Waimapu

Sub-Catchment Action Plan 2012

The Waimapu 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 Waimapu sub-catchment, and planned action for land and resource use in the sub-catchment.

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Bay of Plenty
REGIONAL COUNCIL

Introduction

The Waimapu sub-catchment is south east of Tauranga Harbour. It is 11,164 hectares in area and flows from Otanewainuku north to the harbour between Windermere and Greerton. The Waimapu sub-catchment spans both the Tauranga and Ōtānewainuku Ecological Districts, and stretches approximately from Ohauiti Rd to Pyes Pa Rd.

The sub-catchment is about 21 km long and 6 km wide. It includes 236 km of stream, or 472 km of riparian margins and 3 km of harbour margin. The primary waterways in the sub-catchment are the Waimapu and Waiorohi Rivers. There are four named tributary streams (Kirikiri, Mangarewarewa, Pukekonui and Toropeke) and numerous unnamed tributaries. The Waiorohi tributary supplies half of Tauranga City's municipal water so protecting water quality is a priority.

The most widely spread class of vegetation cover in the sub-catchment is pastoral vegetation at 45 percent. Indigenous vegetation is largely confined to the upper sub-catchment, with reasonably large tracts of bush clad stream gullies cutting through the catchment (23 percent). Horticultural land covers five percent and is in the middle and lower sub-catchment. Exotic forestry is in the southeast - in the middle and upper sub-catchment (eight percent, although some of this area has recently been converted to dairy land). Large areas of estuarine wetlands surround the Waimapu estuary.

Sub-catchment soils are predominantly derived from air-fall ash, with the most recent being from the Kaharoa eruption some 700 years ago. The most common soils are Katikati Sandy Loam and Katikati Hill soils, with occasional Otanewainuku steep-land soils, Oropi series soils and Whakamarama series soils. These volcanic soils are versatile and naturally well-drained but are vulnerable to erosion under poor vegetation cover or intensive land-use.

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

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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 cattle or deer grazing, or where earthworks are not carefully managed. Soil quality has not been monitored in the Waimapu 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 shows that the Waimapu Stream has the worst *E. coli* contamination rates in the Bay of Plenty, with levels above the Ministry of Health guidelines for swimming much of the time. Toi Te Ora Public Health has a permanent warning in place for people to avoid recreational contact with water in the lower Waimapu Stream.

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.

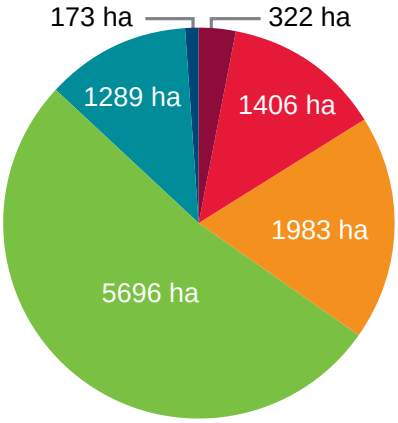
Current riparian margin protection:

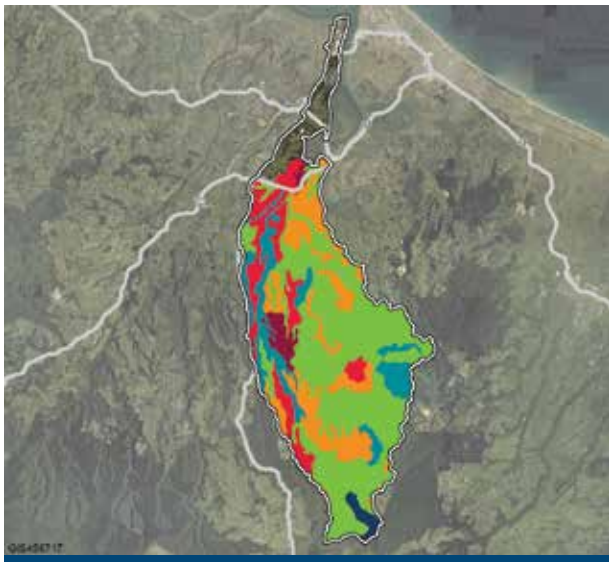
The stock excluded figure indicates those stream margins that are fenced off or land that is currently not available for stock grazing for example, horticulture, forestry, and native bush.

Land use capability classification in the Waimapu 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 land in this sub-catchment is Land Use Capability (LUC) Class 6 - rolling and steep landscapes. Both LUC Class 6 and 7 lands are throughout the catchment. Highly productive LUC Class 2, 3 and 4 - gentle to rolling lands - are in smaller pockets across the sub-catchment.





