

# Marine Natural Values Study Summary

## French Island 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.

French Island Marine National Park is one of three marine national parks in Western Port Bay, which is part of the Victorian Embayments bioregion.

Image left:  
Stalked barnacle *Smillium peronii*.  
Photo by Julian Finn, Museum Victoria.

Image right:  
The pencil urchin *Goniocidar* sp.  
Photo by Julian Finn, Museum Victoria.

### Description

The park is 2,978 hectares in size and approximately 10 kilometres south of the township of Tooradin. It extends offshore from the high water mark for 15 kilometres along the northern shore of French Island, from Scrub to Palmer Points. The northern boundary surrounds Barrallier Island and follows the North Arm and the Horseshoe Channels. Its southern boundary abuts French Island National Park.

It is accessible only by boat from Warneet, Blind Bight, Tooradin and other shore jetties.

The park is part of three special protection areas that cover the bay. These include the Western Port Ramsar site, the East Asian-Australasian Flyway, and Mornington Peninsula and Western Port UNESCO Biosphere Reserve.

Within the park a Special Protection Area for Natural Values of 450 hectares (16 per cent) covers the saltmarsh and mangrove areas.

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 park is influenced by high turbidity in Western Port which arises from daily reworking and re-suspension of fine sediment by tidal, wind and wave action. Water moves through the bay in a clockwise direction around French Island.

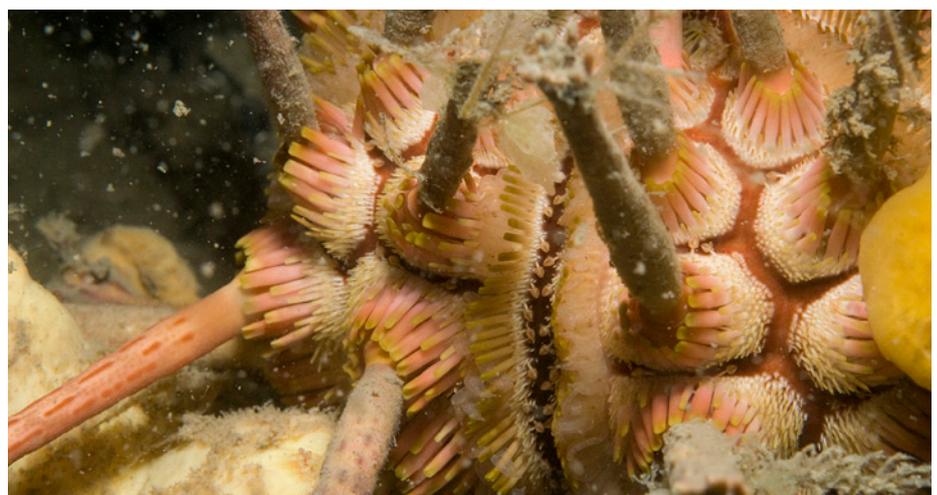
The park is not subject to large waves or swell and the large tides are the major driving force. Tidal variation is 2.6 metres for spring tides and 0.9 metres for neap tides.

Surface water temperatures vary between an average 20.8°C in the summer and 11.3°C in the winter. The substrate is predominantly soft sediment though some gravel-cobble reef occurs in intertidal and subtidal areas. No rivers or creeks flow into the park.

### Marine Habitat Distribution and Ecological Communities

The main habitats protected by the park include subtidal and intertidal soft sediments (including seagrasses, mangroves and a small area of saltmarsh), and the water column. Over 73 per cent of the park is intertidal.

The *Avicennia marina* Mangrove Shrubland community grows on the sediment on intertidal mudflats below the saltmarsh communities. The trunks and pneumatophores of mangroves



provide habitat for epiphytic filamentous algae, gastropods, barnacles, and mussels. The mangrove fringes are inhabited by crabs and at high tide fish such as gobies, mullet, and toadfish.

