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Te ao Māori

In te ao Māori, biodiversity is not understood as a singular concept, but as the living descendants of the atua who inhabit their respective domains.

For example, the progeny of Tangaroa are the fish, the progeny of Hinemoana are the shellfish and seaweeds, of Tāne Mahuta the creatures of the forest, and Ranginui the birds.

In te ao Māori, all things from human to rocks possess mauri, a life force, whether sentient or not. Understanding mauri is key when speaking about biodiversity, as the mauri of one part of the environment influences another, and the life forms that dwell within it. Where biodiversity exists as it should in a place, its presence strengthens the mauri of that environment; where it is diminished or absent, the mauri of the surrounding biodiversity is likewise affected. We whakapapa to our fellow creatures and life forms and the places where they live and have responsibility to provide for them.

Biodiversity in Marlborough

Marlborough is essentially a living museum of species, many of which have evolved in isolation over the past 80 million years.

The region is also a valuable contributor to global biodiversity, as one of New Zealand's centres of endemism, meaning some species are found nowhere else in the world. The variety of habitats is remarkable, ranging from alpine screes to coastal dunes and everything in between. The region's unique geology and climate have created habitats for rare plants like the Marlborough rock daisy, clinging to limestone cliffs, and the delicate Marlborough lilac, painting dry slopes with purple flowers. The twisted branches of mingimingi and the wiry stems of the leafless clematis show how life has adapted to extreme landscapes and conditions.

Biodiversity is under significant pressure across New Zealand and in Marlborough. Declines in plant and animal species are largely attributable to habitat loss and introduced predators, and these declines are accelerating amid an increasingly volatile climate. Today, over 75% of New Zealand's reptiles, birds and freshwater fish are at risk. Yet Marlborough remains a biodiversity hotspot with 21 distinct ecological areas.



Otu Bay wetland

In Marlborough, even the smallest creatures are unique. The waterfall beetle only lives in the splash zones of Marlborough streams, and the kiwaia moth, a tiny flightless jumping moth, lives among the plants that grow in coastal gravels. On land, Marlborough's reptiles are among the rarest in the world. The scree skink and Marlborough spotted skink thrive in rocky alpine slopes, while the emerald Marlborough green gecko hides in mānuka scrub. On predator-free islands, the ancient Maud Island frog can live for 40 years and barely move a few metres in that time. In the outer Sounds, the New Zealand king shag breeds on remote islets. The marine environment also supports a diverse range of rare and endangered species, including mottled brotulid fish and Hector's dolphins.

The diversity of species found in the Sounds and wider Marlborough Coastal Marine Area (CMA) today is a fraction of what would once have been there. Centuries of fishing, harvesting and habitat modification have taken their toll on marine biodiversity. On land, human activity has also accelerated habitat loss, where 99% of wetlands on the Wairau Plains have disappeared. Today, every remaining patch of native habitat provides a reminder of what was once there.

Local government has been responsible for protecting habitats and regional pest management, while Central Government has historically been responsible for species protection. The National Policy Statement for Indigenous Biodiversity 2023 has now been implemented, providing the first national directive to protect, maintain and restore indigenous biodiversity, preventing further decline. The Marlborough Environment Plan (MEP) acknowledges that the remaining areas of indigenous biodiversity contribute significantly to Marlborough's social, economic, cultural and environmental well-being, and has objectives and policies to identify, protect and restore significant habitat and biodiversity values.

Council is about to begin developing its first biodiversity strategy in consultation with the community, aligning with existing environmental strategies and statutory plans. These include Te Mana o te Taiao – Aotearoa New Zealand Biodiversity Strategy, and the Kotahitanga mō te Taiao Strategy, with a focus on Marlborough's unique ecosystems. The new strategy will also align with Council's Biosecurity Strategy, which is tasked with mitigating threats from invasive species and managing ecosystem degradation.



King Shag colony
Credit: Dan Burgin

Kotahitanga mō te Taiao Alliance

Marlborough District Council is a founding member of the Kotahitanga mō te Taiao Alliance (KMTT), a collaboration of iwi, Councils and Government agencies working to restore and enhance nature across Te Tauihu. The alliance spans across 3.4 million hectares of land and sea to champion a landscape-scale approach to caring for the natural environment.

KMTT developed an initial strategy in 2019 with a vision that "people live, care for, and benefit from the environment in ways that bolster natural ecology together with the communities that live within them." More recently, KMTT partners have co-developed a Strategy Implementation Pathway Plan (SIPP), a framework defining the path partners will take to achieve this vision.

In practical terms, the SIPP focuses on four areas where collaboration can make the greatest difference. These are helping native species to thrive, restoring lowlands and connecting ecosystems, restoring marine ecosystems, and Te Kāhui Tangaroa (iwi-led projects). Te Kāhui Tangaroa enables a leadership approach to implement restoration projects for KMTT iwi partners. At the time of this State of the Environment report, Council is scoping a project with iwi partners to lead marine restoration in Pelorus Sound / Te Hoiere and Queen Charlotte Sound / Tōtaranui.

As a committed member of KMTT, Council actively looks for opportunities to align these priorities with statutory plans and obligations, such as the Marlborough Environment Plan (MEP) and Regional Pest Management Plan. One example is Te Hoiere Project, a landscape-scale restoration effort to improve freshwater and the biodiversity that depends on it in Te Hoiere / Pelorus catchment.

Council has also aligned with KMTT to support biodiversity by implementing measures to control and eradicate introduced species. From wilding conifers to the Top of the South Marine Biosecurity Partnership, Council takes an active role from planning through to fieldwork on the ground.



Confluence of the Rai and Pelorus rivers in Te Hoiere catchment

Te kanorau koiora moana
Marine biodiversity

Marlborough's coastline supports a wide range of habitats, from exposed rocky shores to sheltered bays, cobble reefs and extensive offshore sediment areas. These habitats continue to hold significant ecological value, even in areas with a long history of human use.



Aerial image Kaituna Arm of Motuweka/Havelock Estuary supporting saltmarsh habitat

The region's location and varied physical conditions, such as strong tidal currents, wave energy, water clarity and temperature, help support a rich mix of marine life.

Marlborough is a key passage for migrating humpback and southern right whales and is home to species such as the nationally endangered Hector's dolphin in Te Koko-o-Kupe / Cloudy Bay, Clifford Bay and Queen Charlotte Sound / Tōtaranui. Dusky Dolphins, Orca and Bottlenose Dolphins are also regular visitors. The area supports an exceptional diversity of seabirds, including the endemic New Zealand king shag.

Tidal wetlands and larger estuaries like Whangarae Bay, Havelock, Kaiuma and the Wairau Lagoons provide important feeding and nursery habitat for fish, invertebrates and birds.

Estuaries are the link between land and sea, dynamic environments where the freshwater mixes with saltwater, providing shelter, nursery grounds and feeding areas for fish, shellfish, birds and invertebrates. These habitats also act as natural filters, trapping sediment and nutrients that would otherwise enter coastal waters, and help buffer coastlines from storms and flooding.

Estuaries are culturally important for Māori hapū and whānau, and also support recreation, boating and commercial activities that contribute to Marlborough's coastal lifestyle and economy.

Marlborough has over 65 estuaries and intertidal areas, ranging in size and complexity. From the expansive Wairau Lagoons and Motuweka / Havelock Estuary to smaller stream-fed estuaries in the outer sounds.



Seagrass in Onahau Bay

On the seafloor, species such as tubeworms, bryozoans, horse mussels, hydroids, seagrass and kelp all help create three-dimensional structures known as biogenic habitats, changing the physical character of their environment. The habitats they create provide homes, nursery and feeding areas for huge numbers of other species and are an essential part of the marine food web. The Marlborough CMA includes many of the best examples of these habitats known across New Zealand. Without these ecologically significant habitats, many of the special and unique marine animals in Marlborough would be absent.

Pressure

While extensive, many of Marlborough's marine habitats and species are fragile. Sedimentation, contamination, habitat disturbance, climate change and ocean acidification and the introduction of marine pests can all affect biodiversity, particularly when impacts accumulate over time.

Historical land clearance and continued pressures from human activities have led to the significant degradation of estuarine habitats in Marlborough. Increasing recreational, cultural and commercial use of the coastal environment adds further pressure. Surveying subtidal areas remains challenging, but techniques for understanding marine biodiversity are steadily improving.

In general, marine biodiversity in the inner Marlborough Sounds is more affected by human activities, with lower biodiversity values than in the outer areas of the Marlborough Sounds and the open coast.

Ecological integrity relies on a healthy marine environment and protection from, and resilience to, pressures including:

Physical disturbance

Disturbance of marine habitats can cause significant damage. Biogenic habitats on the sea floor are vulnerable to damage from activities such as anchoring, trawling and dredging. For example, the 2020 Earth Sciences NZ (formerly NIWA) report: Life on the Seafloor in Queen Charlotte Sound, Tory Channel and Adjacent Cook Strait recorded damage to 35% of Galeolaria tubeworm mounds within the Queen Charlotte / Tōtaranui Sound. On the water's surface, human activity such as boat traffic and noise can cause king shag to abandon nests, affecting breeding rates and disrupting the behaviour of many species.

Modification and habitat loss

Modifications such as reclamation, dredging and shoreline hardening have significant effects on the health and dynamics of estuaries. These modifications disrupt the natural exchange between land and sea and reduce the extent of important intertidal zones such as saltmarsh and seagrass beds. Over time, these alterations can diminish biodiversity and limit the system's capacity to adapt to sea-level rise and other climate-related pressures.

Sedimentation and turbidity

Since European settlement, sedimentation rates have increased drastically. Land clearance has increased soil vulnerability to erosion, resulting in an increase in fine sediment deposited into the region's estuaries. Large pulses of sediment can be delivered to estuaries during major storm events, as occurred during the July 2021 and August 2022 storms in Marlborough. This reduces the overall ecological function of marine ecosystems and puts pressure on species dependent on these systems. It also reduces the estuaries' ability to trap sediment and create a buffer for coastal protection.

