Ministry for the Environment
Manatū Mō Te Taiao

Te Kāwanatanga o Aotearoa
New Zealand Government

Our Marine Environment: The Stories Behind the Numbers

Tō Tātou Taiao Moana: Ngā Kōrero mō ngā Tau

Our Marine Environment 2025
Tō Tātou Taiao Moana

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Our marine environment is changing
Kei te hurihuri tō tātou taiao moana

Our Marine Environment 2025

Aotearoa New Zealand's vast, diverse and dynamic marine environment is vital to our way of life and central to our sense of identity as an island nation.

New Zealand has over 15,000 kilometres of varied coastline, and a significant portion of the population lives near the coast. Our ocean and surrounding areas are home to many unique animal and plant species. They also enable people to thrive, providing us with food, absorbing global carbon emissions and helping to cool our planet.

In turn, humans are reshaping these vast waters through the global effect of climate change and everyday activities on land and in the sea. The changes we cause don't just impact the fragile marine ecosystems, but also how we live, grow food, build homes and work towards a resilient future for our children.

Our Marine Environment 2025 brings together the latest data to explain how climate pressures are changing our ocean. It shows the impacts of warmer seas, ocean acidification, shifting currents and sea-level rise on marine life and coastal communities.

This companion document highlights some of the findings in the main report and features three case studies which give us reason for hope. They show that by working together and using innovative solutions we can build resilience into how we experience and respond to our changing marine environment.

Environmental data to support informed decisions

The Ministry for the Environment, in partnership with Stats NZ, reports on different aspects of our environment every six months and provides an overview of the whole environment every three years.

These reports draw on data from research literature, public research organisations, regional and district councils, mātauranga Māori (Māori knowledge) and government reports. This comprehensive body of evidence allows us to track human impacts, identify emerging challenges and support informed decision-making for managing natural resources and adapting to environmental change.

This companion document to *Our Marine Environment 2025* delves into some of the stories behind the numbers.

How our marine environment is connected and changing

He pēhea tō tātou taiao moana e honoa ai, e panoni ai anō hoki

Our marine environment is central to who we are. It supports our communities, economy and way of life. But it is changing.

Globally, the way we use resources – such as burning fossil fuels for energy – releases greenhouse gases that warm the planet. Warmer air and oceans lead to rising sea levels, more frequent marine heatwaves, and changes in ocean chemistry and currents. These changes affect weather patterns, marine life and the health of ecosystems everywhere, including here in New Zealand.

Closer to home, the way we develop our coasts and use the land adds extra pressure. Loss of natural habitats and pollution make it harder for marine ecosystems to stay healthy.

Coastal communities are already feeling the effects. Storm surges, erosion and flooding are becoming more common, forcing some communities to consider managed retreat, redesigning infrastructure or restoring natural buffers like dunes and wetlands.

Despite these challenges, there is hope. From removing invasive species to restoring coastal habitats, people across New Zealand are working together to protect our marine environment.

To adapt to change, we need good evidence and data. It helps us understand our connection to the marine environment, make better decisions and build resilient and prosperous communities.

Shaping a resilient future for our marine environment

This companion report features three case studies that show how initiatives involving communities, iwi, businesses and central or local government can support us to adapt and become more resilient as a country.

Auckland Council's future-focussed shoreline adaptation plans

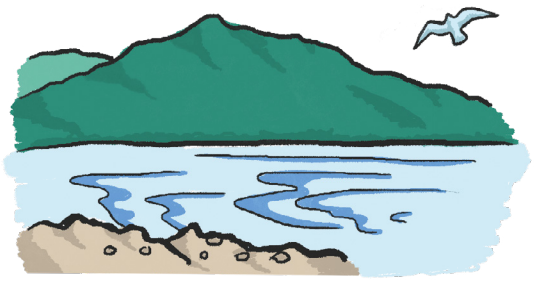
- Auckland Council is planning how to protect its coastline for the next 100 years. **Read about this project on page 5**.

