

Waiau

Sub-Catchment Action Plan 2012



The Waiau Sub-Catchment Action Plan is one of a series about the sub-catchments surrounding Tauranga Harbour. This action plan provides an analysis of the current land management issues, a summary of the available physical resources in the Waiau sub-catchment, and planned action for land and resource use of the sub-catchment.

Published October 2012



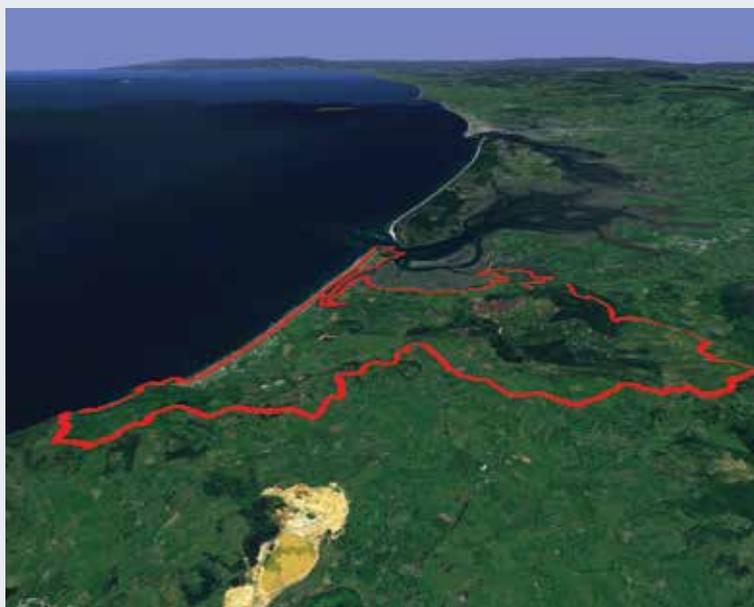
Introduction

The Waiau sub-catchment is located 7.5 km north of Katikati. The catchment is 5793 hectares in area and flows in an easterly direction to Tauranga Harbour. The sub-catchment is part of the Tauranga Ecological District.

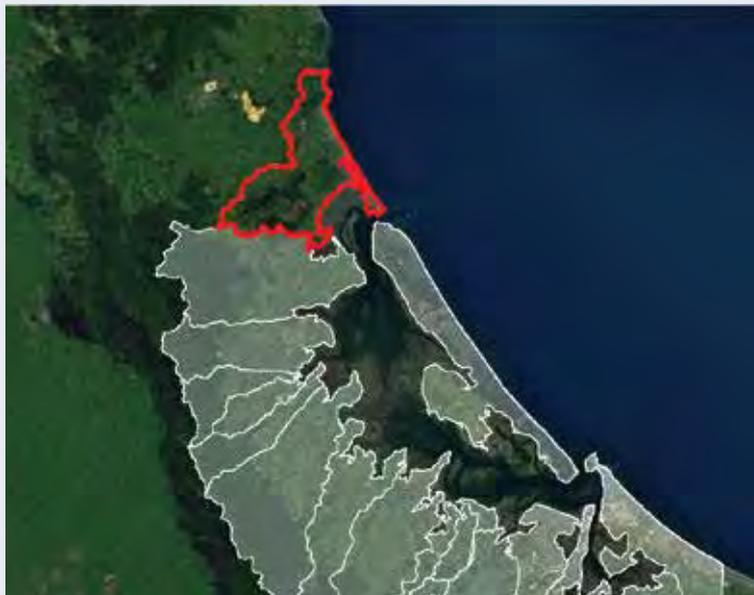
The sub-catchment is 12 km wide and 11 km long and includes the area north of Mt Hikurangi to Waihi Beach. It includes 206 km of stream margins, 18 km of harbour margin and 12 km of open coast. The primary streams are the Waiau, Firewood, Okawe, Orokawa, Orokawaiti, Oukori, Te Puru, Waihi, Three Mile and Two Mile. All streams and tributaries in this sub-catchment are classified as aquatic ecosystem streams and are recognised as migratory pathways for indigenous fish species.

