



Our land 2024

A snapshot

New Zealand's Environmental Reporting Series



Ministry for the
Environment
Manatū Mō Te Taiao

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Tatauranga Aotearoa

Our land 2024: A snapshot

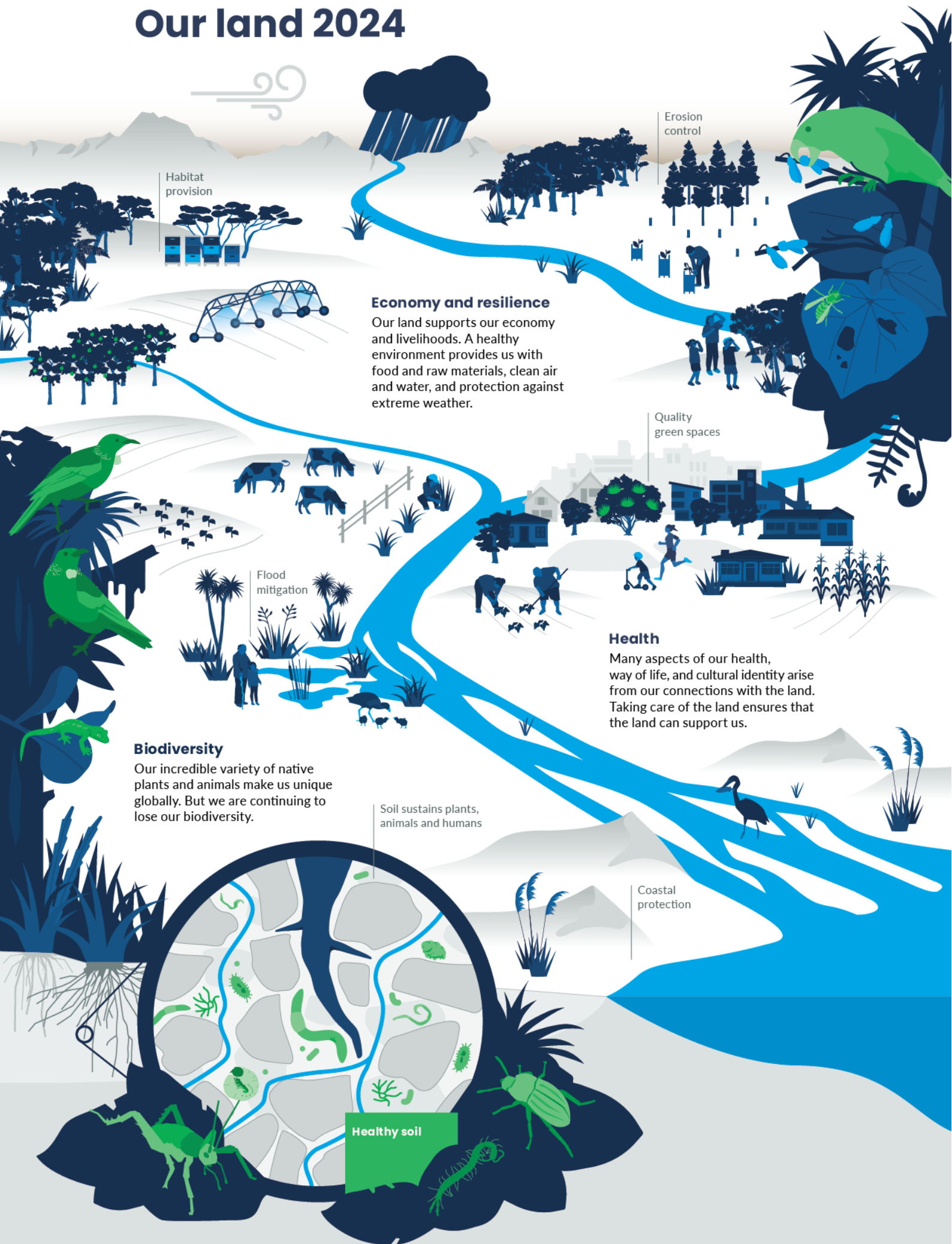
The land and ecosystems of Aotearoa New Zealand are globally unique and for many people our relationship with the land is a defining characteristic of life in Aotearoa. Today, New Zealanders benefit from the many contributions land makes to our lives.