The deposition of sediment on the seafloor can smother and kill marine creatures. Suspended sediment, known as turbidity, can impact the feeding and reproductive cycles of biogenic habitat-forming species.

Pollution and nutrients

Nutrient runoff from rural and urban land, along with commercial discharges, continues to impact estuarine health. High nutrient loads such as nitrogen and phosphorus can cause algal blooms that spread across sediments and water surfaces. High nutrient concentrations, when combined with increased sediment loads, can lead to poor water quality, severely degraded habitats and high mortality rates among marine life. This has been observed at times in gross eutrophic conditions in the Motuweka / Havelock and Okiwa Bay estuaries.

Climate change

As the water temperature rises, many species find conditions no longer suitable for their survival. Elevated temperatures can also facilitate the establishment of invasive species.

Significant weather events have an impact on king shag colonies as nests, often on low-lying exposed rock stacks, can be destroyed or damaged by wind, rain and waves. In the longer term, the predictions of climate change resulting in larger and more prolonged storm events are concerning for king shag.

Many important species have calcium carbonate shells or structures. As the ocean becomes more acidic with climate change, it becomes increasingly challenging for these species to maintain these structures.

Fishing and harvesting

The overharvesting of species through commercial and recreational fishing can upset food web balance and significantly decrease certain species. For example, refer to the case study on kina and kelp on page 66.

Invasive species

Marine species can be predated on, outcompeted and displaced by invasive species, such as Mediterranean fanworm. The impact of the spread of other cryptogenic species like parchment worm are little understood. Estuaries are also threatened by invasive species. Intertidal flats are being populated by the Pacific oyster, particularly in the Pelorus / Te Hoiere Sound, whilst the fringing salt marsh is under threat from invasive plants such as tall wheat grass and spartina grasses.

Over time, there is potential for more estuarine invaders to arrive in Marlborough, with the aggressive Asian paddle crab moving progressively south from the upper North Island and the ongoing threats of new species arriving in New Zealand, such as the Northern Pacific seastar.



Checking sediment plates in Kaiuma Bay

Ngā meka matua
Key facts

Sedimentation

In 2021, Council commissioned Earth Sciences NZ to investigate the sources, scale and ecological impacts of sedimentation in Pelorus / Te Hoiere Sound.

The goal was to understand both historical and current sediment inputs.

Earth Sciences NZ applied a suite of modern sediment tracing tools, including coring, radio-isotopic dating and fatty acid analysis. These methods provided undisturbed historical records of sediment deposition, enabled the reconstruction of sediment deposition rates over time and allowed identification of sediment origin by land-use type. These methods collectively provided precise fingerprinting of sediment sources and of how deposition has changed over time.

The key finding was that "legacy" sediment still dominates. This sediment was originally derived from earlier gold mining, native forest removal and historical pastoral farming practices. About 70% of sediment deposited over the past century is legacy sediment.

The remaining 30% of sediment comes from contemporary land uses, including streambank and subsoil erosion (the largest source), commercial forestry, agriculture and pasture, with smaller contributions from native forest areas.

Sedimentation has had observable consequences, including the smothering of seabed habitats and decreased ecological resilience.

The research shows sedimentation in Pelorus / Te Hoiere Sound has increased dramatically due to human land-use activities. Most of the current burden comes from legacy land clearance, but present-day erosion from streambanks, pastoral farming and forestry still contributes significantly. The findings inform erosion and sediment mitigation strategies, particularly through Te Hoiere Project.

Response

Council has three monitoring programmes focused on marine biodiversity. The Ecologically Significant Marine Site programme (ESMS) is primarily focused on monitoring and protecting important sites of seafloor biodiversity.

The estuary monitoring programme assesses the state and trend in estuarine ecosystems. The shoreline monitoring programme is focused on the impact of large shipwakes on the shoreline of Queen Charlotte Sound / Tōtaranui and Tory Channel / Kura Te Au and is described in the Coast chapter (page 166). Monitoring shows that these significant habitats and ecosystems remain under threat, and the species and values that make these areas important are disappearing.

Ecologically Significant Marine Site (ESMS) programme

Council's ESMS programme promotes the protection of areas of significant indigenous vegetation and significant habitats of indigenous fauna in the Marlborough CMA.

This is accomplished by identifying ESMS and applying the protections contained in the MEP.

The ESMS programme identifies areas of significant biogenic habitat and important estuaries and seabird breeding colonies. Sites become ESMS by going through a series of steps, including identification, survey and assessment against MEP criteria. Sites that meet the criteria are designated as Category A, B or C and added to the MEP. Relevant rules for what can and cannot be done in or near the sites then apply.

For example:

- Dredging, bottom trawling, deposition of dredged material and reclamation are prohibited within Category A and B sites, and anchoring of ships is prohibited in Category A sites.
- Category A and B sites also have a 'buffer zone.' Dredging, bottom trawling or deposition of dredged material within the buffer zone must go through an application process.

Extensive mapping of the seafloor in Queen Charlotte Sound / Tōtaranui, Pelorus Sound / Te Hoiere and a large portion of the wider CMA using multibeam technology has increased the knowledge of seafloor habitats and facilitated the efficient identification of ESMS (figure 1). The mapping has also helped quantify the impact of man-made stressors.

The technology used provides highly accurate information on depth, seabed features and habitat types. Most mapping in Marlborough has been carried out through collaboration between Council, Land Information New Zealand (LINZ) and science partners. The first survey took place in 2015 and a range of locations have now been mapped. The latest is being Port Hardy, Stephens Island and Croisilles Harbour in 2022, and Te Whanganui/ Port Underwood in 2025/26.

The resulting 3D habitat maps improve navigational safety and help identify ecological features such as reefs and canyons. A 2019 survey of Queen Charlotte Sound / Tōtaranui and Tory Channel / Kura Te Au confirmed habitat types, discovered new species and quantified damage, providing important information on biodiversity and natural character.

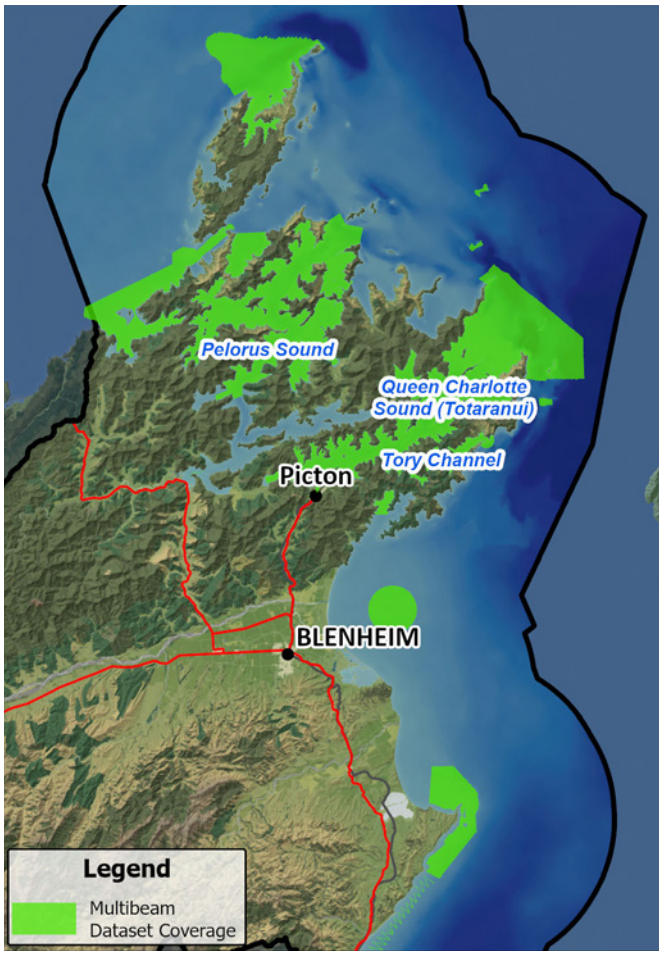


Figure 1: Coverage of multibeam mapping in the Marlborough Coastal Marine Area

Estuaries

Understanding the state and condition of the regions' estuaries is essential for understanding estuary dynamics, identifying threats and developing strategies to manage them.

Council has an annual monitoring plan across the regions' estuaries that includes broadscale habitat mapping; fine-scale monitoring of key indicators like sediment traits and benthic infauna; and monitoring of sediment accumulation rates. Council also works alongside others to increase knowledge, understanding and restoration activities in these areas. For example, council encourages community and landowner involvement to maintain estuary health, including a 'keep off the grass' campaign with signs protecting seagrass beds and restoration efforts, like the Motuweka / Havelock Estuary plan and planting days.



Figure 2: 'Tūraha atu i ngā rimurehia/please keep off the seagrass' signs have been installed in several estuaries, boat ramps and marinas

King shag

The king shag is a rare, nationally endangered seabird endemic to the Marlborough Sounds. It is one of the rarest seabirds in the world with a declining population that fluctuates around 600–800 individuals. King shag breeding colonies are confined to about ten small rock outcrops scattered across the outer areas of the Marlborough Sounds.

Between 1992 and 2002, surveys estimated the population at 645 birds. In 2015 when New Zealand King Salmon wanted to establish new finfish farms in the Pelorus / Te Hoiere Sound, one of the conditions imposed was development of a king shag management plan. The first aerial survey of colonies was undertaken in 2015 and the king shag population was estimated at 843 birds. Despite this estimated increase, the species remains classified as 'Nationally Endangered'. Aerial surveys of all known colonies and roosts have continued since 2015 (figure 6).

The MEP identifies 11 discrete sites as king shag breeding colonies and, recognising the impact that commercial and recreational boat traffic can have, provides a 100 m buffer zone around each site prohibiting vessels.

Biosecurity

Since 2004, Council has collaborated with the Department of Conservation (DOC) to control and remove spartina infestations throughout the Marlborough Sounds. An active control programme for tall wheat grass in the Wairau Lagoons is underway.

Mediterranean fanworm poses significant ecological and economic threats. It can displace native species and harm aquaculture. This invasive species has been managed through the Regional Pest Management Plan (RPMP) and the Top of the South Marine Biosecurity Partnership (established in 2013 to manage marine pest species).