A large proportion of the sub-catchment land cover is pasture and exotic forest. A significant area of the sub-catchments' land cover is indigenous forest land found primarily north of Waihi Beach and south of Mt Hikurangi.

Sub-catchment soils are derived from air-fall ash, and belong to the Waitekauri soil series, with Waitekauri Loam and Waitekauri hill soils being the main soil types in the hills. Soils on the flats are recent, having formed over former estuaries and swamp land, and consist of mainly silty loams from the Te Puna, Pahoa, and Wharere soil series. Being volcanic in nature, the soils are resilient and versatile; however, this also makes them vulnerable to erosion under poor vegetation cover. Along the open coast there is a narrow band of dune ridge and swale formations consisting of Papamoa loamy sand and man-made soils, and ohope sand.



Source: BOPRC, ESRI, i-cubed, USGS, NASA, NOA



Source: BOPRC, ESRI, i-cubed, USGS, NASA, NOA

Land management

What is the problem?

Soil has been and continues to be lost from the catchment at moderate to high rates, especially where steep land is subject to grazing, or where earthworks and forestry are not carefully managed. Soil quality has not been monitored in the Waiau catchment, but results from other similar Bay of Plenty sites indicate generally healthy soils, with the exception of high levels of nitrogen on sheep, beef and deer farms, and excessively high levels on dairy farms (which have increased over 300 percent in the last ten years). While positive from a production perspective, high nitrogen levels represent a risk to water quality through leaching and eutrophication. Soils on kiwifruit orchards have healthy nitrogen levels but very high and increasing levels of phosphorus. While phosphates do not leach in the same way as nitrogen, they still represent a significant risk to water quality if washed into waterways by erosion.

Livestock access to a stream or wetland, or the area immediately around them, degrades water quality by increasing nutrients, faecal matter and sediment in the waterway. Stock access can increase stream bank erosion by stock treading and damaging soil structure, and by eating and degrading vegetation on the stream bank.

Water quality may also be degraded by excess nutrients in streams from fertilisers, farm runoff and urine patch leaching. Sediment can enter waterways from major construction sites (such as subdivision and roading) and forestry at harvest time. These and other pollutants are generally unintentional by-products of activities such as farming and construction.

Water quality monitoring by the Regional Council in 2011 shows the Waiau Stream met the requirements of the Ministry of Health guidelines for swimming but exceeded the median faecal coliform standard of 100 cfu/100ml for stock water supply.

What will we (Bay of Plenty Regional Council) do about it?

- Promote riparian margin fencing to exclude stock and protect water quality
- Promote and help landowners plant riparian margins, to act as filters and reduce pollutants entering streams through surface runoff
- Encourage stock stream crossings, such as bridges, to protect the water quality of streams
- Support retirement of steep erodible land
- Protect existing areas of indigenous biodiversity
- Protect existing wetland areas
- Work with landowners, other agencies and other sections of Regional Council to ensure consistent land and water quality management.

Current riparian margin fencing protection:

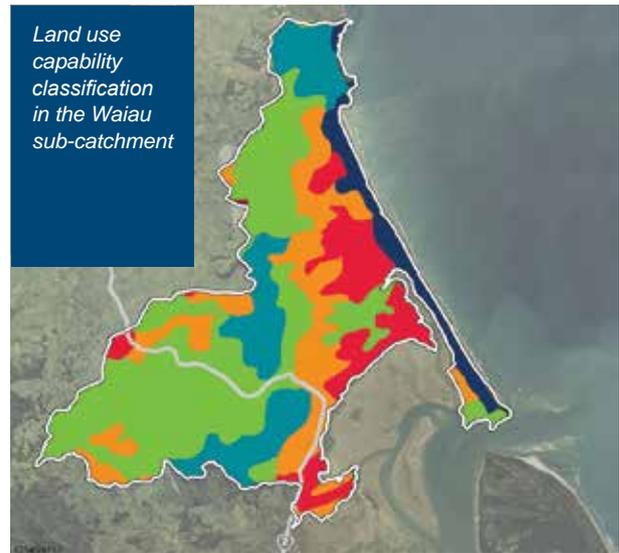
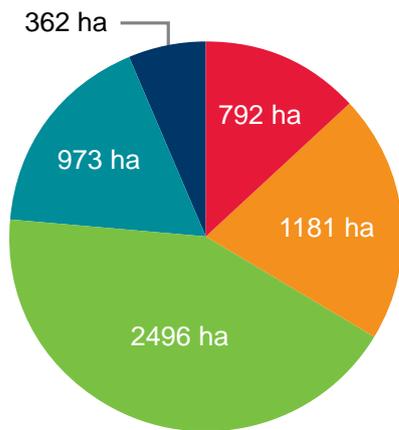