Preparing finfish aquaculture for climate change

- The Cawthron Institute's collaborative research programme will help New Zealand's aquaculture adapt to climate change. **Read about this project on page 7**.

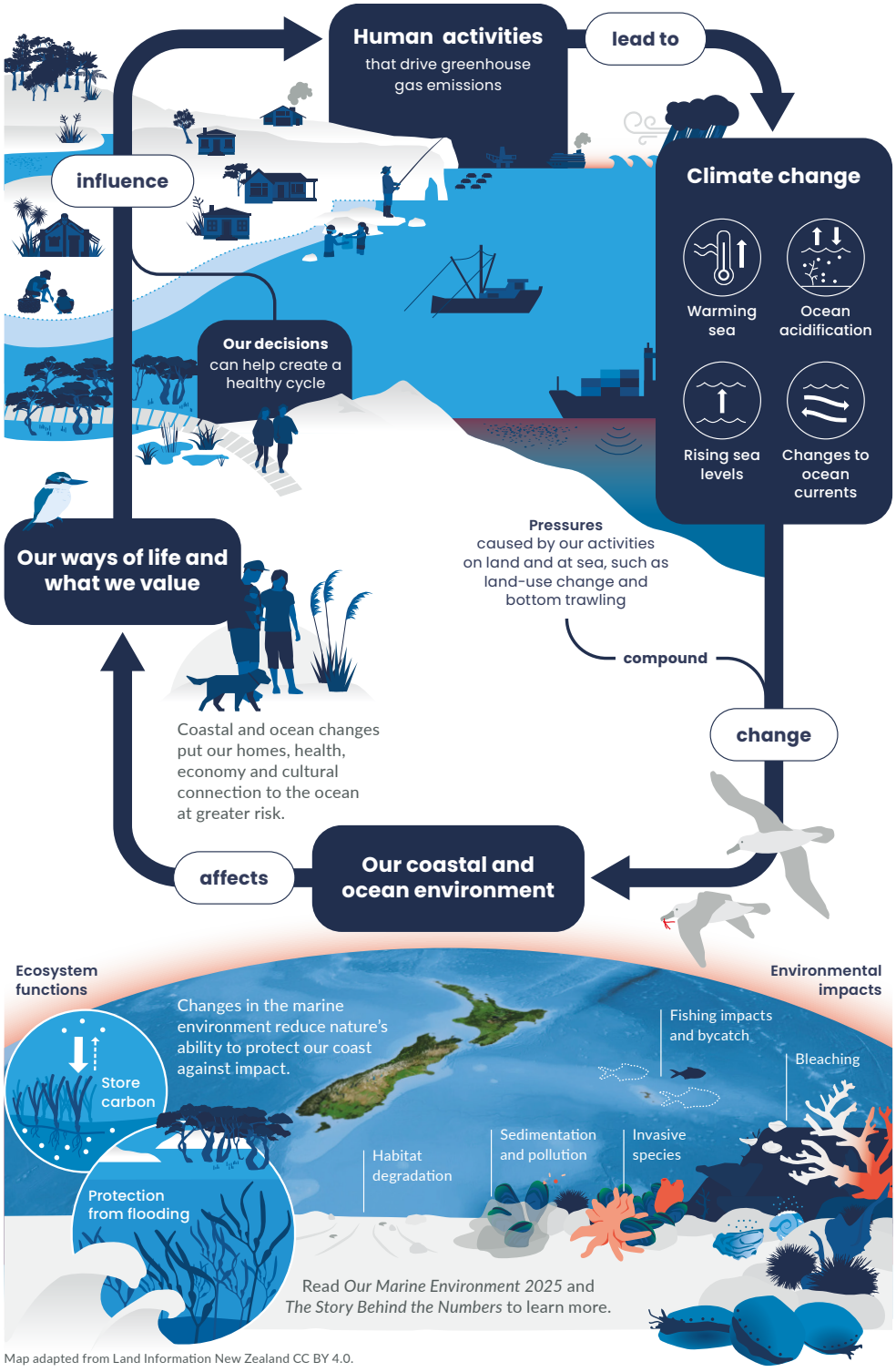
Restoring Kaipara Moana for future generations

- A decade-long initiative aims to restore the health of the Kaipara Moana, New Zealand's largest harbour. **Read about this project on page 9**.



