

Wainui

Sub-Catchment Action Plan 2012



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

Published September 2012



Introduction

The Wainui sub-catchment is 13 km north-west of Tauranga and located between Esdaile and Work Roads. It is 5058 hectares and for planning purposes includes the Apata sub-catchment. The catchment area flows from the Kaimai Range in the south-west to Tauranga Harbour in the north-east. The Wainui sub-catchment is part of the Tauranga ecological district.

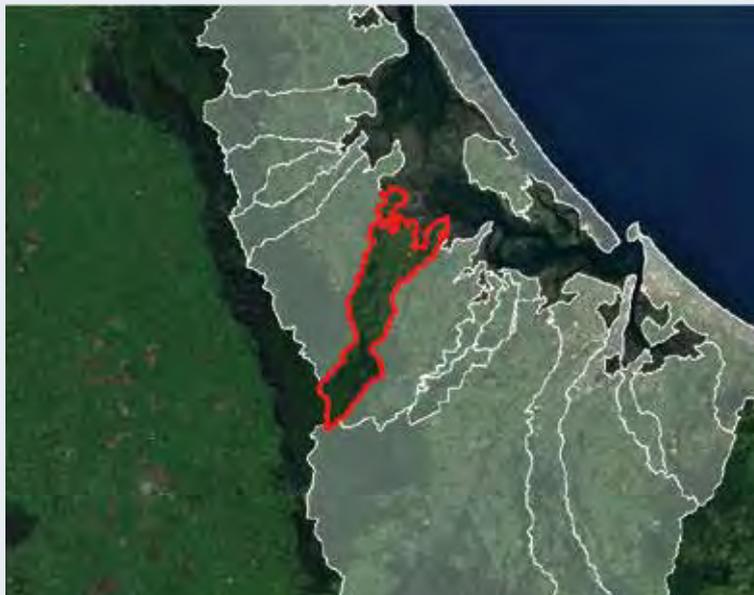
The sub-catchment is about 18 km long and five km wide. It includes 191 km of stream margins and 12 km of harbour margin. The primary waterway in the sub-catchment is the Wainui River. There are four named tributary streams (Waitioka, Parapara, Pahangahanga, and Kaipoko) and numerous unnamed tributaries. The Wainui River and its tributaries are classified as aquatic ecosystem streams.

The most widely spread class of vegetation cover in the sub-catchment is pastoral vegetation at 47 percent of total area. It is found mostly in the middle and lower sections of the sub-catchment. Indigenous land cover (bush) is mainly in the upper sub-catchment (41 percent), and horticultural land cover (nine percent) is only in the lower sub-catchment.

Sub-catchment soils are derived from air-fall ash and belong to the Katikati soil series. Soils on the stream flats are recent and consist of fluvial sands, silts, gravels and boulders. The geology of the sub-catchment is derived from weathered rhyolitic and andesitic tephra on andesites. These soils are versatile with no rooting barrier, however the physical structure is poor and soils 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 Tauranga Harbour 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 Wainui sub-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. 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.

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 help 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 indigenous biodiversity.
- Protect existing wetlands.
- Work with landowners, other agencies and other sections of Regional Council to ensure consistent land and water quality management.

Current riparian margin fencing protection:

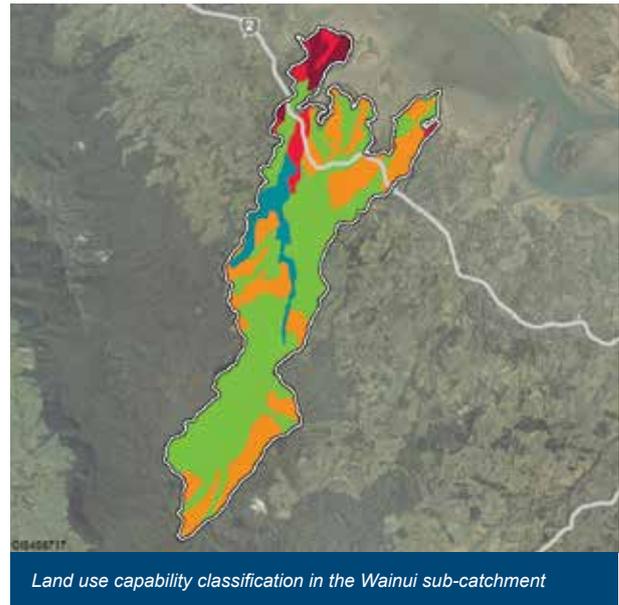
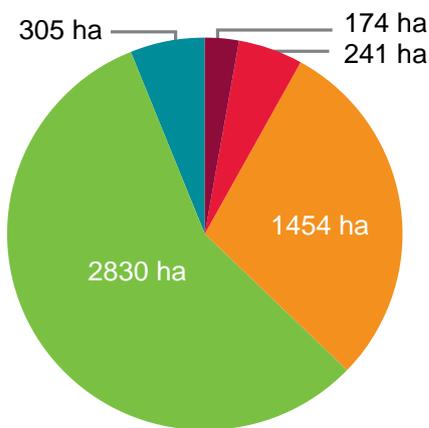


