1. Introduction
Why we need a biodiversity strategy

The purpose of this Biodiversity Strategy is to collate and re-focus many of the policies and actions already adopted by the Council and the community for a range of different purposes, and to propose some new actions, to provide good biodiversity outcomes from all land management practices. The strategy does not duplicate policies already contained in the District Plan, draft Parks and Open Space Strategy, reserve management plans, Stormwater Strategy and integrated catchment management plans.

New Zealand has an obligation, as signatory to the international Convention on Biological Diversity, to protect its indigenous biodiversity. Domestic legislation, such as the Resource Management Act 1991 and the Biosecurity Act 1993 reinforce this obligation. Towards meeting this obligation, the New Zealand Biodiversity Strategy was prepared to provide a framework for action. The Council's own Green Network strategic platform holds the vision that streams and forests will be full of life, and seeks to link the Waitakere Ranges and the sea, connecting the everyday lives of the people of Waitakere with the natural world.

The Waitakere Ranges make up more than half of the City's land area and provide a home to a wide range of rare and common native plant and animal species. This expansive natural area has local, regional, national and international significance[1] for one reason or another, and the City has the collective responsibility for ensuring that these natural values are maintained, enjoyed and enhanced.

Native vegetation in the lowland area, which is the urban part of the City, is fragmented and primarily restricted to gullies and stream margins. There are small forest remnants, and an area of approximately 30ha of gumland vegetation in Waikumete Cemetery, but largely the vegetation is in the regeneration stage and commonly mixed with exotic species. The Council's Green Network strategic platform envisages linking the Waitakere Ranges through the City to the coast bringing the natural world into people's lives.

Although there are numerous active restoration programmes underway in the City, being undertaken by both the Council and the community, there is currently a lack of targeted biodiversity outcomes in relation to these. The Biodiversity Strategy will draw together and summarise existing information and will provide specific biodiversity objectives and outcomes and an action plan to achieve the biodiversity vision for the City.

Section 31 of the Resource Management Act 1991 charges territorial authorities with the control of any actual or potential effects of the use, development or protection of land, including for the purpose of the maintenance of indigenous biological diversity. The legislative framework for having regard to biodiversity maintenance and management is provided in Section 2 of this strategy.

Definitions

Biological diversity or biodiversity is 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 the diversity of life on earth and includes:

- **Genetic diversity:** The variability in the genetic make-up among individuals (and between populations) within a single species.
- **Species diversity:** The variety of species within a particular geographical area.
- **Ecological (ecosystem) diversity:** The variety of ecosystem types (forests, streams, wetlands) and their biological communities that interact with one another and their non-living environments.

[1] Auckland Regional Policy Statement, 1999.

Ecosystem is an interacting system of living and non-living parts (sunlight, air, water, nutrients). Ecosystems can be small and short-lived (rotting logs on a forest floor), or large and long-lived (kauri forest, lake).

Biosecurity is about exclusion, eradication and effective management of pests and unwanted organisms. Where biosecurity and biodiversity issues cross over is in the potential for pest species to replace natives.

New Zealand's Contribution to Global Biodiversity[2]

New Zealand's biodiversity is internationally important. We boast the world's only flightless parrot (kakapo); a bird with nostrils at the end of its beak (kiwi); a primitive frog that lays eggs that hatch into adult frogs (*Leiopelma species)*; a large insect which fills a role that small rodents play in other countries (giant weta); and many other exceptional species.

A high percentage of New Zealand's indigenous species is endemic (they are found nowhere else on earth) — a result of isolated evolution and the diversity of New Zealand's land and seascapes. This level of endemism is remarkable internationally. Both species of New Zealand bat are endemic, as are all four frog species, all 60 reptile species, more than 90 percent of insect species and a similar percentage of marine molluscs, about 80 percent of vascular plants, and a quarter of all bird species. In contrast, Great Britain, which separated from continental Europe only 10,000 years ago, has only one endemic bird species (Scottish crossbill) and a handful of plant and invertebrate species (e.g. Swallowtail butterfly).

The ecosystems in which these species live are also highly distinctive. The kauri forests of the northern North Island, the braided river systems of the eastern South Island, and our geothermal ecosystems are some examples.

The uniqueness of much of New Zealand's indigenous biodiversity means that responsibility for its continued existence is entirely ours; it cannot be conserved in nature anywhere else in the world.

