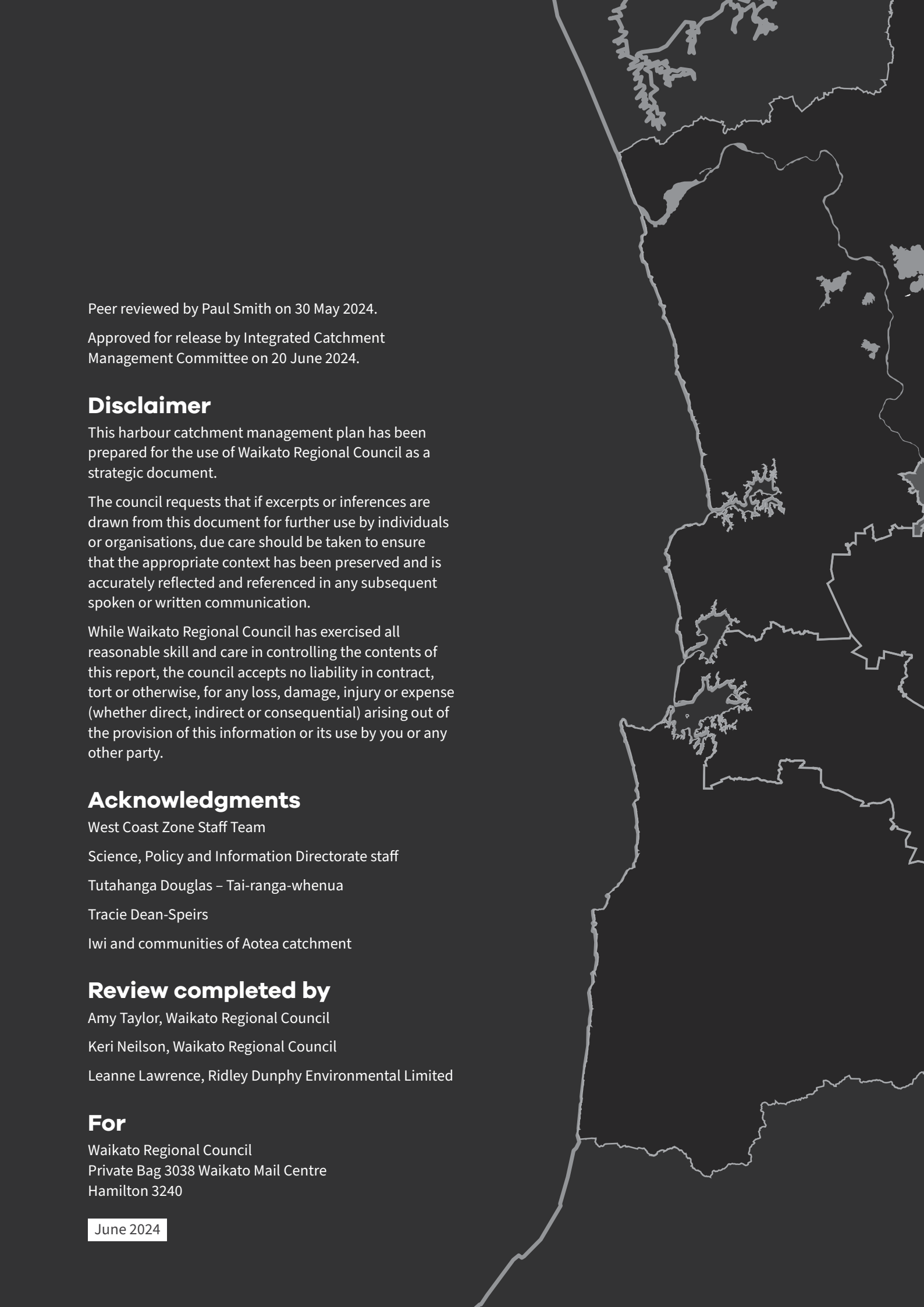
Waikato
REGIONAL COUNCIL
Te Kaunihera ā Rohe o Waikato

Mahere Whakahaere Riuwai o Aotea Moana

Aotea Harbour Catchment Management Plan



Peer reviewed by Paul Smith on 30 May 2024.

Approved for release by Integrated Catchment Management Committee on 20 June 2024.

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Contents

1 Introduction

The development of a catchment management plan provides the opportunity for communities to identify what they want their natural environment to look and feel like in the next 10 to 50 years.

The west coast harbour catchment management plans (HCMPs) recognise the physical, biological and cultural inter-connectedness of harbours with their catchments and communities. They ensure that individual resource management issues such as water quality, soil conservation, erosion and sediment control, sites of significance, flooding and biodiversity are not managed in isolation, but as part of an integrated plan that also considers the cultural, social and economic impacts of activities in the catchment.

The *Aotea Harbour Catchment Management Plan* is an important operational document for Waikato Regional Council (the council) that will guide the implementation of integrated catchment management activities within the Aotea Harbour catchment in collaboration with iwi, landowners and communities.

1.1 Purpose

The purpose of the A*otea Harbour Catchment Management Plan* is to guide future 'on the ground' actions that have been developed to help address the challenges and opportunities identified for the catchment.

The HCMP provides a framework that can be utilised to guide future work programmes of all those involved with the catchment's management and restoration. It can also help assist in obtaining resourcing and funding to deliver specific actions.

This HCMP seeks to:

- reflect the current environmental state of the Aotea Harbour catchment and identify existing and potential issues
- reflect iwi and community values and aspirations for the catchment
- identify priority actions and priority areas for future catchment works that will facilitate improvements to receiving environments
- operationalise and support the delivery of key components of the council's West Coast Zone Plan.
- support and implement non-regulatory provisions of key council policies and plans
- support increased collaboration and external funding for catchment management activities in the Aotea catchment
- be presented in a way that makes its information accessible and understandable for a wide audience.

As the HCMP is a non-regulatory document, no organisation or individual is bound by the implementation of the actions identified in this plan. Where there are actions identified on private land, the landowner is not obliged to undertake them or to allow others to undertake them. To be successful, an HCMP relies on uptake and goodwill of landowners and managers within the catchment and the support of iwi, stakeholders and communities.

1.2 Scope

The HCMP proposes a wide range of restoration and protection actions within the Aotea catchment to meet catchment goals at a range of scales. Actions relating to the following are all considered within scope.

- The watershed of the Aotea Harbour.
- Water quality.
- Land management in rural areas.
- Protection of cultural values.
- Biodiversity.
- Terrestrial and freshwater environments.
- Collaboration for implementation of environmental and cultural restoration projects.
- Identification of potential funding sources for actions.

Through the engagement processes undertaken during plan development, we heard a range of concerns and issues. Some of these were outside the mandate of Waikato Regional Council, or were regulatory in nature, so not appropriate for a plan of this type. The following activities or actions are considered out of scope for the HCMP.

- Plan Change or Treaty settlement processes.
- Actions within the open water areas of the harbours.
- Water or community infrastructure.
- Water allocation.
- Land use controls.
- Wastewater treatment.
- Land drainage.

2 Planning and policy context

The HCMP is a non-statutory plan that includes voluntary actions not required by regulation. The implementation of these actions supports the delivery of key components of the West Coast Zone Plan.

There are several key other policies and plans relevant to the Aotea Harbour that have informed the development of this HCMP actions, including:

- Waikato Regional Council Regional Policy Statement
- Waikato Regional Council Strategic Direction
- West Coast Zone Plan
- Waikato-Tainui Environmental Plan | Tai Tumu Tai Pari Tai Ao
- Ngāti Hikairo Iwi Management Plan – Freshwater.

Appendix 2 outlines the key objectives of these plans that the Aotea HCMP is aligned to and will help to deliver on.

The *West Coast Zone Plan* provides a more detailed overview for the council's integrated catchment management activities within the West Coast Zone (including the Aotea Harbour) for the next 10 years and the overall legislative and policy framework for the zone.

3 Catchment overview

3.1 Catchment description

The catchment of Aotea Harbour covers approximately 16,890 hectares of land along the west coast of the North Island of New Zealand and includes 244 kilometres of streams. The Makomako, Te Maari and Pakoka rivers are the three largest, and their watersheds account for 71 per cent of the catchment area (Greer, et al., 2016). The catchment extends from sea level to about 500 metres above sea level at the top of the Pakoka River sub-catchment. It carries on further inland into the headwaters of the Taparamapua and Te Maari streams, which extend up the eastern side of the Pirongia Forest Park Reserve (Singleton, 2018). The Aotea Harbour catchment is steep with 82 per cent of the land being moderately steep or steeper, and prone to erosion. The cumulative effects of naturally unstable soils and extensive farming results in high sediment loads within some of these waterways.

Aotea Harbour is the smallest of three drowned valley harbours on the Waikato's west coast covering approximately 3100 hectares. It is a shallow estuarine harbour with an extensive dune system to the north of the harbour mouth.

Aotea Harbour has considerable cultural and ecological values. Isolation, low intensity land use and low population density have helped to maintain the area in a relatively healthy and natural condition, although much of the original forest vegetation has been cleared for pasture.

The dune fields at the mouth of Aotea Harbour are nationally significant – as the largest example of their type on the west coast of the North Island. These dunes have been used by Māori historically but are mostly unmodified. They are identified as important geopreservation features and are legally protected within the Aotea Heads Scientific Reserve, which includes the Potahi Point sand spit and Rauiri Head dune (Wildlands Consultants Ltd, 2012).

Aotea Harbour catchment been divided into six sub-catchments by Waikato Regional Council for management purposes: North Harbour, Pakoka, Te Maari, Taparamapua, Okapu and South Harbour, as illustrated in Figure 1.

