty oystercatcher *Haematopus fuliginosus*, little tern *Sternula albifrons*, short-tailed shearwater *Ardenna tenuirostris* and white-faced storm-petrel *Pelagodroma marina* have been recorded as breeding in or in the immediate surrounds of the park.

Two whales of conservation significance including the southern right whale *Eubalaena australis* (which has also been observed to calf in the park) and humpback whale *Megaptera novaeangliae* have been recorded in or near the park. The killer whale *Orcinus orca* and minke whale *Balaenoptera* sp. have been observed in the waters in and around the park. The state vulnerable New Zealand fur seal *Arctophoca forsteri* has also been recorded breeding in the park.

Several conservation listed marine reptiles have been recorded including the leatherback turtle *Dermochelys coriacea*, the green turtle *Chelonia mydas* and the hawksbill turtle *Eretmochelys imbricata* turtle. Three other listed marine reptiles occur as warm water transients along the eastern Victorian coast: loggerhead turtle *Caretta caretta*, Pacific ridley turtle *Lepidochelys olivacea* and yellow-bellied sea snake *Pelamis platurus* and probably use the waters of the park.

Thirty-eight biota including algae, seagrass and invertebrates have been recorded or presumed to be at their

distributional limit in Cape Howe Marine National Park.

Major Threats

Measures to address or minimise threats identified for Cape Howe 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 Cape Howe Marine National Park include introduced marine pests from commercial and recreational vessels, abalone poaching and anchoring. The introduced New Zealand seastar *Astrostele scabra* and screw shell *Maoricolpus roseus* have been reported in the park.

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.

There are already some signs of climate change related effects in eastern Victoria, including Cape Howe Marine National Park, with the black spined urchin *Centrostephanus rodgersii* expanding its range from NSW with a strengthening of the East Australian Current. This species forms urchin barrens (devoid of macroalgae) when it reaches high densities and significantly reduces biodiversity of subtidal reefs. Urchin barrens have been observed in Cape Howe Marine National Park.

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 seven ongoing research projects and one habitat mapping project that are relevant to Cape Howe Marine National Park, while eight research projects and two habitat mapping projects have already been completed. The park has an ongoing subtidal reef monitoring program in addition to high quality community monitoring by Reef Life Survey.

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.