



## Prince Edward Islands Marine Protected Area

### A global treasure setting new conservation benchmarks

The newly declared Prince Edward Islands (PEI) Marine Protected Area (MPA) is one of the largest of its kind in the world and a true conservation jewel in the Southern Ocean.

The Prince Edward Island group, made up of Marion Island and Prince Edward Island, is situated well away from continental land masses and the usual sea routes. As a result the PEI MPA is considered the most pristine in the Southern Ocean.

At about 290km<sup>2</sup> with a circumference of 72km, Marion Island is the larger of these two volcanic islands.

The marine biodiversity of the islands is of global importance. Given the scarcity of land masses in the Southern Ocean, these sub-Antarctic islands contain vast populations of seals and seabirds, which use these islands to breed and moult. This means that these islands are critical to the conservation of such species as they are forced to aggregate in high densities where they

are vulnerable to disturbance and the threat of introduced predators or pathogens.

Like other small oceanic islands, the islands rely on the surrounding ocean for nutrient input. Top predators (birds and seals), which use the islands to breed and moult, bring nutrients to the islands' shelf area and the pelagic environment. Island runoff, driven by rainfall, then augments the nutrients in the shelf waters. The close relationship between the islands' marine and terrestrial environments provides the islands' life support system.

To date longline fishing for Patagonian toothfish has been the main threat to the marine ecosystem and biodiversity around the islands. It is important to note that the Southern Ocean and Antarctica, perceived as "the last frontier" a decade ago, are currently the scene of a rapid increase in human activity and related impacts.

Human pressures in this area are likely to increase dramatically in the future.

## Prince Edward Islands Fact Sheet

### General Facts

- The new Prince Edward Islands Marine Protected Area (MPA) is the first South African offshore MPA and will serve to significantly contribute to global initiatives towards protection of offshore and deep ocean areas.
- The sub-Antarctic Prince Edward Island group, consisting of Marion Island and Prince Edward Island, lies in the Southern Ocean, approximately 2,000 km south-east of Cape Town and 250 km north of the Antarctic Polar Front.
- At 180,000km<sup>2</sup>, approximately the combined size of the Free State Province, Lesotho and Swaziland, the MPA is one of the world's largest.
- Prince Edward is arguably the world's most pristine sub-Antarctic island of significant size and it merits World Heritage Site status.
- The islands have also been declared Special Nature reserves under the South African Environmental Management: Protected Areas Act, No 57 of 2003.
- South African sovereignty over these islands was declared on 12 January 1948.

### Biodiversity Facts

- The marine biodiversity of the Prince Edward Islands is of global importance. The islands are home to a suite of spectacular marine wildlife, including albatrosses, penguins, killer whales and Patagonian toothfish stocks.
- Marion Island exhibits a rare potential for the study of ecological processes and the monitoring of ecological change and the preservation of biological diversity. It has a meteorological observation station and biological research station. Marion Island's meteorological station was originally established to improve South Africa's weather capability forecasts. It now forms a hub for research on global environmental change (specifically climate change) in the Southern Ocean and Antarctica.
- The Prince Edward Islands are estimated to support approximately 2.5 million pairs of breeding seabirds and may support up to 8 million seabirds in total.
- Twenty-nine species of birds, 28 of them seabirds, are thought or known to breed on the Prince Edward Islands. Only one other island group in the Southern Ocean, the Crozets, holds more species of breeding seabird.
- Five species of albatross breed on the Prince Edward Islands, together with 14 species of petrels and five other species. The islands support 44% (7,300 birds) of all wandering albatross, 10% (21,800 birds) of grey-headed albatross, 21% (15,000 birds) of Indian yellow-nosed albatross and approximately 10% (4,400 birds) of Dark-mantled and 2% (700 birds) of Light-mantled Sooty Albatross. While the other species breed on both islands, the Indian yellow-nosed albatross only breed at Prince Edward Island.

- Three species of seal breed at the Prince Edward Islands, namely the southern elephant seal, the sub-Antarctic and Antarctic fur seal. All three species were historically exploited commercially.
- In this cold climate, plants are mainly limited to grasses and mosses.
- The waters within the MPA are often frequented by several species of whales.

