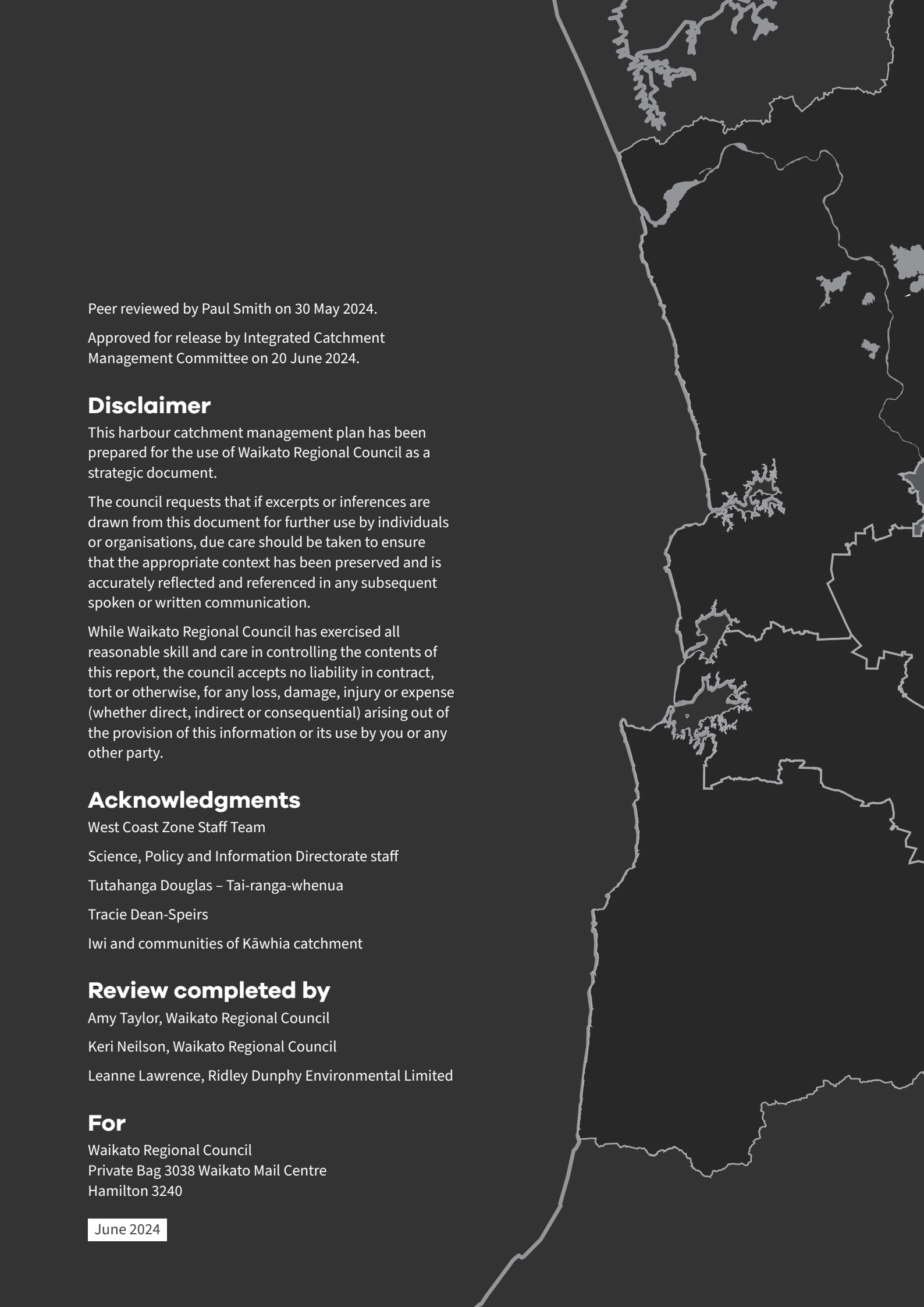
Waikato
REGIONAL COUNCIL
Te Kaunihera ā Rohe o Waikato

Mahere Whakahaere Riuwai o Kāwhia Moana

Kāwhia 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 *Kāwhia 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 Kāwhia Harbour catchment in collaboration with iwi, landowners and communities.

1.1 Purpose

The purpose of the *Kāwhia 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 Kāwhia 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 Kāwhia catchment
- be presented in a way that makes this 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.

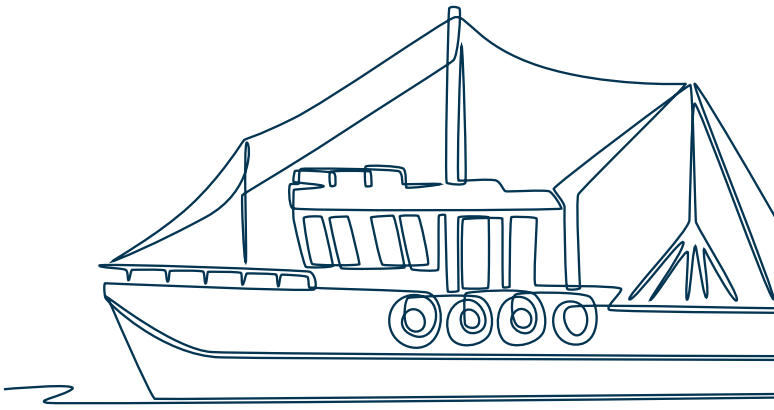
1.2 Scope

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

- The watershed of the Kāwhia 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 the 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 and discharge.
- 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 through its operational actions.

There are several key other policies and plans relevant to the Kāwhia 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
- Maniapoto Environmental Management Plan – Ko Tā Maniapoto Mahere Taiao
- Ngāti Hikairo Iwi Management Plan – Freshwater.

Appendix 2 outlines the key objectives of these plans that the Kāwhia 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 Kāwhia Harbour) for the next 10 years and the overall legislative and policy framework for the zone.

3 Catchment overview

3.1 Catchment description

The Kāwhia Harbour catchment covers approximately 48,000 hectares of land along the west coast of the North Island of New Zealand and includes 709 kilometres of streams. The catchment boundaries are formed by high, steep hills which have been uplifted by folding and faulting and extend the whole length of the West Coast Zone. The catchment is steep with 85 per cent of the land being described as moderately steep or steeper, and prone to erosion.

Kāwhia Harbour is the largest of three harbours within the West Coast Zone, covering an area of about 6765 hectares. The harbour has a complex shoreline and extensive intertidal flats that are the result of drowned river valleys that formed during low sea levels and filled as water levels rose. Kāwhia Harbour is an area with considerable cultural, ecological, and historical values, and has a long history of settlement. A range of factors such as isolation, low intensity land use and low population densities have helped to maintain the harbour and its catchment in a relatively healthy condition.

The catchment has been split into seven sub-catchments for management purposes by the council: Kāwhia, Mangaora, Oparau, Te Kauri, Awaroa, Te Toi, and Waiharakeke, as illustrated in Figure 1.