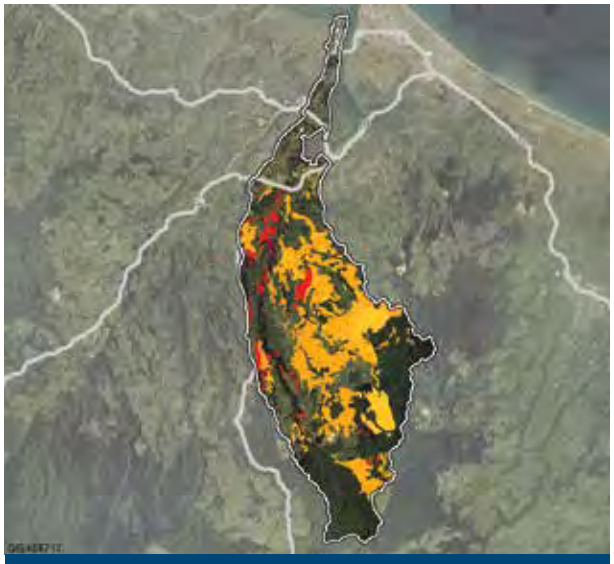
Land use capability classification in the Waimapu sub-catchment

LUC Class	LUC Units	%
2	2s 1	3
3	3e 2, 3e 8, 3w 1	12
4	4e2, 4e 9	17
6	6e 3, 6e 4, 6e 7, 6e 11, 6w 1	48
7	7e 1, 7e 2, 7e 11	11
8	8e 4	1

Not all areas are allocated a LUC unit, so the percentages do not sum to 100

Erosion risk in the Waimapu sub-catchment

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



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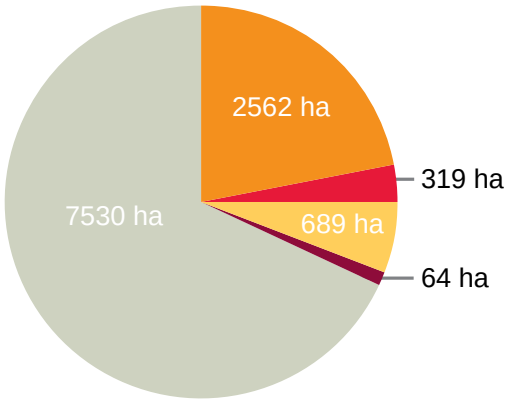
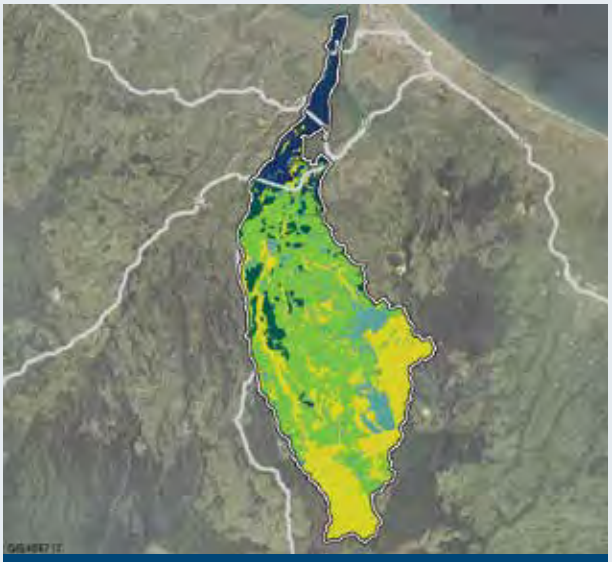


Land Use	Risk	Percent
Pasture	Medium	22
Pasture	High	3
Exotic forest	Medium	6
Exotic forest	High	1
Other land	Not prone	68