Catchment management

Large-scale projects, such as Te Hoiere project, that provide an integrated approach to catchment management are essential for protecting the receiving environment and maintaining estuarine health.



Community planting day at Motuweka /Havelock Estuary, September 2025

Current state

Ecologically Significant Marine Site (ESMS)

The ESMS identified represents the 'best' of what is left in Marlborough of marine biodiversity. It is not a comprehensive list, and the information is continuously improved.

In general, other than intertidal sites there are few ESMS in the inner Marlborough Sounds. Those that remain are small and lack connectivity to other sites. The majority of the larger ESMS are found in the outer Marlborough Sounds where there are fewer human impacts and cleaner water.

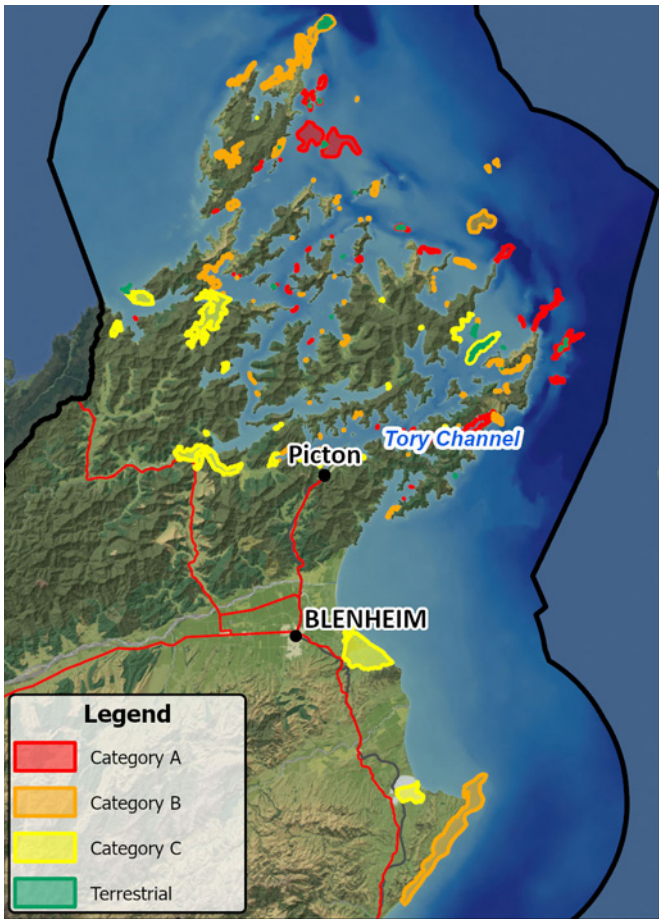


Figure 3: Location and categories of ESMS in Marlborough

There is a high concentration of sites in Tory Channel / Kura Te Au. This reflects the importance of strong currents, reefs and deep water for marine biodiversity.

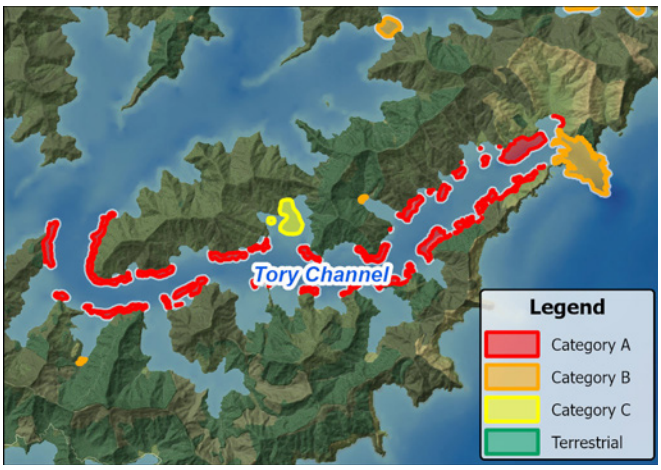


Figure 4: Location and categories of ESMS in Tory Channel / Kura Te Au

Initially, 149 sites were identified in 2011, and monitoring began in 2015. By 2022, 64 of the initial sites had been revisited. Boundaries of 43 sites were revised based on the new survey data, and 62 new sites were discovered.

In 2025, the MEP lists 219 ESMS sites:

- 155 subtidal biogenic habitat sites
- 37 estuaries and intertidal sites
- 16 terrestrial sites and
- 11 king shag breeding sites

Since 2015, 139 sites have been surveyed. Of these, impacts or damage have been noted at 87 (63%) of the ESMS visited. This impact or damage was typically associated with sedimentation and fishing activity.

Ongoing issues in the Marlborough Sounds include the reduction in the number of lampshell and shellfish beds, the disappearance of kelp forests, the loss of red algae meadows and a higher prevalence of parchment worm. During the 2020 seafloor mapping of Queen Charlotte Sound / Tōtaranui, 36% of tubeworm mounds surveyed were damaged and human rubbish was observed at 65% of sites. Similar issues were again confirmed in a 2025 survey of 16 known sites in Queen Charlotte Sound / Tōtaranui and Te Anamāhanga / Port Gore. For example, the loss of red algae from all five sites in Queen Charlotte Sound / Tōtaranui, and no giant lampshells were observed at two sites previously characterised by them.

Estuaries

There is significant variation in the ecological condition of Marlborough's estuaries. Many outer estuaries continue to support healthy ecological features such as seagrass beds, saltmarsh meadows and functioning intertidal flats. Signs of stress are particularly clear in inner regions like the Motuweka / Havelock Estuary and Wairau Lagoons, where sedimentation, nutrient enrichment and physical modifications are intense.

Monitoring indicates that many estuaries are slowly infilling and changing from gravel and sand to mud-dominated beds. Estuaries with strong tidal flushing and minimal catchment disturbance generally show better ecological health than those with restricted circulation and modified land use upstream.

Several estuaries show declines in seagrass cover, largely attributed to increased sedimentation from catchment erosion and poor land-use practices. For example, the Motuweka / Havelock Estuary has lost 98% (21 ha) of seagrass since 2014. Sedimentation from land disturbance and riverbank erosion in the upstream catchments remains the most prevalent pressure on estuarine ecosystems across the region. In estuaries like Motuweka / Havelock and Okiwa Bay, nutrient enrichment and organic accumulation have led to algal buildup, low oxygen levels and reduced sediment health.

Despite ongoing pressures, many estuarine systems in Marlborough retain Good and Very Good ecological condition and represent valuable opportunities for protection and restoration (figure 5). Ongoing monitoring, catchment management and habitat restoration will be essential to maintain and improve estuarine health.

Ecological condition of estuaries

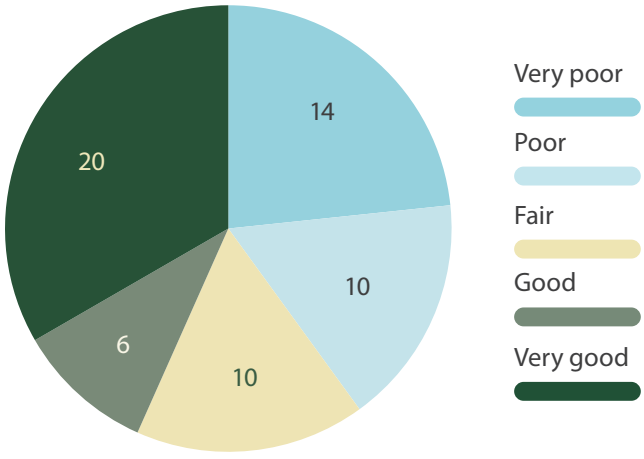


Figure 5: Ecological condition of estuaries in Marlborough based on the 2022 Ecological Vulnerability Assessment and Monitoring Plan

King shag

The total estimated population of king shag identified at monitoring sites has decreased since 2015. Breeding success during the 2021, 2022 and 2023 seasons has been poor due to storm events and, at 646 individuals, the population census in 2024 was the lowest since the monitoring programme began.

King shag population monitoring estimates

2012	2018	2019	2020	2021	2022	2024
843	733	795	815	821	757	646

Figure 6: King shag population estimates. Source: Bell, M., 2024. King Shag non-breeding season population census 2024. Unpublished report for the Department of Conservation.

Biosecurity

All areas of spartina infestation are now controlled to very low levels, and spartina is now believed to be eradicated from the Queen Charlotte / Tōtaranui Sound and Wairau Lagoons.

In 2021, tall wheat grass was found to be invading the Wairau Lagoons in a number of locations, and an active control programme is now underway.

Since 2015, about 80 detections of Mediterranean fanworm have occurred in Marlborough, mostly on vessel hulls linked to the upper North Island or Lyttelton. Recreational vessels remain the highest risk. While fanworm has been found in very low numbers on the seafloor at Waikawa Marina, there is no evidence of a self-sustaining population.



Chance Bay

Future response

Despite the ongoing degradation of biodiversity values in the Marlborough CMA Council is committed to monitoring the health of ESMS and identifying and protecting new sites.

Council continues to develop ways to map the extent of marine biodiversity and understand the impacts on marine ecosystems.

Long-term monitoring and reporting of estuary health will continue. Council will continue to take a collaborative approach to reduce land-based impacts and restore estuarine habitats through planting, buffering and sustainable management. Efforts on education and behavioural changes will increase to reduce human-derived impacts on estuaries. Restoration projects focused on enhancing important habitats will also be a focus.

Council will work with Central Government, iwi and community to restore and protect Marlborough's precious marine biodiversity. The reversal of the degradation of marine biodiversity is beyond just Council's ability to control and needs all stakeholders to work together.

CHANGES SINCE 2015

- The ESMS monitoring programme commenced in 2015.
- 70 new ESMS have been identified since 2015.
- 219 ESMS have been identified in the MEP in Appendix 25.
- Impacts or damage have been observed at 87 (63%) of the ESMS visited. This impact or damage was typically associated with fishing activity and sedimentation.
- King shag breeding success was impacted by extreme weather events in 2021 and 2022.
- The estuary monitoring programme, developed in 2022, provides a robust monitoring schedule following national protocols with data shared annually on the Land and Water Aotearoa website.
- Major storm impacts in 2021 and 2022 highlighted the growing role of climate-driven extreme weather as a key stressor affecting estuaries.
- Education and restoration projects undertaken including seagrass restoration, saltmarsh planting, education initiatives, and kelp restoration trials.