Our marine environment
Tō tātou taiao moana

New Zealand is an island country. We affect the ocean, and changes to the ocean affect all of us.



Map adapted from Land Information New Zealand CC BY 4.0.

Our homes and property
Ō tātou kāinga me ō tātou papanoho

Many New Zealanders live, work and travel along the coast. Most of our major cities cluster around harbours or beaches, shaping our culture and economy.

Coasts also support fishing, aquaculture and tourism – industries increasingly affected by climate change.

- Rising seas and stronger storms are increasing coastal flooding and erosion. Homes, roads and culturally important places are becoming more exposed.
- Managed retreat from the coast is a long-term solution for some. But it can also be much harder for vulnerable communities.
- Protecting or restoring coastal ecosystems can include nature-based solutions such as replanting sand-trapping vegetation or restoring wetlands and offshore reefs. These measures can help make our coastlines more resilient.
- We can build some resilience for our coastal communities with seawalls, levees and other engineering options. But these options can have an environmental cost as coastal habitats and ecosystems are trapped between rising seas and built structures.

What *Our Marine Environment 2025* tells us

219,000

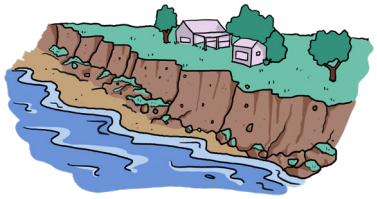
In 2023, about 219,000 homes – worth an estimated $180 billion – were located in coastal inundation and inland flood zones.

About 1,300 homes prone to coastal flooding are expected to experience more than 20 percent damage in extreme events between 2026 and 2060.

Under current climate conditions, 9 percent of landfills (288) are potentially exposed to coastal inundation; with a sea-level rise of 0.4 metres, this increases to 12 percent of landfills (379).

76%

In the next 20 years, New Zealanders are expected to build 49 to 76 percent more coastal protection structures, such as seawalls. These structures can limit the ability of intertidal areas to respond to sea-level rise which can lead to habitat loss or ecosystems being degraded.



Council project to protect coastal areas

Auckland Council has developed 20 shoreline adaptation plans to guide its management of the impacts of coastal hazards and climate change over the next 100 years. These place-based plans take a long-term view to reduce risks like erosion and flooding, supporting decisions on how and where to invest. This means public spaces and infrastructure can stay safe, resilient and better prepared for future generations.

Case study: Shoreline adaptation plans: Future-proofing Auckland's coastline

Engaging iwi, asset owners and communities to plan for how we use and protect coastal areas is key to Auckland Council's shoreline adaptation plan (SAP) programme.

The programme sets out adaptation strategies for how the council will manage the impacts of coastal hazards and climate change on council-owned land and assets across Auckland's 3,200-kilometre shoreline over the next 100+ years across low, moderate and high climate change scenarios.

SAPs cover regional parks and reserves, public beaches, coastal structures (like seawalls, boardwalks and piers), roads and water networks.