On intertidal soft sediments, dense seagrass beds (*Zostera/Heterozostera*), and two small patches of *Halophila australis* occur. Intertidal seagrass beds of *Zostera muelleri* and subtidal beds of *Heterozostera nigricaulis* cover approximately a third of the park.

Large areas of unvegetated mud and sand support invertebrates, microphytobenthos and demersal fish. Benthic invertebrates in both unvegetated and vegetated mudflats are an important food resource for the many migratory shore bird species that use the park.

Of twenty eight species surveyed in the mudflats, the most common was the ghost shrimp *Biffarius arenosus*. Also common were the polychaete worms *Barantolla lepte* and *Lumbrineris* sp.

Intertidal gravel-cobble reef occurs around Barrallier Island and along the shores of French Island. Shorebirds and waders use the reef and sand

shoals to roost. Subtidal gravel-cobble reef is thought to occur around Barrallier Island.

The subtidal seagrass beds, which are predominately *H. nigricaulis*, have a different epifaunal assemblage from that found in intertidal *Z. muelleri* beds. Dialids, Mysid shrimps and Dexaminid amphipods are at much higher densities in the subtidal seagrass than in the intertidal seagrass.

Subtidal soft sediments in the channels are generally coarse sand and are home to infauna including polychaetes, crustaceans, bivalves and gastropods. Epifaunal species living on the subtidal channel sediments in the bay include gastropods, sea stars, urchins and ascidians. Seapens *Sarcoptilus grandis* can be abundant along with the brooch shell *Neotrignonia margaritacea*, the Mud Ark *Anadara trapezia* and the brachiopod lamp shell *Magellania flavescens*.

Fish associated with the subtidal sediments and in the deep channels include stingrays, perch and gobies.

The park used to be fished recreationally for King George whiting *Sillaginodes punctatus*, and rock flathead *Platycephalus laevigatus*, mostly in the deeper channels. Post-larvae of King George whiting *Sillaginodes punctatus* appear in the water column from September to November each year

from adults spawning in South Australia and far western Victoria.

The park also used to be fished recreationally for snapper *Pagrus auratus*, and southern sea garfish *Hyporhamphus melanochir*, mostly in the deeper channels.

The water column is dominated by drifting planktonic species, which rely on currents for movement, nutrients and food. Common plankton found in the park includes phytoplankton such as diatoms, and zooplankton including copepods, jellyfish and ctenophores. Highly mobile fish, sharks and stingrays also inhabit the water column.

### Species and Communities of Conservation Significance

French Island Marine National Park provides important feeding and roosting habitat for forty conservation listed bird species such as the orange-bellied parrot *Neophema chrysogaster*, grey-tailed tattler *Heteroscelus brevipes* and the intermediate egret *Ardea intermedia*, which are listed under the Flora and Fauna Guarantee Act and regarded as critically endangered in Victoria.

The park protects feeding areas for twenty-seven internationally important migrant species protected under the Australia Migratory Bird Agreement with either China (CAMBA) or Japan (JAMBA).

Wavy volute *Amoria undulata* on the soft sediment.  
Photo by Julian Finn, Museum Victoria.



The brittle star *Amphiura triscacantha* is listed under the *Flora and Fauna Guarantee Act* and has been recorded in the park.

Syngnathids (the group that includes seahorses and pipefish) are protected and are found in the park.

Potentially forty species of marine flora and fauna are at their distributional limits in Western Port Bay and could occur within the park.

### Major Threats

Measures to address or minimise threats identified for French Island 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 coastal erosion, litter, sediment and nutrients from the

land and increasing urbanisation, vessels disturbing shorebirds, marine pollution and invasive marine pests.

The Northern Pacific seastar *Asterias amurensis* is well established in Port Phillip Bay and was recently found at San Remo (although the San Remo population may have been eradicated). There are concerns about possible spread of this species to French Island Marine National Park.

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 four ongoing research projects and one habitat mapping project that are relevant to French Island Marine National Park, while four 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](http://www.parks.vic.gov.au).**

French Island Marine National Park.  
Photo by Chris Hayward, Parks Victoria.