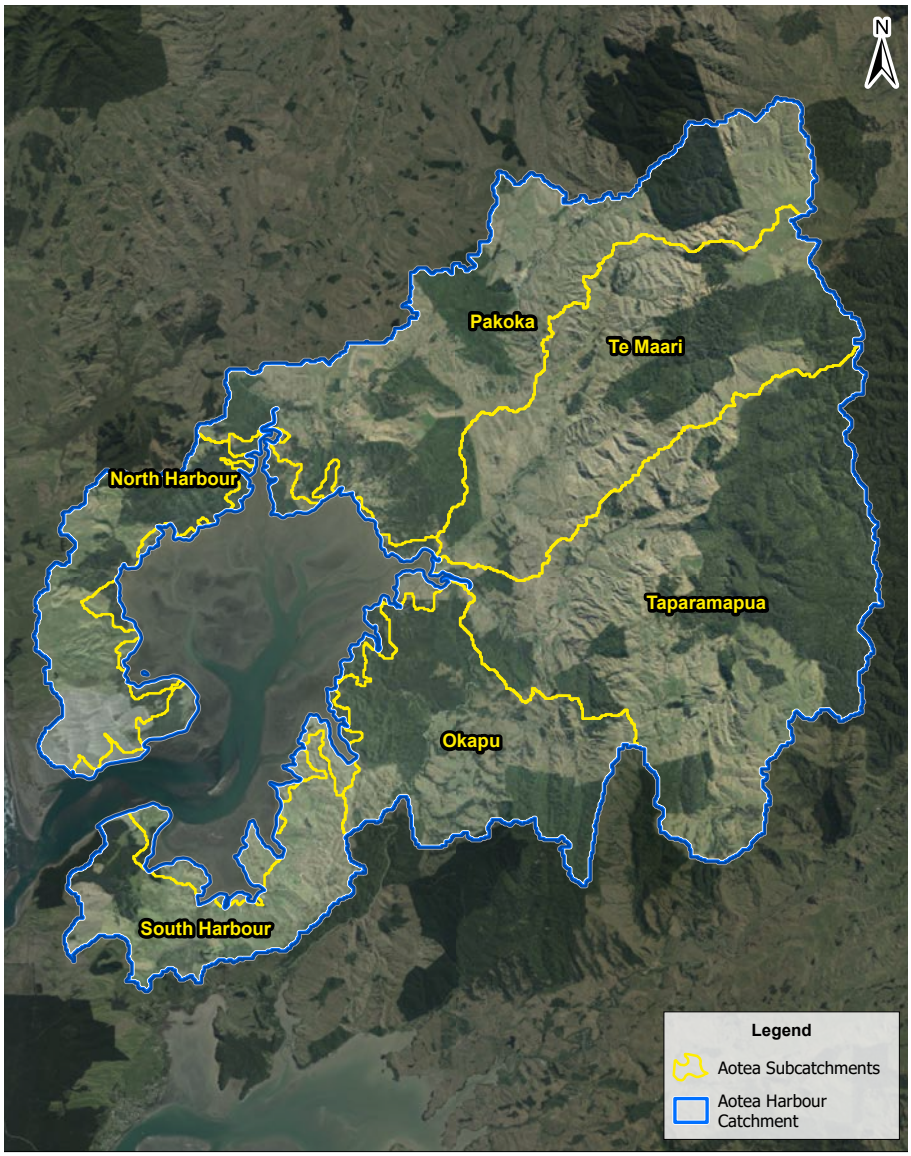


Figure 1: Sub-catchments within the Aotea Harbour catchment

3.2 People and communities

The main harbour settlement within the Aotea catchment is Aotea village, located at the southern end of the harbour margin and with a permanent population of 42. Aotea village has been subject to some development, including reclamation and erosion control, and recent subdivision.

Most of the properties in the Aotea catchment are privately owned. As of 2020 there were a total of 483 individual properties, including 30 in Crown ownership, 72 in Māori freehold land and 381 in private ownership. The majority of properties are rural/lifestyle properties, with a total of about 180 residential properties within the catchment.

Aotea Harbour is of great cultural and historical significance to iwi Māori who come from this area. This includes the many marae and hapū affiliated to Waikato and Ngāti Hikairo that have interests within the catchment.

3.3 Land use

The way we use land and the activities we carry out on our land affect the environment. Some effects are clearly noticeable and easily ascribed to a specific land use, for example, the effects of deforestation on land cover. However, other effects are less obvious, and it's the cumulative effects of the various land uses that contribute to environmental degradation.

Just over half of the Aotea catchment is in pasture (54 per cent). Thirty-nine per cent is in native woody cover and forestry accounts for approximately 3 per cent of the catchment (Figure 2). There is very minimal built-up area within the catchment.

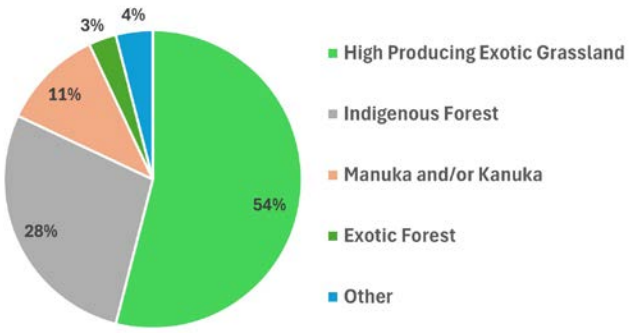


Figure 2: Percentage of land cover within the Aotea catchment (Singleton, 2018).

The slope of the land in the Aotea catchment is a major constraint on land use development because of the risk of erosion and soil loss.

In New Zealand, the land use capability (LUC) system is used to distinguish land areas according to their capacity to support long-term sustained production (Lynn, et al., 2009). The LUC classification assesses five primary physical factors: rock type, soil, slope angle, erosion type and severity, and vegetation cover, which influence the long-term land use potential. LUC classes range from LUC Class 1 (highly versatile) to Class 8 (unsuitable for production).

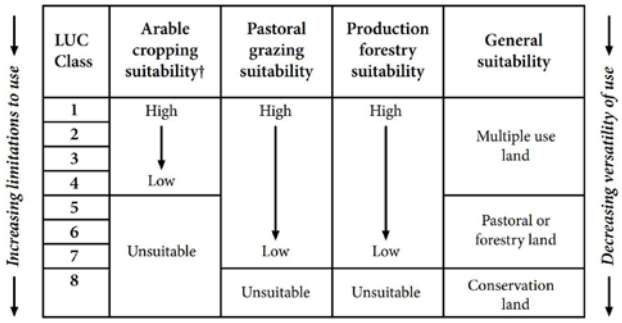


Figure 3: Increasing limitations to use and decreasing versatility of use from LUC Class 1 to LUC class 8 (taken from Manaaki Whenua, Landcare Research).

Overall, the ability to use land in the catchment for production is limited, with 85 per cent of the catchment assigned LUC class 6, 7 or 8. Fourteen per cent of the catchment falls into LUC classes 3 and 4. The catchment does not have any highly versatile land (LUC classes 1 or 2). The area of pasture equates to approximately 9120 hectares. Of this, 74 per cent, or 6703 hectares, is in pasture on class 6e land.

As shown in Figure 4, the predominant land use within the Aotea Harbour catchment is pastoral sheep and beef farming (55 per cent), followed by native bush (21 per cent). There is uncertainty about the usage of 22 per cent of the catchment area. Farming includes high and low producing grassland used for mostly drystock and a small amount of dairy farming (Singleton, 2018).

A catchment condition survey undertaken in the Aotea catchment in 2013 found that only 11.9 per cent of riparian margins were stock proof on both sides of streams and rivers at that time. The North Harbour sub-catchment was the exception, with most streams running through pasture fenced (Wildland Consultants Ltd, 2014).

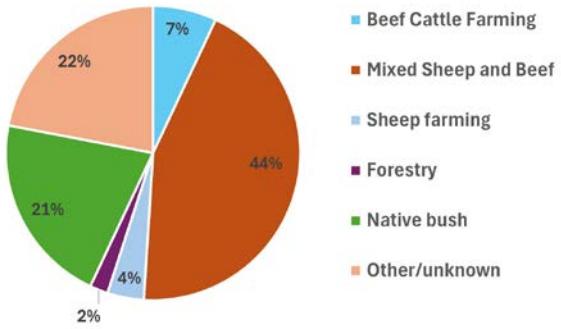


Figure 4: Land use types within the Aotea Harbour catchment (Singleton, 2018).

A very small portion of the Aotea catchment, approximately 2 per cent, is used for exotic forestry, mainly for growing and harvesting of Pinus radiata (radiata pine). Plantation (or exotic) forests have been established in predominately erosion prone steep hill country or dune systems. Recent new forestry is concentrated in upland rural areas of northeast Kāwhia, in addition to extensive sand dune plantation planting along Raukumara Beach.

Plantation forestry can have soil conservation benefits until trees reach maturity in a 25-30 year harvest cycle. Plantation forestry can also, however, have a potential environmental cost. Steep slopes within the Aotea catchment are highly susceptible to landslides for six to eight years post-harvest until new plantings have established stabilising root systems. Removal of trees can degrade streams, with loss of shade, bank destabilisation and deposition of slash and other material during rain events (Singleton, 2018).

3.4 Coastal erosion

Coastal erosion is a natural process that is part of natural beach behaviour. When viewed over a long period, such as a hundred years, most shorelines are simply shifting backwards and forwards. The shoreline along the front of Aotea township is extremely dynamic and shoreline surveys dating from 1889 show major fluctuations and changes. As of 2008, the most recent significant shoreline changes had occurred in the 1960s and 1970s when the shoreline retreated by up to 125 metres over several hundred metres (Tonkin and Taylor Ltd, 2008).

3.5 Catchment erosion and sedimentation

Sediment has been identified as the most important and widespread water quality issue affecting the waterways and harbours of the west coast. The steep hills, unstable geology and high rainfall make catchments naturally vulnerable to erosion. Some land uses, including farming, which is prevalent in the Aotea catchment, exacerbates erosion risk, particularly along river and stream margins. The eroded areas produce sediment and are slow to recover (Singleton, 2018). Sediment naturally occurs in waterways, however, excess sediment can increase water turbidity (make water cloudy), infill streams and estuarine embayments, smother shellfish beds, and change sandy habitats to muddy ones. The change from sandy to muddy substrate or high turbidity reduces people's enjoyment of water.

River and stream banks are subject to the erosive force of water and erosion can damage and remove habitat and release sediment into the water. There are still many watercourses in the catchment with little or no erosion protection in place or where stock can access, accelerating stream bank erosion. Waterways on the west coast generally have high levels of stream bank erosion compared to other parts of the region (Norris, et al., 2020). Wildland Consultants Limited (2014) visually inspected the margins of streams within the Aotea catchment in 2013 and found that the mean proportion of riparian erosion was 22.3 per cent of total riparian length. Mean proportions of riparian erosion for the sub-catchments varied considerably, ranging from 5.8 per cent (Pakoka) to 45.9 per cent (Okapu).

Hill country erosion is typically evident as numerous, small features scattered throughout the Aotea catchment on locally steep slopes in pasture. When the catchment condition survey was carried out in 2013, the total eroded area of the Aotea Harbour catchment was 194 hectares, or 1.5 per cent of the area that was surveyed (Wildland Consultants Ltd, 2014). Mass movement erosion, slips, and slumps were the most commonly observed erosion types. The Taparamapua, Te Maari, South Harbour and Okapu sub-catchments had the highest number of erosion sites per unit area. Climate change is expected to result in more frequent extreme rainfall events, further exacerbating erosion and sedimentation problems.

Waikato Regional Council does not have a monitoring site within the Aotea catchment for water quality. However, due to the nature of the Kāwhia and Aotea catchments and their similar topography, land cover, rainfall and land use, it is reasonable to assume that suspended sediment in rivers and streams of these catchments is similar. Turbidity and water clarity in the Kāwhia catchment are variable, generally satisfactory, with significantly increased suspended sediment loads during wet weather. An example of high suspended sediment inflow to Aotea Harbour from the catchment (Te Maari and Taparamapua streams) is shown in Figure 5.

An estimate of sediment yields within wider Waikato estuaries in 2005 estimated a sediment yield of 33,000 tonnes per year from the catchment into Aotea Harbour, which was the seventh highest ranking (for relative sediment yield) of all 29 estuary catchments in the region at that time (Mead & Moores, 2005).