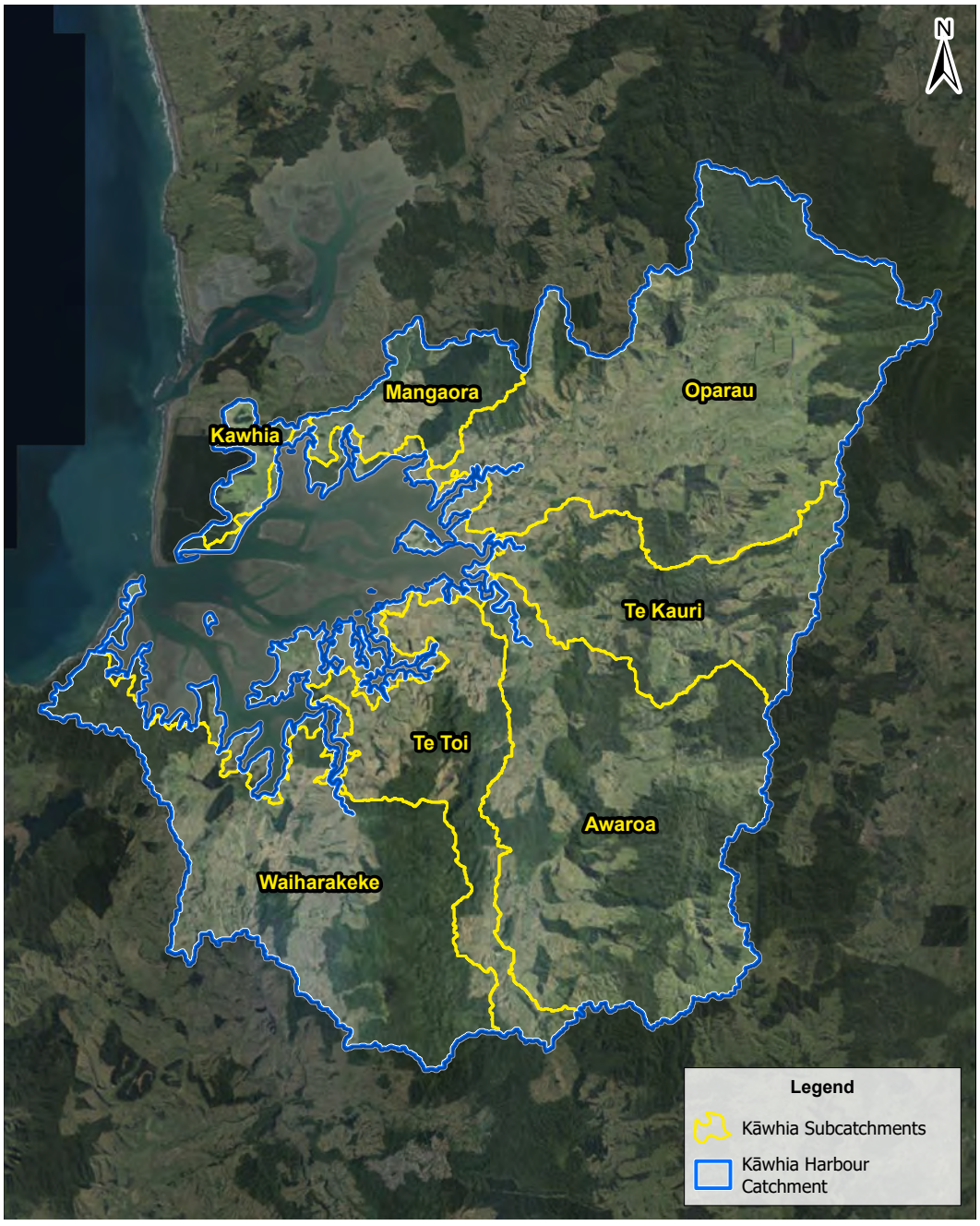


Figure 1: Sub-catchments within the Kāwhia Harbour catchment

3.2 People and communities

As of 2020 there were a total of 1222 properties within the Kāwhia catchment. Almost 65 per cent of these properties are privately owned, with around 27 per cent in freehold Māori ownership, and 9 per cent in Crown ownership. The Kāwhia township is the main residential area within the catchment and has a small permanent population of approximately 348 people. Across the wider catchment the population is about 1850 people.

Kāwhia Harbour is of great cultural and historical significance. It is the resting place of the Tainui waka. Its renown for having abundant resources and the strong community of people is proverbialised in the saying: "Kāwhia moana, Kāwhia kai, Kāwhia tangata (Kāwhia sea, Kāwhia food, Kāwhia people)." This includes the many marae and hapū affiliated to Ngāti Maniapoto, Waikato and Ngāti Hikairo that have interests within the catchment.

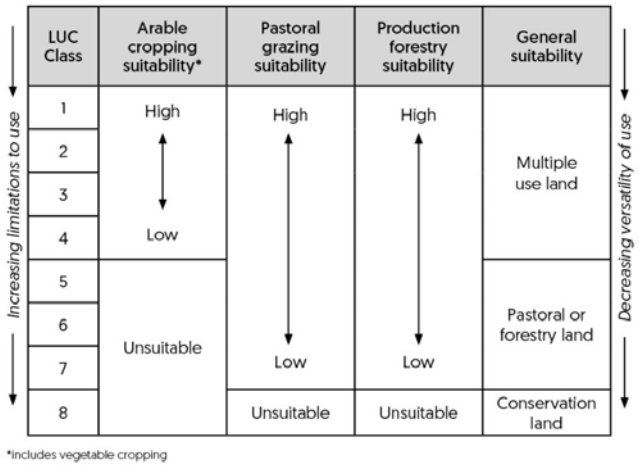


Figure 2: Increasing limitations to use and decreasing versatility of use from LUC Class 1 to LUC class 8 (taken from Manaaki Whenua, Landcare Research).

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.

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). The ability to use land in the Kāwhia catchment for production is limited, with 90 per cent of the catchment assigned to LUC class 6, 7 or 8 and largely limited by erosion or wetness. Ten per cent of the catchment falls into LUC classes 3 and 4. Overall, the catchment does not have any highly versatile land (LUC classes 1 or 2).

Almost half of the Kāwhia catchment is in pasture (49 per cent or 23,520 hectares) and much of the rest in native woody cover (45 per cent) (Figure 3). The majority of the vegetated area consists of indigenous forest which is generally found near the outskirts of the catchment boundary. Of the area in pasture, 74 per cent of it is on Class 6e land and this is prone to erosion. Farming includes high and low producing grassland used for mostly drystock and a small amount of dairying (Figure 4) (Singleton, 2018).

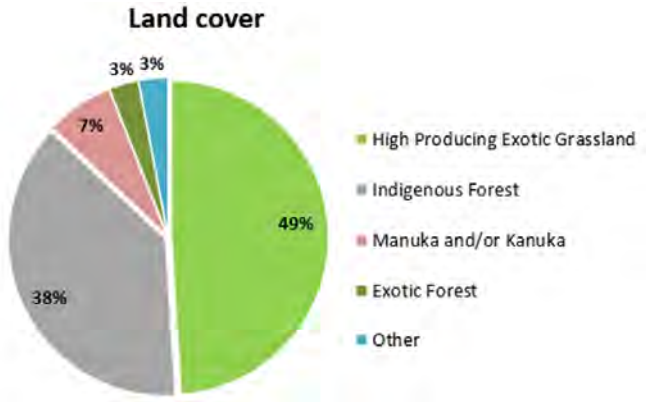


Figure 3: Land cover in the Kāwhia Harbour catchment (Singleton, 2018).

The effects of farming can be mitigated through good farm management. Well-managed waterway margins, grassed farm drains, seepage areas and wetlands help protect water quality. These mitigation measures filter surface run-off, remove nitrogen and prevent stock access (when fenced). Many of these mitigation measures are implemented in the Kāwhia catchment, with a particular focus on riparian management of pastoral waterways. Maintaining grass cover, identifying areas on farm prone to erosion and controlling the erosion are also very important.

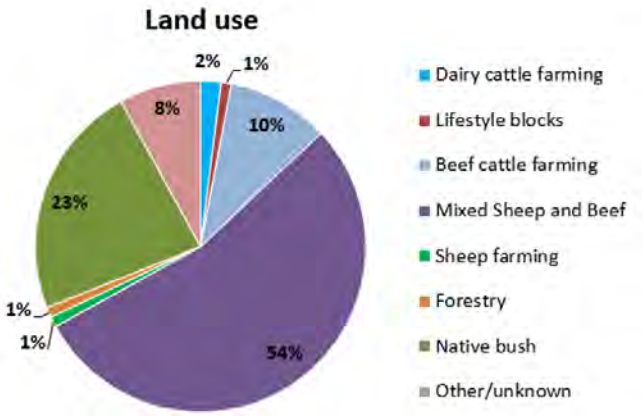


Figure 4: Land use types within the Kāwhia Harbour catchment (Singleton, 2018).

A very small portion of the Kāwhia catchment, approximately 1 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.

Plantation forestry can have soil conservation benefits until trees reach maturity in a 25-30 year harvest cycle. It can also however have a potential environmental cost. Steep slopes within the Kāwhia catchment that are highly susceptible to landslides for six to eight years post-harvest 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 100 years, most shorelines are simply shifting backwards and forwards. It is likely that significant shoreline fluctuations in the Kāwhia area occur over periods of decades in response to sediment bypassing of the harbour entrance and offshore changes on the ebb tide delta (Tonkin and Taylor Ltd, 2008).

Areas of the harbour where there has been erosion in the past or where there is a risk of coastal erosion/inundation include:

- the shoreline along the northern side of the entrance
- the shoreline adjacent to Maketu Marae – in order to protect the marae, a seawall was built in 1971 and reinforced in 2004
- the foreshore of Kāwhia township
- the road to Kāwhia where it is close to the shoreline in places
- erosion at Te Waitere with some houses and properties threatened in the 1990s
- periodic inundation of low-lying areas around Kawhia Harbour including an old cemetery.

Climate change is expected to result in more frequent extreme weather events, further exacerbating coastal erosion challenges.

3.5 Sedimentation

The steep hills, unstable geology and high rainfall in the Kāwhia catchment make it naturally vulnerable to erosion. Some land uses, including farming, exacerbate erosion risk. 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 embayment, smother shellfish beds, and change sandy habitats to muddy ones. The change from sandy to muddy substrate reduces people's enjoyment of water.

