Te Rereatukahia

Sub-Catchment Action Plan 2012

The Te Rereatukahia 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 Te Rereatukahia 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 Te Rereatukahia sub-catchment is five kilometres south-west of Katikati. The catchment is 1857 hectares in area and flows east from the Kaimai-Mamaku Forest Park to Tauranga Harbour. The Te Rereatukahia sub-catchment is part of the Tauranga ecological district.

The sub-catchment is about 8.5 km long and two km wide. It includes 44 km of stream margins and 1.2 km of harbour margin. The primary waterway in the sub-catchment is the Te Rereatukahia Stream (seven km). There is one named tributary stream, Ngututuru (4.4 km) and numerous unnamed tributaries (32.6 km). The Te Rereatukahia Stream and its tributaries are classified as natural state streams in the upper reaches and aquatic ecosystem streams through the developed catchment.

The most widely spread class of vegetation cover in the sub-catchment is indigenous vegetation at 62 percent of total area. There are large tracts of pasture land cover in the middle sub-catchment (20 percent), and horticultural land cover (13 percent) is restricted the mid-lower sub-catchment. Exotic forest is found in the mid sub-catchment (five percent).

Soils belong to the Kaitkati soil series and are of volcanic origin derived from various volcanic ash layers over Waiteariki Ignimbrite. Sub-catchment 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 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 Te Rereatukahia 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 in streams may also be degraded by high nutrient levels 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 Te Rereatukahia 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 help reduce pollutants entering streams through surface runoff
- Encourage stock stream crossings, such as bridges, to protect streams' water quality
- Support retirement of steep erodible land
- Protect existing indigenous biodiversity
- Protect existing wetlands

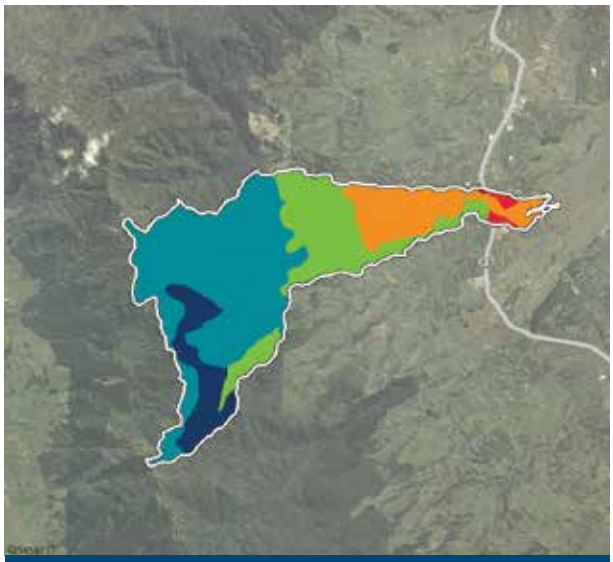
Current riparian margin fencing protection:

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.

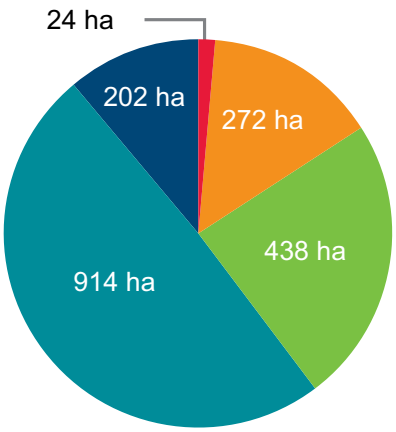
Land use capability classification in the Te Rereatukahia sub-catchment

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 catchment is classified as moderate to highly erodible Land Use Capability (LUC) Class 6, 7 and 8 lands – strongly rolling, steep and very steep landscapes. The remaining land is highly productive (LUC) Class 3 and 4 lands – undulating to rolling landscapes – that is found throughout the lower sub-catchment.



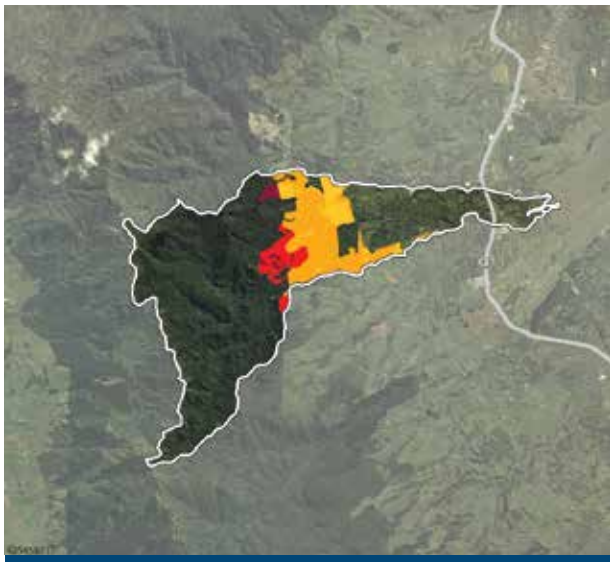
Land use capability classification in the Te Rereatukahia sub-catchment