Land cover in the Waimapu sub-catchment



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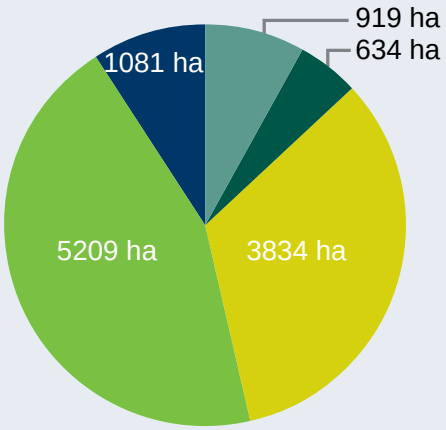
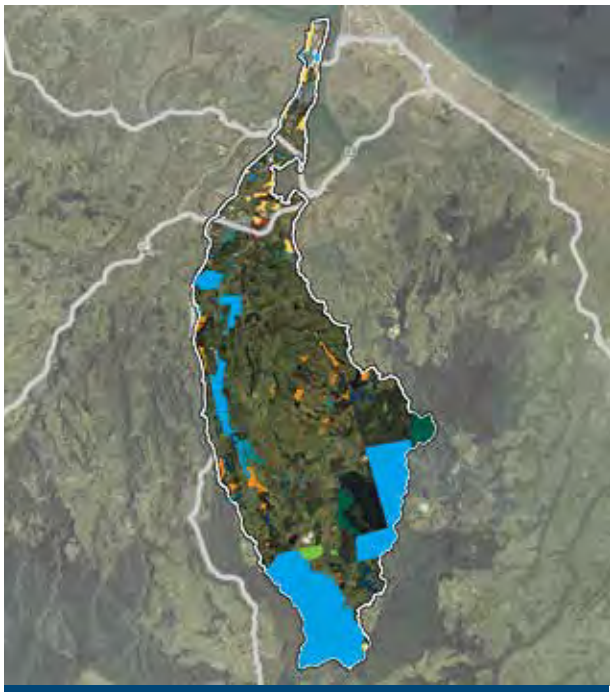


Vegetation	Percent
Exotic	8
Horticulture	5
Indigenous	33
Pasture	44
Urban	9

Existing protection status in the Waimapu sub-catchment



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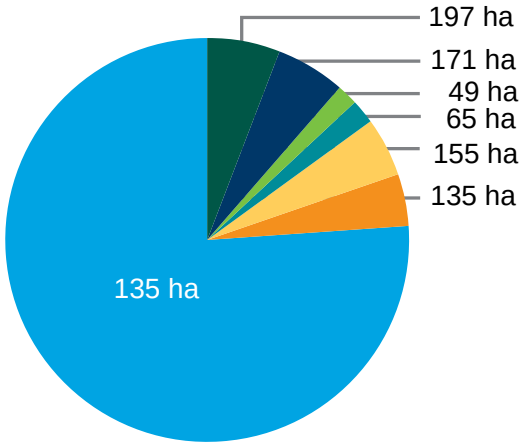

Class	Percent
DOC	6
BOPRC Covenant	5
Māori	0.2
Nga Whenua Rāhui	2
QEII	2
District Reserve	5
WBOPDC Covenant	4
TCC Water Reserve	76

Land management survey 2011

Field work

In developing the Waimapu Sub-Catchment Action Plan, Bay of Plenty Regional Council undertook field surveys of all properties that have waterways flowing through them or along their boundary between April and August 2011. Observations for some properties were made from adjacent land. Areas with formal protection were not surveyed as they already have action plans in place.

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

Land use	▪ Type and rationale ▪ Land Use Capability classification based on physical resources present
Stream margins	▪ Protection measures (if any) in place ▪ General condition and upkeep ▪ Estimated length (both protected and unprotected) ▪ GPS track of any stream channels not evident in the GIS database maps
Erosion features	▪ Estimated size and trend direction ▪ Photographs and GPS points (either at feature or where the photo was taken)
Biodiversity features	▪ Estimated land cover and the type of vegetation (e.g. native, introduced species)

Land owner feedback

Bay of Plenty Regional Council, NZ Landcare Trust and Department of Conservation held a meeting with landowners on 26 July 2011. The meeting gathered their concerns, challenges and priorities.

In order of priority, the challenges and solutions suggested were:

Priority 1 – Education and information

- Greater education and publicity of the choices and benefits of Riparian Management Plans
- Clarify the nature of the sediment (and therefore the sediment source) in the waterways. Identify and consider whether it is heavy or light sediment
- Educate and publicise the various types of waterways (e.g. creeks, streams, rivers) suitable for riparian management
- Research to find creative means and uses for riparian planting (such as making productive use of riparian strips)
- Provide information to farmers about track formation and maintenance for minimising erosion and run-off.

Priority 2 – Sedimentation

- Manage the unsealed roading network by extending seal and reducing sediment run-off
- Better manage run-off from subdivision development.

Priority 3 – Care groups

- Have a care group(s) for the Waimapu Stream/ catchment.
- Encourage or arrange for nurseries to grow plants for the Waimapu catchment care group.

Priority 4 – Collaboration between Regional Council and landowners

- Take economic viability into account and make land management regulations affordable for landowners
- Council to listen to and be more flexible with landowners.

Priority 5 – Riparian management

- Encourage appropriate riparian management (fencing off) on all waterways
- Take a staged approach towards adopting best riparian management practices
- Minimise *E. coli* entering waterways.