The main sediment issues for Kāwhia are generated in the hills of the upper catchment. The hill country has high rainfall (between 1600 and 2500 millimetres per year) in the headwaters and is prone to shallow slip and sheet erosion, particularly where heavy livestock are grazed on steep land (Singleton, 2018).

A 2006 study of the contaminants loads carried by eight streams in the Kāwhia catchment showed that suspended sediment loads increased significantly during wet weather, to approximately 180 times the low flow loads (Vant, 2019). The Oparau and Awaroa Rivers were the highest contributors of water flow to the harbour, however, in proportion to flow, the Oparau River carried considerably less suspended sediment than the Awaroa River.

The council regularly monitors the water quality of the Oparau River in the Kāwhia catchment. Between 1993 and 2017, water clarity in the stream could generally be described as satisfactory. Assessment of water clarity trends indicated there was a likely improvement in clarity over the 10 years from 2008 to 2017 (Vant, 2018), (Tulagi, 2018).

An estimate of sediment yields within wider Waikato estuaries was published in 2004 (Mead & Moores, 2005). This study estimated a sediment yield of 98,000 tonnes per year from the catchment into Kāwhia harbour, which was the sixth highest ranking (for relative sediment yield) of all 29 estuary catchments in the Waikato region at that time.

3.6 Harbour sediments

Kāwhia Harbour is 'strongly flushing', which means that most of the water that comes into the harbour from the rivers goes out to sea in one tidal cycle. However, sediment can be deposited in the sheltered arms of the harbour (Greer, et al., 2016) and there is concern about the increasing "muddiness" of the harbour.

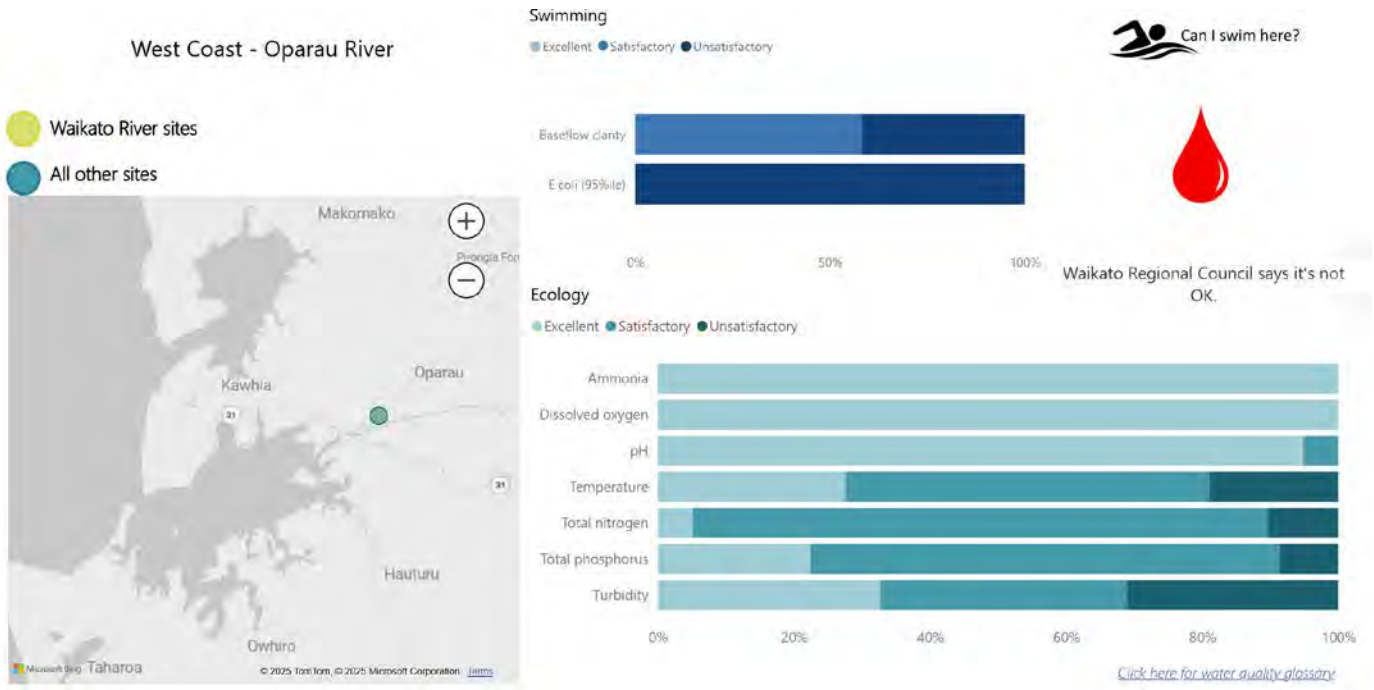
Sediment contaminants, such as metals and other trace elements, have both natural and human-induced sources. A description of sediment quality within the Kāwhia Harbour concluded that the concentrations of most trace elements were at the lower end of the estimated natural range (Rumsby, 2009). The sediment quality in Kāwhia Harbour was assessed as "good" and indicated a low risk of toxic effects on sediment dwelling organisms at that time.

3.7 Water quality

Overall, water in rivers and streams in the Kāwhia catchment is of reasonable quality in comparison to other parts of the Waikato region that have more intensive land use. Monthly freshwater monitoring has been conducted since 1993 at the Oparau River at Langdon Road. Monitoring assesses ecological health and the suitability of water quality for human use.

The council's Environmental Indicators website provides summary data for the 2016-2020 period and this information indicates that the Oparau River was not considered to be safe for contact recreation (swimming) over that period. This was due to high levels of E. coli (100 per cent of the time) (Figure 5).

Figure 5: Average (2016-2020) results of monitoring (ecological health and suitability for swimming) at the Oparau River monitoring site as displayed at the Waikato Regional Council Environmental Monitoring Hub website.[1]



1 https://www.waikatoregion.govt.nz/environment/natural-resources/water/rivers/water-quality-monitoring-map/.

2 Land, Air, Water Aotearoa (LAWA) - Oparau River at Langdon Rd (Off Okupata Rd)

3 20-30% of the time, the estimated infection risk for swimmers is greater than 5%.

3.8 Terrestrial biodiversity

Before European colonisation, most of the Kāwhia catchment was covered in indigenous vegetation. Species, including extensive rimu-tawa forest cover, extended over the hill country, with more broadleaved species present at coastal sites, and kauri occurring in isolated stands within the Te Kauri Stream catchment. Conifer-broadleaved forest dominated at higher (montane) altitude, with dense podocarp forest at low altitude alluvial sites. Extensive duneland vegetation occurred around the entrances to Kāwhia harbour, while freshwater wetland areas were present to a lesser extent (Harding, 1997), (Wildland Consultants Ltd, 2014). Since then, the combined effects of logging, land clearance, drainage and fires have reduced indigenous vegetation cover to approximately 28 per cent of the 1840 extent (Leathwick, et al., 1995). The most heavily reduced vegetation types are coastal, semi-coastal and lowland forests, which have been widely cleared for farming.

Despite having undergone substantial modification, the Kāwhia catchment retains some extensive and important areas of indigenous vegetation – and numerous smaller areas – that are critical for a number of rare and threatened species and nationally important examples of their type. The catchment contains a number of significant surface karst features, including the 294-hectare Te Kauri karst and 519-hectare Taumatatotara karst and dolines (Wildland Consultants Ltd, 2014). Most of these areas occur on a mix of public and private land.