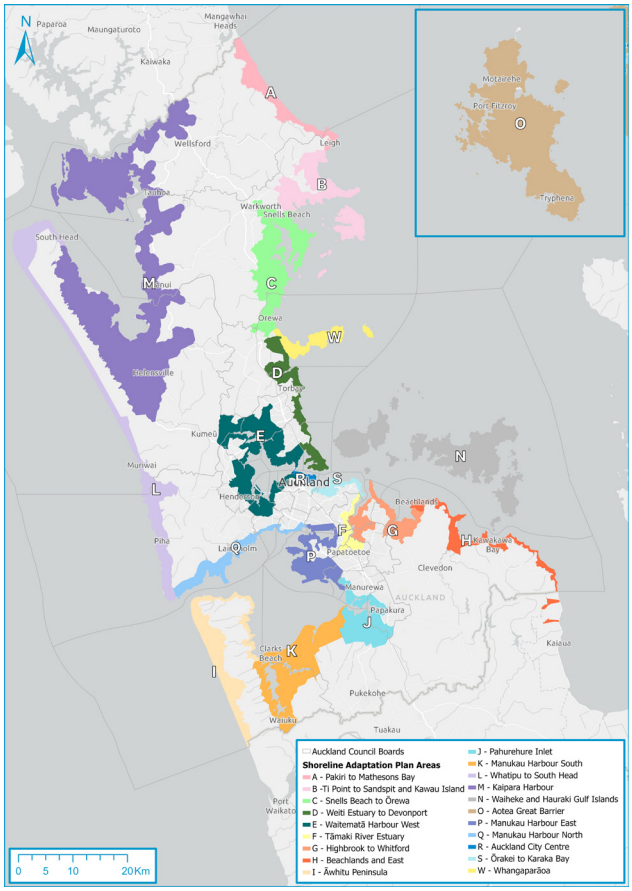
The programme started in 2021, with pilot plans for the Whangaparāoa Peninsula and Kahawairahi ki Whakatiwai/Beachlands and East. Plan development was accelerated after the 2023 storm events, with plans for all areas of the coast expected to be in place by the end of 2025.

"We must work together. Auckland's shoreline adaptation plans are the first step in adaptation planning, starting conversations across the region and building partnerships to provide a blueprint for how we manage our coastal areas going forward." – Dr Natasha Elizabeth Carpenter, Head of Coastal Management

Above: Omaha Beach, Auckland.
Right: Areas covered by shoreline adaptation plans.
Images: Auckland Council.

"Engagement on SAPs has identified a need for ongoing community involvement and opportunities for community leadership, acknowledging the complexity of coastal hazard information and options," says Dr Natasha Elizabeth Carpenter, Auckland Council Head of Coastal Management.

The SAPs feature four strategies to guide decisions on outcomes for three changing climate scenarios. These range from 'no action' – applied in areas where council-owned land and assets are not exposed to coastal hazards or catchment flooding – through to 'adaptation priority' in areas where further conversations are needed to guide decisions about change, including relocation, resilient design and adaptation of uses and assets.

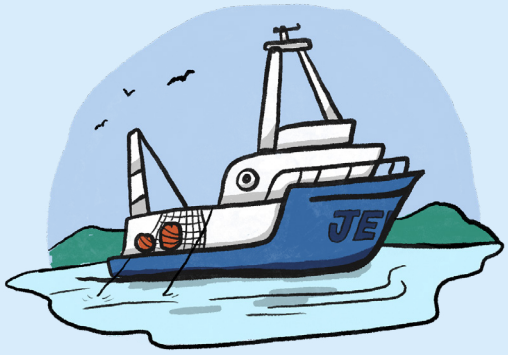


Our livelihoods
Ō tātou oranga

Fisheries, aquaculture and tourism depend on healthy coasts and oceans.

Climate change is adding pressure: warmer seas, shifting currents and more frequent marine heatwaves are changing food chains and where key species can live. It also amplifies other pressures – such as those from activities on land – which together can reduce biodiversity and weaken ecosystem resilience.

Looking after ecosystem health supports the industries and communities that rely on our marine environment.