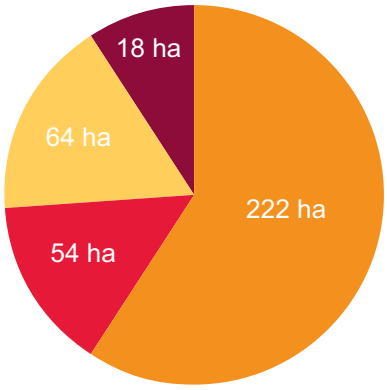
LUC Class	LUC Units	Percent
3	3e 1	1
4	4w 1	15
6	6e 1, 6e 2, 6e 2+8e 2	24
7	7e 8	49
8	8e 4	11

Erosion risk in the Te Rereatukahia sub-catchment

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

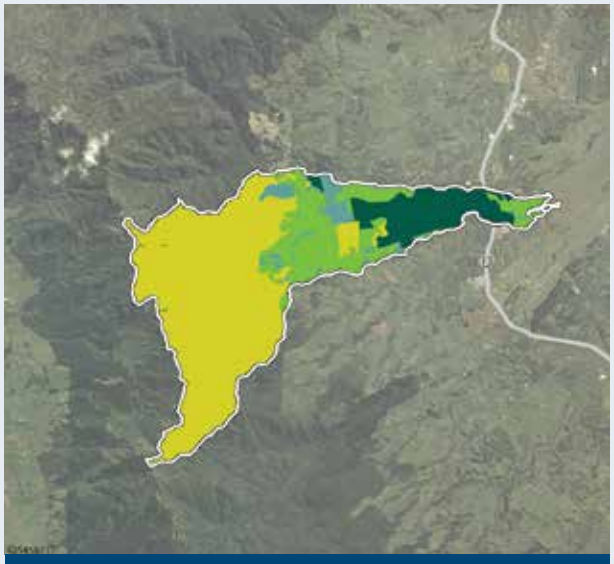


Erosion risk in the Te Rereatukahia sub-catchment



Land Use	Risk	Percent
Pasture	Medium	12
Pasture	High	3
Exotic forest	Medium	3
Exotic forest	High	1

Land cover in the Te Rereatukahia sub-catchment



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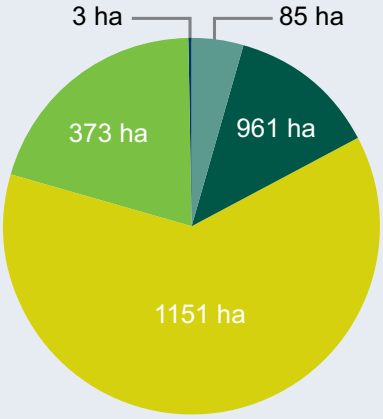
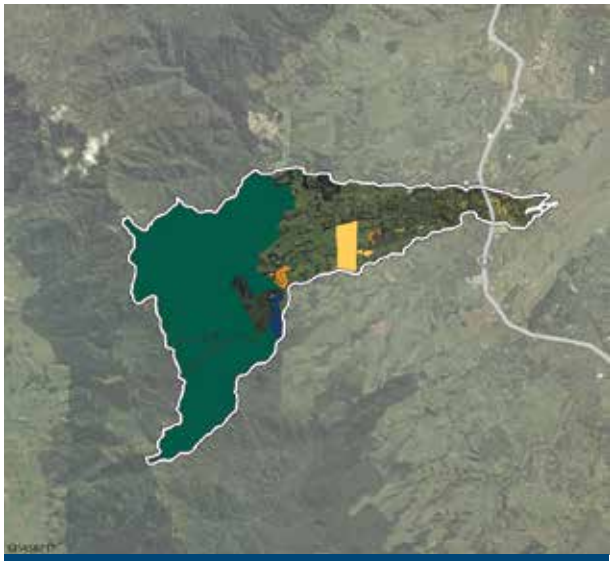


Vegetation	Percent
Exotic	5
Horticulture	13
Indigenous	62
Pasture	20
Urban	0.1

Existing protection status in the Te Rereatukahia sub-catchment



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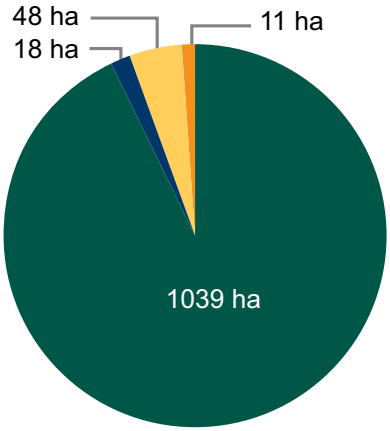

Class	Percent
DOC	56
BOPRC Covenant	1
District Reserve	3
WBOPDC Covenant	1

Land management survey 2011

Field work

In developing the Te Rereatukahia Sub-Catchment Action Plan, Bay of Plenty Regional Council undertook field surveys of 10 properties in the catchment area in April 2012 and May 2012. The properties surveyed covered 12 percent of the catchment. Priority was given to large pastoral blocks 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, steam margins, erosion features and biodiversity features.

