

Marine Natural Values Study Summary

Point Hicks 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.

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

Image left:
A school of butterfly perch *Caesioperca lepidoptera* over a subtidal reef sponge garden. Photo by Mark Norman, Museum Victoria.

Image right:
Featherduster worms *Sabellastarte australiensis* on subtidal reef. Photo by Mark Norman, Museum Victoria.

Description

The park covers 3,810 hectares and adjoins Point Hicks Lighthouse Reserve and the Croajingolong National Park. It extends offshore to state limits from the high water mark along 9.6 kilometres of coastline from 2 kilometres east of Clinton Rocks to Stable Bay.

The park includes Whaleback Rock and Sensation Reef and is accessible by a short walk from Point Hicks Road, or less readily 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 Bidawal and Country of Gunai/Kurnai. The Monero-Ngarigo 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 twice daily tides. Prevailing winds and swells are generally from the south-west and north-east. It is influenced by both cool southern waters and the warm East Australian Current. The continental slope is quite close and cold-water upwellings are frequent.

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 is granite with some metamorphic outcrops west of the lighthouse. No estuaries or creeks run directly into the park.

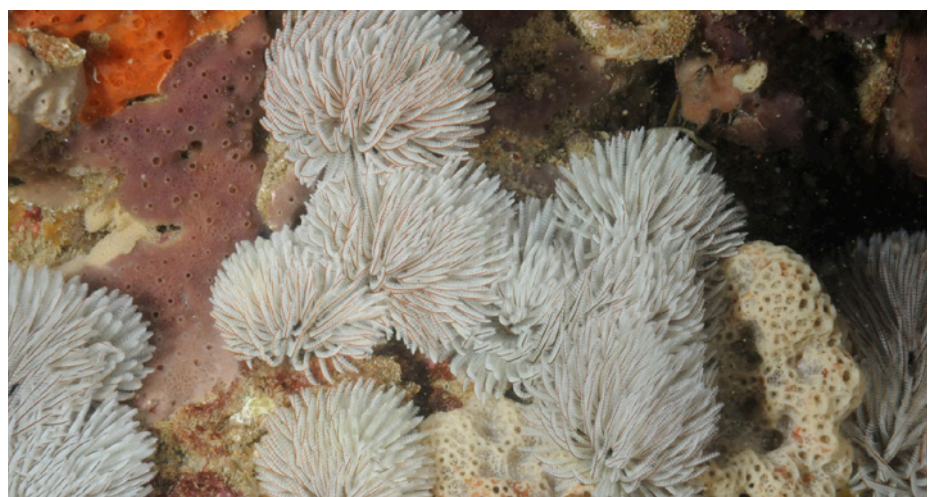
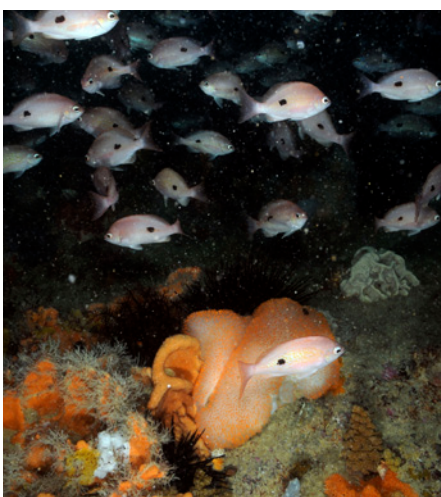
Marine Habitat Distribution and Ecological Communities

The main habitats protected by the park include the water column, subtidal and intertidal soft sediments, and subtidal and intertidal reefs. Over 80 per cent of the subtidal area of the park is deeper than 20 metres.

It has been reported that the composition of invertebrate assemblages living on the intertidal reefs are more similar to those found at Mallacoota, Merimbula and Bermagui than to assemblages found further west along the Victorian coast. East coast species contributing to these differences have lower densities at Point Hicks than in NSW.

The subtidal reef consists of highly exposed granite slopes, boulders, rock gullies and outcrops and includes shallow reefs, as well as deep reefs that extend below 80 metres depth.

Eastern temperate and southern cosmopolitan species co-occur, as a result of the mixing of warm eastern and cool southern waters.



The marine flora and fauna of the subtidal reefs are spectacular and include colourful and diverse sessile invertebrates. In very shallow subtidal waters red algae and the bull kelp *Durvillaea potatorum* are the dominant algae.

Other important characteristics of are the canopy forming algae (e.g. *crayweed Phyllospora comosa* and common kelp *Ecklonia radiata*) and small understory algae (e.g. *Halopteris* spp., *Cladostephus spongiosus*, *Dilophus marginatus*, *Acrotylus australis* and *Sinkoraena tasmanica*), and encrusting and erect sponges.