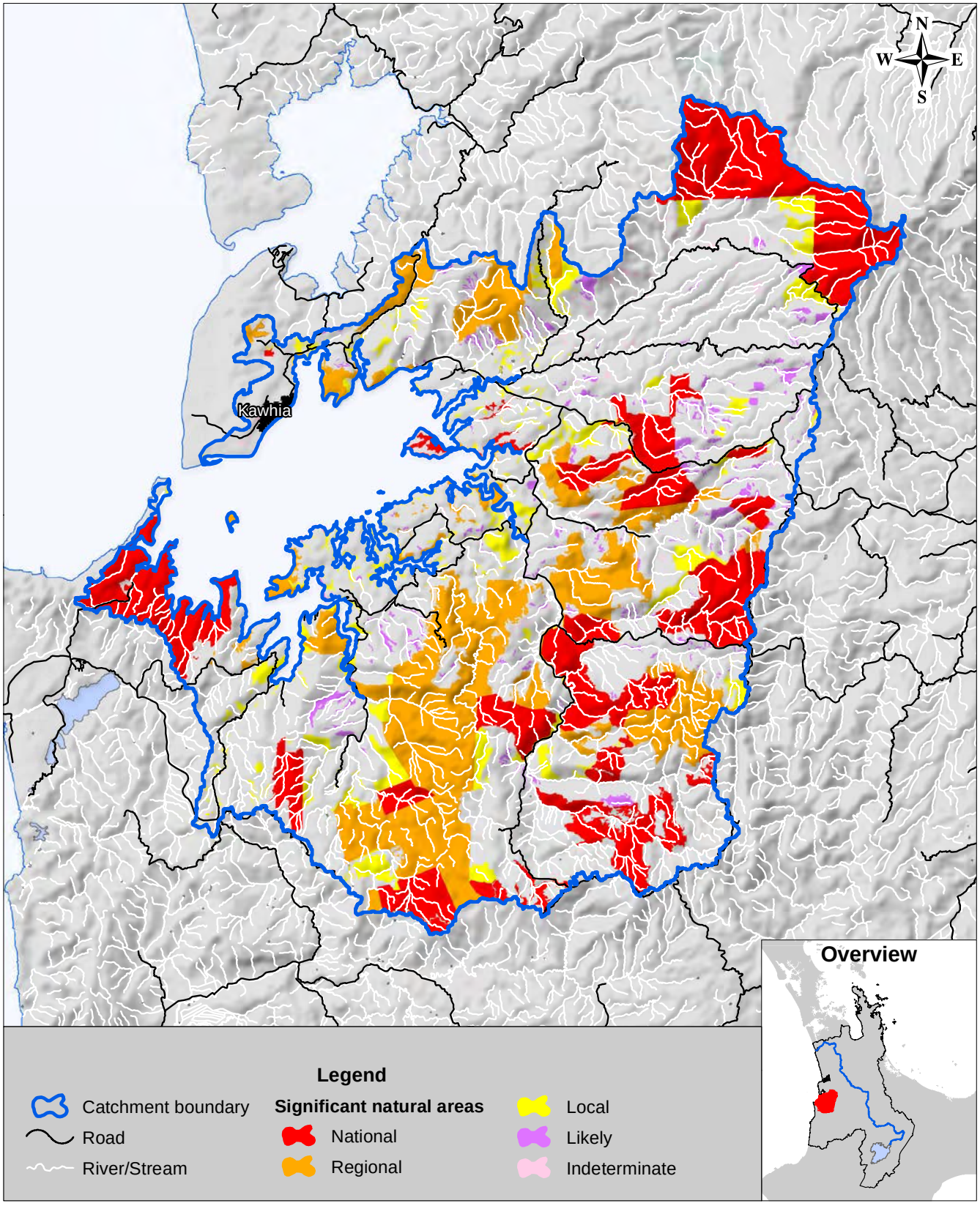
Higher elevation areas, which are unsuitable for farming, have retained indigenous vegetation but have been modified by the removal (i.e. logging) of larger podocarp species. Several large blocks of indigenous forest remain – mostly in the steeper upland areas to the east and southeast, across and up long alluvial valley ridges, and in a broad swathe across the south harbour ridgeline (Golder Associates, 2007). Coastal forest species include kohekohe, nikau, puriri and tawa (Environment Waikato, 2009).

The Awaroa valley supports a number of rare and significant native plant species, including two mistletoe species and the endemic Awaroa koromiko/hebe (Figure 6), which is only known from a small number of limestone outcrops in the headwaters of the Awaroa River and northern Taumatatotara range (Brandon, et al., 2004). The nationally vulnerable plant, Kirk's daisy, is also known to occur within the Kāwhia catchment. This fleshy small green shrub has large white daisy-like flowers and is targeted by possums, goats and deer.

Terrestrial significant natural areas (SNA) in the Kāwhia catchment are shown in Figure 7.

Figure 6: Awaroa hebe (*Veronica scopulorum*) is found on only a handful of rock outcrops in the partially forested karst landscape inland from Kāwhia. Photo: T. Emmitt.

Figure 7: Terrestrial significant natural areas (SNA) in the Kāwhia catchment (Singleton, 2018).



3.9 Freshwater biodiversity

Biodiversity river prioritisation has been undertaken on a regional scale for the Waikato region (Leathwick & Julian, 2009). Rivers and streams identified as significant natural areas within the Kāwhia catchment are:

- Oparau River and some tributaries
- Awaroa River and some tributaries
- Rangitaiki Stream
- Te Kauri Stream
- Opango Stream
- Waitapu Stream
- Waiharakeke Stream and some tributaries
- Owhiro Stream.

Lakes identified as SNAs in the Kāwhia catchment are lakes Koraha, Parangi and Te Rotopupu. Lake Koroha is a karst lake situated on Department of Conservation land and is in excellent ecological condition. Te Rotopupu was also identified as a top-ranking wetland for restoration in a Ngā Repo o Kāwhia project undertaken by NIWA and Maniapoto Māori Trust Board (Ratana, et al., 2019).

The Kāwhia 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, grey mullet and a range of bully species[4]. 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 Kāwhia catchment: *Echyridella menziesii* and the rare *Echyridella aucklandica*. These play an important role within ecosystems and are recognised as a cultural keystone species. *E.menziesii* has been found to be the most common species in Kāwhia, being most numerous in the Okupata and Te Kauri streams (Melchior, et al., 2023).

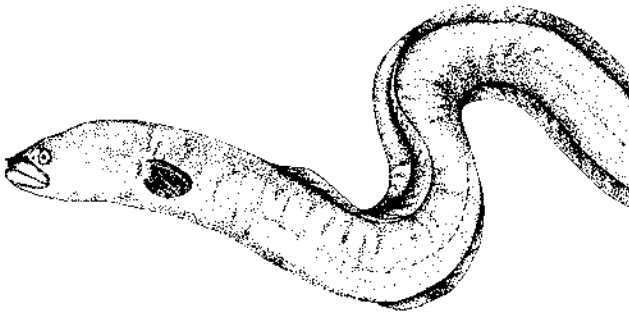
3.10 Wetlands

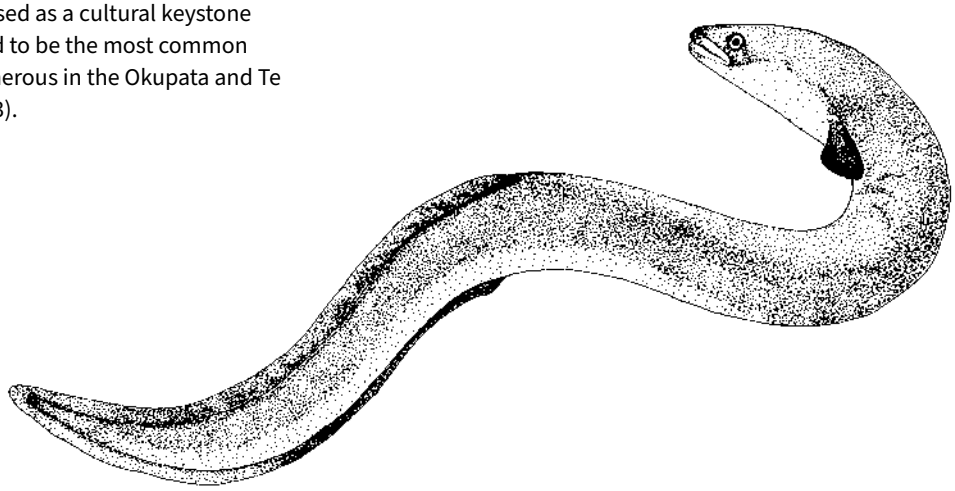
As has happened across New Zealand, wetlands have been reduced and lost from the Kāwhia catchment as a result of drainage and historical land use changes. Although substantially reduced already, there is evidence that wetland loss has also continued in recent times. Significant remaining wetlands in the catchment include:

- significant estuarine and freshwater wetland complex, including Tiritirimatangi Peninsula wetland and the wetlands in the upper reaches of the peninsula's eastern and Awaroa arm
- wide diversity of estuarine vegetation and remnant freshwater wetland habitats associated with the Owhiro Stream
- limestone outcrops and mature native forest/swamp forest around Rakaunui Inlet (Graeme, 2005).

Maniapoto Māori Trust Board and NIWA undertook a collaborative project to develop an inventory of wetlands (repo) and springs (puna) for the Kāwhia rohe on the basis of their mātauranga-a-iwi, values, uses, associations, resources and opportunities for restoration (Ratana, et al., 2017). Utilising their framework, seven initial sites were identified as priority tuatahi (priority one) for restoration efforts:

- Te Rotopupu (repo), Manua Swamp (repo), Ruatuna (repo), Repo (name to be confirmed).
- Te Puia o Tawhia (puna), Te Kauri (puna), Puna (name to be confirmed).





