# Marine Park 7 Neptune Islands Group Marine Park

## Park at a glance

This marine park includes the whole of the Neptune Islands Group, which is located in offshore waters adjacent to the mouth of Spencer Gulf in South Australia.

At 146 km<sup>2</sup>, it represents 1% of South Australia's marine parks network.

#### Community and industry

- Little is known about Aboriginal heritage in this area.
- Commercial fisheries in the area target shark, ocean leatherjacket, pilchards and rock lobster.
- The southern-most island of the group features a lighthouse, buildings and a jetty which are listed on the Register of the National Estate and State Heritage Register.
- Shark-cage diving and recreational charter-boat fishing are popular.

#### Fauna and flora

- A breeding population of the Australian sea lion lives within the park.
- The Neptune Islands host about half the Australian population of New Zealand fur seals. It is the State's most important pup production site for these seals.
- Seabirds protected under international treaties, such as the Caspian tern, crested tern and short-tail shearwater roost and nest on the islands.
- Great white sharks feed in the waters surrounding the islands.

#### Habitat

- The Neptune Islands Group Marine Park is within the Eyre Bioregion.
- Habitats typical of this region include:
  - exposed island environments,
  - $\circ\;$  a variety of intertidal and deep-water reefs and
  - sandy seafloor habitats.
- The habitats inside the Neptune Islands Group Marine Park provide critical baselines to measure any changes to the State's marine ecosystems that may arise over time from, for example, pollution or climate change.

- The mouth of Spencer Gulf represents a transition zone between the influences of the gulf and the influences of the oceanic waters to the south.
- Migratory and widely travelled species such as southern right whales, seabirds and great white sharks link the marine park with more distant ecosystems.

### **Boundary description**

The Neptune Islands Group Marine Park comprises the two areas set out below.

- The area within two nautical miles of the coastline of the North Neptune Islands at median high water.
- The area within two nautical miles of the coastline of the South Neptune Islands at median high water.

**NOTE:** This boundary description is indicative only. It does not describe inclusions and exclusions of specific land parcels. For this detailed information, please refer to the DEH website: www.marineparks.sa.gov.au or Surveyor-General's office for the relevant marine park plan (known as a Rack Plan).



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### Neptune Islands Group Marine Park

### **Bioregions and South Australia's** marine parks network

Eight biologically distinct regions have been identified off South Australia's coastline. The State's marine parks have been carefully designed to include parts of each bioregion and the various habitats within them.

By including some examples of the marine biodiversity typical of the Eyre Bioregion, the Neptune Islands Group Marine Park contributes to the marine parks network's goal of representing and protecting examples of the full diversity of South Australia's marine life.

The remote Neptune Islands provide examples of remote island habitats with associated reefs located in open waters outside the mouth of Spencer Gulf.

## The 14 marine park Design Principles

To guide the initial identification and final selection of South Australia's multiple-use marine parks, 14 Design Principles were defined and adopted by the Government. The seven Biophysical Principles and seven Community Principles help ensure the marine parks network meets the objects of the *Marine Parks Act 2007*, as well as South Australia's national and international obligations for marine protection.

The Biophysical Design Principles guided the identification of proposed marine park sites. The Community Design Principles were then applied to fine-tune site selection of the 19 multiple-use parks in the network.





## **Biophysical Design Principles**

The seven Biophysical Principles address environmental conservation.

In the first instance, all parks were designed to meet the Precautionary Principle. Rigorous application of the Adequacy, Comprehensiveness and Representativeness Principles ensure the marine parks network meets South Australia's national and international marine protection obligations.

The remaining three Biophysical Principles helped prioritise important local sites, to ensure the marine parks network maximises ecological outcomes (South Australia's Strategic Plan Target 3.4).

#### The Precautionary Principle

The Precautionary Principle is a risk-management tool which requires action to be taken now in areas where scientific knowledge is not yet complete. One of the ways the Precautionary Principle has been applied in developing marine parks is to include areas of unsurveyed seabed habitats.

In the Eyre Bioregion, 14,973  $\text{km}^2$  (80%) of seabed habitats is yet to be surveyed.