Kelp restoration site - healthy rimurimu

Motuweka / Havelock Estuary restoration plan

The momentum built through phase 1 of the Te Hoiere Project (refer to the case study on page 103) provides an excellent platform to extend this project to the receiving coastal and marine environment to restore Te Hoiere Catchment, ki uta ki tai, from the tops of the mountains to the depths of the sea. One project confirmed for phase 2 is the Motuweka / Havelock Estuary restoration plan.

The Motuweka / Havelock estuary is a place of abundance, combining natural beauty, high biodiversity, recreational activities, cultural significance and industry.

It serves as a scenic route and a gateway to the surrounding estuary, supporting local biodiversity and providing access for various industries and activities. However, the estuary faces widespread environmental issues (refer to the case study on discharges on page 160), including sedimentation, elevated nutrient levels, municipal and commercial discharges, and degradation of native ecosystems, which threaten both ecological balance and cultural practices.

In late 2024, work commenced on the development of an ecological restoration plan for the area. Facilitated workshops (held in November 2024 and April 2025) engaged Ngāti Kuia, Rangitāne o Wairau, community representatives, Council, DOC, Fish and Game, Port Marlborough, the Marine Farming Association and industry to identify estuary values they wished to protect or enhance, and to define and prioritise restoration initiatives considered important for improving estuary health.

The vision for the estuary's future focuses on restoring its ecological health, improving water quality, and revitalising local ecosystems. Key goals include enhancing water clarity, fostering biodiversity, and supporting sustainable practices that benefit both the environment and the local economy. The integration of Māori customary practices and a connection to the land are integral to this restoration process.

The restoration plan highlights activities such as restoring the estuary's shoreline vegetation, and the development of the plan was celebrated with a community planting day of 2,000 wiri / sea rush along the Havelock Marina breakwater in September 2025.



Motuweka Havelock Estuary

Kina and kelp

Algal-dominated reefs are vital coastal habitats in New Zealand, covering thousands of hectares and forming the foundation for shallow water life.

They offer food, shelter and nurseries for marine species like shellfish, fish and invertebrates, while providing ecosystem services such as nutrient absorption, sediment stabilisation, wave buffering and carbon sequestration. Healthy reefs enhance water clarity, oxygen and coastal productivity.

In the Marlborough Sounds, kelp, macroalgae and other seaweeds are found on rocky shorelines from exposed outer to sheltered inner areas. Canopy species like giant, bull and common kelp, along with turfing seaweeds, form complex underwater forests.

Unfortunately, these underwater forests are under threat from over-grazing by the endemic sea urchin kina. Kina graze heavily on kelp and seaweeds, and when kina numbers are high enough they can strip reefs bare, creating areas devoid of seaweeds and reducing available habitat for other marine life. On these barrens, kina often remain small with poor roe quality due to limited food, making them less desirable for harvest.

The expansion of these barrens is primarily driven by the loss of natural predators, including snapper, blue cod, and crayfish. This decline in predation pressure, coupled with warming seas, has reduced macroalgae cover and diminished biodiversity and ecosystem resilience.

In the Marlborough Sounds, long-term declines in macroalgal forests have been reported since the 1960s and today, kina barrens are the most dominant reef habitat in Queen Charlotte / Tōtaranui Sound.



Kina removal, Motuara Island

Restoration trials

To better understand how kina removal might support macroalgae recovery, the University of Auckland, Te Ātiawa, Council, Port Marlborough and partners established four small trial sites across Queen Charlotte / Tōtaranui Sound in 2022: Blackwood Bay / Tahuahua Bay, Blumine Island / Ōruawairu, Meretoto / Ship Cove and Motuara Island. Approximately 34,000 kina were removed during the initial clearance, and divers continue to revisit every three months to remove reinvading kina and monitor kelp recovery.

Findings

After one year, kelp recovery was evident at all sites. Motuara Island showed the strongest response, with numerous giant kelp up to 4.5 m tall returning to previously barren rock. At other sites, native species such as common kelp and brown algae also increased, while control areas where kina remained showed little change. Overall, macroalgae cover rose by 10% at Blackwood Bay / Tahuahua Bay and up to 67% at Motuara Island. Recovery rates differed between sites, influenced by environmental factors such as wave exposure, sedimentation and temperature.

Next steps

Continued kina removal is required to prevent reinvasion, but culling alone is not a sustainable long-term solution. Restoring predator populations and addressing broader pressures such as sedimentation and warming seas will be essential for lasting ecosystem recovery. Insights from these trials will help guide future macroalgae restoration efforts throughout the Marlborough Sounds.

Data sources and external collaborators or contributors:

University of Auckland (Assoc. Prof. Nick Shears); Te Ātiawa; Port Marlborough; Sustainable Seas National Science Challenge; Marlborough District Council Coastal Science Team.

Marine biosecurity in Marlborough – a collaborative approach

Since 2008, Council has partnered with Tasman District Council, Nelson City Council and Biosecurity New Zealand under the Top of the South Marine Biosecurity Partnership in response to managing marine biosecurity in the Top of the South / Te Tauihu region.

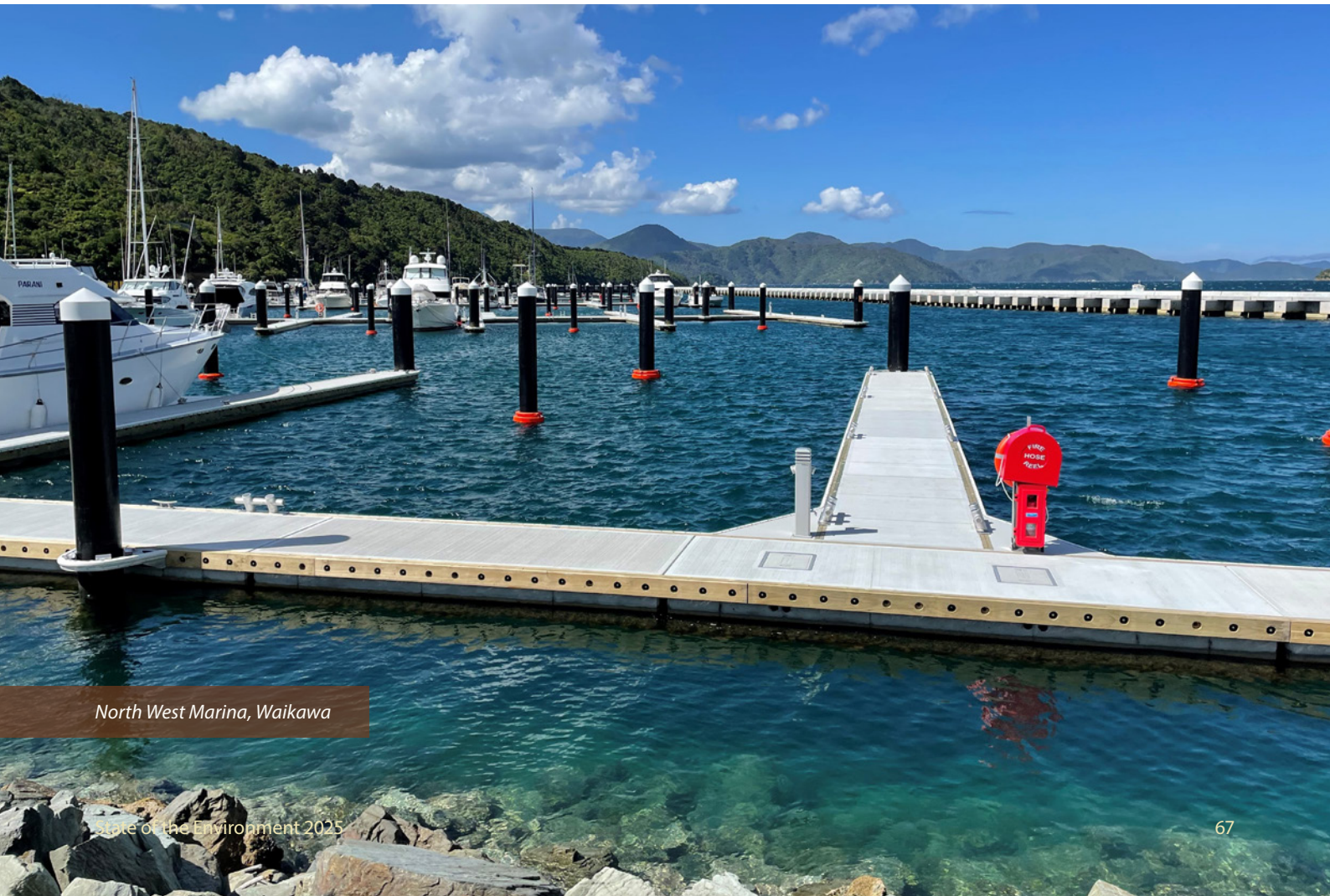
The partnership is aimed at preventing new marine pests from being introduced or establishing in the Top of the South marine environment, managing established pests and responding effectively to new incursions.

The partnership has now grown to include Greater Wellington Regional Council and is currently coordinated under contract by Boffa Miskell Ltd.

A major success of this partnership has been the inclusion of wider programme partners with an interest in marine biosecurity.

These wider partners include various commercial operators, including marinas, ports and aquaculture representatives, science providers, and iwi. The group works collaboratively, ensuring there is a platform for good communication, engagement and constructive relationships.

Some key achievements from this collaborative model include effective incursion responses across various occupied water spaces, including marine farming areas and marinas. Strong communication and engagement, utilising partners' communication channels, remain important parts of public engagement and education.



North West Marina, Waikawa

Te kanorau koiora wai māori
Biodiversity in freshwater

Marlborough's geology and climate is incredibly diverse and, as a result, so are its freshwater ecosystems. From small alpine lakes and headwater tributaries, freshwater streams and rivers meander across multiple land uses, passing through lowland wetlands and estuaries before reaching the sea.