4 NZ Freshwater Fish Database | NIWA

3.11 Biodiversity of Kāwhia Harbour

Kāwhia Harbour is identified as an area of significant conservation value (ASCV) in the *Waikato Regional Coastal Plan*. It is also listed as a wetland of international importance under Ramsar criteria. The harbour meets the criteria because of its importance to international and internal migratory birds. The harbour is nationally important[5] as a wintering site for a range of species, with the following of note (Dowding, 2019):

- South Island pied oystercatcher (typically has 3000-5000 birds in winter which is about 3-5 per cent of the global population)
- pied stilt (typically about 500 birds in winter, >1 per cent of the NZ population)
- black stilt (several individuals in all winters, >1 per cent of the NZ population)
- banded dotterel (winter flock of 300-400 birds, >1 per cent of the NZ population, in top 10 wintering sites in NZ)
- Eastern bar-tailed godwit (3000-6000 annually, >1 per cent of the NZ population).

Kāwhia Harbour has extensive tidal flats and areas of saltmarsh wetland on the fringes and in tidal arms of the harbour. These areas support rare and threatened wetland birds, 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 they are highly valued as mahinga kai. In a 2008 survey by the Department of Conservation, cockles were found to be the most abundant shellfish species in Kāwhia Harbour, occurring in the highest densities in muddy sand substrates. Wedge shells were the second-most numerous species and were recorded in greatest numbers from the middle of Kāwhia Harbour (Hillock & Rohan, 2011).

Seagrass is an ecologically valuable habitat in the coastal marine area. Seagrass beds can stabilise sediment, influence nutrient cycling, provide a food source for microbes and 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 (Jones, 2021).

Kāwhia Harbour supports very extensive and ecologically important seagrass beds that extend over 842 hectares in varying density (Bouma, 2016). These areas far exceed the total area of seagrass in all of the Coromandel Peninsula harbours combined (593 hectares).

3.12 Animals 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 Kāwhia catchment, the council undertakes possum control within three priority possum control areas on a three yearly basis, at Mt Pirongia West buffer, Oparau and Hauturu-Awaroa. These areas adjoin conservation land on the mountains of Pirongia and Karioi, where the Department of Conservation has a regular aerial possum control programme. The 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.

Goats are also a significant issue within the Kāwhia Harbour catchment affecting the regeneration of native forest and riparian buffers around the harbour. The council and DOC currently co-fund goat control work undertaken in the Pirongia area of the catchment.

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 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 goose population was using Aotea, Raglan and Kāwhia estuaries during the 2018 moult season survey (Smith, 2019).

5 Meeting the criteria for national importance of supporting 1% or more of a national population.

3.13 Pest plants

Alligator weed, yellow flag iris, old man's beard, climbing spindleberry and boneseed have been identified as key terrestrial weed species within the West Coast Zone. Within the Kāwhia Harbour, in recent years, the council has undertaken eradication of alligator weed from the mouth of the harbour and management of yellow flag iris, old man's beard and climbing spindleberry.

Spartina and saltwater paspalum are two key invasive weeds that threaten the health and integrity of Waikato estuaries. Spartina has been the focus of an eradication programme in Kāwhia Harbour that has been led by the Department of Conservation since 2001. Indications are that there is a high likelihood of eradication from the district within the next 10 years (Department of Conservation, 2017).

Saltwater paspalum, another weedy grass, was reported as showing an increasing trend in coverage in Kāwhia Harbour in 2012 (Graeme & Kendal, 2014), (Bouma, 2016). This species is of particular concern in estuaries because of its smothering habit and its wide habitat range which allows it to compete with almost all estuarine vegetation communities except sea grass (Graeme & Kendal, 2001). Due to its competitiveness and wide-ranging effect on estuarine biodiversity, it is considered a greater threat than spartina to the ongoing health of the native estuarine communities. Tiritirimatangi Peninsula and the Awaroa River arm within Kāwhia Harbour have been identified as important "within estuary" areas for saltwater paspalum control in Kāwhia (Graeme & Kendal, 2014).

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.[6] These predictions are not certain.

As explained by the MfE, projections of climate change depend on future greenhouse gas emissions, which are uncertain. In summary, the changes likely to be experienced in the Kāwhia 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 Kāwhia 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.

6 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 the council for the Kāwhia 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.

For the Kāwhia catchment, the Awaroa sub-catchment was ranked highest when all categories were combined and was the highest ranked for land instability risk and biodiversity. Te Kauri was ranked second highest and had the highest score for water quality risk. Oparau and Waiharakeke were ranked third equal (Table 1).

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 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 identify the Te Kauri sub-catchment as the highest priority for management for both soil conservation (Figure 8) and water quality risk (nitrogen, phosphorus and *E. coli*). The Awaroa sub-catchment was identified as the second highest priority for soil conservation. This aligns with the catchments identified by Singleton (2018) as high risk for these factors.

Figure 8: Soil conservation factor scores for sub catchments of Kāwhia Catchment (Norris, et al., 2021).

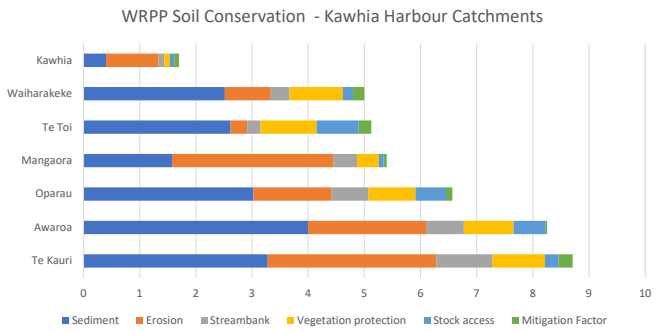


Table 1: Total category scores and priority ranking of Kāwhia Harbour sub-catchments (Singleton, 2018).

Sub-catchment	Land instability risk score	Water quality risk score	Biodiversity score	Harbour score	Community Score	TOTAL score	Rank within Kāwhia Harbour
Kāwhia	24	1	55	9	40	129	6
Mangaora	78	17	42	20	15	172	4
Oparau	60	59	51	18	4	192	3=
Te Kauri	66	62	52	18	5	203	2
Awaroa	89	46	76	18	14	243	1
Te Toi	49	25	53	25	9	161	5
Waiharakeke	62	34	64	20	12	192	3=

6 Funding

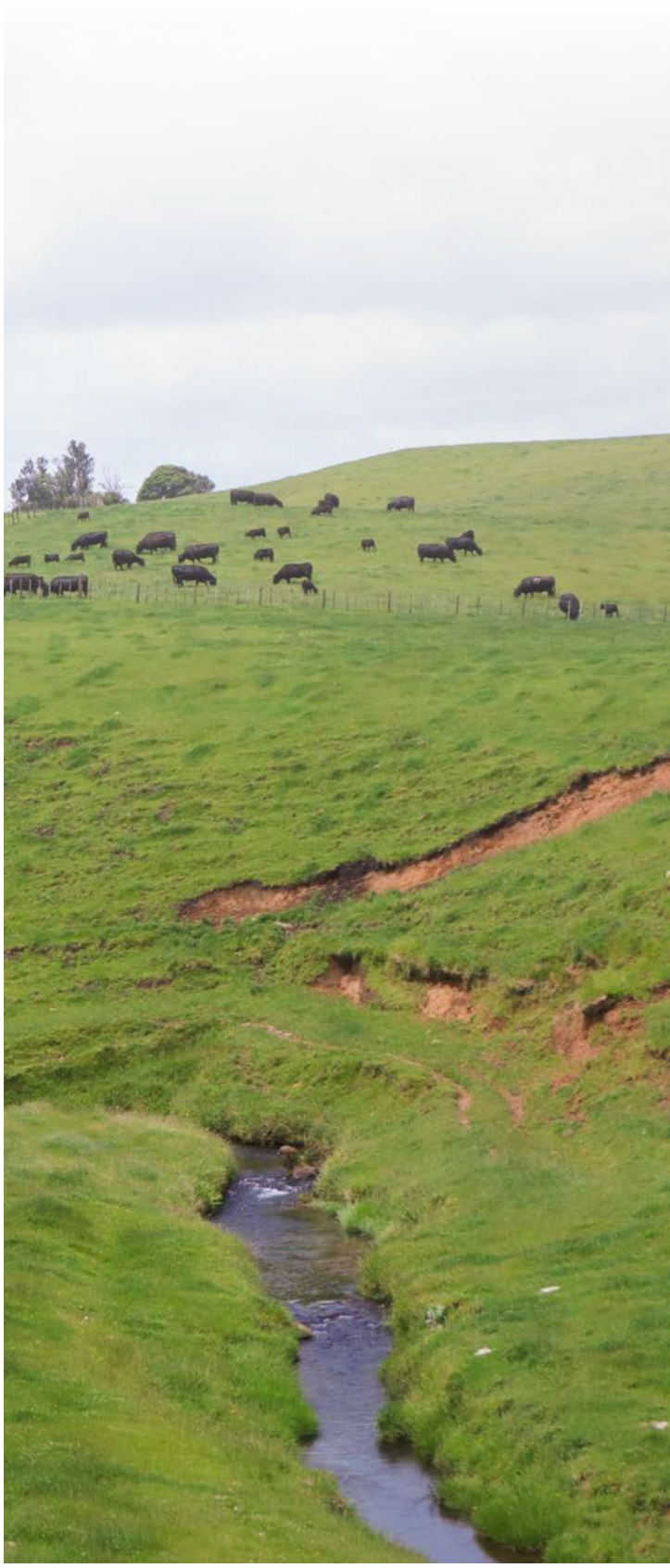
The council collects rates (general and targeted) for flood protection, river management, soil conservation works and other catchment management works based on areas of benefit and activities that contribute to the programmes being managed. This is outlined in the *West Coast Zone – Funding Policy Statement* (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 Kāwhia, 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 newsletters and surveys (71 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