Stock exclusion indicates those stream margins that are fenced off or land that is currently not available for stock grazing, for example, horticulture, forestry, and native bush.

Land use capability classification in the Waiau sub-catchment

Sustainable land use and management is essential to ensure the Bay of Plenty region maintains clean waterways, productive soils, and indigenous biodiversity. How the land is used and managed can have a direct effect on its potential for long-term sustainability.

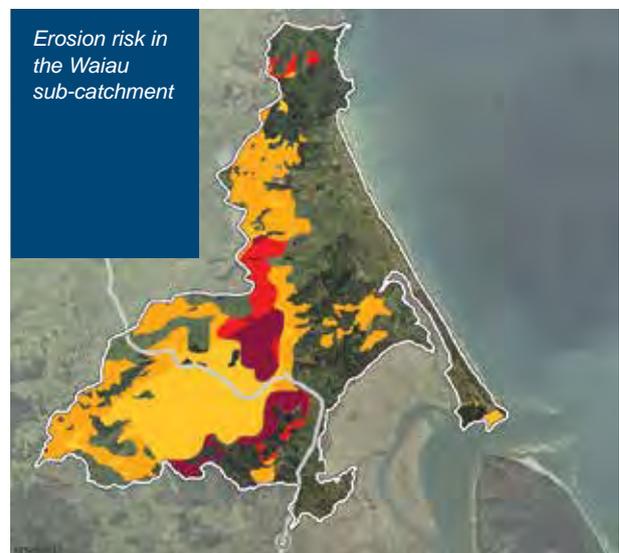
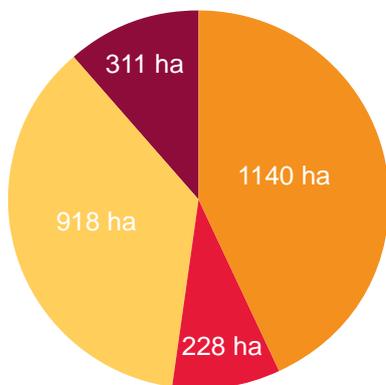
The majority of productive land in this sub-catchment is Land Use Capability (LUC) Class 6 - steep landscapes. Most of the high producing LUC Class 2, 3 and 4 lands are located in the lower catchment. Steeper LUC Class 7 land is primarily located in a band through the middle of the catchment.



LUC Class	LUC Units	Percent
3	3e 1, 3w 1	13
4	4e 1, 4e 2, 4s 2	20
6	6e 1, 6e 16, 6 e 17, 6w 1	42
7	7e 8	17
8	8e 1, 8e 2	6

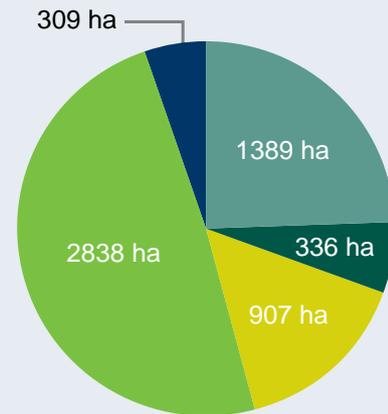
Erosion risk in the Waiau sub-catchment

A high proportion of Land Use Capability Classes 6 & 7 land in the Waiau sub-catchment is medium to high risk erosion-prone land due to pastoral land use. Forestry located on this class of land has a medium to high risk of erosion during the post-harvest phase.



