



*Hon. Chris Carter,
Minister of Conservation*



*Hon. David Benson-Pope,
Minister of Fisheries*

We have become increasingly aware of the exciting diversity of the life in our seas and of the need for its protection.

Foreword

New Zealand has an important role to play in the preservation of global biodiversity.

The processes that have shaped our land and surrounding oceans over the aeons have left us in charge of an amazing diversity of life and ecosystems. Much of the focus of nature conservation in New Zealand for the last century has been on the land, where sizeable national parks and reserves have been established. With the advent of scuba diving and the efforts of underwater naturalists such as Wade Doak and Roger Grace, we have become increasingly aware of the exciting diversity of the life in our seas and of the need for its protection.

The Government, as a signatory to the United Nations Convention on Biological Diversity, is committed to maintaining and preserving the natural heritage of our lands and waters.

Towards this, a strategy has been developed for maintaining New Zealand's biodiversity, with a vision to the year 2020.

Marine habitats and ecosystems will be maintained in a healthy, functioning state, and degraded areas allowed to recover. A full range of New Zealand's marine habitats and ecosystems will be protected.

A network of marine reserves and other Marine Protected Areas will be established to protect special and unique sites and also representative areas. The target is to protect 10% of New Zealand's marine environment in this way by 2010. These protected areas will provide an invaluable store of genetic diversity that will contribute to maintaining the health of the wider marine ecosystem. They will also provide unique opportunities for recreation, marine tourism, scientific research and education.

In the 90% of the sea that will lie outside the protected areas, sustainable fisheries management will be the key means of maintaining productive and healthy marine ecosystems. But human activities on land can adversely affect the sea through pollution and increased sedimentation from run off. Dealing with these problems requires concerted action from local councils, farmers, foresters, property developers, road makers, and you and I being careful about what we tip down the drains in our backyard. The sea and land are connected.

New Zealand is one of the most maritime countries on earth. The relationship we have with the sea is an important part of defining who we are as a people. Whether our connection with the sea is from gathering kai moana for a hangi, catching a snapper, obtaining a living from fishing, shipping or marine tourism, or from simply enjoying a beach picnic or a snorkel along a rocky reef, Kiwis share a common love and respect for the oceans that surround us.

Hon. Chris Carter, Minister of Conservation

Hon. David Benson-Pope, Minister of Fisheries



New Zealand's incredible marine biodiversity

New Zealand's marine environment covers some **410 million hectares of ocean** and our Exclusive Economic Zone is the fourth largest in the world.

Biological diversity or “Biodiversity” for short describes the variety of all biological life – plants, animals, fungi, and microorganisms – the genes they contain and the ecosystems on land or in water where they live. It is a term that encompasses the diversity of life on earth.

New Zealand has a particularly rich and complex seascape; a consequence of its extension over 30° of latitude, its position on an active plate boundary with all the consequent folding, faulting and volcanism, and its positioning in relation to major subtropical and subantarctic water masses and surface and deep water current systems.

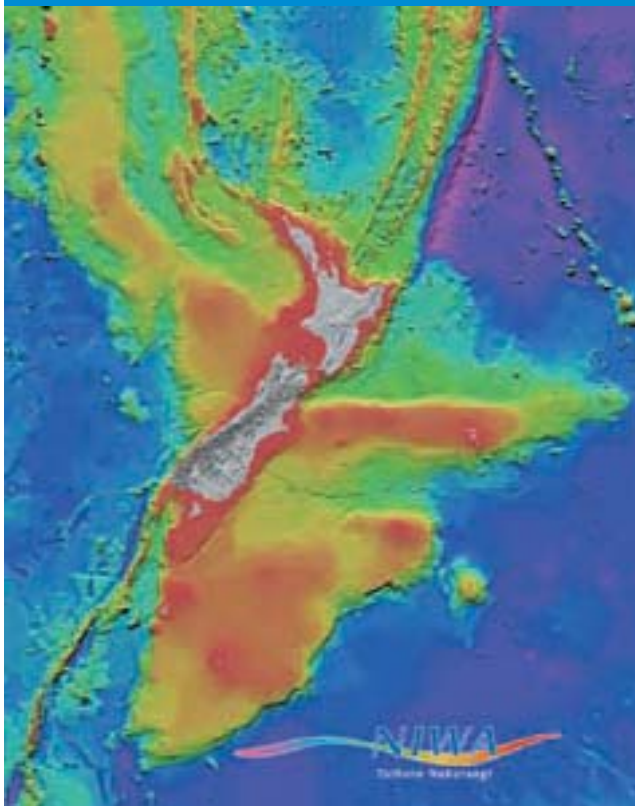
New Zealand's marine environment covers some 410 million hectares of ocean and our Exclusive Economic Zone is the fourth largest in the world.