The 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*
- *Maniapoto Environmental Management Plan | Ko Tā Maniapoto Mahere Taiao*
- *Tai Tumu Tai Pari Tai Ao | Waikato-Tainui Environmental Plan.*

Appendix 2 outlines the key components of these plans that the Kāwhia 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 Kāwhia catchment. This information was not always easy for people to find, and not accessible in one place. In response to this, the council developed the *Kāwhia 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 Kāwhia 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: Kāwhia Catchment Management Plan: Supporting information | Waikato Regional Council

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 Kāwhia Harbour.

- Erosion and the need for greater soil conservation measures within the harbour catchment.
- The impacts of sedimentation and water quality deterioration on shellfish populations (and availability for harvest).
- The need to achieve a balance between the environment and economic prosperity.
- 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).
- Water availability in Kāwhia and the need to understand how groundwater limitations may constrain development within the settlement.
- The need for more rigorous monitoring and reporting of water quality.
- Physical changes to areas around Maketu marae associated with erosion, which is impacting on burial grounds.
- Continuing loss of native biodiversity.
- Increasing plant and animal pests.
- Mangrove establishment in the harbour.

Commonly expressed aspirations included the following.

Water and land

- Harbour water quality is improved and remains consistently high to allow safe swimming, food gathering and recreational enjoyment.
- Sedimentation in the harbour is reduced.
- Slips and erosion in the catchment is stabilised with poplars and willows.
- Land is farmed to its capability and landowners are supported to do farm plans.
- Critical source areas are identified and addressed.
- A higher standard of sewerage and wastewater treatment is sought to address failing septic tank systems.

Biodiversity

- Wetlands (repo) are better protected and are restored.
- Connections between different natural areas across the landscape are restored.
- There are more native plantings and green spaces around harbour margins.
- Streams are retired and planted, and stock are excluded.
- A higher level of funding is provided for biodiversity work.
- Esplanade reserves are required as part of developments.
- Shellfish and fisheries resources are maintained and restored to support sustainable harvest.
- Planning is undertaken for future mangrove management.
- Pest control programmes are expanded and include Māori land that adjoins public land.

People and communities

- There are more marae-led projects, including projects that involve the development and monitoring of cultural indicators.
- We undertake collective and co-ordinated action amongst different groups working on a range of issues.
- 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 local native plant nurseries and fencing and riparian planting contractors.
- Better information is available for individuals and groups regarding available funding, support and advice.
- 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 Kāwhia catchment
The natural state and unique geographical features of the harbour and catchment
Good water quality
The recreational values of the catchment
Biodiversity
Sources of kai/food

Biggest concerns for the catchment
Erosion
Silt and sedimentation
Over-fishing
Pest plants and animals
Water quality

Most desired actions
Fencing and planting to protect waterways and reduce sediment
Pest plant and animal control
Community education on protecting waterways
Collaboration between iwi, community groups, agencies, council and farmers
Enhancing biodiversity

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, goals and actions that form the operational focus of this HCMP.

The vision established for the Kāwhia 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 Kāwhia Harbour catchment vision are:

Water quality

Goal 1: Manage and reduce contaminants in priority sub-catchments to protect and enhance instream water quality and Kāwhia 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: 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.

10 Implementation, monitoring and review

An implementation plan has been developed to help address issues identified within the Kāwhia Harbour catchment and provide a framework that can be utilised by all those involved in catchment management within the harbour catchment.

The aim of this implementation plan, which can be viewed in Appendix 1 on page 23, is to outline 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 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 Kāwhia 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.

Table 2: Kāwhia Harbour Catchment Management Plan measures of success.

Goals	Measures
Goal 1: Manage and reduce contaminants in priority sub-catchments to protect and enhance instream water quality and Kāwhia 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). • Survey completed and mangrove locations mapped within the Kāwhia harbour.
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 Kāwhia 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 – Kāwhia catchment
Goal 1 – Manage and reduce contaminants in priority sub-catchments to protect and enhance instream water quality and Kāwhia 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 (incentivised funding for fencing will be considered when over and above regulatory requirements) 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 Kauri Oparau	Reduction in sediment and nutrient contamination and enhanced biodiversity Wetland sites of cultural significance are protected and enhanced. Enhanced environmental stewardship for iwi.	Area (ha) of wetland protected per year in 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 exclusion 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 newsletters, field days and on farm.	WRC – RUD WRC - ICM	Ongoing from July 2024	Primary Industry Engagement Section
Stock exclusion	G1.3	In priority sub-catchments use incentives and work with landowners and trustees of MMOL 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	Te Kauri Oparau	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	Ongoing from July 2024	West Coast Zone programme

Action area	Goal.action	Action	Priority sub-catchment(s)	Outcome	Measure	Who is involved	Date	WRC programme lead
		waterways from July 2024. Seek opportunities for secondary benefits for protection of mahinga kai.						
Stock exclusion	G2.2	Determine the amount and location of remaining stock exclusion required adjacent to the Kāwhia Harbour margin by July 2026.	Harbour margin	Assist strategic planning for stock exclusion to enhance harbour water quality, estuarine health and areas of mahinga kai.	Length and location of stock exclusion required quantified in Kāwhia catchment.	WRC – ICM Landowners	July 2026	West Coast Zone programme Biodiversity programme
Stock exclusion	G2.3	Collaborate with landowners and iwi to support completion of fencing of Kāwhia Harbour margin, incorporating identified sites of significance.	Harbour margin	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	G1.4	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	G1.5	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	Workshops held by July 2027	Primary Industry Engagement Section

Action area	Goal.action	Action	Priority sub-catchment(s)	Outcome	Measure	Who is involved	Date	WRC programme lead
Farm planning	G1.6	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	G2.5	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
Education	G1.7	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	Industry WRC – RUD	July 2025	Primary Industry Engagement Section
Compliance	G2.6	Respond to information regarding unauthorised discharges of wastewater into Kāwhia harbour.	Harbour	Compliance with wastewater regulations is improved	Number of complaints	WRC – RUD	Ongoing from July 2024	Regional Compliance

Land and its use – Kāwhia 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, decrease contaminants entering waterways and build resilience to climate change

Action Area	Goal.Action	Action	Priority sub-catchment(s)	Outcome	Measure	Who is involved	Date	WRC Programme Lead
Soil conservation	G4.1	Review outputs from the Waikato Regional Prioritisation Framework using new Sednet modelled data to confirm WRC 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	G3.1	Promote best management practices on Land Use Capability (LUC) class 6e and 7 land in pasture that is erosion prone – advocate land retirement, afforestation, pole planting where appropriate, 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	G3.2	Seek advice from proposed Kāwhia iwi advisory group 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 boosting adoption of sustainable practices.	Traditional knowledge incorporated in review of Kāwhia Catchment Management Plan and implemented in Kāwhia Catchment.	WRC – ICM Kāwhia Iwi Advisory Group	June 2026	West Coast Zone Programme
Soil conservation	G4.2	In priority sub-catchments provide incentives for hill country erosion control. (40 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	Te Kauri Awaroa Oparau	Reduced erosion of hill country and sedimentation to waterways	Area of hill country retired. Area of hill country revegetated. Area of hill country protected with pole planting.	WRC – ICM Landowners	July 2027	West Coast Hill Country Erosion Control programme