Figure 5: Te Maari and Taparamapua streams discharging sediment into Aotea Harbour (Image: Google Earth).

3.6 Harbour sediments

A 2008 sediment study of Aotea Harbour concluded that the concentrations of most trace elements were at the lower end of the estimated natural range, and no trace elements were present in concentrations which exceeded the ANZECC (2000) ISQG-low guideline values. Sediment samples from Aotea Harbour were mostly sandy, with finer grain sizes closer to shore. Sediment samples collected from around the mouths of the Te Maari and Makomako streams were very muddy. The sediment quality in Aotea Harbour was assessed as "good" and indicated a low risk of toxic effects on sediment dwelling organisms (Rumsby, 2009).

3.7 Water quality

Streams in the west coast are generally of reasonable quality in comparison to other parts of the Waikato region that have more intensive land use. Waikato Regional Council regularly monitors the water quality of 14 rivers and streams within the West Coast Zone, between Whāingaroa and Mokau. None of these sites occur in the Aotea catchment, but recent analysis suggests that the water quality of the streams in the catchment is likely to be similar to the combined dataset for the other 14 west coast stream sites. Based on this, it is likely that the waters of streams and rivers are generally well-oxygenated, moderately turbid, have moderate to high levels of total nitrogen, moderate levels of total phosphorus, and high levels of faecal bacteria contamination (E. coli) (Vant, 2019).

E. coli is the parameter of concern for the Kāwhia catchment; it is at levels that pose a realistic risk to swimmers and high when compared to other lowland rural sites in New Zealand. It is likely that this also applies to streams in the Aotea catchment.

Recent estuarine water quality monitoring in the Aotea Harbour shows overall good water quality and only slight pressure due to nutrients, sediments and microbial contaminants. Water clarity was excellent throughout the year. Recreational water quality data for Aotea Harbour is very limited but historically results are generally good. It has been concluded that swimming and other recreational activities in the harbour are unlikely to be impacted by water quality. Estuarine water quality monitoring did not show an indication that water was unsuitable for shellfish gathering purposes (Kamke, 2021).

3.8 Terrestrial biodiversity

As in many parts of New Zealand, the indigenous flora and fauna of the Aotea catchment has been greatly reduced. Historically, most of the catchment would have been covered in indigenous vegetation, including extensive rimu-tawa forest extending over the hill country, with more broadleaved species present at coastal sites, and kauri occurring in isolated stands within catchment. Conifer-broadleaved forest would have dominated at higher altitude, with dense podocarp forest at low altitude alluvial sites. Extensive duneland vegetation occurred around the entrances to Aotea Harbour (Harding, 1997), (Wildland Consultants Ltd, 2014).

Despite extensive modification, the Aotea catchment retains some important areas of indigenous vegetation and numerous smaller areas that are critical for a number of rare and threatened species. In total ,almost 17 per cent of the area in the catchment has been identified as a significant natural area (SNA) (Figure 6) (Wildland Consultants Ltd, 2016).

A single surface karst feature, that incorporates Lake Disappear and surrounding areas, has been identified within the Aotea Harbour catchment. The 53-hectare site is located to the southeast of Bridal Veil Falls. It is the largest karst lake in New Zealand and the site has naturally uncommon ecosystems, including sinkholes, cliffs, scarps and tors. Some significant plant and animal species have been recorded within the broader locality and have potential to occur at the site (Waikato Regional Council, 2022).

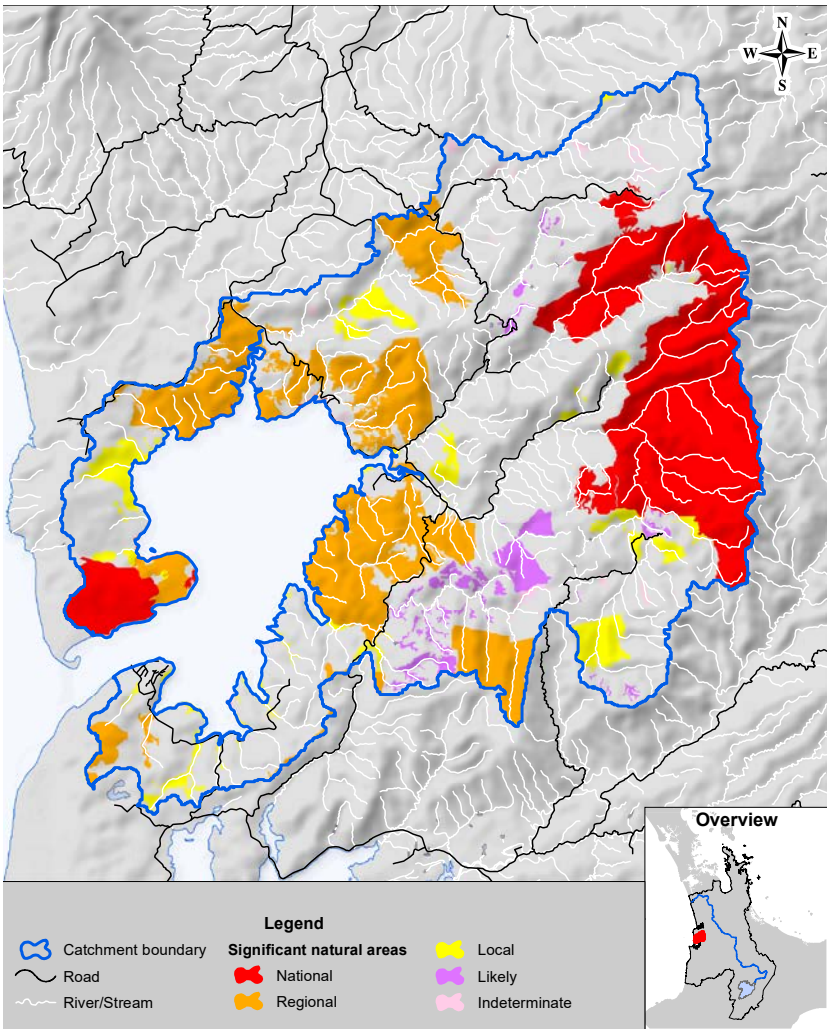


Figure 6: Significant natural areas in the Aotea catchment (Singleton, 2018).

3.9 Freshwater biodiversity

Biodiversity river prioritisation has been undertaken on a regional scale for the Waikato region. Rivers and streams identified as significant natural areas within the Aotea catchment are (Waikato Regional Council, 2016):

- Waitapu Stream
- Papatapu bush
- Kainamunamu Stream
- Te Kopua Stream
- Taparamapua Stream
- Makomako Stream and its tributaries.

The Aotea catchment supports a diverse number of native fish species, including those that undertake migrations between the coast and the forested headwaters of streams and rivers. Species recorded include longfin and shortfin tuna (eel), banded kōkopu, īnanga, common smelt, piharau (lamprey), torrentfish, and a range of bully species[1]. Kōura (freshwater crayfish) are also found in the catchment waterways. Instream habitat for these species can be affected by a range of factors, including:

- sedimentation reducing water quality, the amount of available habitat, and smothering spawning sites and fish eggs
- fish passage through the catchment being restricted by inappropriate structures (including culverts and fords) in waterways
- changes in river and stream water quality, including temperature. Instream temperatures are directly related to the amount of riparian vegetation/shading that is available.

There are two species of the native freshwater mussel (kākahi or kāeo) found in the Aotea catchment: *Echyridella menziesii* and the rare *Echyridella aucklandica*. These play an important functional role within ecosystems and are recognised as a cultural keystone species. Waikato Regional Council undertook monitoring of kāeo in five catchments of the Waikato region between 2013-2017, including at three sites in Aotea catchment. The Pakoka Stream supported both species of kāeo, while only the more common *E. mensiesii* was found in the Makomako and Matahahaia streams (Melchior, et al., 2023).

As has happened across New Zealand, many wetlands have been reduced and lost from the Aotea catchment as a result of drainage and historical land use changes. However, the Raoraokauere wetland (in the North Harbour sub-catchment) has been identified as significant within the catchment, as has the intact estuarine-freshwater wetland sequences that occur on the western side of the harbour, southwest of Pakoka landing. These areas include freshwater swamp forest of various sizes, and extensive coastal forest (Graeme, 2005).

3.10 Biodiversity of Aotea Harbour

Aotea Harbour is identified as an area of significant conservation value (ASCV) in the Waikato Regional Coastal Plan. It provides important habitat for a range of international and local migratory waterfowl, and a variety of resident species. Bird counts have been undertaken annually at Aotea and Kāwhia harbours since 1976 by the Ornithological Society of New Zealand (now Birds New Zealand). The harbour is one of the top 19 shorebird wintering sites in New Zealand that are nationally important[2] for indigenous and international shorebirds, including pied oystercatchers, banded dotterel, pied stilts and Arctic migrants (Dowding & Moore, 2006). Rare and threatened wetland birds also occur within the saltmarsh and reed vegetation of the harbour, including banded rail, Australasian bittern (matuku) and North Island fernbird.

Shellfish perform important ecosystem services in estuaries. Their filtering of water has significant benefits for water quality, they form a key component of shorebird and fish diets and are highly valued as mahinga kai. Numbers of cockles in Aotea Harbour have been estimated at between 30-35 million (Berkenbusch & Neubauer, 2018). Other studies on shellfish in the harbour have found cockles to be numerous, but wedge shells more widespread. Pipi have been recorded in much smaller numbers and in restricted locations (Hillock & Rohan, 2011). Studies have shown that cockles and wedge shells may tolerate short term exposure to pulses of suspended sediment, but sustained exposure is problematic. Sediment from land is known to be more difficult for cockles to process than re-suspended marine sediments (Bouma, 2016).

Estuarine vegetation provides shelter, food, breeding and nursery grounds for animals such as fish, birds and shellfish. These habitats also act as filters, trapping sediment, nutrients and other contaminants, which improves estuarine water quality. The estuarine vegetation of Aotea Harbour has been surveyed periodically and found to include mangroves, salt marshes, seagrass, sea meadows and weed communities. Saltmarshes are made up of low-growing herbs, rushes and sedges. Rush/sedgeland is the most predominant vegetation community around the harbour margin (Graeme & Kendal, 2014).

Seagrass is an ecologically valuable habitat in the coastal marine area. Seagrass beds can stabilise sediment, provide a food source for small invertebrates, and provide habitat for other invertebrates such as crustaceans, shellfish and worms. Seagrass beds also provide foraging ground for shorebirds and feeding and nursery grounds for fish. Seagrass beds occur extensively across the middle tidal regions of Aotea Harbour (Graeme & Kendal, 2014), (Bouma, 2016).

1 NZ Freshwater Fish Database | NIWA

2 Meeting the criteria for national importance of supporting 1% or more of a national population)

3.11 Animal pests

Many of New Zealand's indigenous species evolved and once thrived without any native predators. However, introduced animals arrived with humans, and threaten the survival of our indigenous species.