## Multi-use zones

The Prince Edward Islands Marine Protected Area (MPA) comprises three types of multi-use zones:

- A 12 nautical mile sanctuary (no take) zone
- Four restricted zones, in which fishing effort is limited
- A controlled zone, linking the four restricted areas. This zone is to be managed as a low impact zone that links the four zones spatially.

The rationale for the zoning is that this MPA will have a 12 nautical mile sanctuary zone for the preservation of the unique island ecosystem and to contribute towards the recovery of Patagonian toothfish populations. The zonation system will still allow limited utilisation of Patagonian toothfish resources by South African vessels outside the sanctuary area.

# Threats to the Prince Edward Islands

## Fishing practices

Marine resources in the area have been threatened by illegal and unsustainable fishing practices in the past, resulting in significant economic and ecological losses to South Africa.

The marine resources of the Prince Edward Islands suffered a negative impact during the 1980s, mainly due rampant illegal, unregulated and unreported (IUU) fishing activity for Patagonian toothfish (*Dissostichus eleginoides*).

The establishment of a longline fishery for Patagonian toothfish on the islands' shelf waters places seabirds at risk. Certain species of seabird to are prone to diving after baited hooks, becoming snagged, and drowning during line setting. This source of mortality affects populations of seabirds dramatically - albatrosses and large procellaria petrels being particularly vulnerable.

## Climate change

The Southern Ocean region and the Antarctic are in many ways a microcosm of the environmental change found elsewhere on the planet. The Prince Edward Islands are showing rapid change in step with global climate change.

Any anthropogenic reduction in the resilience of the species within the exclusive economic zone of the island may render them locally (or even globally) extinct, for instance if sea surface temperatures change drastically, or if the position of the oceanic fronts moves too far south. There is evidence that many birds and seals forage in the vicinity of the fronts. Global climate change in the Southern Ocean is causing shifts in the position and intensity of the major frontal systems and changes in oceanic circulation patterns within the region of the islands. The islands' climate has changed significantly over the last few decades, having become warmer and drier. Climate changes on the island may have a dramatic effect on the breeding success of a number of bird species on the islands.

## Alien species

One of the greatest threats to biodiversity is that of biological invasion. Wildlife on the islands is particularly vulnerable to introduced species that threaten endemic fauna and flora. Alien species introductions are a real threat, and many alien species appear to benefit from warmer climatic conditions.

## Pollution

Many shipping-related processes threaten the marine (and therefore terrestrial) environment of the islands, given the inseparable relationship between the marine and terrestrial environments. These include the introduction of alien species via ballast water and on hulls, and pollution such as oil spills. Vessels may exercise their right of passage and seek shelter near the islands, making it difficult to control any associated negative impacts.

## Marine Protected Areas (MPAs) elsewhere

About 1,2% of the surface area of the Earth's oceans is already in protected areas, far less than the 12% of the planet's land area set aside.

Following is a list of some of the world's largest marine protected areas, previously passed into law (areas in square kilometres):

1. Australia's Coral Sea Commonwealth Marine National Park 989,842
2. Phoenix Islands Protected Area in Kiribati in the central Pacific 408,342
3. Australia's Great Barrier Reef Marine Park 343,480
4. U.S. Papahānaumokuākea Marine National Monument off Hawaii in the Pacific 334,154
5. U.S. Mariana Trench Marine National Monument in the Pacific 247,179
6. U.S. Pacific Remote Islands Marine National Monument 212,788
7. South Africa's Prince Edward Islands Marine Protected Area 180,633
8. New Zealand's Kermadec Benthic Protection Area 164,840
9. Australia's Macquarie Island Commonwealth Marine Reserve 161,895
10. Ecuador's Galapagos Marine Reserve in the Pacific 137,975

Sources: [www.environment.gov.za](http://www.environment.gov.za); WWF; [www.sanap.ac.za](http://www.sanap.ac.za); *The Prince Edward Islands*.

*Land-Sea Interactions in a Changing Ecosystem.*