Biodiversity

Biodiversity – A general overview

Number 2

WHAT IS BIODIVERSITY?

Biodiversity is shorthand for 'biological diversity'. It is *"...the variability among living organisms, and the ecological complexes of which they are a part, including diversity within species, between species, and of ecosystems"* (Section 2 of the Resource Management Act 1991).

WHY IS BIODIVERSITY IMPORTANT?

Biodiversity is essential for the continued existence of a healthy planet. All parts of biodiversity are interconnected in an intricate 'web of life'. Biodiversity is like a building block – every bit counts. When one building block is missing, not only is the web of life incomplete, it is prone to collapse.

Besides being essential to maintaining Earth's life - supporting capacity, biodiversity is a source of food and medicines, and essential 'ecosystem services' such as purification of air and water, nutrient cycling, waste decomposition, carbon sequestration, pollination and disease control.

Biodiversity often has important social, recreational and cultural values. For example, it shapes New Zealanders' national identity.

WHAT MAKES NEW ZEALAND'S INDIGENOUS BIODIVERSITY SPECIAL?

It is thought New Zealand has at least 80,000 indigenous (native) animals, plants and fungi.

New Zealand's native biodiversity is unique, born of long isolation as small islands in a vast ocean (New Zealand split from other continents 80 million years ago). New Zealand has a high percentage of endemic species (those found nowhere else in the world). For example, both native bat species are found only in New Zealand, as are all four frogs, all 60 reptiles, more than 90% of insects and marine molluscs, about 80% of vascular plants, and a quarter of all our bird species.

Unlike other continents, New Zealand was almost mammal-free – the only native mammals were two species of bat, and marine mammals.

The 80 million years of isolated evolution and the relative absence of mammals lead to evolution on land taking an eccentric course. Until quite recently, birds dominated the land. Some evolved into unique new forms – the world's largest eagle, a flightless nocturnal parrot, the kiwi with nostrils at the end of its long beak, and the giant moa, taller than any other bird. Flightless birds and giant insects (such as the giant weta) filled roles small mammals filled elsewhere – foraging on the ground, living in burrows and hollows.

New Zealand's native biodiversity is both special and highly vulnerable.

Taranaki has a unique array of native plants and animals of its own – being home to a number of species largely confined to the region and found nowhere else in the world, e.g. the rare moth Notoreas 'Taranaki Coast'.

WHAT IS THE STATE OF OUR INDIGENOUS BIODIVERSITY?

Over the last 1000 years, since the arrival of humans New Zealand's biodiversity has radically changed on land, in our rivers, lakes and streams, and in the sea.

Although New Zealand was one of the last places on earth to be settled by humans, it has one of the worst records of native biodiversity loss. Seventy percent of our forests and 90% of our wetlands have been lost. Dozens of species have also become extinct and an increasing number are now threatened with extinction.

Taranaki Regional Council

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Extinctions include:

- 32 % of our endemic land and freshwater birds, including the magnificent moa and *Harpogornis moorei*, Haast's eagle
- 18% of our seabirds
- three of seven frog species
- three of 64 reptile species
- one fish and one bat species
- at least 12 invertebrate species
- possibly 11 of the 2300 known vascular plants.

The destruction of New Zealand's biodiversity continues today and is still in serious decline. About 800 of New Zealand's known animal, plant and fungi species and 200 subspecies are considered threatened. It is likely that many still unknown species are also threatened.

Taranaki has lost 60% of its forests and 92% of its wetlands. On the intensively farmed ring plain and coastal terraces, native forests have been largely cleared and those remaining are becoming increasingly fragmented. Taranaki is home to 52 rare and endangered native plants and animals, 40 threatened birds, mammals, reptiles and invertebrates, and more than 10 threatened plant species. However, a number of native species have already been lost.

WHAT ARE THE KEY THREATS TO INDIGENOUS BIODIVERSITY?

The pressures on biodiversity have taken three forms:

- habitat destruction – removing and grazing of forests, draining wetlands, fragmenting and degrading remnant ecosystems.
- invasive animals and weeds – introduced species such as possums, rats and old man's beard that prey on, or compete with, native species, or degrade their habitat
- hunting – hunting, fishing and gathering.

Certain types of ecosystems such as wetlands, dunelands and lowland forests have largely gone in the intensively farmed parts of the region.

HOW CAN I MAKE A DIFFERENCE?

Everyone can play a part in maintaining and enhancing our region's biodiversity.

In Taranaki, many land occupiers, individuals, community groups are actively involved in biodiversity projects to protect and restore remnant bush, wetlands and dune systems. Their actions include:

- covenanting remnants – there are several types of agreements or covenants that allow you to legally protect the values of the area while you still own and manage the land
- fencing to exclude livestock
- weed and pest control
- enhancement plantings.

Whatever activity you get involved in – native tree plantings, beach clean-ups, stock control and fencing, legal protection of land, project funding – you will be helping preserve our natural inheritance.

The Taranaki Regional Council provides free advice on ecological restoration, and invasive animal and weed control. Other forms of assistance may also be available. If you require further information contact:

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All students at Moturoa School are involved in seed germination and planting activities at the school's propagation unit. Pictured are some of the school's younger students involved in a 'hands-on' activity.