Within the Aotea catchment, Waikato Regional Council undertakes possum control within two priority possum control areas (PPCAs) on a three yearly basis, which encompass parts of Mount Pirongia North and West buffers. These areas adjoin conservation land on the Pirongia mountain where the Department of Conservation has a regular aerial possum control programme. Waikato Regional Council's programme extends possum control onto adjacent privately owned farmland to reduce reinvasion and help extend and sustain biodiversity values within and beyond these important conservation areas.

Feral goats (*Capra hircus*) are a significant issue within the Aotea Harbour catchment. Waikato Regional Council currently co-funds the goat control work that DOC undertakes in the Pirongia area.

Swan and Canada geese populations have been identified as being of particular concern by locals as the birds occur in large numbers and are perceived to have a negative impact on the harbours, in particular due to deposition of faecal material and their impacts on seagrass beds. Moult season surveys in the western Waikato show swan populations have declined substantially since 1984 to about 5000 birds (c. one third of the 1984 swan population). By comparison, surveys show that goose numbers have increased over the past 30 years by a factor of 20, to approximately 10,000 birds. Approximately 25 per cent of the population was using Aotea, Whāingaroa and Kāwhia estuaries during the 2018 moult season survey (Smith, 2019).

3.12 Plant pests

Spartina and saltwater paspalum have been identified as the most important estuarine weeds in Aotea Harbour that pose the greatest ecological risks. The distribution of these species was surveyed in 2005 and 2012 and spartina had decreased significantly in coverage due to a control programme undertaken by the Department of Conservation. As of 2024, eradication is close to being achieved.

Saltwater paspalum was showing an increasing trend in coverage within Aotea when surveyed in 2014. It is of particular concern in estuaries because of its smothering habit and its wide habitat range. It will grow among and compete with all estuarine vegetation communities except sea grass and will colonise open mudflats. It can climb over vegetation and form dense beds, easily smothering sea meadow, saltmarsh ribbonwood, rushland and even short mangrove communities. Due to its competitiveness and wide-ranging effect on estuarine biodiversity, saltwater paspalum is considered a greater threat than spartina to the ongoing health of the native estuarine communities. In a sub-regional prioritisation, Aotea Harbour has been identified as the highest priority west coast estuary for saltwater paspalum control (Graeme & Kendal, 2001) (Graeme & Kendal, 2014). As of 2024, a dedicated control programme has not commenced.

4 Climate change

The Ministry for the Environment (MfE) has provided an overview of how climate in the Waikato region is likely to change into the future and what implications this has for the region.[3] These predictions are not certain. Projections of climate change depend on future greenhouse gas emissions, which are uncertain. In summary, the changes likely to be experienced in the Aotea catchment over the coming 20 to 70 years are:

- increased temperatures, including:
  - increased daily average temperatures
  - increased days with high temperatures (over 25 ˚Celsius)
- increased winter rainfall and reduced spring rainfall, but there will be local variation and projections are uncertain
- potential increase in westerly wind flow during winter, and northeasterly wind flow during summer
- some increase in storm intensity, local wind extremes and thunderstorms; ex-tropical cyclones will likely be stronger and cause more damage as a result of heavy rain and strong winds
- further rise in relative mean sea levels – over the 20th century there has been an average rise of 1.7 millimetres per year.

The most likely climate-induced changes identified for the Aotea community are droughts, sea level rise and river flooding events. Increased rainfall can be expected to cause an increase in erosion in both hill country and rivers.

3 www.mfe.govt.nz/climate-change/likely-impacts-of-climate-change/how-could-climate-change-affect-my-region/waikato

5 Prioritisation of catchments

Prioritisation of restoration locations and activities is necessary to ensure resources are utilised in the most effective way. Two prioritisation assessments have been undertaken by Waikato Regional Council for the Aotea catchment in recent years. The first was in 2018, and involved assessment and scoring of sub-catchments based on several categories, including (Singleton, 2018):

- land instability (poor vegetation protection, sediment and erosion risk) – scored as the percentage of sub-catchment with moderate or higher risk
- water quality risks (E. coli, nitrogen, phosphorus, stream bank erosion and stocking risk) – scored as the percentage of sub-catchment with moderate or higher risk
- biodiversity values of the land (priority streams, priority areas on private land, SNAs) – scored as kilometres of high-risk stream, percentage of priority native cover on private land, and percentage of vegetation that is regionally, nationally or internationally significant
- importance of harbour features (presence of salt marsh or seagrass, shellfish beds, coastal flushing) – scoring based on the relative abundance of shellfish or habitat near the catchment discharge
- relative importance for community activities (tourism and visitors, water based commercial activities, swimming, food gathering, schools and marae, care groups) – scoring based on the relative use of the sub-catchment for a range of community activities.

Whilst the prioritisation was intended to be impartial, it was limited by the quality and availability of information and required judgement to determine final priorities. Nevertheless, it provided useful initial guidance on areas of risk and opportunity.

The Te Maari sub-catchment scored the highest overall (for Aotea and for all west coast harbour catchments), driven by its high score for land instability risk and water quality risk (Table 1). Taparamapua was a close second for water quality risk and third for land instability. North Harbour and Okapu both scored substantially higher than other sub-catchments for biodiversity, whereas South Harbour was the highest ranked for community values and harbour features.

Table 1: Outcome of the prioritisation process in Aotea Harbour catchment by (Singleton, 2018).

Sub-catchment	Land instability risk score	Water quality risk score	Biodiversity score	Harbour score	Community score	TOTAL score	Rank within Aotea Harbour
North Harbour	24	14	100	8	9	155	6
Pakoka	70	37	26	16	18	167	5
Te Maari	121	54	63	11	10	259	1
Taparamapua	67	53	47	20	15	202	3
Okapu	59	19	102	20	14	214	2
South Harbour	66	0	68	23	38	195	4

In 2021, the Waikato Prioritisation Framework (WPF) was applied to the west coast catchments (Norris, et al., 2021). The WPF is a spatial framework that utilises spatial model data from multiple sources and applies geospatial techniques for determining priorities based on risk. It provides a decision support tool for prioritisation across catchments, identifying locations with the greatest potential for water quality improvement, and with the likely greatest cost benefit in implementing soil conservation mitigations. The results of the WPF identified the Te Maari and Taparamapua sub-catchments as the first and second highest priorities respectively for management of both soil conservation (Figure 7) and nutrient risk (nitrogen, phosphorus and E. coli). This aligns with the catchments identified by Singleton (2018) as high risk for these factors. It is therefore likely that catchment management works in these locations will lead to more positive sediment reduction and water quality improvements for the harbour than similar work at other locations.

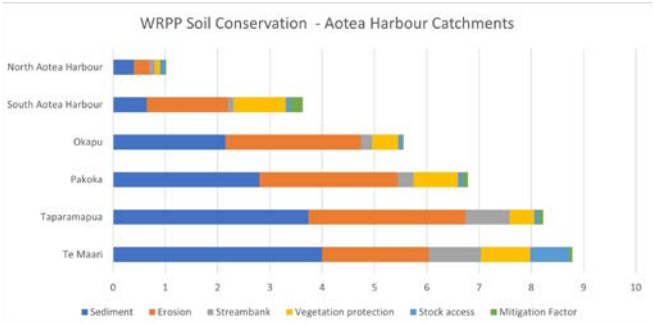


Figure 7: Graph of the ranked soil conservation factor scores for the sub-catchments in the West Coast management zone (Norris, et al., 2021).

6 Funding

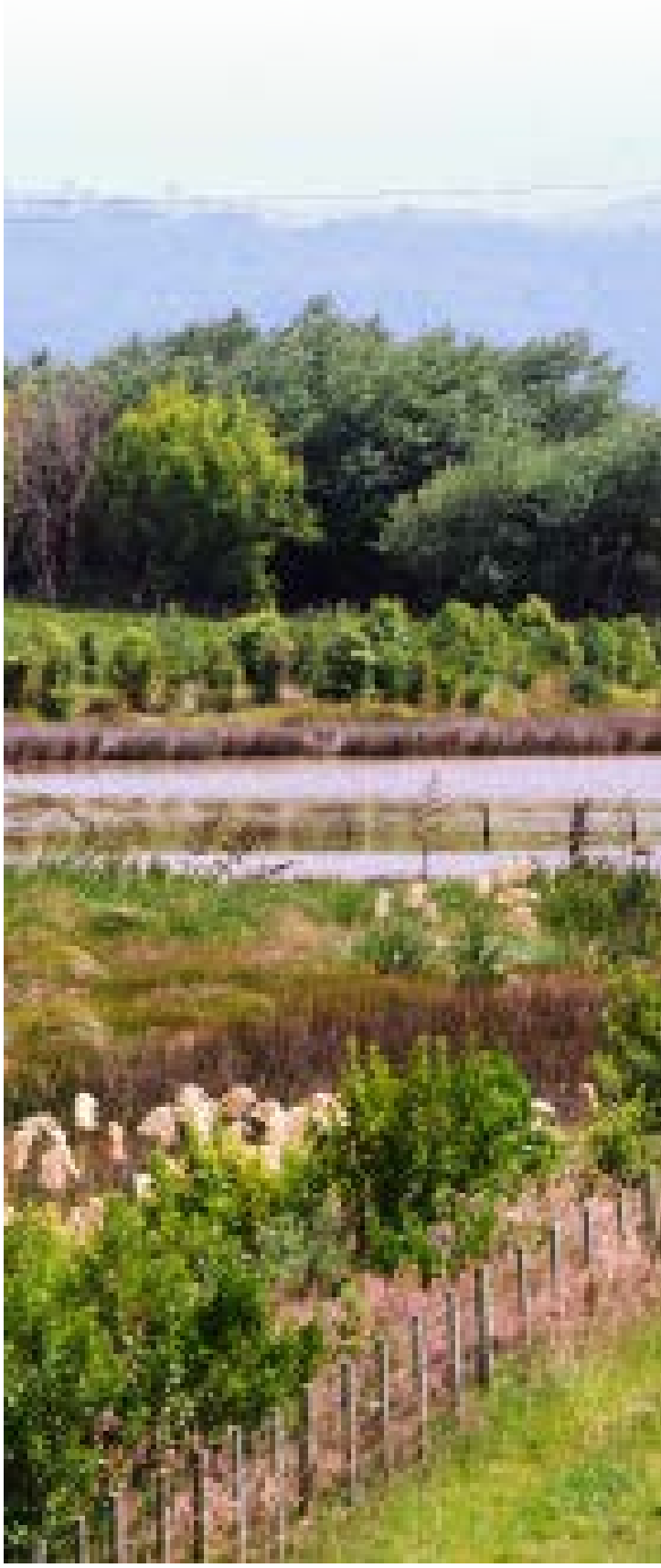
The council collects rates (general and targeted) for flood protection, river management, soil conservation works and other catchment management works based on areas of benefit and activities that contribute to the programmes being managed. This is outlined in the West Coast Zone – Funding Policy Statement (Waikato Regional Council, 2010).

The actions identified in this HCMP and funded by the council will be implemented under the current levels of service agreed with the community and referenced in the West Coast Zone Plan (Waikato Regional Council, 2024).

Funding programmes include the following.