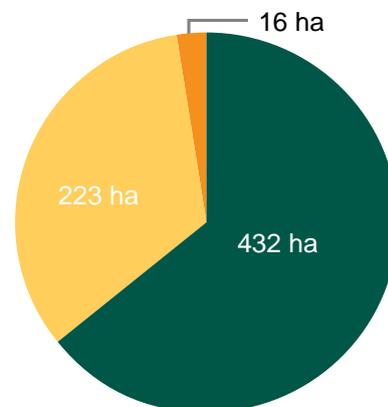
Land Use	Risk	Percent
Pasture	Medium	19
Pasture	High	4
Exotic forest	Medium	16
Exotic forest	High	5

Land cover in the Waiau sub-catchment



Vegetation	Percent
Exotic	24
Horticulture	6
Indigenous	15
Pasture	48
Urban	5

Existing protection status in the Waiau sub-catchment



Class	Percent
DOC	7
District Reserve	4
WBOPDC Covenant	0.3

Land management survey 2011

Field work

In developing the Waiau Sub-Catchment Action Plan, Bay of Plenty Regional Council undertook field surveys of 27 properties between February and March 2012. The properties surveyed account for 48 percent of the catchment area. Priority was given to large properties that had waterways flowing through them or along their boundary.

Areas with formal protection were not surveyed as they already have action plans in place.

Field work included an assessment of land use, stream margins, erosion features and biodiversity features:

Land use	<ul style="list-style-type: none"> Type and rationale Land Use Capability classification based on physical resources present
Stream margins	<ul style="list-style-type: none"> Protection measures (if any) in place General condition and upkeep Estimation of length (both protected and unprotected) GPS track of any stream channels not evident in the GIS database maps
Erosion features	<ul style="list-style-type: none"> Estimation of size and trend direction Photographs and GPS points (either at feature or where the photo was taken)
Biodiversity features	<ul style="list-style-type: none"> Estimation of extent of land area covered and the type of vegetation (e.g. native, introduced species)

Land owner feedback

Bay of Plenty Regional Council, Department of Conservation and Landcare Trust held a public meeting with landowners on 20 June 2011. The purpose of the meeting was to gather the concerns, challenges and priorities of Waiau catchment landowners.

The attendee landowners provided their vision for the catchment.

- Clean waterways and harbours for our grandchildren.
- Clean stream, minimal flooding, clear water flow to the harbour.
- Mangroves out of the harbour.
- Clean streams.
- To maintain the quality, or improve it.
- That identified community values are achieved within an acceptable timeframe.
- A vision of these issues not being ongoing; therefore they should not be looked upon as a long-term issue, within say a 10 or 5 year plan. Action required now.
- A more responsible use of the sub-catchment. Not to have a NIMBY (Not In My Back Yard) attitude, but a responsible local/national pride on water quality and use.

Iwi/hapū feedback

Ngāi Tauwhao ki Otawhiwhi has recently completed the creation of our Hapū Management Plan which outlines our aspirations and goals for the future health of the whānau and whenua. Many of the goals and desired outcomes align closely with those of Council. We whole heartedly support Council's efforts to improve water quality in the Waiau catchment and Tauranga Moana and look forward to working more collaboratively in the future.

Ngāti te Wai maintain very strong connections with our awa. We are currently undertaking a restoration project to protect part of the Tuapiro River that flows past our Marae. The Tuapiro River and estuary are heavily used for kaimoana gathering. We absolutely support any activities that encourage other landowners to remove stock access from rivers and improve water quality and kaimoana stocks.

Actions

The three main land management issues common to the surveyed properties in the Waiau Sub-Catchment areas are set out in the table below. Proposed actions to maintain and improve riparian protection, erosion, unsuitable land use and biodiversity loss within the catchment area are listed along with who is involved to implement the action.