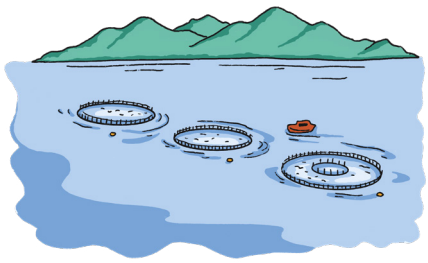


- Climate change is warming oceans and causing ocean currents to shift. This can affect food chains, and the productivity and distribution of key commercial fish stocks.
- New Zealand's warming ocean will affect where fish live.
- Although most assessed New Zealand fish stocks are meeting performance measures, ocean-based activities including bycatch, bottom trawling and overfishing can harm biodiversity and ecological resilience.
- Understanding the natural capital of marine ecosystems helps us appreciate how closely environmental health is tied to social and economic resilience.

What *Our Marine Environment 2025* tells us

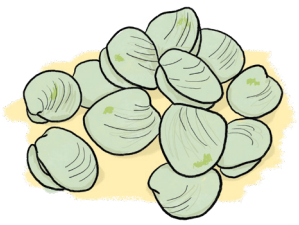
$2.2b

In 2023, fisheries and aquaculture employed 14,580 people and contributed an estimated $2.2 billion to New Zealand's GDP.



Māori commercial fisheries hold about a third of the interests in New Zealand.

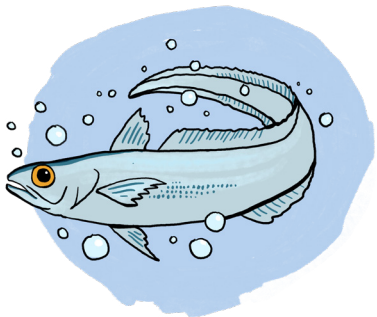
In 2023, marine tourism and recreation employed an estimated 1,605 people and directly contributed an estimated $120 million to New Zealand's GDP.



Māori fisheries settlements enable Māori customary rights and participation in the commercial seafood sector. These arrangements might be at risk due to degradation of marine environments.

88%

In 2024, 88 percent of assessed fish stocks were fished within specified limits, 12 percent were overfished or depleted and 6 stocks had collapsed.



Preparing finfish aquaculture for climate change

The Cawthron Institute is developing climate-resilient breeding strategies to help New Zealand's finfish aquaculture adapt to marine heatwaves and other climate impacts.

Case study: Fast-tracking finfish climate change adaptation

New Zealand's largest independent science organisation, the Cawthron Institute, is leading a five-year collaborative research programme aimed at preparing New Zealand's finfish aquaculture industry for the impacts of climate change.

Programme Leader Dr Jane Symonds says the Climate Adapted Finfish research programme aims to shift the focus of finfish aquaculture breeding towards valuing genes that help fish cope with climate and environmental changes, including warmer water.

"New Zealand's finfish aquaculture industry is at risk, with more frequent marine heatwaves causing more fish deaths. We've recently learned that king salmon can inherit their ability to tolerate heat, which means it's possible to breed fish that will do better in warmer water.

The programme will protect and add value to the aquaculture sector as the climate changes. It will develop breeding strategies that adapt to future conditions, using climate forecasts and finding ways to deal with new threats."

Industry and iwi will collaborate on breeding programmes to help established and emerging local species thrive. They plan to investigate how new species such as haku (kingfish) and tāmure (snapper) can be farmed in warmer coastal waters.

"In our experience, the magic happens when you bring together collaborative, multi-disciplinary teams of people who represent science, industry, government, iwi/hapū and communities. Genuine collaboration fosters innovation that has real world impact."

The programme is a partnership between Cawthron, the Bioeconomy Science Institute (AgResearch and Plant & Food Research) and Te Arawa Fisheries. It is supported by the Ministry of Business, Innovation and Employment's Endeavour Fund.

"Our Climate Adapted Finfish research programme builds on earlier work to meet an urgent need. We're identifying finfish that can survive and thrive in different environments, so they can be bred to do well as the climate changes."
– Dr Jane Symonds, Programme Leader

Above: Dr Jane Symonds at the Finfish Research Centre. Above right: Chinook salmon. Images: Cawthron Institute.