In *Our land 2024*, we use the terms ‘natural assets’ and ‘natural infrastructure’ to describe natural or semi-natural structural elements of ecosystems and landscapes that are important to delivering benefits for the environment and people. Examples of natural infrastructure include our soils, forests and grasslands, urban green spaces, and wetlands.

Functioning natural infrastructure provides us with a range of benefits, including improving water quality, absorbing atmospheric carbon, enhancing flood control, supporting biodiversity, and supporting our mental, cultural and physical health. Our natural infrastructure is also crucial to our economy. Our primary production and tourism sectors as well as our international brand and identity rely on our natural environment.

This snapshot of *Our land 2024* explores the current state of our natural assets and natural infrastructure, the benefits they provide us, and how we’ve placed them under pressure.

Our land 2024



Habitat provision

Erosion control

Economy and resilience

Our land supports our economy and livelihoods. A healthy environment provides us with food and raw materials, clean air and water, and protection against extreme weather.

Quality green spaces

Flood mitigation

Health

Many aspects of our health, way of life, and cultural identity arise from our connections with the land. Taking care of the land ensures that the land can support us.

Biodiversity

Our incredible variety of native plants and animals make us unique globally. But we are continuing to lose our biodiversity.

Soil sustains plants, animals and humans

Coastal protection

Healthy soil

Our soils

Key facts

5%

of our land (12,693km²) was classified as highly erodible in 2022.

Approximately

182 million

tonnes of eroded soil entered our rivers in 2022.

300,000+

landslides occurred in Tairāwhiti, Hawke's Bay, Wairoa, and the Wairarapa from Cyclone Gabrielle in 2023.

Our soils are a finite resource in our lifetime and yet a strategic natural asset. They play a critical role supporting biodiversity, purifying water, cycling nutrients, storing carbon, and underpin our agricultural and horticultural economy. In the year ending June 2023, the food and fibre sector (excluding seafood) accounted for \$55.3 billion in export revenue, which represented over 75 percent of Aotearoa New Zealand's total in export goods.

For many Māori soil is also of great cultural significance, fundamental to māra kai (gardening, horticulture) and viewed as a living entity with deep connections to whakapapa (ancestral lineage).

But our activities on land have compromised both the quality and quantity of our soils through deforestation, urban sprawl and densification, and agricultural intensification. Climate change is adding to these pressures, exacerbating flooding, landslides and erosion.

The loss of soils through human-driven excess erosion, on top of our naturally high erosion rates, impacts the health of our indigenous land, freshwater and marine ecosystems. It also has significant consequences for the productivity and resilience of the food and fibre sector.

Our highly productive land and urban green spaces

Key facts

Approximately

two-thirds

of our population growth is projected to occur in less than 3% of our land area, in and around Auckland, Hamilton, Tauranga, Wellington and Christchurch.

54%

increase in highly productive land used for urban or residential purposes between 2002 and 2019: from 69,920 to 107,444 hectares.

20%
Auckland

15%
Hamilton

decline in private green space as a proportion of each city's urban area between 1980 and 2016.

Highly productive land is a vital form of natural infrastructure. Its unique characteristics make it particularly suitable for some forms of primary production such as market gardening and vegetable production.

Urban green spaces provide important places for interaction with nature, foster community cohesion, and provide critical services such as lowering ambient temperatures, reducing stormwater runoff, and supporting biodiversity.

But our population is growing and is heading for 6 million by 2050. Population growth has contributed to the expansion of our towns and cities, with the total urban area in Aotearoa growing by 15 percent between 1996 and 2018 (See indicator: [Urban land cover](#)).

This means that highly productive land, often on the fringes of our cities, comes under pressure from development and land fragmentation as cities grow outwards. Reducing the land available for horticulture can have consequences for food prices. The reduced availability of highly productive land in the Auckland and Waikato District could contribute, alongside other factors, to an increase in fruit and vegetable prices of up to 58 percent across the country by 2043.

Whilst urban densification provides a solution to housing availability, in some major cities, the availability of urban green space such as parks, green belts, and private gardens is not keeping pace with development. This has consequences for our physical and mental health and our ability to connect with nature.

Our indigenous forests

Key facts

A quarter

of remaining native vegetation is hosted on private land.

12,869 ha

of indigenous land cover was the net loss in Aotearoa between 2012 and 2018.