The stock excluded figure indicates those streams that are fenced off or land that is currently not available for stock grazing e.g horticulture, forestry, and native bush.

Land use capability classification in the Wainui sub-catchment

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

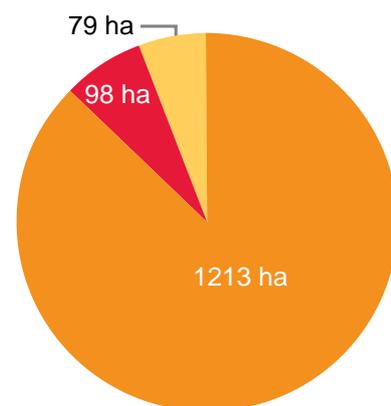
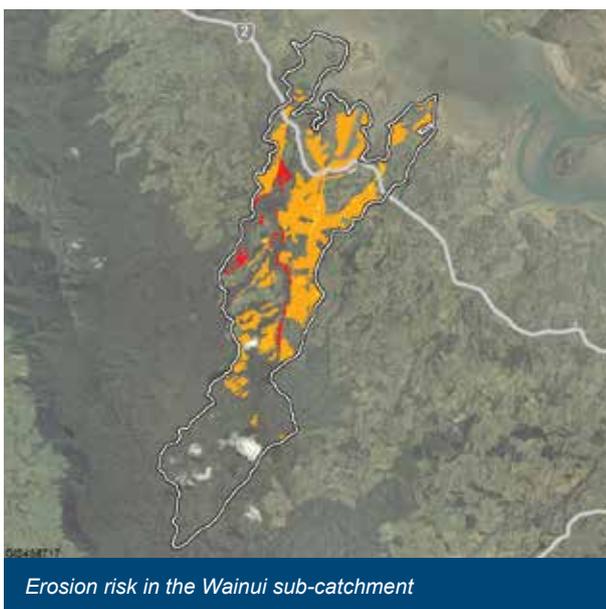
The majority of land in this sub-catchment is Land Use Capability (LUC) Class 6 - rolling and steep landscapes. Both LUC Class 6 and 7 lands are in the middle and upper catchment. Highly productive LUC Class 2, 3 and 4 - gentle to rolling lands - are primarily in the lower catchment.



LUC Class	LUC Units	Percent
2	2e 1	3
3	3e 1, 3w 1	5
4	4e 1, 4e 9	29
6	6e 1, 6e 2, 6e 2+4e 1, 6e 11, 6w 1	56
7	7e 8	6

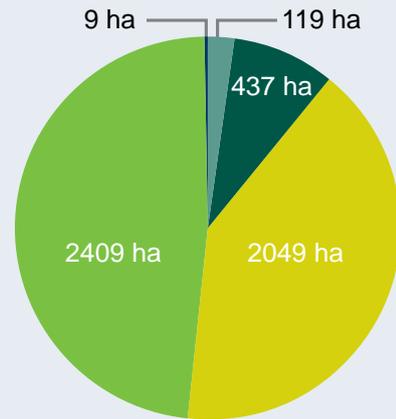
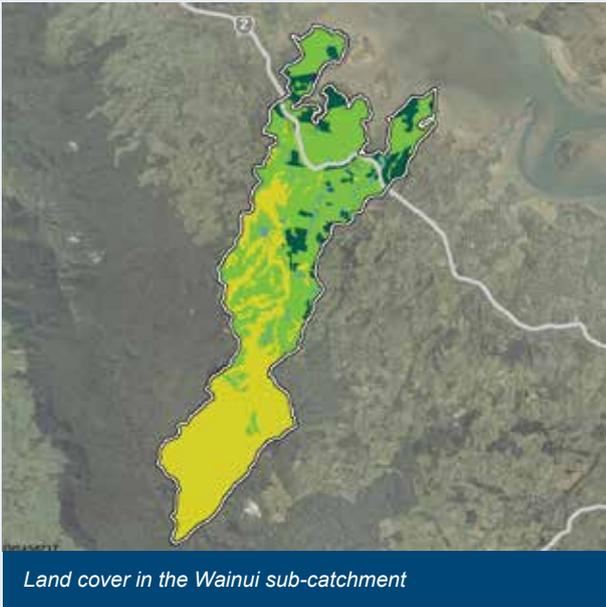
Erosion risk in the Wainui sub-catchment