More than 15,000 marine species have been found in the sea, based on current knowledge, we predict that New Zealand could have up to 10% of the global marine biodiversity represented within the waters under its jurisdiction.

Our isolation in the south-west Pacific means that in some marine groups there is a particularly high proportion of species only found in New Zealand. This is particularly high amongst:

Triplefins (small reef fish)	100%
Sponges	90%
Molluscs (shellfish)	86%
Bryozoans (lace corals)	60%
Seaweeds	40%

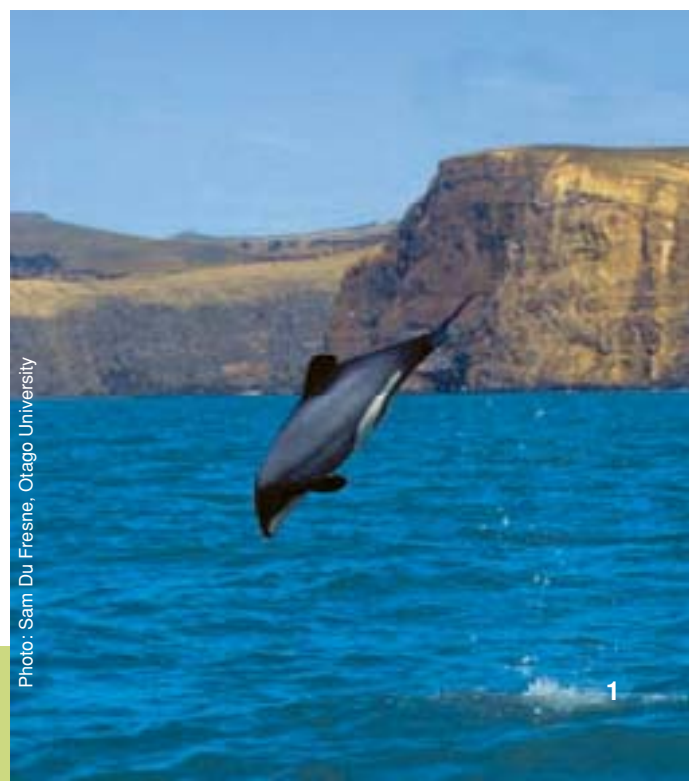
And amongst our mammals, the New Zealand sea lion and Maui's and Hector's dolphin are found nowhere else in the world.



Contents

- 1 New Zealand's incredible marine biodiversity
- 4 Human impacts on marine biodiversity
- 6 Protecting biodiversity
- 9 Marine Protected Areas
- 10 Biodiversity benefits of Marine Protected Areas
- 13 Designing a MPA network

Published by:
Marine Conservation Unit, Department of Conservation
PO Box 10 420, Wellington, New Zealand
© Department of Conservation, June 2005
ISBN 0-478-22691-8



New Zealand is also visited by a number of migratory species, and provides habitat that is critical to the long-term viability of some of these; including some of our whales, and sea birds like albatrosses and petrels.

This wide variety in marine seascapes and diversity of habitats means that New Zealand has a great richness of unique species.

The second deepest part of the Earth's ocean is found in the Kermadec Trench, north-east of mainland New Zealand; as yet its fauna is almost completely unknown. The shallow, warm sub-tropical waters around the Kermadec Islands themselves support large colonies of plate and soft corals and populations of the rare spotted black groper as well as a species of giant sex-changing limpet which grows as big as your hand.

Extending north-east and south-west of the Kermadecs are many steep-sided undersea volcanoes or 'seamounts' that never made it above the sea surface. Some slopes comprise recently extruded material with little marine life, while others have developed unique faunas different from adjacent seamounts. Seamounts are also found around much of New Zealand, though not all have been formed by volcanic action. Around the active hydrothermal vents of some seamounts, highly specialised marine life can be found.