Fish lake, one of the Tarndale Lakes, Molesworth Recreation Reserve

These waterways connect the mountains to the sea. The three largest river catchments in Marlborough are Te Hoiere / Pelorus River in the northwest, Wairau River in central Marlborough and Awatere River in the south.

Marlborough's few natural lakes have unique ecological values and are important for sustaining the region's ecology. The largest lake in Marlborough, Lake Elterwater, is a wildlife refuge for a range of birds, including herons, grebes and dabchicks.

New Zealand has 51 species of native freshwater fish, 31 of which are endemic to New Zealand. In Marlborough, we have eight galaxiid species, six bullies, two eels, torrentfish, black flounder, common smelt and kanakana (lamprey). Many of these species are diadromous, meaning they migrate between saltwater and freshwater. As a result, they are particularly vulnerable to barriers created by dams, weirs and culverts. The alpine Tarndale Lakes are home to the Tarndale bully, an endemic fish found nowhere else in the world.



Tarndale bully

Ngā meka matua
Key facts

Marlborough's unique freshwater fauna

Streams in the Marlborough Sounds contain important populations of threatened shortjaw kōkopu.

Marlborough represents the southern limit of kōura (freshwater crayfish - Paranephrops planifrons) on the east coast of the South Island.

Nationally, the Kaharore bully fish is identified as ' at risk – naturally uncommon'; however, Marlborough is a particular stronghold for this species.

Kākahi, or freshwater mussels, are a taonga species for Māori and a bioindicator for the quality of an ecosystem because young kākahi prefer a healthy environment to live in.



Pressure

Nationally, many indigenous freshwater species and ecosystems are under significant pressure, with 76% of native freshwater fish being classified as 'Threatened'. Marlborough's aquatic ecosystems reflect this trend.

Freshwater biodiversity in Marlborough is increasingly under pressure from a range of human activities, environmental changes and biosecurity threats. The region's freshwater habitats have been extensively modified through the construction of channels for drainage and flood control, wetland drainage and land development. Many lowland streams have been straightened or confined, reducing habitat complexity and connectivity. Wetlands have been drained for agriculture, and riparian zones have been cleared, leading to the loss of shade, bank stability and food sources for aquatic life. Structures such as poorly designed culverts and weirs often create fish passage barriers, preventing native fish from accessing upstream spawning and feeding habitats.

These pressures have contributed to habitat degradation, reduced water quality and impacted native species.

In addition, water abstraction, water diversions, sedimentation and the introduction of predatory species, such as trout, have all contributed to native species population decline and fragmented habitats. In the drier southern parts of Marlborough, intermittent streams that dry seasonally are particularly vulnerable during periods of drought.

Many of the largest native galaxiids (kōkopu) live mostly in small streams running beneath forest or bush canopies. Widespread conversion of forest to pasture over time has resulted in their decline, and the introduction of predatory trout restricts their distribution within forested streams. As a consequence of these changes, together with the creation of migration barriers and loss of habitats, a number of native fish are now endangered. A 2010 report indicated that although only the grayling is extinct, eight additional species are nationally threatened and another twelve are now in decline.

The ecological health of Marlborough's waterways is closely linked to land-use practices. The expansion and intensification of land use in Marlborough, driven by the growth of viticulture, exotic plantation forestry, agriculture and urban development, continues to place significant pressure on freshwater ecosystems. Since 1990, the vineyard area has increased from about 2,600 ha to 33,700 ha, and exotic forestry has expanded by roughly 35,000 ha, resulting in widespread landscape changes. These activities can increase sediment runoff (for example, through land clearance, development and harvesting of forests), which smothers stream habitats, reduces water clarity, and affects sensitive native fish and macroinvertebrate species (insects, crustaceans, worms and other small critters), disrupting spawning cycles.

Nutrient inputs from fertilisers, farmed and feral animals, soil disturbance and wastewater irrigation further degrade water quality by stimulating excessive algal and periphyton (attached algae) growth, thereby lowering oxygen levels and altering stream communities.

Urban development has introduced additional stressors with stormwater runoff carrying heavy metals, hydrocarbons and pathogens. The expansion of impervious surfaces that water can't pass through and the modification of stream channels have altered flow regimes and reduced the resilience of urban water bodies.

Climate change is altering rainfall patterns, increasing temperatures and intensifying extreme weather events. These changes affect freshwater ecosystems by altering flow regimes, increasing the frequency of droughts and floods, and shifting species distributions. Warmer water temperatures can stress cold-water species and favour the spread of invasive organisms.

Non-native plants and animals pose a serious threat to freshwater biodiversity.

Aquatic weeds such as water celery and oxygen weed can outcompete native vegetation, alter flow regimes and reduce oxygen levels. Introduced fish species prey on or compete with native fish, disrupting food webs.

These cumulative pressures reduce the resilience and overall ecological health of Marlborough freshwater systems, making recovery more difficult.

Ngā meka matua
Key facts

The ecological value of indigenous aquatic plants in stream ecosystems

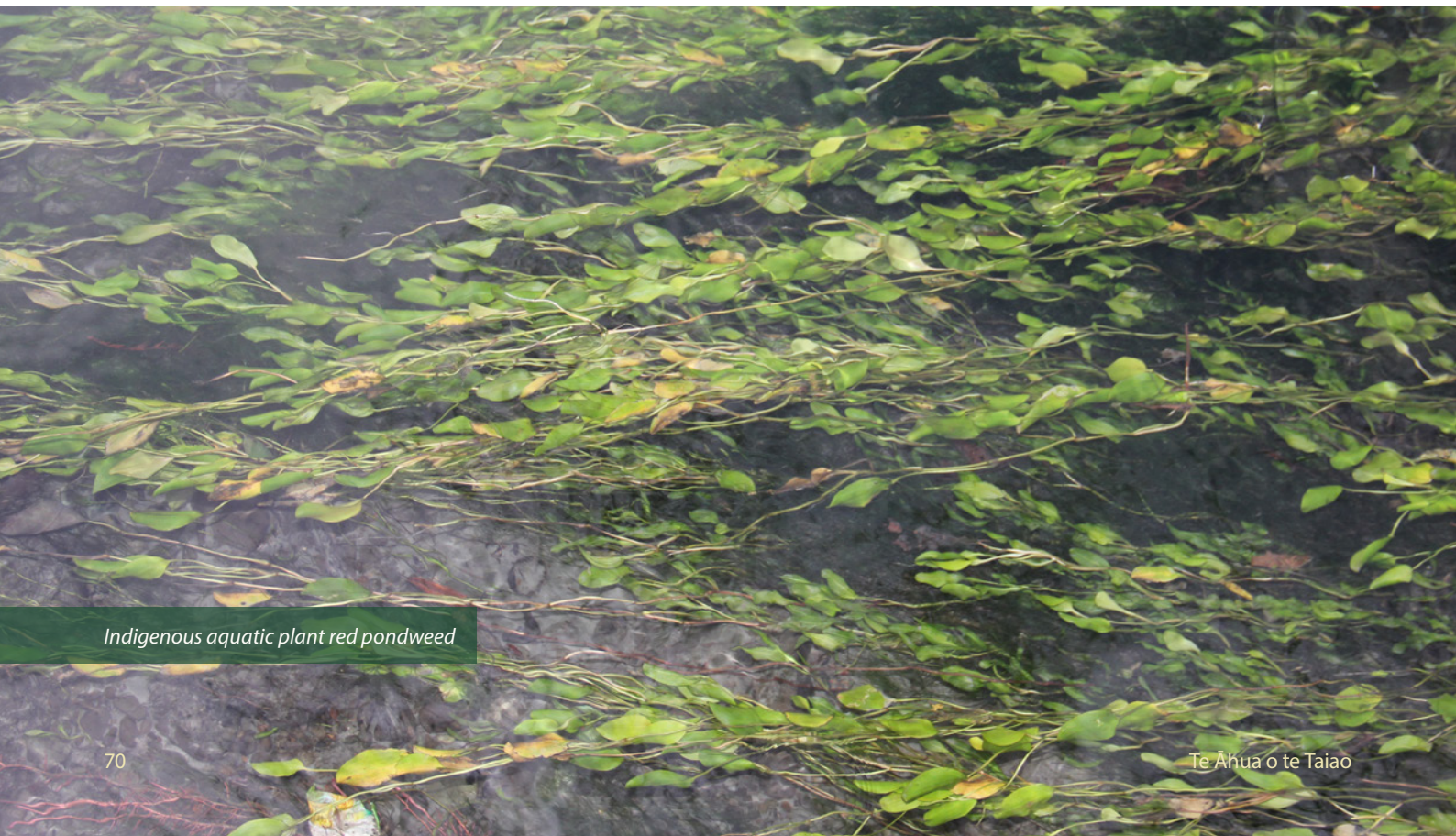
Aquatic plants are often misunderstood, with many people assuming that any vegetation growing in a waterway is a weed that needs removal.

While invasive species such as oxygen weeds can smother habitats and disrupt ecological processes, not all aquatic plants are harmful. In fact, indigenous aquatic vegetation plays a central role in maintaining the health and functioning of stream ecosystems.

Rather than degrading the stream, indigenous aquatic plants support biodiversity and enhance water quality.

Native aquatic plants stabilise streambed gravels, reducing sediment resuspension during high flows. Their root structures help maintain bank integrity, limiting erosion and preventing fine sediment from smothering fish spawning habitat. The vegetation also creates a mosaic of microhabitats that support diverse macroinvertebrate communities, which in turn form the primary food source for species such as whitebait and juvenile eels. In shaded reaches, these plants contribute to natural nutrient processing, absorbing excess nitrogen and phosphorus and limiting the growth of nuisance algae.

Healthy streams depend on native plant communities that support the structure, stability and productivity of freshwater ecosystems.



Indigenous aquatic plant red pondweed

Response

Council has implemented various measures to protect freshwater biodiversity by addressing pressures that degrade habitats and impair the life-sustaining functions of rivers and streams.