Our connection to place
Tō tātou toiwhenua

As a nation, we work, play and connect with the marine environment. It's part of who we are and shapes how we live.

Our beaches, harbours and coastal areas are where people come together for recreation, culture and connection.

But climate change, along with other pressures, is putting these special places at risk. If we don't act, it will become harder to enjoy the experiences that help define our identity and support our wellbeing.

- Land use and climate change can degrade estuaries and coastal wetlands, reducing water quality and habitat health.
- Losing safe access to beaches and gathering places disrupts recreation and cultural practices.
- Degraded coastal habitats increase risks to health and kaimoana (seafood). They can also reduce natural protection from storms and flooding.
- For many Māori and coastal communities, the coast is integral to passing on knowledge, tikanga (customs and protocols) and mahinga kai (traditional food-gathering). Protecting sites that are wāhi taonga (sacred or treasured places) helps keep these connections strong.

What *Our Marine Environment 2025* tells us

191

Culturally important places and infrastructure, such as marae and urupā (burial sites), are vulnerable to damage from extreme weather events: 191 marae are within 1 kilometre of the coast.

1,954

Of the 9,054 mapped archaeological sites in the coastal zone, 1,564 are vulnerable to flooding from the sea and 1,954 are highly vulnerable to erosion driven by sea-level rise.

127

In a 2019 assessment of public conservation sites and infrastructure, 50 amenity areas, 127 buildings, 23 water systems, 126 structures and parts of 21 walking tracks were assessed as potentially vulnerable to flooding from the sea.

The number of fish harvested recreationally declined between 2017/18 and 2022/23, particularly in the north of New Zealand.

Sustained action for environmental recovery

Local government, iwi, landowners and the community are working together to restore the health of Kaipara Moana, New Zealand's largest harbour. The initiative is reducing sediment entering the harbour, regenerating native ecosystems, and improving the long-term health of the land, water and biodiversity.

Case study: Restoring Kaipara Moana for future generations

"As a voluntary initiative, we rely on the goodwill and hard work of those taking action on the land. By providing expert guidance and support every step of the way, we help farmers and community groups deliver projects with the greatest environmental benefits."
– Justine Daw, Pou Tātaki

Kaipara Moana Remediation (KMR) is a decade-long catchment management programme that aims to transform the health of New Zealand's largest harbour.

The Kaipara Harbour catchment spans about 6,000 square kilometres across Auckland and Northland, including over 8,110 kilometres of rivers and streams.

Decades of deforestation and land-use intensification have degraded the catchment, and an estimated 700,000 tonnes of sediment enter the harbour each year.

This affects many taonga species and some of New Zealand's rarest ecosystems. As the nursery for much of New Zealand's snapper fishery, the Kaipara Harbour also has major economic, customary and recreational value.

One of KMR's long-term objectives is to halve the amount of sediment entering the harbour.

Since it was established in 2021, KMR has invested in projects to restore wetlands, fence off rivers and streams, and plant trees or regenerate forest on erosion-prone land.

Through KMR projects, more than 2.7 million trees have been planted (or contracted to be planted), over 1,000 kilometres of fencing completed or contracted, 1,500 hectares planted, contracted or regenerated into native forest, and more than 148,000 hectares of land managed under KMR plans.

KMR is a collaboration between Kaipara Uri (Ngā Maunga Whakahii o Kaipara, Te Rūnanga o Ngāti Whātua, Te Uri o Hau Settlement Trust), the Northland Regional Council and Auckland Council, and the Ministry for the Environment, which committed $100 million to KMR through the Jobs for Nature programme.

Pou Tātaki Justine Daw is thrilled with the high levels of community participation, with well over 1,000 landowners and groups now working with KMR.

The Jobs for Nature programme estimates that the total environmental and wellbeing benefits of these projects is more than $389 million, representing the substantial long-term value this restoration work brings to ecosystems, communities and future generations.

Above: Confluence of the Kaipara and Kaukapakapa Rivers. Image: Auckland Council.