New Zealand's Biodiversity Decline

New Zealand, one of the last places on earth to be settled by humans, has one of the worst records of indigenous biodiversity loss. While biodiversity varies in natural cycles, nothing since the extinction of the dinosaurs (65 million years ago) compares with the decline in indigenous biodiversity in New Zealand over the last century.

The first phase of decline was the loss of New Zealand's larger bird species when humans first settled here, including the world's largest eagle and several moa species. By around 1600, about a third of the original forests had been replaced by grasslands although other habitats, for example wetlands and coastal areas, remained largely unchanged. From around 1850, the gathering pace of European settlement started a new wave of forest destruction. Since then, a further third of our original forests have been converted to farmland, and there has been extensive modification of wetlands, dunelands, river and lake systems, and coastal areas. Other bird species, such as the huia and laughing owl, also became extinct during this time.

As far as we know, in the last 700-800 years, humans and their accompanying pests have caused the extinction of:

- 32% of indigenous land and freshwater birds;
- 18% of endemic sea birds;
- three of seven frog species;
- At least 12 species of invertebrates such as snails and insects;
- One fish, one bat and perhaps three reptile species; and
- Possibly 11 plant species[3].

Today, about 1000 of our known animal, plant, and fungi species are considered threatened, and it is likely that many presently unknown species are also threatened. Many populations of these threatened species have disappeared from areas where they were once found. This pattern of local loss of populations and shrinking of a species range is the forerunner to species extinction.

The challenge at the national level is to integrate biodiversity considerations across all sectors of government and the economy. The challenge regionally and locally is to translate national priorities and targets into local plans and programmes.

[2] The New Zealand Biodiversity Strategy, Our Chance to Turn the Tide, 2000.
[3] Ministry for the Environment, The State of New Zealand's Environment, 1997.

Waitakere City's Biodiversity Challenge

The Waitakere Ranges are botanically rich containing 20% of all New Zealand's flowering plant species and 60% of all native fern species[4]. Although the following statistics are drawn from a number of sources and subject to change, the Ranges are home to:

- 542 species of native plant (111 species of these being native ferns)
- Many species of nationally threatened and regionally threatened plant species
- 50 species of native bird
- 3 species of kauri snail (large land snail)
- 11 species of native freshwater fish
- 5 species of native reptile
- 1 native frog species
- 1 native mammal (long-tailed bat).

Although records are not complete, it appears that we have lost 11 native bird species from the Ranges and 15 species from the lowlands. The short-tailed bat was once common in the region but has not been recorded for some time.

There are now 240 plant species identified as actual or potential threats to native vegetation, and there are 19 introduced bird species, 9 introduced mammals and 2 amphibians, all competing with our native species.

Maintaining biodiversity is not just about ensuring the survival of rare and endangered species. It is the whole range of different species, rare and common, and the variation between populations within a species that is important. Different populations of the same species, if isolated and subject to different selection pressures will vary over time and is the species' insurance against extinction. The reason for using eco-sourced or provenance plants in re-vegetation projects is first to ensure that the local gene pool of a species continues to survive, and secondly because the locally sourced material is well adapted to the local environmental conditions.

In summary, the challenge is to maintain the viability of local populations across the range of species that naturally occur in the region, the range of ecosystems, and to understand their significance and to facilitate community support and engagement in the long term.

Why Biodiversity is Important to Te Kawerau A Maki

Kawerau A Maki's concerns are to :

- have access to flora and fauna for harvesting and craft;
- ensure the protection and enhancement of native flora and fauna and their ecosystems;
- support the eradication of exotic plants and animals that are damaging , destroying or competing with native species or their ecosystems;
- participate in decisions regarding the introduction of exotic flora and fauna into New Zealand; and
- ensure that property rights are not ascribed to native species in breach of Treaty rights.

[4] Waitakere Ecological District Survey Report, 1993

Snapshot of Waitakere

Area:	36,000 hectares
Open space:	18,239 hectares
Area of Open Space with significant vegetation:	5,246.8 hectares
Population:	168,750 (2001 census)
Climate:	Warm temperate/sub-tropical. 14^0-27^0 C in summer 8^0-19^0C in winter
Average monthly rainfall:	Slightly higher than other parts of the region. 90mm in summer 140mm in winter