For example, the State of the Environment river monitoring network, which samples 55 river sites monthly, provides essential information on ecological health. These data support early detection of biodiversity risks and help target management responses that enhance water quality and protect habitats for native fish and other species. Council also runs soil quality, land-use monitoring and hill-country erosion programmes that help reduce sediment and nutrient loss into streams, thereby protecting aquatic plants and animals from habitat smothering.

Council's planning framework includes rules that set environmental limits on freshwater, which directly support biodiversity protection. Under the MEP, water allocation limits have been set to maintain the life-supporting capacity of rivers, lakes, aquifers and wetlands, acknowledging that excessive abstraction can compromise ecological health. The plan also sets environmental flow requirements, including minimum flow and trigger levels that restrict or suspend water takes when flows fall to those levels, ensuring that abstraction does not reduce flows below the thresholds required to sustain native biodiversity.

Catchment management

The MEP has identified 12 waterways across the region with degraded water quality and a further 10 at risk of degradation. To address the water quality issues, Council established the Catchment Care Programme. Four catchment programmes have been established: the Taylor River Improvement Programme, Hill Country Erosion Programme, Catchment Care (focused on Flaxbourne, Tuamarina, Linkwater and Are Are Creek) and Te Hoiere Project, a collaboratively designed catchment restoration initiative. Supported by Central Government funding, Council has worked alongside landowners to protect riparian margins, plant erosion-prone hillsides and improve water quality and biodiversity outcomes. Collectively, these programmes have resulted in substantial planting and riparian and wetland fencing. Refer to the Land chapter on page 82 for more information.

In the Pelorus / Te Hoiere catchment, there has been a focus on identifying fish passage barriers and supporting landowners to remediate them. Using data collected through Catchment Condition Surveys along with spatial data, a Fish Passage Action Plan (FPAP) was developed to identify priority fish barriers in the catchment. Over 212 potential fish passage barriers have been assessed, and 16 have been fixed.

Wetlands

Between 2011 and 2013, the Council undertook a region-wide wetland identification project to locate and assess ecologically significant wetlands. Over 1,300 wetland sites were identified, many of which are now scheduled for protection under the MEP. These wetlands range from small ephemeral patches to large valley-floor systems and provide critical habitat for native fish, aquatic invertebrates and wetland birds. Scheduling these sites provides landowners with certainty about where wetland rules apply and helps prevent further loss through drainage or land conversion. The mapping project has also improved awareness among landowners and enabled targeted ecological restoration in priority areas. To meet the National Policy Statement for Freshwater 2020's objective of no further loss of the extent of natural inland wetlands, a desktop identification and mapping programme has been implemented.

Lake Elterwater (also known as Ruakanakana), is a shallow lake and wetland that supports an extensive range of native birdlife. Monitoring has highlighted elevated nutrient levels, including nitrogen and phosphorus concentrations that regularly exceed national guidelines, increasing the risk of algal blooms. Restoration efforts are being led collaboratively by local landowners, Council, Ngāti Kurī, New Zealand Landcare Trust and wetland ecologists through the Lake Elterwater-Ruakanakana Restoration Group. The restoration programme focuses on improving ecological health by addressing poor water quality, erosion and sedimentation. Over the past decade, landowners have implemented targeted planting and weed control along the lake margins, supported by Council funding and technical guidance. Earlier restoration projects laid the foundation for this work, including large-scale willow removal, fencing to exclude stock and reintroduction of native wetland vegetation to rebuild habitat structure for indigenous birds and insects.

The current programme aims to expand these efforts, with goals that include restoring habitat for species such as freshwater mussels and bitterns, improving water quality through catchment management, and creating opportunities for community education and engagement.

Biosecurity

Freshwater biosecurity in Marlborough is vital to protecting the region's rivers, lakes, wetlands and assets from low-abundance and emerging freshwater pest species. Freshwater biosecurity threats include freshwater weeds, pest fish, turtles and clams. Council's biosecurity programmes focus on controlling low-density invasive species and preventing new species from establishing.

The following species are managed to protect biodiversity, water quality and wetlands under a sustained control programme as identified in Council's Regional Pest Management Plan:

- Eel grass
- Parrot's feather
- Purple loosestrife
- Reed sweet grass
- Rough horsetail

In 2024, a minor partnership agreement was established between Council and the DOC, under which DOC provided funding to support Council in managing new parrot's feather and reed sweet grass sites effectively. Work is ongoing in this space to develop a long-term agreement for collaborative work on the freshwater biosecurity programmes.

Council has recently partnered with Biosecurity New Zealand to jointly deliver the Check, Clean, Dry campaign in the region. This initiative aims to engage freshwater users, promote good biosecurity practices and raise awareness of freshwater biosecurity issues.

Current state

Monitoring shows that upland rivers such as the Pelorus and upper Wairau support relatively intact aquatic communities, including native fish and macroinvertebrates. In contrast, lowland streams and modified waterways show reduced biodiversity, with fewer sensitive species and dominated by organisms tolerant to environmental stress.

Wetlands remain among the most ecologically valuable but threatened habitats. Many are small, fragmented and degraded, although some, such as Para Wetland and Grovetown Lagoon, have improved through restoration.

Recent assessments have identified hundreds of potential fish passage barriers across the region. Many are associated with road culverts, farm crossings and flood control structures. Council has begun prioritising sites for remediation, with more than 10 retrofits completed in Te Hoiere / Pelorus catchment.

eDNA sampling

Environmental DNA (eDNA) sampling is a method used to detect the presence of species in freshwater environments by analysing genetic material left behind by organisms. As fish, insects and other aquatic species move through a stream, they shed tiny fragments of DNA. By collecting small water samples, filtering them, and extracting the DNA species present, they can be identified.

One of the main advantages of eDNA sampling is that it can detect rare or low-density species that traditional survey methods might miss.

eDNA sampling across 141 river sites shows a highly diverse freshwater community, with nearly 3,000 different taxa detected. Native fish were widely distributed, led by the longfin eel, which was found at 128 sites, followed by the shortfin eel at 101 sites. Other native species such as dwarf galaxias, whitebait and several bully species, including kaharore, redfin and bluegill bullies, were commonly detected, whereas torrentfish, common smelt, kanakana and black flounder were present at lower frequencies.

Introduced species were also widespread, particularly brown trout (77 sites) and rainbow trout (44 sites), with smaller occurrences of Chinook salmon and goldfish. Macroinvertebrate diversity was high, with high detection rates for caddisflies, mayflies, stoneflies and dobsonflies, all key indicators of good water quality. Crustaceans and molluscs were also well represented: kōura were found at 34 sites and the native freshwater shrimp at nine sites. Overall, the eDNA results show Marlborough's rivers support a rich mix of native fish, sensitive invertebrates and characteristic freshwater species, alongside introduced taxa that are also widely established.

Marlborough has made good progress in controlling several invasive species, but challenges remain. The species identified as under sustained control in the Regional Pest Management Plan (RPMP) remain in relatively isolated infestations:

- Eel grass has been suppressed to very low levels across the region. In the long term, it may be possible to eradicate it entirely, with only one active infestation remaining in Waterlea Creek in central Blenheim.
- Several new sites of parrot's feather, reed sweet grass and rough horsetail have been found over recent years, which continues to put pressure on Council's limited biosecurity resources, although a number of rough horsetail sites are now annually observed at very low numbers.
- Recently, a one-hectare infestation of reed sweet grass in the Para Wetland has significantly expanded the programme's scope. Efforts are now focused on containing this infestation before aiming for control within the next 10 to 20 years.

Marlborough waterways remain free of the most invasive pest fish species; however, a population of goldfish remain in the Taylor Dam and occasionally appears in the Taylor River in Blenheim.

Red-eared slider turtles have been reported five times in Marlborough waterways. This is a common occurrence across the country as people abandon pets, which have a lifespan of up to 50 years in captivity, due to the high cost of care, releases for cultural reasons, and occasional escapes when they wake from hibernation. While it is not currently warm enough for them to breed in Marlborough, this may change over time.

The gold clam, which is currently only present in the North Island, and the great willow herb, currently found south of Marlborough's border, are considered emerging threats or likely to arrive in Marlborough in the coming years.

Outside the district, the aquatic plant trade has been a concern, leading to new infestations. Council lacks the capacity to monitor this type of trading within the region.

Future response

Future freshwater monitoring programmes will use a mix of different monitoring methods to provide a more accurate picture of ecosystem health.