As a precautionary measure, 138 km<sup>2</sup> (1%) of the unsurveyed habitat is included within the Neptune Islands Group Marine Park. Including unsurveyed habitats increases the likelihood that all of the habitats that actually exist in the region are included within a marine park.

#### The Adequacy Principle

Adequacy is achieved if the marine park provides for both ecosystem integrity and the viability of whole populations of species.

A marine park is considered to have achieved Adequacy if both it and the network it contributes to are large enough to protect the species and habitats found there, and close enough to connect populations.

The Neptune Islands Group Marine Park covers 146 km<sup>2</sup> (1% of the whole network). It has been designed to include multiple examples of each habitat type where possible, at sizes sufficient to contain viable populations of marine species.

The Principles of Connectivity and Linkages, Resilience and Vulnerability and Ecological Importance also contribute to the Adequacy of a marine park. Ultimately, Adequacy is closely linked to the success of marine park management plans with zoning.

#### Comprehensiveness and Representativeness Principles

To meet the Principle of Comprehensiveness, examples of all of the habitats that occur in the Eyre Bioregion need to be included within a marine park.

To be Representative, all habitats in a region (e.g. reefs, beaches, seagrass, mangroves) need to be included across the full variety of physical situations in which they occur (e.g. shallow and deep water reefs, low and high energy beaches). This variety must be represented within the combination of parks created in a bioregion.

The Neptune Islands provide examples of remote, offshore island environments to the marine parks network. The island group comprises granite mountains rising steeply from deep water, exposed to high wind, wave and swell energy. Habitats include the exposed island environments above the reach of the tides, while at the waterline, intertidal reefs extend down into deep water and sandy seafloor habitats. The slightly larger North Neptune Island has an area of surveyed platform reef adjacent to it, some of which is more than 50 metres deep.

#### Connectivity and Linkages Principle

Connectivity describes how plants and animals move between different places. Linkages refers to the transfer of materials (e.g. organic matter) and energy flows. Connectivity and Linkages both depend on the way currents, tides and waves move water and on the abilities of marine life to move between different areas.

The Neptune Islands Group Marine Park creates the opportunity to protect connected habitats from the terrestrial island surface through to deep water reefs and sandy plains. Protecting connected habitats benefits species which move between different habitats to support their needs. For example, New Zealand fur seals breed and raise their pups on the islands and forage in the surrounding regions.

For some highly mobile species, the Neptune Islands Group is an important destination in their travels. Satellite tracking of great white sharks, for example, which have foraging ranges of thousands of kilometres, has shown that they revisit the Neptune Islands at regular intervals, thus establishing ecological linkages between geographically distant locations.

Large scale natural processes connect and link this area to other more distant regions. Offshore from the mouth of Spencer Gulf, multiple oceanic influences converge and mix, such as the warm Leeuwin Current, originating in Western Australia, the cooler Flinders Current flowing from the south east and upwellings of nutrient-rich cold waters originating off the edge of the continental shelf which rise to the surface off Point Sir Isaac and off the western end of Kangaroo Island. The mixing of these influences creates a transition from western warm waters to the cool temperate conditions found in State waters south and east of this region. Also, the mixing of larvae and nutrients from four different sources also contributes to the high biological productivity and diversity of plants, animals and habitats of this region.

#### Resilience and Vulnerability Principle

The combined Principle of Resilience and Vulnerability encourages the inclusion of places, plants and animals that are more susceptible to degradation or decline and/or less able to recover from damaging impacts.

Less resilient habitats, plants and animals are less able to resist disturbances or pressures. More vulnerable habitats, plants and animals have less capacity to recover once pressures are removed. For example, some seagrasses may take decades or more to recover from disturbance.

Examples of less resilient and more vulnerable habitats, plants and animals in this marine park include colonies of invertebrate animals inhabiting deep water reefs. Also highly vulnerable to human pressures are a small breeding population of Australian sea lions at the South Neptune Islands. Great white sharks, also a protected species, rely on the sea lions and fur seals of the Neptune Islands as a major food source.

#### Ecological Importance Principle

Cold water upwellings as well as the influences of the Leeuwin and Flinders Currents create unique conditions, high biological productivity and high species diversity in this region.

The Neptune Islands are distinctive for the very steep rise of the islands from deep water, creating reef habitats of great diversity.