- Catchment new works: this programme can incentivise landowners in priority locations to undertake catchment management activities including fencing and planting that enhance the special values that characterise the catchment such as wetlands, rivers, coastal and estuarine ecosystems. Actions must go beyond regulatory requirements. Where funding is limited, projects that have multiple benefits will be prioritised.
- River management: This programme enables the council to work with landowners in priority catchments to achieve stable rivers, manage flood waters and enhance the environmental values of river systems. Typical works include removing and/or relocating obstructions, vegetation management to improve channel capacity and stability, and mitigation of bank erosion.
- Hill Country Erosion Fund: The council has been successful in obtaining funding from the Ministry for Primary Industries (MPI) to support landowners undertaking hill country erosion mitigations in priority catchments. This fund currently runs until 2027.
- Coastal enhancement fund: This funding is available to undertake priority partnership projects with iwi and communities, particularly on public or Māori owned land.
- Biodiversity funding: The council supports community environmental projects regionally through the Natural Heritage Partnership Programme (NHPP). This programme comprises three separate contestable funds – the Natural Heritage Fund, the Environmental Initiatives Fund and the Small Scale Community Initiatives Fund.

This HCMP can also be used as a basis for the council, iwi, community groups or landowners to apply for restoration funding from other agencies such as central government, district councils or philanthropic organisations.



7 Plan development

In developing the HCMP for Aotea, several phases of information gathering were completed to ensure the plan reflected the current state of the harbour catchment and the views of the iwi and communities for whom it is important to.

Phase 1 – Community and iwi engagement

The council undertook a wide range of engagement and consultation activities to identify iwi and community concerns and aspirations for the catchment, as well as ideas for future action. The consultation process included:

- workshops with iwi and communities
- area wide surveys – mail and online (36 responses received)
- an agency and stakeholder workshop.
- rural landowner meetings
- presentation and meetings with the community board
- hui with tangata whenua.

Information from these engagement activities was compiled for each catchment and commonly occurring issues, themes and ideas were identified.

Phase 2 – Guidance from existing plans

Council recognises that significant work has previously been undertaken in establishing policies, objectives and actions for the West Coast area, including the harbours. Information and guidance were drawn from key documents to inform the development of goals and actions for the harbour catchment plan. These documents included:

- Waikato Regional Council Regional Policy Statement
- Waikato Regional Council Strategic Direction
- West Coast Zone Plan
- Ngāti Hikairo Iwi Management Plan – Freshwater
- Tai Tumu Tai Pari Tai Ao – Waikato-Tainui Environmental Plan

Appendix 1 outlines the key components of these plans that the Aotea HCMP is aligned to and will help to deliver on.

Phase 3 – Current state of the catchment

Early engagement undertaken at the start of HCMP development identified that communities and whānau wanted to be able to easily access information that the council holds on the current state of the Aotea catchment. This information was not always easy for people to find, and not accessible in one place. In response to this, the council developed an *Aotea Catchment Management Plan: Supporting information* report. This draws together all of the data and information gathered and stored by the council over the past 20 years relating to Aotea catchment. This process also highlighted areas of risk and opportunity for each catchment with respect to sedimentation, water quality and biodiversity. The supporting information report is available at: waikatoregion.govt.nz/assets/WRC/TR202410.pdf.

8 Concerns and aspirations

As part of the community and iwi consultation process undertaken in the development of this plan we commonly heard the following concerns about Aotea Harbour.

- Erosion and the need for greater soil conservation measures within the harbour catchments;
- The impacts of sedimentation and water quality deterioration on shellfish populations (and availability for harvest);
- Upcoming regulations and national policies that may make it harder for farmers to operate - particularly on hill country;
- The impacts of climate change and the effect of more intense weather events on hill country erosion, and on coastal settlements (including marae);
- The amount of forestry within the catchment and the need to ensure that it is well managed;
- The need for more rigorous monitoring and reporting of water quality;
- Continuing loss of native biodiversity and the impacts of plant pests and animals;
- The lack of water quality monitoring and cultural health indicators.

Commonly expressed aspirations included the following.

Water and land

- Aotea catchment hill country is stable.
- Harbour water quality remains consistently high for safe swimming, food gathering and recreational enjoyment.
- Sedimentation in the harbour is reduced, and land management practices are implemented to protect water quality.
- Land is farmed to its capability and landowners are supported to plan at a farm/property scale.
- Critical source areas are identified and addressed in a targeted way.
- More funding is available to accelerate works.

Biodiversity

- The Aotea catchment retains its high level of naturalness.
- Wetlands (repo) are better protected and are restored.
- Connections between different natural areas across the catchment are restored.
- There are more native plantings around harbour margins.
- Streams are retired and planted, and stock are excluded.
- Destructive impacts on natural ecosystems are prevented.
- There is greater funding for pest control programmes and they are expanded to include Māori land that adjoins public land.

People and communities

- There are more marae-led projects, including projects to develop and monitor of cultural health indicators.
- There is co-ordinated action amongst different groups working on a range of issues and projects to maximise their effectiveness.
- Schools and youth are involved in environmental education programmes.
- There is improved communication between councils and other agencies with landowners and sector groups to help them get ahead of regulatory changes.
- There are opportunities for establishing local native plant nurseries, and fencing and riparian planting contractors.
- There is better, user-friendly information available for individuals and groups regarding available funding, support and advice and scientific data.
- There are opportunities for catchment or sub-catchment groups to lead work in their areas with support from agencies.

Summary of iwi and community feedback
Communities, iwi and stakeholders were asked to identify and rank the values, concerns and actions that were most important to them.
What people value the most about Aotea catchment
The natural state and unique geographical features of the harbour and catchment
The recreational values of the catchment
Good water quality
Biodiversity
Sources of kai/food
Biggest concerns for the catchment
Erosion
Pest plants and animals
Silt and sedimentation
Water quality
Forestry operations and runoff
Most desired actions
Fencing and planting to protect waterways and reduce sediment
Pest plant and animal control
Coastal planting
Collaboration between iwi, community groups, agencies, council and farmers
Erosion control

9 Catchment vision and goals

Input from iwi and communities, guidance from existing plans and scientific information held by the council were collated and together have been used to develop the vision, objectives and actions that form the operational focus of this HCMP.

The vision for the Aotea Harbour catchment is:

A healthy catchment, a healthy harbour and an engaged community.

9.1 Catchment goals

The goals developed to support the realisation of the vision for the Aotea Harbour catchment are:

Water quality

Goal 1: Manage and reduce contaminants in priority sub-catchments to protect and enhance Aotea Harbour.

Goal 2: Maintain and enhance water quality so mahinga kai can be safely collected and consumed.

Land and its use

Goal 3: Appropriate land use is promoted and encouraged to manage the soil and land resources in the catchment.

Goal 4: The use of strategic incentives in priority sub-catchments is promoted to reduce erosion, decrease contaminants entering waterways and build resilience to climate change.

People and communities

Goal 5: Implementation of catchment management acknowledges and incorporates iwi and the wider community's cultural, historical, social, economic and spiritual connections with the catchment.

Goal 6: Landowners, mana whenua, community and stakeholders are working collaboratively towards environmental improvement.

Biodiversity and biosecurity

Goal 7: Significant biodiversity areas and values for protection and restoration have been identified.

Goal 8: An active and engaged community is involved in the protection and restoration of indigenous biodiversity in the catchment.

10 Implementation, monitoring and review

An implementation plan has been developed to help address issues identified within the Aotea Harbour catchment and provide a framework to be utilised to guide future work programmes of all those involved with the zone's management and development.

The aim of this implementation plan is to create specific and tangible actions to be undertaken to help achieve the catchment vision and goals. The implementation plan sets out a description of each action, the relevant priority catchment(s)/locations that the action will be undertaken in, and the measures for success.

The actions in this HCMP will be subject to a review in collaboration with the proposed Aotea Iwi Advisory Group by December 2025. Following this, a full review is intended to be undertaken every six years and a limited review three years after each full review.

Monitoring of the HCMP goals will be ongoing and will focus on the following key aspects:

- completion of actions to measure the degree of implementation of this HCMP
- environmental outputs and outcomes demonstrating the effectiveness (or otherwise) of this HCMP
- the outcomes of the information gathered in respect of Table 2 below.

Progress against measures will be reported annually to the Integrated Catchment Management Committee and to iwi co-governance committees. A three-yearly summary report will be produced prior to each review of the HCMP.

Goals	Key measures
Goal 1: Manage and reduce contaminants in priority sub-catchments to protect and enhance Aotea Harbour.	• Area of wetland protected in priority sub-catchments. • Area of wetland protected on multiple Māori owned land blocks. • Length of incentivised fencing completed in priority sub-catchments. • Area of riparian plantings completed in priority catchments. • Length of incentivised fencing and area of planting on multiple Māori owned land blocks.
Goal 2: Maintain and enhance water quality so mahinga kai can be safely collected and consumed.	• Length and location of stock exclusion required quantified adjacent to the harbour margin. • Unfenced sites of cultural significance are identified. • Length of fencing completed adjacent to the harbour margin.
Goal 3: Appropriate land use is promoted and encouraged to manage the soil and land resources in the catchment.	• Number of promotional activities undertaken (e.g., newsletters, flyers, field days). • 70% of farms over 20ha in priority sub-catchment(s) have started a farm plan to meet Freshwater regulations.
Goal 4: The use of strategic incentives in priority sub catchments is promoted to reduce erosion, decrease contaminants entering waterways and build resilience to climate change.	• Prioritised areas for erosion control identified using Sednet modelled data in priority sub-catchments. • Area of hill country retired in priority sub-catchments. • Area of hill country revegetated in priority sub-catchments. • Area of hill country protected with pole planting in priority sub-catchments. • Sites of cultural significance protected in priority sub-catchments. • Area of native vegetation planted on multiple Māori owned land blocks. • Length of stream bank stabilised by river management works in priority sub-catchments.
Goal 5: Implementation of catchment management acknowledges and incorporates iwi and the wider community's cultural, historical, social, economic and spiritual connections with the catchment.	• Number of iwi-led projects of high cultural significance supported. • Number of projects co-designed and implemented with iwi (or hapū/marae).
Goal 6: Landowners, mana whenua, community and stakeholders are working collaboratively towards environmental improvement.	• Iwi technical group formed. • The HCMP review is complete by the iwi technical group. • Number of students within Kura Waitī ki Kura Waitā. • Number of promotional activities undertaken (e.g. newsletters, fliers, field days).
Goal 7: Identify significant biodiversity areas and values for protection and restoration.	• Mapped and prioritised biodiversity areas in Aotea catchment completed. • Updated maps that identify additional important biodiversity areas that hold cultural significance. • The number of projects on private land, within the top 30% of priority ecosystems. • Number of biodiversity enhancement projects initiated on Māori land. • Number of river management sites where fish habitat enhancement has been included.
Goal 8: An active and engaged community is involved in the protection and restoration of indigenous biodiversity in the catchment.	• Area of land where pest plant or animal control has been undertaken. • The number of community groups that are undertaking biodiversity restoration activities. • The number of community groups that are undertaking pest management activities.