The north-eastern coastline of North Island has many harbours, estuaries, and sandy bays interspersed with rocky headlands and offshore islands. Along the muddy margins of the harbours and estuaries are forests of mangrove. In the shallow harbour flats are meadows of sea-grasses, and banks of filter feeding cockles and pipi. These are important nursery grounds for juvenile fish and provide rich feeding grounds for coastal fishes and sea birds.

New Zealand is also visited by a number of migratory species, and provides habitat that is critical to the long-term viability of some of these; including some of our whales, and seabirds like albatrosses and petrels.



Photo: Kim Westerskov



Photo: NIWA 2004



Photo: NIWA 2004

Undersea volcanoes or 'seamounts' have developed unique faunas



Photo: T. and J. Enderby

In the shallow harbour flats are meadows of sea-grasses, and banks of filter feeding cockles and pipi. These are important nursery grounds for juvenile fish and provide rich feeding grounds for coastal fishes and sea birds.

Of all the offshore islands, none are as remarkable as the steep-sided Poor Knights Islands, lying 25 kilometres off the east coast of Northland and in the path of the warm East Auckland Current. The islands support a unique mix of sub-tropical and temperate species, in a spectacular seascape of caves, archways, cliff faces and pinnacles bathed in clear water. Densely packed schools of plankton-eating fishes crowd the archways, and mosaics of algae and invertebrates encrust the cliff faces.

The margin of New Zealand's continental shelf is indented by over a hundred canyons. Some of these steep-sided features are only a few kilometres long, while others like the Cook Strait and Kaikoura Canyons are major features of the seascape and bring deep water close to the New Zealand mainland. Vertical mixing of the water column and associated increased productivity often occurs in and around canyons, helping to sustain a more varied and abundant mid-water and bottom dwelling fauna than the surrounding continental shelf. This in turn attracts large predators like giant squid and sperm whales.

Fiordland is a place of seascapes unequalled in Australasia. Sheer rock walls, carved by glaciers, plunge up to 450 metres below the surface. A yellow tinted surface freshwater layer, a consequence of the high rainfall percolating through decaying leaf litter, greatly reduces the underwater light. So species like black coral, red coral and glass sponges, that are usually only found in deep water, can be found close to the surface. Nowhere else in the world are black corals found in such abundance, or so close to the surface.

Thus we have a wide variety of marine habitats inhabited by an estimated 65,000 species, many of which are unique to New Zealand, making it a hotspot for marine biodiversity worldwide.



Photo: Malcolm Francis, 2004



Photo: Malcolm Francis, 2004

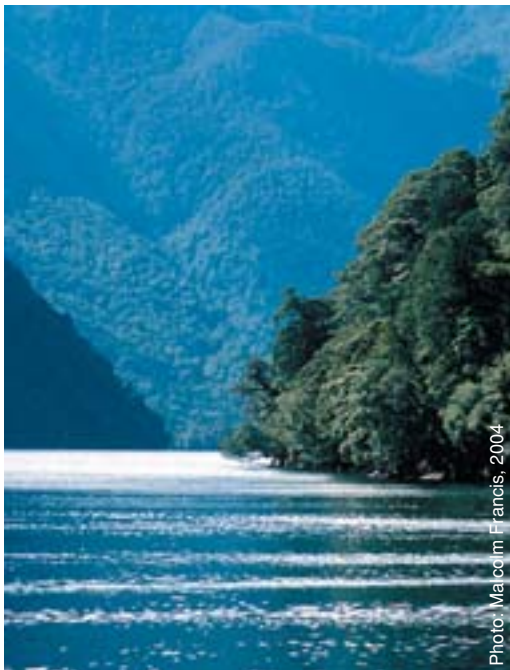


Photo: Malcolm Francis, 2004



Photo: Ken Grange, NIWA 2004

Sheer rock walls, carved by glaciers, plunge up to 450 metres below the surface. A yellow tinted surface freshwater layer, greatly reduces the underwater light.

Nowhere else in the world are black corals found in such abundance, or so close to the surface.

Fiordland is a place of seascapes unequalled in Australasia.