The *Phyllospora* invertebrate community includes relatively high abundances of the predatory whelk *Cabestana spengleri* and the seastar *Patiriella calcar*, and moderate abundances of blacklip abalone *Haliotis rubra* and the red bait crab *Plagusia chabrus*. The herbivorous sea urchin *Centrostephanus rodgersii* can remove all erect algae to create 'urchin barrens' on the reefs.

Fish assemblages are a mixture of cool southern and warm eastern species and include large numbers of the blue-throated and purple wrasse (*Notolabrus tetricus* and *Notolabrus*

fucicola). Other fish species include the banded morwong *Cheilodactylus spectabilis*, sea sweep *Scorpius aequipinnis*, Maori wrasse *Ophthalmolepis lineolata*, one-spot puller *Chromis hypsilepis* and white-ear damselfish *Parma microlepis*. The eastern blue grouper *Achoerodus viridis* is also present in low numbers.

Subtidal soft sediments include whole and broken shells (known as biogenic gravel) often encrusted in pink algae suggesting that rhodoliths may be present in these areas. Shell areas tend to have many small orange ball sponges (*Tethya* sp.) amongst the shells, and vertical sponges attached to larger shells are also sometimes present. Sand areas tend to be bare, although if vegetation is present, it is usually clumps of the green algae *Caulerpa* spp.

Coastal surveys of benthic infauna found that crustaceans were the *dominant taxa*, mostly made up of amphipods, cumaceans, as well as isopods and ostracods. The invasive New Zealand screw shell, *Maoricolpus roseus*, was identified in very high densities at 40 metres depth. This species is associated with a reduction in other infauna indicating that this exotic species poses a serious threat to the high diversity of infauna that is characteristic of much of Bass Strait.

The dominant fish species on subtidal soft sediment are school whiting *Sillago flindersi*, sparsely spotted stingaree *Urolophus paucimaculatus*, piked dog shark *Squalus megalops*, jack mackerel *Trachurus declivis*, round snouted gurnard *Lepidotrigla mulhalli*, red rock cod *Scorpaena papillosus* and cocky gurnard *Lepidotrigla vanessa*.

Other important species include banded stingaree *Urolophus cruciatus*, short finned gurnard, scaber leatherjacket *Parika scaber* and gurnard perch *Neosebastes scorpaenoides*.

There is some evidence to suggest that the inshore sandy areas east of Wilsons Promontory, including the park, may be important feeding areas for gummy shark pups. The subtidal soft sediment may also be an important feeding ground for gummy sharks, saw sharks and elephant sharks.

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, reptiles and seabirds are also found in or use the water column in the park.

Black urchins *Centrostephanus rodgersii* and yellow zoanthids. Photo by Mark Norman, Museum Victoria.



Species and Communities of Conservation Significance

Twenty-six conservation listed shore or sea birds have been sighted in or in the immediate surrounds of the park. Twenty are recognized as threatened in Victoria and two are regarded as endangered (the little egret and fairy tern).

Four birds are listed as vulnerable at both the state and national level, including the northern giant-petrel, fairy prion, and shy and black-browed albatross. Twelve birds are recognized internationally under the Australia Migratory Bird Agreement (CAMBA or JAMBA). Hooded plover nesting sites have been recorded along the coast to the east of the park and at the mouth of the Mueller and Thurra Rivers, and it is likely that they forage along the park's shore.

Two whales of conservation significance including the southern right whale *Eubalaena australis* and humpback whale *Megaptera novaeangliae* have been recorded in or near the open waters of the park. The killer whale *Orcinus orca*, leopard seal *Hydrurga leptonyx*, Australian fur seal *Arctocephalus pusillus doriferus* and New Zealand fur seal *Arctophoca forsteri* have been observed in the waters.

The yellow-bellied sea snake *Pelamis platurus* has been recorded in or near the park. Four other conservation listed marine turtles occur as vagrants along the eastern Victorian coast including loggerhead *Caretta caretta*, green *Chelonia mydas*, Pacific ridley *Lepidochelys olivacea* and leatherback *Dermochelys coriacea*, and probably transit through the park.

Fish of conservation significance present include the state and nationally vulnerable Australian grayling, the nationally threatened whale shark, and the recently protected eastern blue groper *Achoerodus viridis*.

Thirteen biota including algae and invertebrates have been recorded or presumed to be at their distributional limit. The whale shark *Rhincodon typus* is also presumed to be at the limit of its distribution in the park.

Major Threats

Measures to address or minimise threats identified for Point Hicks 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 introduced marine pests from commercial and recreational vessels, and abalone poaching. 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 will likely be exacerbated by climate change.

There are already some signs of climate change related effects in eastern Victoria, including Point Hicks Marine National Park, with the black spined urchin *Centrostephanus rogersii* 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.

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 and one habitat mapping project that are relevant to Point Hicks 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.