Action Area	Goal.Action	Action	Priority sub-catchment(s)	Outcome	Measure	Who is involved	Date	WRC Programme Lead
		mahinga kai and sites important for taonga species.			Sites of significance protected.			
Soil conservation	G4.3	On MMOL include provision in planting plans for the revitalisation of native plant species traditionally used by Māori.	Te Kauri Awaroa Oparau	Diverse native species supporting wider ecosystem health. Traditional plant sources are preserved, enriching cultural ties and environmental resilience.	Area of native vegetation planted on MMOL.	WRC – ICM MMOL Trustees and managers	Ongoing from July 2024	West Coast Zone programme
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 the sub-catchment(s) after five years.	Te Kauri Awaroa Oparau	Enhanced knowledge on areas of river instability.	Priority areas mapped for river management in Te Kauri, Awaroa and Oparau 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 for cultural significance.	Te Kauri Awaroa Oparau	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	G4.5	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 Kauri Awaroa Oparau	Improved water quality and reduce erosion. Channel capacity maintained. Management strategies safeguard areas vital 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

Action Area	Goal.Action	Action	Priority sub-catchment(s)	Outcome	Measure	Who is involved	Date	WRC Programme Lead
River management	G3.3	Update regional river management best practise guidelines to incorporate cultural values and principles. Apply these to river management works in the Kāwhia catchment.	Whole of catchment	Best practice guidelines consider both ecological and cultural health.	Updated best practice guidelines.	WRC – ICM WRC Tai-Ranga-Whenua Iwi	December 2026	ICM Zone Managers West Coast Programme
Farm planning	G3.4	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	G3.5	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	From July 2025	Primary industry Engagement Section
Education	G3.6	Provide information and advice to landowners on soil conservation and methods to reduce sediment entering water within the Kāwhia catchment.	Whole of catchment	Raised awareness and knowledge on soil conservation. Landowners undertaking 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 enhancing 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 – Kāwhia 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-catchment(s)	Outcome	Measure	Who is involved	Date	WRC Programme Lead
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 a Kāwhia iwi advisory group (IAG) (or use existing suitable forum) with iwi and marae representatives for ongoing engagement, input and connection to Māori communities in Kāwhia for catchment and river management matters.	Whole of catchment	Catchment and river management programmes in Kāwhia catchment respect and incorporate Māori cultural values.	Iwi advisory group formed.	WRC – ICM WRC – Tai-ranga-whenua Iwi	December 2024	West Coast Zone programme
Working with iwi	G6.3	Kāwhia IAG to review and provide further input into Kāwhia 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 Kāwhia IAG	December 2025	West Coast Zone Programme
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.	Number of iwi-led projects being supported.	Iwi, marae and hapū WRC – ICM WRC – Tai-ranga-whenua	From July 2024 onwards	West Coast Zone programme

Action Area	Goal. Action	Action	Priority sub-catchment(s)	Outcome	Measure	Who is involved	Date	WRC Programme Lead
				Projects that are deeply rooted in mātauranga Māori.				
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 by July 2026, implementation by 2028	West Coast Zone programme
Working with community	G5.3	In response to mana whenua concerns regarding mangroves in the catchment, undertake engagement with iwi and local community, and complete a vegetation survey to determine the current extent of mangroves and other plant species of concern in the harbour.	Harbour	Environmental concerns raised by mana whenua, leading to tailored management strategies.	Survey completed and mangrove locations mapped.	WRC – ICM WRC – SPI Iwi/hapū/marae Community	December 2025	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	Empowered community leading environmental improvement and sustainability projects.	Number of projects supported.	WRC – ICM Community	Ongoing from July 2024	West Coast Zone programme Biodiversity and Biosecurity Teams
Working with community	G6.5	Support environmental enhancement of new public access to beach project through dune planting (led by Te Taiao O Kāwhia Moana).	Beach front	Improve environmental conditions along public access at local beaches.	Number of plants planted.	Te Taiao o Kāwhia Moana Community WRC - ICM	Subject to Te Taiao o Kāwhia Moana project plan	Biodiversity, West Coast Zone programme (Coastal enhancement fund)
Working with community	G6.6	Hold annual meetings between District Councils, Department of Conservation (DOC), iwi and Regional Council to discuss work programmes and identify areas for collaboration. Utilise Te Taiao o Kāwhia Moana Forum where appropriate. Advocate for community concerns around wastewater discharge.	Whole of catchment	Better collaboration across agencies and enhanced overall environmental management strategies.	Number of meetings held.	WRC – ICM	Ongoing from July 2024	West Coast Zone programme – Zone Manager

Action Area	Goal. Action	Action	Priority sub-catchment(s)	Outcome	Measure	Who is involved	Date	WRC Programme Lead
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 Kāwhia catchment newsletter. Use of StoryMaps platform.	WRC – ICM WRC – SPI WRC – RUD WRC – Comms	Ongoing from July 2024	West Coast Zone Programme – Zone Manager
Catchment information	**G6.4**	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 – Comms	Ongoing from July 2024	Regional Resilience Team
Catchment information	**G5.5**	Develop a West Coast Natural Hazard Risk Management Plan which details all the hazards for the zone, their ranking, and outlines responsibilities for their management.	Whole of zone	Community is engaged and informed on natural hazard risks.	Plan is completed	WRC – ICM WRC – Comms	June 2026	Regional Resilience Team
Education	G6.7	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 – Comms	Ongoing from July 2024	West Coast Zone programme – Zone Manager
Education	G6.8	Support development and implementation of educational programme 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 Kāwhia 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

Biodiversity and biosecurity – Kāwhia 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-catchment(s)	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 Kāwhia catchment.	Whole of catchment	Conservation efforts are targeted to protect and manage key biodiversity areas effectively.	Mapped and prioritised biodiversity areas in Kāwhia catchment completed by July 2025.	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 identify 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.	WRC – ICM Landowners	Ongoing from July 2025	Biodiversity programme West Coast Zone programme
Priority sites	8.1	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 owned land.	WRC – ICM Owners of MMOL	Ongoing from July 2024	Biodiversity programme

Priority sites	G8.2	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	Strengthened 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
Lakes and wetlands	G8.3	Collaborate with landowners and iwi to access and survey Lake Rotopupu. Develop a programme to enhance biodiversity, aquatic health and other values as agreed with partners.	Lake Rotopupu	Condition of Lake Rotopupu is better understood. Values of the lake are enhanced.	Plan completed that integrates traditional and contemporary knowledge to improve aquatic health and values at Lake Rotopupu.	WRC – ICM Landowners Iwi	Ongoing from July 2026	Biodiversity programme
Biosecurity	G8.4	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, and promotion of the restoration and preservation of native biodiversity.	Annual report on animal and plant pest control outcomes completed.	WRC – ICM Local community	Ongoing from July 2024	Biosecurity programme
Biosecurity	G8.5	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	G7.4	Identify opportunities for enhancement of fish habitat sites within priority river management areas (or sub-catchment)	Te Kauri Awaroa Oparau	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
	G7.5	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	G8.6	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	The number of community groups that are undertaking biodiversity restoration activities	WRC – ICM Community Iwi	Ongoing from July 2024	Biodiversity programme