11 Appendices

Appendix 1 - Implementation plan

Water quality – Aotea catchment

Goal 1 – Manage and reduce contaminants in priority sub-catchments to protect and enhance Aotea Harbour
Goal 2 – Maintain and enhance water quality so mahinga kai resources can be safely collected and consumed

Action area	Goal. action	Action	Priority sub-catchment(s)	Outcome	Measure	Who is involved	Date	WRC programme lead
Wetlands	**G1.1**	Identify wetland areas for protection (fencing considered when over and above the minimum action requirements in freshwater farm plans) within the priority sub-catchment(s) that will help mitigate sediment and nutrient contamination. Where enhancement for biodiversity is possible, this will be considered. When working with Trustees of Multiple Māori owned land (MMOL) seek to identify and protect wetlands and puna of cultural significance.	Te Maari, Taparamapua, North and South Harbour	Reduced sediment and nutrient contamination, enhanced biodiversity. Wetland sites of cultural significance are protected and enhanced. Enhanced environmental stewardship for iwi.	Area of wetland protected per year in the priority sub-catchments (from 2025). Area of wetland protected on Māori owned land.	WRC – ICM Landowners Trustees of MMOL	Ongoing from July 2024	West Coast Zone programme
Stock exclusion	**G2.1**	Advocate to landowners stock access requirements to "defined" waterways (Waikato Regional Plan, Freshwater National Environmental Standards, 360 Stock regulations).	Whole of catchment	Improved water quality, reduced *E. coli* through reduced livestock contamination.	Guidance on stock exclusion requirements promoted in Zone newsletter(s), field days and on farm.	WRC – RUD WRC – ICM	Ongoing from July 2024	Primary Industry Engagement Section
Stock exclusion	**G1.2**	In priority sub-catchments use incentives and work with landowners and trustees of MMOLs to undertake riparian restoration over and above the minimum requirements in regulations (Waikato Regional Plan, Freshwater National Environmental Standards, 360 Stock regulations) along 10 km of identified waterways from July 2024. Seek opportunities for secondary benefits for protection of habitat for mahinga kai.	Te Maari, Taparamapua	Improved water quality, biodiversity and habitat for mahinga kai through enhanced riparian zones.	The length of incentivised fencing and area of riparian plantings completed. Length of incentivised fencing and planting on MMOL.	WRC – ICM Landowners Trustees of MMOL	Ongoing from July 2024	West Coast Zone programme
Stock exclusion	**G2.2**	Determine the amount and location of remaining stock exclusion required adjacent to the Aotea Harbour margin.	Harbour margins	Assisted strategic planning for stock exclusion to enhance harbour water quality,	Length and location of stock exclusion required quantified in Aotea catchment.	WRC – ICM Landowners	July 2026	West Coast Zone programme

Action area	Goal. action	Action	Priority sub-catchment(s)	Outcome	Measure	Who is involved	Date	WRC programme lead
				estuarine health and areas of mahinga kai.				Biodiversity programme
Stock exclusion	**G2.3**	Collaborate with landowners and iwi to support completion of fencing of Aotea Harbour margin, incorporating identified sites of significance.	Harbour margins	Improved Water Quality and Habitat Protection. Culturally significant sites are respected and protected.	Unfenced sites of cultural significance are identified. Length of fencing completed around harbour margin.	WRC – ICM Landowners Iwi/hapū	Ongoing from July 2024	West Coast Zone programme Biodiversity programme
Working with iwi	**G2.4**	Work with iwi, hapū and marae to identify and partner on projects that protect and enhance mahinga kai resources.	Whole of catchment	Improved habitat for mahinga kai at sites identified as important to iwi.	Number of projects being implemented.	Iwi/hapū WRC – ICM	Ongoing from July 2024	West Coast Zone programme
Farm planning	**G2.4**	Support landowners throughout the catchment to develop farm plans. Provide farm planning guidance with a focus on reducing contaminants and the opportunity to attend farm planning workshops in collaboration with farming sector bodies.	Whole of catchment	Enhanced farm management practices reducing contaminant levels.	Number of workshops held. Number of completed plans.	WRC – RUD Industry Landowners	Ongoing from July 2025	Primary Industry Engagement Section
Farm planning	**G1.3**	Identify Multiple Māori owned land (MMOL) within the catchment and engage to understand aspirations of Trustees for their farms. Hold farm planning workshops for Trustees/managers to support development of farm plans and identify funding opportunities for implementation.	Whole of catchment	Informed and engaged MMOL trustees preparing tailored farm plans.	Number of workshops	WRC – RUD WRC – ICM MMOL Trustees	Workshops held by July 2027	Primary Industry Engagement Section
Farm planning	**G1.4 and G2.5**	Through the MPI Hill Country Erosion programme, identify flagship Māori landowners to pilot farm plan development on land that is in multiple ownership. Incorporate traditional knowledge on land use and erosion control.	Whole of catchment	Increased involvement of Māori in farm planning. Culturally informed practices contribute to sustainable land management.	Number of farm plans with Māori landowners. Engagement rate of MMOL trustees in farm planning processes.	WRC – ICM WRC – RUD MMOL Trustees	July 2027	West Coast Zone programme
Education	**G2.6**	Provide information and advice to landowners and communities on the methods to reduce contaminants entering water. Provide water quality monitoring information to community, landowners and iwi as it becomes available and promote the use of the LAWA website.	Whole of catchment	Increased awareness and engagement with contaminant reduction practices.	Information published in Zone newsletters and on WRC website.	WRC – RUD WRC – ICM	Ongoing from July 2024	Primary Industry Engagement Section

Action area	Goal. action	Action	Priority sub-catchment(s)	Outcome	Measure	Who is involved	Date	WRC programme lead
Education	**G2.7**	Work with industry to promote best practice management on land – nutrient management, fertiliser/pesticide use, stream crossings, tracking, grazing practices, drainage, cropping/harvesting practices.	Whole of catchment	Improved land management practices reducing environmental impact.	Summary of Good Management Practices available on WRC website.	WRC – RUD Industry	July 2025	Primary Industry Engagement Section

Land and its use – Aotea catchment

Goal 3 – Appropriate land use is promoted and encouraged to manage the soil and land resources in the catchment
Goal 4 – The use of strategic incentives in priority sub catchments is promoted to reduce erosion and decrease contaminants entering waterways

Action area	Goal. Action	Action	Priority sub-catchments	Outcome	Measure	Who is involved	Date	WRC Programme Lead
Soil conservation	**G3.1**	Promote best management practices on Land Use Capability (LUC) class 6e and 7 land in pasture that is erosion prone – advocate land retirement, forestry, pole planting and suitable stock regimes.	Whole of catchment	Increased awareness and adoption of erosion reducing practices.	Number of promotional activities undertaken (newsletters, fliers, field days).	WRC – ICM	Ongoing from July 2024	West Coast Zone programme
Soil conservation	**G4.1**	Review outputs from the Waikato Regional Prioritisation Project using new Sednet modelled data to confirm priority areas for erosion control within the priority sub-catchment(s).	To be determined	Enhanced decision-making for effective erosion control.	Mapped and prioritised erosion control areas in priority sub-catchments.	WRC – ICM WRC – SPI	June 2025	West Coast Zone programme
Soil conservation	**G3.2**	Seek advice from proposed Aotea iwi advisory group (IAG) on best practice for protection of soils and erosion prone sites of significance.	Whole of catchment	Strategies that combine modern agricultural methods with traditional ecological knowledge. Greater involvement of iwi in development of best practice boosts adherence to sustainable practices.	Traditional knowledge incorporated in review of Aotea Catchment Management Plan and implemented in Aotea catchment.	WRC – ICM Aotea IAG	June 2026	West Coast Zone programme
Soil conservation	**G4.2**	In priority sub-catchments provide incentives for hill country erosion control over and above the minimum action requirements in farm plans. (25 ha/yr over 10 years with treatment options – pole planting, revegetation species and retired and natural revegetation). Seek to protect sites of cultural significance where known. This could include protecting mahinga kai and sites important for taonga species.	Te Maari, Taparamapua	Reduced erosion of hill country and sedimentation in waterways.	Area of hill country retired. Area of hill country revegetated. Area of hill country protected with pole planting. Sites of significance protected.	WRC – ICM Landowners	July 2027	West Coast Hill Country Erosion Control programme
Soil conservation	**G4.3**	On MMOL include provision in planting plans for the revitalisation of native plant species traditionally used by Māori.	Whole of catchment	Diverse native species supporting wider ecosystem health.	Area of native vegetation planted on MMOL.	WRC – ICM MMOL Trustees	Ongoing from July 2024	West Coast Zone programme

Action area	Goal. Action	Action	Priority sub-catchments	Outcome	Measure	Who is involved	Date	WRC Programme Lead
				Traditional plant sources are preserved, enriching cultural ties and environmental resilience.		and managers		
River management	**G4.4**	Identify areas for proactive river management within the priority sub-catchment(s). Use local knowledge and further survey of stream bank erosion. Complete an annual works plan and review sub-catchment(s) after five years.	Te Maari, Taparamapua	Enhanced knowledge on areas of river instability.	Priority areas mapped for river management within priority sub-catchments. Annual programme of works developed.	WRC – ICM	Ongoing from July 2024	West Coast Zone programme
River management	**G4.5**	Investigate funding opportunities to work with iwi to map priority river sections of cultural significance.	Te Maari, Taparamapua	Areas identified for their importance to local Māori clearly delineated.	Funding secured to support cultural mapping. Specific river sections mapped for cultural significance.	WRC – ICM Iwi/hapū	June 2026	West Coast Zone programme
River management	**G4.6**	Provide incentives for remediation and prevention of stream bank erosion in priority sub-catchment(s). Work in partnership with landowners in the priority sub-catchment(s) to complete required works. New fences to be a minimum of 5m from top of bank to allow for river movement. Plant species include those effective for erosion control. When undertaking works, seek to incorporate benefits for protecting habitats of taonga species and other identified sites of significance.	Te Maari, Taparamapua	Improved water quality and reduced erosion. Channel capacity maintained. Management strategies safeguard areas for Māori cultural practices.	Length of stream bank stabilised by river management works. Sites of significance protected.	WRC – ICM Landowners	Ongoing from July 2024	West Coast Zone programme
River management	**G4.7**	Update the regional river management best practice guidelines to incorporate cultural values and principles. Apply these to river management works in the Aotea catchment.	Whole of catchment	Best practice guidelines consider both ecological and cultural health.	Updated best practice guidelines.	WRC – ICM WRC – TRW Aotea IAG	December 2026	ICM Zone Managers West Coast Zone programme
Farm planning	**G3.3**	Support landowners throughout the catchment to develop farm plans. Provide farm planning guidance and the opportunity to attend workshops in collaboration with farming sector bodies.	Whole of catchment	Improved farm management practices and compliance with regulations.	Number of workshops held and attendance at farm planning workshops.	WRC – RUD WRC – ICM Industry Landowners	From July 2025	Primary Industry Engagement Section
Farm planning	**G3.4**	Advocate for proposed iwi advisory group to undertake a review of the farm plan Catchment Context for the West Coast.	Whole of catchment	Actions within farm plans consider local cultural values.	Reviewed Catchment Context incorporates Māori values and knowledge.	WRC – RUD	June 2025	Primary Industry Engagement Section