The table summarises the field work:

Land use	▪ Type and rationale ▪ Land Use Capability classification based on physical resources
Stream margins	▪ 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	▪ Estimated size and trend direction ▪ Photographs and GPS points (either at feature or where the photo was taken)
Biodiversity features	▪ 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 12 September 2012 to gather their concerns, challenges and priorities. The land management issues raised included:

Priority 1 – Education and establishing care groups

- Education about land management / sustainability
- What if DOC and WBOPDC set up care groups like "Neighbourhood Watch" but "Forest Watch" – coach and mentor and support the groups to take action.
- TV to use for education of local weed issues.
- Tap into the historical knowledge of the long-staying landowners in each locality.
- Education and involvement of the younger generation / children in the catchment.
- Empower and educate the community to get together and work on the issues.

Priority 2 – Restoration of native biodiversity

- Active control of pests (animals and weeds) in the catchment area – 1080 if necessary.
- Restoration of birdlife.
- Native animal biodiversity – pests.

Priority 3 – Water quality / Riparian management

- Water quality – requires fencing.
- Pool discharge (water from Sapphire Springs Hot Pool).
- Stream water quality – specifically the e-coli count.
- Planting of river boundaries – with natives and/or grasses.
- Compulsory fencing (unless inaccessible to stock) of river edges and active encouragement of planting banks in natives.
- Run-off of nutrient from properties that are not adjacent to the river, in addition to those that are.
- Build better bigger boulder banks – beat erosion!
- Stream alignment; look at the whole river; wetlands (cut speed, settle sediment); funding; river scheme (rate support).

Priority 4 – Weeds

- Practical approach to maintaining weed control (explore Department of Correction assistance, volunteer groups etc).
- Weeds (wandering jew, crocosmia, onion weed, convolvulus).
- Strong enforceable rules for weed control – eventual fine for non-compliance.
- Noxious weed list to be re-addressed. As it stands, no one takes responsibility.

Iwi/hapū feedback

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

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 supports 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 Te Rereatukahia 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 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 stream banks and to improve water quality. • Remove all stock access to streams; fence remaining 8 km and start planting 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.	0.8 km of new riparian fencing per year	▪ Bay of Plenty Regional Council ▪ Landowners ▪ Western Bay of Plenty District Council
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. • Increase the awareness of cattle and deer at high stocking rates on steeper slopes. • Ensure that landowners apply appropriate land management practices.	20 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
Improve biodiversity protection and enhancement ▪ Advocate further covenanted areas within the sub-catchment. • Continue tree planting on private land in native or non-invasive exotic species. • Continue to 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 10 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

Monitoring

Te Rereatukahia catchment action plan key performance indicators (KPI's)

	Key performance indicator	Te Rereatukahia 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 excluded from stock.	90% - 80 km	0.8 km	0.8 km	0.8 km	0.8 km	0.8 km	0.8 km	8 km
	Number of properties 'at risk' for erosion which are managed by a property management plan.	New measure	2	2	2	2	2	2	20
Biodiversity	High value ecological sites on private land that are under active management.	New measure	No identified high value ecological sites	0	0	0	0	0	0
	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

Helen Brownlie owns a 4.3 ha property on Hot Springs Road. Despite being a 'lifestyle' sized block, Helen applies the same farm management principles that are used on larger farms. One of the most important things she has done on the farm is the planning and implementation of subdivision fencing, which enables good stock and pasture management, while ensuring unsuitable areas for grazing (which include a small stream and a very steep slope) are either retired or put to an alternate use.

"I believe in common sense farming so have made a real effort to make things as simple as possible for myself. This is the main reason I have always kept a small flock of sheep and goats, they do a wonderful job of controlling weeds and reduce my labour." However Helen stressed the necessity for good quality fencing by experienced fencers which also must be maintained.

Helen Brownlie in front of her retired stream gully.

"Down the back of the property I saw the need to fence off the stream and the small bit of bush on the steep slope. I get satisfaction from seeing the bush recovering and I've also now planted out the margins. I haven't retired the whole area though; I have a small woodlot of eucalypts and kanuka that I use for firewood."

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

Bay of Plenty REGIONAL COUNCIL

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