				to better protection and restoration outcomes.				
Community groups	G8.7	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, improved 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	G8.8	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 (ha) of restoration in Kāwhia catchment	WRC – ICM Iwi Landowners	Ongoing from July 2024	Biodiversity programme
Education	G8.9	Carry out community education on surveillance monitoring for new biosecurity risks.	Whole of catchment	Risks of high profile pests are highlighted and the community is aware of biosecurity measures and undertaking preventative actions.	Catchment 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 in stream water quality and Kāwhia 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: b. natural character and natural function; c. health and functioning of indigenous biodiversity, ecosystems and habitats; d. 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; 1. improving the life-supporting capacity of marine waters where they have been degraded as a result of human activities; 2. to enable people and communities to provide for their social, economic and cultural wellbeing and for their health and safety; and 3. 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	19.4.2: 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.
Maniapoto Environmental Management Plan – Ko Tā Maniapoto Mahere Taiao	14.3.1: Recognition of the role of Maniapoto as rangatira and kaitiaki of Ngā Wai o Maniapoto - Ngā Wai o Maniapoto is healthy and enhanced to protect the relationship of Maniapoto and water bodies. 14.3.2: Water quality - Restore and enhance the mauri of Ngā Wai o Maniapoto and protect Te Mana o te Wai. 14.3.4: Integrated catchment management - To provide an integrated and coordinated approach to manage freshwater resources that considers whole of river effects of land and freshwater activities and the fresh water/salt water interface. 17.3.3: Coastal water quality - To enhance, restore and protect the mauri of coastal waters. 17.3.8: Integrated management - To establish an integrated and coordinated approach to coastal and marine management which also considers the effects of land and freshwater activities and the fresh water-salt water interface.
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. Kāwhia's freshwater springs will be sustained for future generations. 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 direction 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.
Maniapoto Environmental Management Plan – Ko Tā Maniapoto Mahere Taiao	17.3.5: Activities in the coastal and marine area - To eliminate discharges to the coastal marine area and avoid land use practices that generate contaminants and pollution to coastal areas. 18.3.1: Unsustainable and inappropriate land use practices - Land management and land use enhance and protect the holistic functioning and interconnected relationships of the natural environment and are compatible with Maniapoto values and principles. 18.3.3: Soil Conservation - To effectively manage the mauri of land and soils by reducing soil nutrient loss, nutrient leaching and runoff to water bodies.
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 direction 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. 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 WaikatoTainui coastal area.
Maniapoto Environmental Management Plan – Ko Tā Maniapoto Mahere Taiao	17.3.1: Recognition of the role of Maniapoto as rangatira and kaitiaki for the coastal and marine environment - To recognise and provide for the cultural relationships and values that Maniapoto have with the coastal and marine environment.
Ngāti Hikairo Iwi Management Plan - Freshwater	Participate with land owners, 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 direction 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.
Maniapoto Environmental Management Plan – Ko Tā Maniapoto Mahere Taiao	15.3.1: Recognition of the role of Maniapoto as rangatira and kaitiaki of wetlands - Wetlands are healthy and enhanced to protect the relationship of Maniapoto and wetlands. 15.3.2: Mauri of wetlands - To enhance and protect natural wetlands to produce an overall net gain in wetland area in the rohe as wetlands are restored. 19.3.1: Biodiversity - The diversity of natural heritage areas, habitats and ecosystems are reserved in a healthy state alongside more modified ecosystems to ensure indigenous species and subspecies maintain genetic diversity and viable population densities.
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.

12 References

Bouma S. 2016. Marine biodiversity stocktake of the Waikato Region 2015. Waikato Regional Council Technical Report 2015/48. Hamilton, Waikato Regional Council.

Brandon A, de Lange P, Townsend A. 2004. Threatened plants of Waikato Conservancy. Wellington, Department of Conservation.

Department of Conservation. 2017. Spartina Eradication Plan: Hauraki, Waikato and Whitianga District Offices for 2017/18 - 2032/33. Wellington, Department of Conservation.

Dowding JE. 2019. Sites of importance to shorebirds and seabirds in the Waikato region. Waikato Regional Council Technical Report 2019/20. Hamilton, Waikato Regional Council.

Environment Waikato. 2009. Shore Futures: Preferred Futures Report: a collective vision for healthy harbours and communities in the Kawhia and Aotea catchments. Hamilton, Waikato Regional Council (Environment Waikato).

Golder Associates. 2008. West Coast natural character and landscape assessment (Kawhia and Aotea catchments). Golder Associates Report ENVWAWKT002 prepared for Waikato Regional Council. Auckland, Golder Associates.

Graeme M, Kendal H. 2001. Saltwater Paspalum (Paspalum vaginatum) – a weed review. Environment Waikato Technical Report 2001/18. Hamilton, Waikato Regional Council (Environment Waikato).

Graeme M. 2005. Estuarine vegetation survey: Kāwhia Harbour. Environment Waikato Technical Report 2005/42. Hamilton, Waikato Regional Council (Environment Waikato).

Graeme M, Kendal H. 2014. Ecological prioritisation for saltwater paspalum control in the Waikato region. Waikato Regional Council Internal Report 2015/46. Hamilton, Waikato Regional Council.

Greer D, Atkin E, Mead S, Haggitt T, O'Neill S. 2016. Mapping residence times in west coast estuaries of the Waikato region. Waikato Regional Council Technical Report 2016/19. Hamilton, Waikato Regional Council.

Harding, M. 1997. Waikato Protection Strategy : a report to the Forest Heritage Fund Committee. Wellington, Forest Heritage Fund.

Hillock, K, and M Rohan. 2011. Intertidal benthic habitats of Kāwhia and Aotea harbours. DOC Research and Development Series 327. Wellington, Department of Conservation.

Jones H. 2021. Regional Estuary Monitoring Programme trend report: 2001 to 2018. Waikato Regional Council Technical Report 2021/05. Hamilton, Waikato Regional Council.

Kamke J. 2021. State of coastal water quality for the west coast of the Waikato region 1994-2021. Waikato Regional Council Internal Series 2021/17. Hamilton, Waikato Regional Council.

Leathwick JR, Clarkson BD, Whaley PT. 1995. Vegetation of the Waikato Region: current and historical perspectives. Landcare Research Contract Report LC9596/022. Hamilton, Manaaki Whenua - Landcare Research.

Leathwick J, Julian K. 2009. Identification of high value rivers and streams in the Waikato Region: final report. Environment Waikato Technical Report 2009/05. Hamilton, Waikato Regional Council (Environment Waikato).

Lynn I, Manderson A, Page M, Harmsworth G, Eyles G, Douglas G, Mackay A. 2009. Land use capability survey handbook: a New Zealand handbook for the classification of land. Hamilton, AgResearch Ltd.

Mead S, Moores A. 2004. Estuary sedimentation: a review of estuarine sedimentation in the Waikato Region. Waikato Regional Council Technical Report Series 2005/13. Hamilton, Waikato Regional Council.

Melchior M, Williams A, Hamer M, Pingram M, Collier K. 2023. The state of freshwater mussels (Kākahi, Kāeo) in Waikato wadeable streams. Waikato Regional Council Technical Report 2022/01. Hamilton, Waikato Regional Council

Norris M, Borman D, Hill R. 2021. Waikato Prioritisation Framework and its use for soil conservation : development and methods. Waikato Regional Council Technical Report 2021/06. Hamilton, Waikato Regional Council.

Ratana, K, N Herangi, S Te Huia, and W Tane. 2017. Prioritising wetland restoration efforts based on Mātauranga-ā-Hapū in the Kāwhia Rohe. NIWA Client Report 2017124HN prepared for Te Wai Māori & Maniapoto Māori Trust Board. Hamilton, National Institute of Water and Atmospheric Research (NIWA).

Ratana K, Herangi N, Murray T. 2019. Me pēhea te whakarauora i ngā repo o Ngāti Maniapoto? How do we go about restoring the wetlands of Ngāti Maniapoto? New Zealand Journal of Ecology 43(3): 3391.

Rumsby A. 2009. Trace elements in the sediment of Waikato West Coast Estuaries. Waikato Regional Council Technical Report 2009/08. Hamilton, Waikato Regional Council.

Singleton P. 2018. Priority West Coast Harbour catchments : sub-catchment prioritisation. Natural Knowledge Ltd Report prepared for Waikato Regional Council.

Smith B. 2019. Use of West Coast Waikato estuaries by Canada geese and black swans. Waikato Regional Council Technical Report 2019/16. Hamilton, Waikato Regional Council.

Tonkin and Taylor Ltd. 2008. West Coast Hazard Project. Waikato Regional Council Technical Report 2008/14. Hamilton, Waikato Regional Council.

Tulagi A. 2018. Regional rivers water quality monitoring programme: data report 2017. Waikato Regional Council Technical Report 2018/25. Hamilton, Waikato Regional Council.

Vant W. 2018. Trends in river water quality in the Waikato region, 1993-2017. Waikato Regional Council Technical Report 2018/30. Hamilton, Waikato Regional Council.

Vant W. 2019. Internal WRC memo - Water quality in streams in the catchments of Aotea and Kāwhia Harbours. (WRC document reference 15119510). Hamilton, Waikato Regional Council.

Waikato Regional Council. 2010. West Coast Zone : funding policy statement. Environment Waikato Policy Series 2010/05. Hamilton, Waikato Regional Council (Environment Waikato).

Waikato Regional Council. 2024. West Coast Zone Plan – Te Mahere o te Rohe Taihauāuru. Waikato Regional Council Policy Series 2025/01. Hamilton, Waikato Regional Council.

Wildland Consultants Ltd. 2014. Aotea Harbour catchment condition survey. Contract Report No. 3151 prepared for Waikato Regional Council. Unpublished report.

Waikato
REGIONAL COUNCIL
Te Kaunihera ā Rohe o Waikato

He taiao mauriora **Healthy environment**

He hapori hihiri **Vibrant communities**

He ōhanga pakari **Strong economy**

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