Approximately half the Australian population of New Zealand fur seals are located at the Neptune Islands. The islands are the most important pup production site in South Australia for this species, whose population is recovering from decimation by the early sealing industry.

CSIRO research has confirmed the Neptune Islands is an area of importance to great white sharks.

Seabirds protected under international treaties, such as the Caspian tern, crested tern and shorttail shearwater roost and nest on the islands.





## **Community Design Principles**

#### Synergies with Existing Protected Areas Principle

By aligning with existing protected areas, marine areas can contribute to the establishment of protected corridors across the land-sea interface. The Neptune Islands Group Marine Park includes the whole of the Neptune Islands Conservation Park.

#### Complementing Existing Management Principle

Management of South Australia's marine parks will complement, but not replace, current management arrangements. By providing a more inclusive management framework, South Australia's marine parks network is designed to help existing environmental management practices.

The Neptune Islands are located outside local government boundaries and natural resources management board boundaries. Neptune Islands Group Marine Park management will integrate with and complement existing management practices relating to the lighthouse, other infrastructure and fisheries management measures surrounding the islands.

Wherever possible, provision will be made in the future Neptune Islands Group Marine Park management plan with zoning to accommodate current and future economic, social and infrastructure requirements. Administrative agreements between agencies will support streamlined assessment so that the marine park does not create an extra approval process.

# Give Consideration to the Full Diversity of Marine Uses Principle

The Government is committed to designing marine parks for conservation and for sustainable use, in close consultation with local communities and with minimal impact on existing activities.

The proclamation of the Neptune Islands Group Marine Park outer boundary does not change the way people use the marine environment, or change any existing land or sea-bed tenure.

Wildcatch fisheries in the region target shark, ocean leatherjacket, pilchards and rock lobster. Proclamation of the Neptune Islands Group Marine Park does not displace any existing commercial fishing activity. The Government recognises that high-value catch areas occur within the marine park and will work with stakeholders during the development of the Neptune Islands Group Marine Park management plan with zoning to avoid displacing effort from those areas wherever possible.

Tourism activities in the region include recreational fishing and white shark cage diving. A number of charter operations serve the islands.

The outer boundary of the Neptune Islands Group Marine Park does not change existing recreational fishing and boating activities. Existing access for recreational beach fishing will be maintained throughout the Neptune Islands Group Marine Park, except in small areas designated as "sanctuary" or "restricted access" zones. These zones will be determined over the next couple of years as the marine park management plan with zoning is developed.

With input from a Marine Park Local Advisory Group, industry and the community, a management plan with zoning will be developed for the Neptune Islands Group Marine Park which will cater for ongoing community use of the area. The management plan will be subject to community consultation and every effort will be made to minimise impacts on people and businesses.

#### Respect Indigenous Interests and Culture Principle

The Government is aware that there may be confidential Aboriginal heritage sites in South Australia's coastal areas. Where possible, these sites have been considered in the planning process. Future management plans will ensure these heritage sites are appropriately respected. Aboriginal aspirations for this area are not known by the Department for Environment and Heritage.

#### Give Consideration to Cultural Heritage Principle

The southern-most island of the Neptune Islands Group features a lighthouse and associated cottages, buildings and jetty. All the structures, excluding the modern lighthouse, are listed on the Register of the National Estate and State Heritage Register for their historic significance.

Neptune Islands Conservation Park is listed on the Register of the National Estate.

# Ensure Ease of Identification, Compliance and Enforcement Principle

The Neptune Islands Group Marine Park was designed to ensure ease of identification, compliance and enforcement where possible. The marine park boundary extends two nautical miles around the islands.

# Provide for Education, Appreciation and Recreation Principle

The Neptune Islands Group Marine Park was designed to ensure the things we enjoy in this environment continue, by helping to maintain a healthy marine environment and our uses of it.

Further opportunities for education, appreciation and recreation will be achieved through the zoning and management planning process.

### Need more information?

For further information, please see: *Design Principles Guiding the Development of South Australia's Marine Park Boundaries* and *Technical Report on the Outer Boundaries of South Australia's Marine Parks Network*. Both are available on the marine parks website: www.marineparks.sa.gov.au or by calling 1800 006 120.