Action area	Goal. Action	Action	Priority sub-catchments	Outcome	Measure	Who is involved	Date	WRC Programme Lead
Education	**G3.6**	Provide information and advice to landowners on soil conservation and methods to reduce sediment entering water within the Aotea catchment.	Whole of catchment	Raised awareness and knowledge on soil conservation. Landowners undertake measures to reduce on-farm erosion.	Number of newsletters or events where information and advice has been made available to landowners and community.	WRC – RUD WRC – ICM	Ongoing from July 2024	West Coast Zone programme
Education	**G3.7**	Work with industry to promote best practice management on land – e.g. nutrient management, fertiliser/pesticide use, stream crossings, tracking, grazing practices, drainage, cropping/harvesting practices.	Whole of catchment	Improved land management practices, reducing environmental impact and enhanced sustainability.	Number of opportunities to provide best practice management information to landowners and/or collaboration events.	Industry WRC – RUD	Ongoing from July 2024	Primary Industry Engagement Section

People and communities – Aotea catchment

Goal 5 – Implementation of catchment management acknowledges and incorporates iwi and the wider community's cultural, historical, social, economic and spiritual connections with the catchment
Goal 6 – Landowners, mana whenua, community and stakeholders are working collaboratively towards environmental improvement

Action area	Goal. Action	Action	Priority sub-catchments	Outcome	Measure	Who is involved	Date	WRC Programme Lead
Working with iwi	**G5.1**	Identify opportunities to work with iwi/hapu/marae to support iwi aspirations and projects of high cultural significance. This may include undertaking cultural health assessments.	Whole of catchment	Protection of cultural heritage and catchment health through integrated management practices. Jointly developed projects focused on iwi priority sites. Projects that are deeply rooted in mātauranga Māori.	Number of iwi-led projects being supported.	WRC – ICM Iwi, marae, hapū WRC – Tai-ranga-whenua	From July 2024 onwards	West Coast Zone programme
Working with iwi	**G6.1**	At least two hui per annum held with iwi authorities or their delegated Taiao forum to discuss work programmes and progress on achieving the outcomes of this plan.	Whole of catchment	Improved communication, engagement and building of trust. Enhanced collaborative efforts and shared cultural and environmental objectives.	Number of hui held annually.	WRC – ICM Iwi authorities	From July 2024 onwards	West Coast Zone programme
Working with iwi	**G6.2**	Form an Aotea iwi advisory group (or use an existing suitable forum) with iwi and marae representatives for ongoing engagement, input and connection to Māori communities in Aotea for catchment and river management matters.	Whole of catchment	Catchment and river management programmes in Aotea catchment respect and incorporate Māori cultural values.	Technical group formed.	WRC – ICM WRC – Tai-ranga-whenua Iwi	December 2024	West Coast Zone programme
Working with iwi	**G6.3**	Aotea iwi advisory group to review and provide further input into Aotea Catchment Management Plan (CMP).	Whole of catchment	CMP is effective and culturally appropriate. CMP continues to incorporate local cultural perspectives and foster collaboration for environmental improvement.	CMP review is complete.	WRC – ICM WRC – Tai-ranga-whenua Aotea IAG	December 2025	West Coast Zone programme

Action area	Goal. Action	Action	Priority sub-catchments	Outcome	Measure	Who is involved	Date	WRC Programme Lead
Working with iwi	**G5.2**	Subject to iwi capacity, co-design at least one project each with Te Nehenehenui, Ngāti Hikairo and Waikato-Tainui (or hapū/marae) and commence implementation.	Whole of catchment	Shared responsibility is fostered and enhances project outcomes through co-design.	Number of projects co-designed and implemented.	WRC – ICM WRC – RUD Iwi/hapū/marae	Design July 2026, implementation by 2028	West Coast Zone programme
Working with community	**G6.4**	Support the wider community's environmental aspirations by providing assistance in project identification, project support and community engagement. Provide information on funding opportunities.	Whole of catchment	Empowering community-led environmental improvement and sustainability projects.	Number of projects supported.	WRC – ICM	Ongoing from July 2024	West Coast Zone programme Biodiversity and Biosecurity teams
Working with community	**G6.5**	Hold annual meetings between District Councils, Department of Conservation (DOC), iwi and Waikato Regional Council to discuss work programmes and identify areas for collaboration.	Whole of catchment	Better collaboration across agencies enhances overall environmental management strategies.	Number of meetings held.	WRC – ICM DOC TLAs Iwi	Ongoing from July 2024	West Coast Zone programme – Zone Manager
Catchment information	**G5.3**	Promote and raise awareness of the values, status and progress with protecting and enhancing the harbour catchment.	Whole of catchment	Informed community enthusiastic about catchment protection and enhancement.	Annual Aotea catchment newsletter. Use of StoryMaps platform.	WRC – ICM WRC – SPI WRC – RUD WRC – Communications	Ongoing from July 2024	West Coast Zone programme – Zone Manager
Catchment information	**G5.4**	Maintain, update and promote the WRC Hazards portal to ensure that the best available information is readily accessible to public, local authorities and others on natural hazard risks.	Whole of catchment	Community is engaged and informed on natural hazard risks.	WRC website is updated. Portal is promoted in annual Whāingaroa newsletter.	WRC – ICM WRC – Communications	Ongoing from July 2024	Regional Resilience Team
Education	**G6.6**	Support the uptake of appropriate climate change actions through education, planning and understanding the role the community can play now and into the future to improve climate resilience.	Whole of catchment	Enhanced community knowledge and proactive engagement in climate resilience strategies.	Articles in Zone and catchment newsletters.	WRC – ICM WRC – SPI WRC – Communications	Ongoing from July 2024	West Coast Zone programme – Zone Manager

Action area	Goal. Action	Action	Priority sub-catchments	Outcome	Measure	Who is involved	Date	WRC Programme Lead
Education	**G6.7**	Support development and implement educational programmes Kura Waitī ki Kura Waitā (River Schools to Moana Schools) to help advance Mātauranga Māori kaupapa in environmental education involve school children in understanding and caring for the Aotea Harbour catchment.	Whole of catchment	Development and implementation of a structured educational programme. Increased environmental awareness and stewardship among students.	Number of students within Kura Waitī ki Kura Waitā.	WRC – RUD WRC – ICM	Ongoing from July 2024	Environmental Education Team

Biodiversity and biosecurity – Aotea catchment

Goal 7 – Identify significant biodiversity areas and values for protection and restoration
Goal 8 – An active and engaged community is involved in the protection and restoration of indigenous biodiversity in the catchment

Action area	Goal. Action	Action	Priority sub-catchments	Outcome	Measure	Who is involved	Date	WRC Programme Lead
Priority sites	**G7.1**	A prioritisation process has been developed to identify important biodiversity areas for future management and protection. This will be utilised to identify priority sites within the catchment.	Whole of catchment	Conservation efforts are targeted to protect and manage key biodiversity areas effectively.	Mapped and prioritised biodiversity areas in Aotea catchment completed.	WRC – ICM	July 2025	Biodiversity programme
Priority sites	**G7.2**	Collaborate with iwi and hapū using proposed iwi advisory group to review mapped biodiversity areas and use traditional knowledge to identify and map important biodiversity areas that hold cultural significance or offer potential for mahinga kai and sites of significance.	Whole of catchment	Mapping process includes Māori perspectives and supports iwi responsibilities in environmental guardianship, promoting sustainability.	Updated maps that identify additional important biodiversity areas that hold cultural significance.	WRC – ICM Iwi advisory group	July 2026	Biodiversity programme
Priority sites	**G7.3**	Develop a works programme for priority biodiversity management (20 years). Undertake appropriate actions (fencing, weed/pest control and revegetation) in identified high value biodiversity areas, including those used by threatened species.	To be determined	Enhanced ecological health and resilience of high-value ecosystems through sustainable management practices.	The number of projects on private land, within the top 30% of priority ecosystems.	Landowners WRC – ICM	Ongoing from July 2025	Biodiversity programme West Coast Zone programme
Priority sites	**G7.4**	Within priority biodiversity sites on MMOL include provision in project plans for the revitalisation of native plant species traditionally used by Māori and for traditional practices in fencing, weed control and revegetation.	To be determined	Restoration projects on MMOL have integrated traditional Māori knowledge with modern practices.	Number of biodiversity enhancement projects initiated on Māori land.	WRC – ICM Owners of MMOL	Ongoing from July 2024	Biodiversity programme
Priority sites	**G7.5**	Work with partners - iwi, hapū, DOC, District Councils, Nga Whenua Rāhui, and landowners to identify priority sites and opportunities for partnership restoration projects that protect vulnerable ecosystems.	To be determined	Strengthens community and inter-agency cooperation, leading to more comprehensive and effective conservation outcomes.	The number of projects developed with partners.	WRC – ICM Iwi DOC TLAs Landowners	Ongoing from July 2024	Biodiversity programme West Coast Zone programme
Biosecurity	**G8.1**	Work with landowners and community groups to protect biodiversity in the catchment by controlling nuisance populations of pest plants and animals.	Whole of catchment	Reduced impact of invasive species, promoting the restoration and preservation of native biodiversity.	Area of land where pest plant or animal control has been undertaken.	WRC – ICM	Ongoing from July 2024	Biosecurity programme West Coast Zone programme

Action area	Goal. Action	Action	Priority sub-catchments	Outcome	Measure	Who is involved	Date	WRC Programme Lead
Biosecurity	**G8.2**	Support the development of community-led action for high interest pests that are not included within the Regional Pest Management Plan (such as Canada geese). Engage with expert(s) to provide information on strategies for population reduction and control.	On community request	Targeted community actions against specific pests is enabled, enhancing local biodiversity through effective pest control strategies.	Report on active groups within the catchment.	WRC – ICM Community Iwi Fish and Game	July 2025	Biosecurity programme
Fish habitat	**G7.6**	Identify opportunities for enhancement of fish habitat sites within priority river management areas (or sub-catchment).	Priority river management areas	The management and conservation of fish habitats enhancing aquatic biodiversity is supported.	Number of river management sites where fish habitat enhancement has been included.	WRC – ICM	Ongoing from July 2025	West Coast Zone programme
Fish habitat	**G7.7**	Implement the use of the Fish Passage Assessment Survey app (NIWA Citizen Science) so Council staff can identify fish passage barriers and map, when out on-site visits.	Whole of catchment	Removal or mitigation of barriers to fish movement is facilitated, improving fish survival and distribution.	Fish barrier locations mapped.	WRC – ICM Community	Ongoing from July 2024	West Coast Zone programme
Community groups	**G8.3**	Work with community groups to protect identified biodiversity areas in the catchment using support and funding assistance where available.	Whole of catchment	Enhanced local engagement and stewardship of biodiversity areas, leading to better protection and restoration outcomes.	The number of community groups that are undertaking biodiversity restoration activities.	WRC – ICM Community Iwi	Ongoing from July 2024	Biodiversity programme
Community groups	**G8.4**	Support community initiatives for pest management activities and encourage wider collaboration. Showcase and celebrate biosecurity achievements where communities and groups have achieved significant biodiversity gains.	Whole of catchment	Strengthened community capacity to manage pests, improving local biodiversity health.	The number of community groups that are undertaking pest management activities.	WRC – ICM Community Iwi	Ongoing from July 2024	Biosecurity programme
Coastcare	**G8.5**	Take an active role in restoring and protecting dune systems through the Coastcare programme.	Coastal dunes	Enhanced dune ecosystem stability and biodiversity through restoration efforts.	Area of restoration in Aotea catchment.	WRC – ICM Iwi Landowners	Ongoing from July 2024	Biodiversity programme
Education	**G8.6**	Carry out community education on surveillance monitoring for new biosecurity risks.	Whole of catchment	Risks of high profile pests are highlighted and the community of biosecurity measures and undertaking preventative actions.	Community newsletter includes biosecurity news section.	WRC – ICM Iwi Community	Ongoing from July 2024	Biosecurity programme