A high proportion of Land Use Capability Class 6 land in the Wainui sub-catchment is medium-risk erosion-prone land due to pastoral land use.



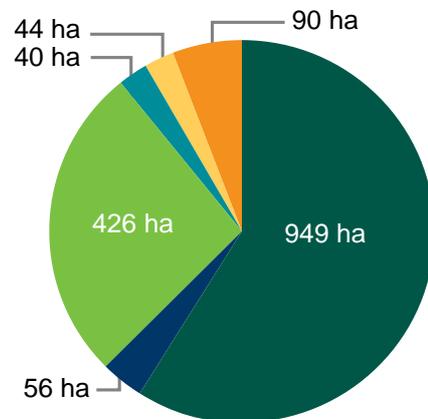
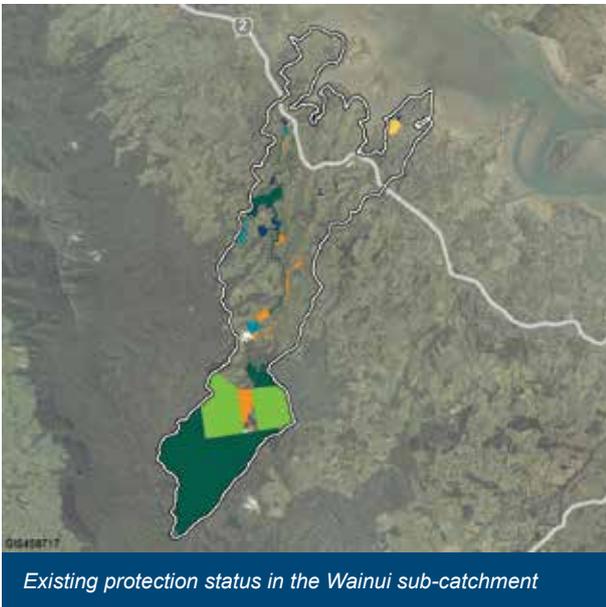
Land Use	Risk	Percent
Pasture	Medium	24
Pasture	High	2
Exotic forest	Medium	2

Land cover in the Wainui sub-catchment



Vegetation	Percent
Exotic	2
Horticulture	9
Indigenous	41
Pasture	48
Urban	0.2

Existing protection status in the Wainui sub-catchment



Class	Percent
DOC	19
BOPRC Covenant	1
Nga Whenua Rāhui	8
QEII	1
District Reserve	1
WBOPDC Covenant	2

Land management survey 2011

Field work

In developing the Wainui Sub-Catchment Action Plan, Bay of Plenty Regional Council undertook field surveys of 21 properties in the catchment area in April and October 2011. The properties surveyed covered 33 percent of the catchment.

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 had action plans in place.

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

The table summarises the field work:

Land use	<ul style="list-style-type: none"> Type and rationale Land Use Capability classification based on physical resources
Stream margins	<ul style="list-style-type: none"> Protection measures (if any) General condition and upkeep Estimated length (both protected and unprotected) GPS track of any stream channels not evident in GIS database maps
Erosion features	<ul style="list-style-type: none"> Estimated 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"> Estimated extent of land area covered 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 met with land owners on 11 July 2011 to gather their concerns, challenges and priorities.

Priority 1 – Water Quality

- Fencing to stop stock ingress.
- Nutrient loads.