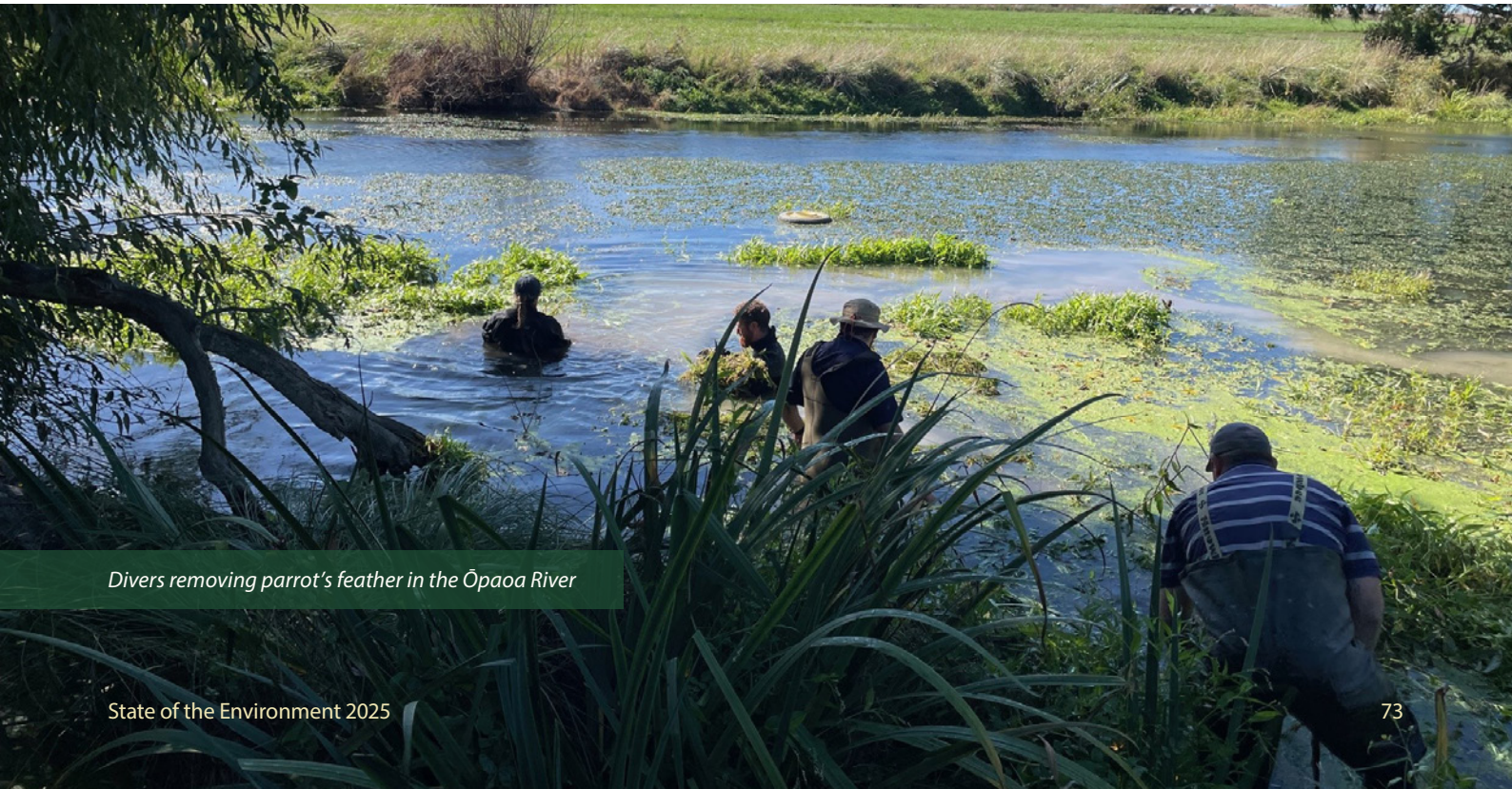
Regular eDNA sampling will continue to track the presence and distribution of native and introduced species. Low-flow conditions will be assessed using techniques such as drift dives and targeted habitat observations to understand how reduced flow affects fish behaviour and ecosystem function. Alongside these field methods, we will re-evaluate existing allocation limits and minimum flow settings to ensure they remain appropriate under changing environmental pressures, supporting sustainable water use while safeguarding ecological integrity.

Council will need to ensure adequate resources are available to undertake control and surveillance for existing freshwater biosecurity programmes and to respond to new invasive and emerging pest species in the region, ensuring they are controlled quickly to prevent establishment.

This includes effective management of the movement of invasive species on equipment between waterways by engaging with high-risk water users, monitoring freshwater plant sellers and implementing a monitoring programme for new-to-region species.

CHANGES SINCE 2015

- Establishment of the Catchment Care Programme.
- 212 fish passage barriers assessed, with 16 remediated.
- eDNA has been used to identify freshwater flora and fauna in Te Hoiere / Pelorus River, and sampling has been completed at all State of the Environment monitoring sites in Marlborough. Further analysis required at sites outside of Te Hoiere.
- An increase in the number of sites and properties affected by biosecurity programmes.
- Five reports of red-eared slider turtles in Marlborough waterways.
- Increasing pressure from species outside the region, including the gold clam from the North Island and the great willow herb south of Marlborough.



Divers removing parrot's feather in the Ōpaoa River

Freshwater fish passage

A significant remediation project undertaken in the Linkwater area involved the replacement of a five-culvert ford crossing on Cullen Creek with a bridge.

A bridge is the most appropriate method for stream crossings, as it avoids disturbance to the streambed and protects habitat on an ongoing basis.

The site was prioritised because it contains fish species classified as 'At Risk'. The crossing is located at the bottom of the catchment and acts as a barrier that prevents fish from accessing approximately seven km of upstream habitat. In addition to the fish passage impacts, the approaches to the crossing were considered a critical source of sediment and other contaminants into the creek. The removal of the old structure has not only improved fish passage but also made the area easier for the landowner to use. With the bridge being significantly higher than the previous crossing, stock can be safely moved during wet conditions.



Before (above) and after (below):
A five-culvert ford crossing removed on Cullens Creek and replaced with a bridge to remediate fish passage

Te kanorau koiora i te whenua
Biodiversity on land

Marlborough is home to a rich and distinctive array of indigenous flora and fauna, shaped by its varied geography, climate and long history of ecological isolation.



Native Daphne and Pimelia moth
Credit: Ian Miller, Department of Conversation

The region spans diverse ecosystems, from alpine zones and dry inland valleys to coastal forests and wetlands, each supporting unique biological communities. Approximately 80% of New Zealand's native trees, ferns and flowering plants are endemic, and Marlborough hosts many of these, including species at the edge of their natural range.

Despite significant progress, Marlborough's indigenous biodiversity remains under pressure. The landscape remains highly modified, and many ecosystems are fragmented and vulnerable. However, the expansion of the Significant Natural Areas (SNA) programme, increased funding and stronger community engagement have led to measurable improvements in ecological condition and public awareness.

Council's commitment to voluntary conservation, supported by strategic planning and collaboration, provides a strong foundation for future biodiversity protection.

Pressure

Human activity has significantly altered Marlborough's natural landscapes. Since the arrival of Polynesian and European settlers, extensive deforestation, land conversion for agriculture and urban development have fragmented habitats and reduced native vegetation cover.

Vegetation clearance, wetland drainage and the introduction of pest species have significantly reduced native habitat, especially in lowland areas. South Marlborough is classified as a 'Threatened Environment.' In the Wairau lowlands, less than 10% of native vegetation remains, well below the 15% threshold considered necessary for species survival.

Development for viticulture, pastoral clearance and forestry continues to place pressure on remaining natural areas.

Pest plants and animals

Invasive species remain the primary threat to indigenous biodiversity. Pest plants such as old man's beard, wilding conifers and willow regrowth outcompete native vegetation, altering ecosystems and reducing habitat quality. Bomerea (a fast-growing vine), wild kiwifruit, and blue passion flower are emerging pest plant species that could impact biodiversity in the region, but their spread can be stopped with sufficient resources to manage them.

Pest animals, including possums, deer and goats, damage vegetation through browsing and compete with native species for food and space.

South Marlborough is home to approximately 29 'Nationally Critical', 26 'Nationally Endangered' and 16 'Nationally Vulnerable' plant species, including unique limestone communities. These plants and ecosystems are threatened by wild goats.

While some areas are actively managed, many remain vulnerable to these pressures.

Response

Over the past decade, Council has continued its commitment to protecting indigenous biodiversity through the SNA programme.

Established in 2001, the SNA programme has evolved into a cornerstone of Marlborough's environmental strategy, focusing on voluntary landowner engagement, ecological surveys, habitat protection and ongoing monitoring. Information about natural areas on private land is collected to work in partnership with landowners to help protect them.

Council's Landowner Assistance Programme provides funding and technical support for biodiversity protection. Since 2015, Council invested over $1.5 m in protecting and enhancing SNAs. This has been supported by an additional $1.8 m investment from landowners and partners.

These protections and enhancements have included:

- Fencing of vulnerable habitats
- Weed and pest control
- Restoration planting

Sites can be identified in a number of ways, and the MEP sets out criteria for assessing biodiversity and the significance of those sites. For an area to be considered significant, one or more of the four identification criteria of representativeness, rarity, diversity and pattern or distinctiveness must be ranked as high or medium. The size, cohesiveness, connectivity to other sites and ecological context of an area are also considered.

Monitoring and evaluation

SNAs are monitored using photo points, ecological condition assessments and landowner feedback. Site reports are provided to landowners, helping guide management decisions and track ecological trends.

Council also participates in national biodiversity monitoring initiatives, developing standard indicators to assess ecosystem health and trends.

The MEP introduces new rules for the clearance of indigenous vegetation and the management of wetlands. These policies aim to prevent further habitat loss and support voluntary conservation efforts. Council is also preparing a Biodiversity Strategy to coordinate action across departments and align with national priorities.

Council plans to continue its voluntary, practical approach to biodiversity protection. Key priorities include:

- Monitoring effectiveness: Regular assessment of protected and unmanaged sites.
- Biodiversity Strategy: Developing a strategy with support from external partners.
- Threatened ecosystems: Identifying dune-lands, rare ecosystems and habitats of threatened species.
- Community support: Expanding funding and technical assistance for community-led projects.
- Climate stress: Droughts and extreme weather events may impact restoration success.
- Weed and pest pressure: Continued spread of invasive species requires sustained control efforts.
- Landowner engagement: Ongoing outreach is needed to maintain momentum and awareness.

In addition to the SNA programme, Council administers the Working for Nature / Mahi mō te Taiao grants, which provide financial support to individuals, community groups and landowners undertaking biodiversity restoration and protection projects. These grants built on the success of the Tui to Town programme, which, since 2008, promoted the protection of existing areas of native vegetation and the planting of new areas to provide stepping stones of habitat for native birds, specifically tui. Working for Nature / Mahi mō te Taiao grants have enabled a broader range of initiatives beyond the SNA framework, including wetland restoration, riparian planting and pest control in ecologically sensitive areas. The programme has helped build community capacity, fostered collaboration and supported long-term ecological outcomes across Marlborough. Many recipients have used the funding to complement SNA work, extending the reach and impact of conservation efforts on private land.

The East Coast Protection Bylaw, developed in collaboration with landowners and iwi, aims to safeguard sensitive coastal ecosystems from vehicle damage and disturbance. Similarly, Te Hoiere Bat Recovery Project, led by Forest & Bird, focuses on protecting critical bat habitat in the Te Hoiere / Pelorus catchment through predator control and habitat enhancement. These projects demonstrate the value of community-driven conservation and the importance of aligning local initiatives with regional biodiversity goals.