Appendix 2 – Policy connection summary

Water quality	
Goal 1: Manage and reduce contaminants in priority sub-catchments to protect and enhance Aotea Harbour.	
Goal 2: Maintain and enhance water quality so mahinga kai can be safely collected and consumed.	
West Coast Zone plan	Protect and enhance the productive soil capacity, fresh and marine water quality and biodiversity. Direct resources to activities and areas of greatest environmental benefit.
WRC Strategic Direction priorities	Clean water and healthy aquatic ecosystems that meet iwi aspirations and community needs within environmental limits. Healthy marine ecosystems that provide us with many benefits like recreation, food, improved water quality, increased resilience to climate change and sustainable economic opportunities.
WRC Policy statement	CE-CMA-O2: Recognise and provide for the mauri and health of marine waters by: 1. maintaining the following: a. natural character and natural function; b. health and functioning of indigenous biodiversity, ecosystems and habitats; c. human relationships with marine water including: i. the cultural and traditional relationship of tangata whenua with marine waters; ii. harvesting of aquatic food species and mahinga kai that is safe to eat; and iii. recreation values including swimming; 2. improving the life-supporting capacity of marine waters where they have been degraded as a result of human activities; 3. to enable people and communities to provide for their social, economic and cultural wellbeing and for their health and safety; and 4. managing adverse cumulative of land use activities on water in the coastal marine area. LF-O1: Maintain or enhance the mauri and identified values of fresh water bodies including by: 1. maintaining or enhancing the overall quality of freshwater within the region; 2. safeguarding ecosystem processes and indigenous species habitats; 3. safeguarding the outstanding values of identified outstanding freshwater bodies and the significant values of wetlands; 4. safeguarding and improving the life supporting capacity of freshwater bodies where they have been degraded as a result of human activities, with demonstrable progress made by 2030; 5. establishing objectives, limits and targets, for freshwater bodies that will determine how they will be managed; 6. enabling people to provide for their social, economic and cultural wellbeing and for their health and safety; 7. recognising that there will be variable management responses required for different catchments of the region; and 8. recognising the interrelationship between land use, water quality and water quantity.
Waikato-Tainui Environmental Plan – Tai Tumu Tai Pari Tai Ao	19.4.1: Waikato-Tainui engage and participate in the highest level of decision making on matters that affect waters in the Waikato-Tainui rohe. 19.4.2: Water quality is such that fresh waters within the rohe of Waikato-Tainui are drinkable, swimmable and fishable in all places (with water quality to the level that kiingi taawhiao could have expected in his time). 19.4.3: An integrated and holistic approach to management of water is achieved. 24.3.1: The mauri of marine waters in the Waikato-Tainui coastal area is protected and enhanced and the marine biodiversity in the Waikato-Tainui coastal area is restored and protected.
Ngāti Hikairo Iwi Management Plan - Freshwater	Improvement and increases in mahinga kai sites. The return of traditional fishing sites. Improved access to reaches of the river and streams used traditionally for accessing kai and other traditional resources. Ngāti Hikairo will be consulted regarding any concerns regarding water quality.

Land and its use	
Goal 3: Appropriate land use is promoted and encouraged to manage the soil and land resources in the catchment.	
Goal 4: The use of strategic incentives in priority sub-catchments is promoted to reduce erosion, decrease contaminants entering waterways and build resilience to climate change.	
West Coast Zone plan	Protect and enhance the productive soil capacity, fresh and marine water quality and biodiversity. Direct resources to activities and areas of greatest environmental benefit.
WRC Strategic priorities	Clean water and healthy aquatic ecosystems that meet iwi aspirations and community needs within environmental limits. Resilient communities that plan for intergenerational wellbeing, develop with nature in mind and are able to respond to and recover from adversity. Work with others to transition to a competitive low emissions economy that's fair for everyone and enhances community wellbeing for the future.
WRC Policy statement	LF-O4: The soil resource is managed to safeguard its life supporting capacity, for the existing and foreseeable range of uses. LF-O5: The value of high class soils for primary production is recognised and high class soils are protected from inappropriate subdivision, use or development.
Waikato-Tainui Environmental Plan – Tai Tumu Tai Pari Tai Ao	21.3.1: Activities that accelerate soil erosion are managed effectively, including through the reforestation and retirement of marginal lands from existing intensive and environmentally unsustainable land uses. 21.3.2: The life supporting capacity of land and soils effectively manages soil nutrient loss and water quality so there is minimal impact on nutrient loss to waterways. 24.3.2: Coastal erosion is effectively managed so that the Waikato-Tainui coastal area is protected and enhanced.
Ngāti Hikairo Iwi Management Plan - Freshwater	A reduction in sediment inflows, enabling the river and streams to return to their natural character. A reduction in effluent discharges in all rivers, streams and lakes. A reduction in nutrient loading in all rivers, streams and lakes.

People and communities	
Goal 5: Implementation of catchment management acknowledges and incorporates iwi and the wider community's cultural, historical, social, economic and spiritual connections with the catchment.	
Goal 6: Landowners, mana whenua, community and stakeholders are working collaboratively towards environmental improvement.	
West Coast Zone plan	Direct resources to activities and areas of greatest environmental benefit. Support mana whenua and strengthen community partnerships. Enhance outcomes for the West Coast through strengthened leadership and visibility.
WRC Strategic priorities	People working together to protect and restore our unique local native plants and animals, and the indigenous ecosystems they live in. Resilient communities that plan for intergenerational wellbeing, develop with nature in mind and are able to respond to and recover from adversity. Vibrant communities that are well connected with each other and to services. Work with others to transition to a competitive low emissions economy that's fair for everyone and enhances community wellbeing for the future.
WRC Policy statement	IM-O1: Natural and physical resources are managed in a way that recognises: 1. the inter-relationships within and values of water body catchments, riparian areas and wetlands, the coastal environment, the Hauraki Gulf and the Waikato River;

	2. natural processes that inherently occur without human management or interference; 3. the complex interactions between air, water, land and all living things; 4. the needs of current and future generations; 5. the relationships between environmental, social, economic and cultural wellbeing; 6. the need to work with agencies, landowners, resource users and communities; and 7. the interrelationship of natural resources with the built environment. IM-O7: The relationship of tangata whenua with the environment is recognised and provided for, including: 1. the use and enjoyment of natural and physical resources in accordance with tikanga Māori, including mātauranga Māori; and 2. the role of tangata whenua as kaitiaki. IM-P3: Tangata whenua are provided appropriate opportunities to express, maintain and enhance the relationship with their rohe through resource management and other local authority processes. ECO-P3: Maintaining and enhancing indigenous biodiversity shall be promoted in an integrated and efficient manner including by working collaboratively with landowners, resource managers, tangata whenua and other stakeholders.
Waikato-Tainui Environmental Plan – Tai Tumu Tai Pari Tai Ao	21.3.4: Integrated catchment management occurs across the entire rohe of Waikato-Tainui, including in catchments that impact on, or flow into the Waikato-Tainui rohe. Integrated catchment management includes the effective and sustainable management of floodplains and drainage areas to promote natural habitat enhancement. 24.3.5: Waikato-Tainui coastal areas are managed in an integrated way, considering the upstream effects of land and freshwater activities. Productive relationships exist between those who impact on or use the resources of the Waikato-Tainui coastal area.
Ngāti Hikairo Iwi Management Plan - Freshwater	Participate with landowners, in any restoration of the riparian habitat. Initiate and participate with other agencies in community education.

Biodiversity and biosecurity	
Goal 7: Identify significant biodiversity areas and values for protection and restoration.	
Goal 8: An active and engaged community is involved in the protection and restoration of indigenous biodiversity in the catchment.	
West Coast Zone plan	Protect and enhance the productive soil capacity, fresh and marine water quality and biodiversity. Direct resources to activities and areas of greatest environmental benefit.
WRC Strategic priorities	People working together to protect and restore our unique local native plants and animals, and the indigenous ecosystems they live in.
WRC Policy statement	CE-O1: The coastal environment is managed in an integrated way that: 1. preserves natural character and protects natural features and landscape values of the coastal environment; 2. avoids conflicts between uses and values; 3. recognises the interconnections between marine-based and land-based activities; and 4. recognises the dynamic, complex and interdependent nature of natural biological and physical processes in the coastal environment. LF-O3: Maintain or enhance the mauri and identified values of fresh water bodies including by: 1. maintaining or enhancing the overall quality of freshwater within the region; 2. safeguarding ecosystem processes and indigenous species habitats; 3. safeguarding the outstanding values of identified outstanding freshwater bodies and the significant values of wetlands; 4. safeguarding and improving the life supporting capacity of freshwater bodies where they have been degraded as a result of human activities, with demonstrable progress made by 2030; 5. establishing objectives, limits and targets, for freshwater bodies that will determine how they will be managed; 6. enabling people to provide for their social, economic and cultural wellbeing and for their health and safety;

	7. recognising that there will be variable management responses required for different catchments of the region; and 8. recognising the interrelationship between land use, water quality and water quantity. ECO-O1: The full range of ecosystem types, their extent and the indigenous biodiversity that those ecosystems can support exist in a healthy and functional state.
Waikato-Tainui Environmental Plan – Tai Tumu Tai Pari Tai Ao	20.3.1: Existing wetlands are protected and enhanced. 20.3.2: The relationship of Waikato-Tainui with its wetlands is enhanced through the restoration of wetlands and enhanced/permitted access for cultural purposes. 24.3.1 The mauri of marine waters in the Waikato-Tainui coastal area is protected and enhanced and the marine biodiversity in the Waikato-Tainui coastal area is restored and protected.
Ngāti Hikairo Iwi Management Plan - Freshwater	To gradually improve the availability of suitable spawning habitat for indigenous fish species especially Koura, Inanga and Tuna. Increases in the population of aquatic species. The riparian habitat will be restored through the reestablishment of native plants. The unique freshwater ecosystem will be maintained.

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Waikato
REGIONAL COUNCIL
Te Kaunihera ā Rohe o Waikato

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