27%

of gross greenhouse gas emissions were offset by land use, land-use change and forestry in 2021.

Our forests are an important habitat for a high proportion of threatened species, many of which are considered taonga (treasured), as well as culturally significant sources of rongoā (medicine). They also reinforce and protect underlying soils from rainfall, reducing the risk of erosion and landslides, and function as carbon sinks, sequestering atmospheric carbon dioxide.

Following human settlement, our lowland indigenous forests were cleared in favour of agricultural landscapes. More recently exotic forestry, in particular species such as radiata pine, has expanded into pastoral hill country. Alongside international log demand, production forestry is incentivised as a tool for climate change mitigation.

While exotic plantation forests provide economic, climate and some biodiversity benefits, they can also cause challenges associated with slash production, wilding pine spread, and the loss of sequestered carbon and erosion during clear-fell harvesting.

Our floodplains and braidplains

Key facts

400,000+

residential buildings, an estimated 12% of our housing value, are exposed to flooding during extreme weather events.

11,630 ha

of riverbed and riparian margins, across 20 braided rivers in Canterbury, were converted to agricultural use between 1990 and 2012.

Damage from Cyclone Gabrielle and the Auckland floods may total between

\$9B to \$14.5B

in recovery costs.

Our floodplains and braidplains are ecologically significant habitats. They also provide critical capacity for our river systems during floods and remove excess sediment and nutrients when inundated. Due to their flat and naturally fertile soils and proximity to water for irrigation, floodplains and braidplains are also desirable for urban and rural development.

However, development on floodplains has exposed communities and built infrastructure to flood and erosion risks and led to the need for engineered flood protection systems. Urban and agricultural development is also occurring alongside our braided rivers, constraining their

channel margins. Extreme rainfall associated with climate change is also likely to place increased pressure on these systems over time.

These pressures have resulted in a loss of habitat for indigenous species as well as a decline in cultural and recreational amenity. While measures that restrict the natural movement of river systems such as engineered channels and stopbanks are designed to protect communities, they also alter river systems' natural capacity to provide flood and erosion benefits. Climate change is expected to increase risks to communities in flood-prone areas and there is growing recognition that existing structural flood protections are inadequately prepared for these pressures.

Our dunes and wetlands

Key facts

In 2008, sand dunes covered
25,208 ha
of our land surface, an 80% decrease from the 1950s.

5,761 ha
of freshwater wetland area was lost between 1996 and 2018.

72,000 New Zealanders
are exposed to extreme coastal flooding. At least 50,000 buildings worth \$12.5 billion and 191 marae are within 1 kilometre of the coastline.

Our coastal dunes protect coastlines from flooding and erosion while our wetland ecosystems filter nutrients, reduce flooding, and store carbon. Dunes and wetlands also provide opportunities for recreation and cultural connection and provide crucial habitats. For many Māori, wetlands are taonga, providing opportunities for mahinga kai (traditional food-gathering practices) and rongoā as well as providing insight into the health of ecosystems.

Urban development in coastal areas has limited the ability of our dune systems to migrate inland in response to sea-level rise and storms, reducing their flood protection benefits.

We have lost around 90 percent of our wetlands in the past 150 years. Between 1996 and 2018 freshwater wetland area decreased by 5,761 hectares, with 87 percent of this loss occurring through conversion into grazing grassland (see Indicator: [Wetland area](#)). Drainage of wetlands for agricultural purposes has released significant stores of carbon into the atmosphere and significantly diminishes their capacity to mitigate flooding or provide ecological and cultural value.

Our evidence base

Existing data and research show us how the pressure we're placing on our natural infrastructure impairs its function. However, gaps in our evidence base limit our ability to fully understand the ecosystem effects while taking full account of the value of our natural infrastructure.

Conventionally we monitor the abundance of species or extent of habitats such as wetlands. The health and condition of ecosystems are typically less well monitored. There is also a lack of a common terminology and typology for ecosystems. Without this, it is difficult to build an estimate of how nature supports our economy, resilience, culture and public health.

Quantifying the value of nature and natural infrastructure is also challenging, particularly as our relationship with nature changes over time. It is also a challenge to describe this value in ways that allow visibility within decision-making (eg in monetary terms). However, doing so is essential if we are to recognise natural infrastructure as a viable alternative to conventional infrastructure solutions and realise all the co-benefits it can provide.