Land management issues and solutions

Actions	Milestones	Who is involved?
<p>Improving riparian protection</p> <ul style="list-style-type: none"> ▪ Work with landowners to apply sustainable land use methods and practices to maintain and/or repair streambanks and to improve water quality. ▪ Completely remove stock access to streams, fence remaining 43km and instigate planting of riparian margins to eliminate the effects of livestock, polluted water runoff and erosion. ▪ Instigate necessary remedial works to stream margins such as bank re-contouring, riparian planting and engineering works using relevant legislation relating to riparian management. ▪ Tailor site specific solutions. 	<p>Average 2.3 km of new riparian fencing per year.</p>	<ul style="list-style-type: none"> ▪ Bay of Plenty Regional Council ▪ Landowners ▪ Western Bay of Plenty District Council
<p>Improve erosion control and appropriate land use practices</p> <ul style="list-style-type: none"> ▪ Apply property level management plans to LUC class 6 & 7 pastoral and forestry land that has been identified as eroding or at risk of eroding. ▪ Promote the need for land use change on LUC class 7 land pastoral land – advocate land retirement, forestry and suitable stock regimes. ▪ Work with landowners to apply soil and water conservation methods and good land management practice to maintain and/or repair landscapes. ▪ Increase the awareness of cattle and deer at high stocking rates on steeper slopes. ▪ Ensure that land owners apply appropriate land management practices. 	<p>35 properties with 'at risk' land have management plans by 2022.</p>	<ul style="list-style-type: none"> ▪ Bay of Plenty Regional Council ▪ Landowners ▪ Western Bay of Plenty District Council ▪ Department of Conservation
<p>Improve biodiversity protection and enhancement</p> <ul style="list-style-type: none"> ▪ Advocate further covenanted areas within the subcatchment. ▪ Continue tree planting on private land in native or non-invasive exotic species. ▪ Liaise with Waikato Regional Council and Department of Conservation on coordinating management of the Kaimai Mamaku Range and its catchments as part of the Kaimai Catchments Project. ▪ Work with landowners and community groups to protect identified biodiversity areas in the sub-catchment by establishing native plant populations and controlling nuisance populations of pest plants and animals. 	<p>By 2022 an additional 10 sites are managed for biodiversity protection and enhancement.</p>	<ul style="list-style-type: none"> ▪ Bay of Plenty Regional Council ▪ Land owners ▪ Western Bay of Plenty District Council ▪ Department of Conservation ▪ Community Care Groups

Monitoring

Waiau catchment action plan key performance indicators (KPI's)

	Key performance indicator	Waiau sub-catchment targets							Total
		Current Year ending 30 June 2012	Year 1*	Year 2*	Year 3*	Year 4*	Year 5*	Years 6*-10	
Soil and water	Km of riparian margins excluded from stock.	79% - 163 km	1 km	1 km	2 km	2 km	2 km	3 km	23 km (90% 186 km)
	Number of properties 'at risk' for erosion which are managed by a property management plan.	New measure	3	3	3	3	3	4	35
Biodiversity	Identified High Value Ecological Sites (HVES) on private land that are under active management.	New measure	No identified high value ecological sites	n/a	n/a	n/a	n/a	n/a	n/a
	Number of areas of indigenous forest or wetland being actively managed by the community to protect their biodiversity values.	New measure	1	1	1	1	1	1	10

Note: The progress to achieve the targets will be reported on annually.

*Year 1 ends at 30 June 2013, Year 2 ends at 30 June 2014 etc.

Case study

Gordon Bridgman is the third generation farming on their Dairy block between SH2 and the harbour. It is not surprising therefore that he has deep affinity with his surroundings and wants to minimise his farm's impact on the wider environment.

"Living and working right next to such a pristine part of the Harbour makes you appreciate how lucky we are. The work we have done with Council has made a big difference to the quality of water that comes off our farm. Watching all the native plantings establish and thrive is so rewarding, it really increases my enjoyment of working on the farm."

The Bridgeman property is nearing the end of a five year programme of fencing and planting streams, wetlands and harbour margins.



Gordon Bridgman with the planted Tauranga Harbour margin buffer zone in the background.

"Seeing the change over time has really motivated me to continue this work on to other areas of the farm."

For more information call a Land Resources Administration Officer on 0800 884 880.