Priority 2 – Cost and Funding issues

- Cost of maintaining riparian strips (weed control).
- Insufficient finance for fencing and planting for some landowners.
- On-going financial assistance to complete and maintain the fencing and weed control so the effect is universal.
- Cost of establishment of riparian protection.
- Funding or plants needed to plant filter belts along river fringe to improve water quality.
- Riparian fencing cost and planting advice.
- Planning to fence adequately with regards to topography, contour, maintenance, security from poachers.
- Cost of weed control in waterways (e.g. gorse, pampas, blackberry).

Priority 3 – Mangroves /sedimentation

- Extent of mangrove growth in the estuary.
- Sedimentation.

Priority 4 – Communication

- All property owners' involvement in riparian protection.

Priority 5 – Land maintenance and erosion control

- Logs falling off slips/erosion in upper catchment, clogging swimming holes and trapping sediment and kayakers.

Priority 6 – All harbour users sharing responsibility

- The rural landowner is subsidising the urban water users with no input.

Priority 7 – Sub-catchment management

- Planting the riparian edges using suitable plants regarding topography. Perhaps need a specific nursery plan / council management plan.
- Western Bay of Plenty District Council should have a subdivision requirement that waterways be fenced off.

Priority 9 – Increasing native fish stocks

- To make Wainui a whitebaiting-free river to increase the native fish stocks.

Iwi/hapū feedback

“Ngāi Tamawhariua hapū tautoko the efforts of Regional Council to improve the mauri and water quality of rivers within our rohe, and Tauranga Moana in general. In particular, Ngāi Tamawhariua support actions that will restore the health and abundance of traditional kai such

as tuna and watercress. We would love to see people heading down to swim in the river as we used to. Clean water to swim and healthy kai stocks are indicators of good stream health from our perspective”.

Actions

Three main land management issues were identified, common to the surveyed properties, in the Wainui sub-catchment. These are set out below, with actions proposed to maintain and improve riparian protection, reduce erosion and unsuitable land use and reduce biodiversity loss within the catchment area, and who is can help implement the actions.

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. Remove all stock access to streams, fence remaining 41 km and promote planting of riparian margins to eliminate the effects of livestock, polluted water runoff and erosion. Begin stream margin remedial works such as bank re-contouring, riparian planting and engineering works - using relevant legislation relating to riparian management. Identify site-specific solutions. 	<p>2.5 km of new riparian fencing per year</p> <p>1 km of riparian planting per year</p>	<ul style="list-style-type: none"> Bay of Plenty Regional Council Landowners Western Bay of Plenty District Council NZ Landcare Trust working with community care groups
<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 landowners apply appropriate land management practices. 	<p>30 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 NZ Landcare Trust working with community care groups
<p>Improve biodiversity protection and enhancement</p> <ul style="list-style-type: none"> Advocate further covenanted 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. 	<p>By 2022 an additional 23 sites, including the 3 High Value Ecological Value sites are managed for biodiversity protection and enhancement.</p>	<ul style="list-style-type: none"> 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

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

	Key performance indicator	Wainui 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.	78% - 150 km	2.5 km	2.5 km	2.5 km	2.5 km	2.5 km	2.5 km	25 km
	Number of properties 'at risk' for erosion which are managed by a property management plan.	New measure	3	3	3	3	3	3	30
Biodiversity	High value ecological sites on private land that are under active management.	New measure	0	1	0	1	0	1	3
	Number of areas of indigenous forest or wetland being actively managed by the community to protect their biodiversity values.	New measure	2	2	2	2	2	2	20

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

Terriann Payne has lived in the Wainui Stream catchment for three years and enjoys the benefits that lifestyle living brings; clean air, peace and quiet and plenty of outdoor activities to keep her young son entertained. They enjoy swimming in the Wainui River and this got Terriann thinking about water quality.

While studying for a university degree in environmental science, Terriann was able to study the river. "The wee critters, or macro-invertebrates, that live in the water are an excellent measure of water quality," said Terriann.

"The species and numbers present can be used as water quality indicators."

Terriann's study showed that water quality in the Wainui is good to excellent overall but human influences can significantly affect the river, particularly grazing and earthworks around the smaller feeder tributaries.



Children swimming at a local Wainui River waterhole

Keeping livestock out of waterways is a significant step towards maintaining water quality and in most cases the Bay of Plenty Regional Council can assist with fencing costs.

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