Iwi/hapū feedback

Representatives of hapū within the Waimapu catchment rohe shared their main concerns, challenges and priorities regarding the natural environment of this area

- The hapū and their iwi support any initiatives which result improved water quality particularly with regard to the importance of using the streams and harbour for kaimoana gathering, including Patiki and Titiko, and swimming and playing.
- Most ancestral lands have been lost - it is important to tangata whenua that Regional Council supports the owners of Māori land to improve water quality and biodiversity.
- It is important that remaining remnant native bush is protected and restored.
- It is a high priority to the iwi/hapū to protect culturally significant sites in the catchment.
- There were a range of opinions on whether traditional walking routes should be open for public use.

- Build capacity for young Māori to learn about/work in the resource management field within their rohe.
- Protect the Mauri of the streams and lands within the catchment by way of kaitiaki.
- Monitor restoration activities such as riparian fencing and planting to reduce sedimentation and increase water quality; and
- On-going communication between regional council and iwi/hapū. Share monitoring results and proposed restoration initiatives with iwi/hapū and work with iwi/hapū to restore their lands where possible.

Actions

Three main land management issues, common to the surveyed properties, were identified in the Waimapu sub-catchment. We have identified solutions that will help maintain and improve riparian protection, reduce erosion and unsuitable land use and reduce biodiversity loss within the catchment area, and who can help implement the actions

Land management issues and solutions

Actions	Milestones	Who is involved?
Improving riparian protection ▪ Work with landowners to apply sustainable land use methods and practices to maintain and/or repair wetlands and streambanks to improve water quality. ▪ Completely remove stock access to stream banks, fence remaining 234km 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.	5 km of new riparian fencing per year 1 km of riparian planting per year	▪ Bay of Plenty Regional Council ▪ Landowners ▪ Western Bay of Plenty District Council ▪ Tauranga City Council for projects which benefit the city ▪ NZ Landcare Trust working with community care groups
Improve erosion control and appropriate land use practices ▪ 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. ▪ Work to ensure that earthworks, track construction and roading complies with best practice to minimise run-off. ▪ Increase the awareness of the impact of cattle and deer on steeper slopes. ▪ Ensure that landowners apply appropriate land management practices.	50 properties with 'at risk' land have management plans by 2022	▪ Bay of Plenty Regional Council ▪ Landowners ▪ Western Bay of Plenty District Council ▪ Department of Conservation ▪ NZ Landcare Trust working with community care groups
Improve biodiversity protection and enhancement ▪ Advocate protection and restoration of valuable areas within the sub-catchment ▪ 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.	By 2022 an additional 30 sites, including the 2 High Value Ecological Value sites are managed for biodiversity protection and enhancement.	▪ Bay of Plenty Regional Council ▪ Landowners ▪ Western Bay of Plenty District Council ▪ Department of Conservation ▪ Community Care Groups ▪ NZ Landcare Trust working with community care groups

Monitoring

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

	Key performance indicator	Waimapu sub-catchment targets							
		Current Year ending 30 June 2012	**Year 1***	**Year 2***	**Year 3***	**Year 4***	**Year 5***	**Years 6*-10**	**Total**
Soil and water	Km of riparian margins with no stock access	50.6% - 238 km	4 km	4 km	4 km	5 km	5 km	5 km, 5 km, 6 km, 6 km	50 km
	Number of properties 'at risk' for erosion which are managed by a property management plan.	New measure	5	5	5	5	5	5	50
Biodiversity	High value ecological sites on private land that are under active management.	New measure	0	1	0	0	1	0	2
	Number of areas of indigenous forest or wetland being actively managed by the community to protect their biodiversity values.	New measure	3	3	3	3	3	3	30

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

Bill and Wendy Flowerday moved to their 97 hectare Ohauiti property on the slopes of Mt Misery (Maungatutu) in 2004. They had previously farmed in the Waikato. Their intention for the property, known as Rewa Ridge, was to fatten beef cattle. The light Kaharoa ash soils erode readily when exposed to the heavy rains typical of the area. Bill and Wendy quickly recognised that there were parts of the land that were better off retired either for soil conservation or to protect the many areas of native bush.

Bill and Wendy looked at their options and entered into two agreements with the Bay of Plenty Regional Council. The first was a Biodiversity Management Plan which protects areas of forest and wetland. They received a substantial subsidy toward the cost of the fencing, planting and pest and weed control. The second was a Riparian Management Plan to fence off stream banks from stock, with a similar subsidy for costs. These two agreements were each signed for a five year period and can be reviewed at any time. The property is now looking great both from a production and protection perspective. The Regional Council congratulates Bill and Wendy for taking the initiative and doing their bit for water quality, soil conservation and forest protection.

Bill standing in front of his recently fenced protection area.

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

Bay of Plenty REGIONAL COUNCIL

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