Biosecurity – pests and weeds

The Council has been managing pest species for some time, with a traditional focus on the primary sector, particularly pastoral farming. Managing pests today requires a broader approach that protects indigenous biodiversity and habitats while also supporting economic outcomes. Council has a biosecurity programme informed by its Biosecurity Strategy and a Regional Pest Management Plan (RPMP), and collaborates with landowners, the community and other agencies to manage animal pests and plant species.

Current state

Extent of Significant Natural Areas

As of 2025, the SNA programme has identified 962 terrestrial sites, covering 138,383 ha across the Marlborough region. This is a substantial increase from 708 sites and 45,575 ha recorded in 2015. The expansion reflects ongoing ecological surveys and improved landowner engagement.

Recent additions include 14 new sites surveyed in 2024/25, totalling 928 ha. These include diverse ecosystems such as limestone bluffs, tall native forests and rare shrublands. The most ecologically significant site in the region is home to 24 threatened species and is protected by a conservation covenant.



Forested Significant Natural Area co-esisting with productive land

Condition of sites

Monitoring of SNAs in 2025 shows a clear difference between managed (supported by Council's Landowner Assistance Programme) and unmanaged sites:

Condition of managed SNA sites

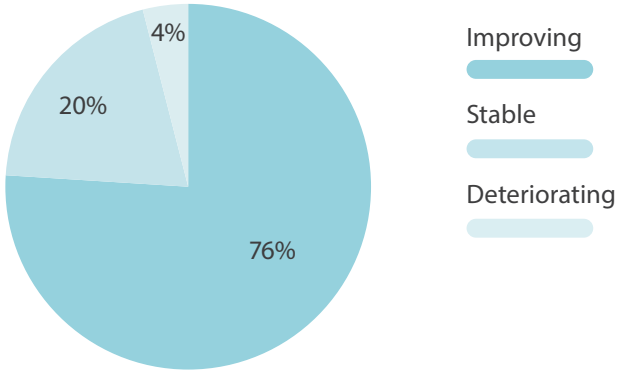


Figure 1: Condition of managed SNA sites in 2025

Condition of unmanaged SNA sites

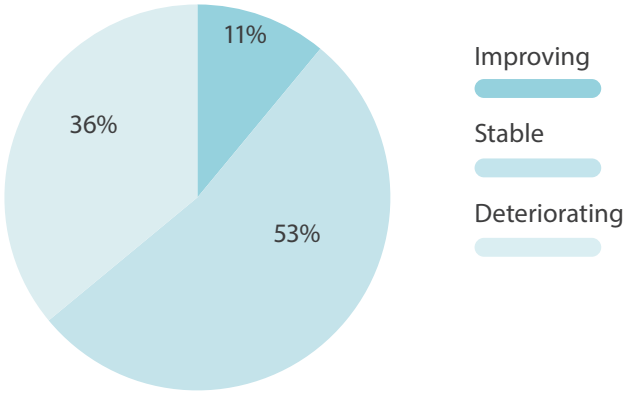


Figure 2: Condition of unmanaged SNA sites in 2025

These figures mirror the 2015/16 trends, confirming that active management, such as fencing, pest control and restoration planting, is essential for maintaining ecological health.

Vegetation cover and restoration

Efforts to restore native vegetation have resulted in modest improvements. On the Wairau Plains, indigenous vegetation cover has increased from 170 ha in 2015 to approximately 189 ha in 2025. However, this still represents less than 1% of land cover in the Blenheim Ecological District.

Pests and weeds

Invasive animals such as rabbits have been reduced and remain at relatively low numbers across the district compared to the early 2000s. However, there has been a significant increase in ungulates (wild deer, goats and pigs) noted across the region in recent years.

In addition to physical land impacts, ungulates severely impact native plant and animal communities. Ungulate browsing suppresses the regeneration of native species such as tōtara, kānuka, broadleaf and a variety of shrubs, simplifying forest structure and reducing natural regeneration. This loss of plant diversity degrades habitat quality for native birds, lizards and other species that rely on forest understories for food and shelter. Over time, continued ungulate grazing reduces biodiversity and weakens ecosystem functions, including soil retention, carbon storage and freshwater quality.

Data provided by DOC from its wild goat control programme in South Marlborough shows an increase in the number of goats removed in the last three years, from around 5,000 per year in 2022 to 7,700 in 2025.

South Marlborough goat control

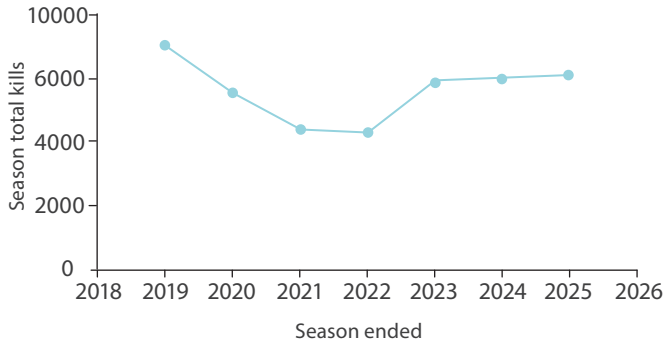


Figure 3: South Marlborough goat control total culls per season. Source: Department of Conservation

Wilding conifers are rapidly spreading across large areas of the district, affecting places like the Rangitahi / Molesworth, Awatere, Waihopai, East Coast and Marlborough Sounds. Council collaborates with Biosecurity NZ, DOC, and community groups to manage wilding conifers in key locations. For more information refer to the case study on page 102.

Future response

Protection and monitoring of indigenous biodiversity will continue through the SNA programme, and support will be provided through the landowner assistance programme. The development of a Biodiversity Strategy will inform future priorities and direction.

Council will review its RPMP in 2027 to evaluate its programmes and secure resourcing needed to maintain existing programmes and get ahead of the new and emerging threats.

Council is committed to continually managing wilding conifers through both regulatory and non-regulatory programmes to address the threat; however, securing sufficient funding for the programme remains a significant challenge for the region.

Enhancing on-farm and vineyard engagement to better manage the spread of agricultural weeds is crucial for the long-term control and suppression of these species.



An example of the effectiveness of ungulate proof fencing, showing regenerating bush

CHANGES SINCE 2015

- Significant Natural Area Expansion from 708 sites (45,575 ha) to 962 sites (138,383 ha).
- Annual investment increased from $79,198 to over $230,000.
- Monitoring has expanded, with improved data collection and reporting.
- More community groups are involved in restoration and weed control.
- Significant increase in ungulate populations.
- QEII covenants increased from 56 (2,000 ha) to 75 (4,000 ha).
- Working for Nature / Mahi mō te Taiao grants were created in 2020.

Mirza Downs

Mirza Downs, a coastal farming property in the Kekerengu Ecological District, is home to two ecologically outstanding areas that represent some of Marlborough's rarest and most diverse ecosystems. The SNA programme has played a pivotal role in identifying, supporting and protecting these nationally significant natural features.

One SNA encompasses coastal gullies, dunes and dramatic limestone formations extending to Needles Point.

This landscape supports over 25 threatened plant species, including the nationally vulnerable coastal mat daisy, rare limestone specialists, and regionally endemic species such as the Marlborough rock daisy. The dunes and scarps also provide habitat for threatened fauna, including the Waiharakeke grass skink, Marlborough spotted skink, and populations of banded dotterel and katipō spider. The site's scale, diversity and connectivity make it one of the most ecologically valuable coastal ecosystems in Marlborough.

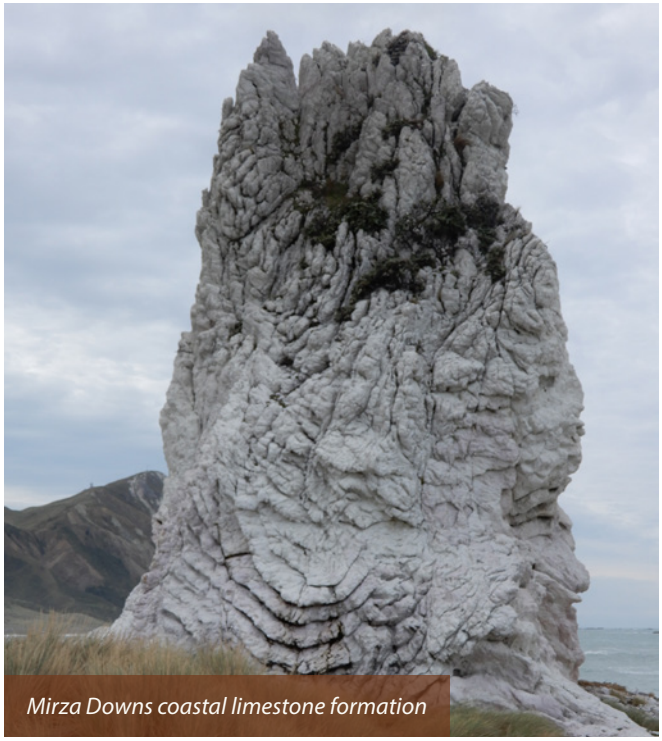
Through the SNA programme, ecological assessments, management recommendations and practical support enabled large-scale conservation gains. Fencing funded in partnership with Council separated stock from regenerating native vegetation, allowing kanuka and mānuka forest, shrublands, dune systems and limestone flora to recover. Targeted pest control, including goat eradication, removal of wilding conifers and predator trapping, has facilitated the return of native birds, invertebrates and lizards. The programme also supported the site's legal protection through QEII Open Space Covenants, ensuring long-term safeguarding of these irreplaceable habitats.

The other smaller but equally important inland limestone bluff has benefited from similar support. The SNA framework identified a nationally threatened limestone ecosystem and guided early intervention to control weeds such as old man's beard and wilding pines, thereby preserving populations of critically endangered limestone plants.

Mirza Downs demonstrates how the SNA programme empowers landowners through expert guidance, practical tools, and long-term protection pathways, resulting in thriving biodiversity alongside viable farming.



Mirza Downs northern limestone bluff



Mirza Downs coastal limestone formation



Banded dotterel and chick
Credit: Ailsa McGilvary-Howard