

Kopurererua

Sub-Catchment Action Plan 2012



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

Published September 2012

Introduction

The Kopurererua sub-catchment is located 13 km north-west of Tauranga City. The sub-catchment is 7404 hectares in area and flows north from the Mamaku Plateau to Tauranga Harbour, entering the harbour at the Waikareao Estuary. It is part of the Tauranga and Otanewainuku ecological districts.

The sub-catchment is about 26 km long and four km wide. It includes 300 km of stream margins (total stream length is 150 km) and eight km of harbour margin. The primary waterway in the sub-catchment is the Kopurererua Stream (29 km). There is one named tributary stream (Tautau) and numerous unnamed tributaries. The Kopurererua Stream and its tributaries are classified as aquatic ecosystem streams.

The most widely spread vegetation cover in the sub-catchment is pastoral at 41 percent of total area. There are large tracts of indigenous land cover (bush) in the upper and middle sub-catchment (41 percent), and horticultural land cover (six percent) is restricted to the mid-lower sub-catchment. Exotic forest is found in the upper sub-catchment (six percent).

The geology is Te Ranga which is not known anywhere else suggesting a local volcanic pyroclastic flow eruption possibly under a lake as it was a very hot eruption but the rock is not welded. Sub-catchment soils are formed from volcanic tephra with Oropi soil series in the upper catchment and Katikati soil series in the mid to lower catchment. Both types have no significant 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 Kopurererua 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.

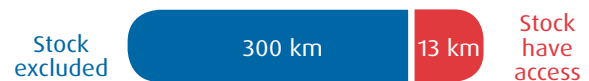
Water quality may also be degraded by excess nutrients in streams from fertilisers, farm runoff and urine patch leaching. Sediment can enter waterways from major construction sites (such as subdivision and roading) and forestry at harvest time. These and other pollutants are generally unintentional by-products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

Water quality monitoring by the Regional Council in 2011 shows that the Kopurererua Stream failed to meet the requirements of the Ministry of Health guidelines for swimming, did not meet the median faecal coliform standard of 100 cfu/100ml for stock water supply and exceeded nutrient levels that might promote undesirable biological growth.

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
- Work with landowners, other agencies and other sections of Regional Council to ensure consistent land and water quality management.

Current riparian margin fencing protection:

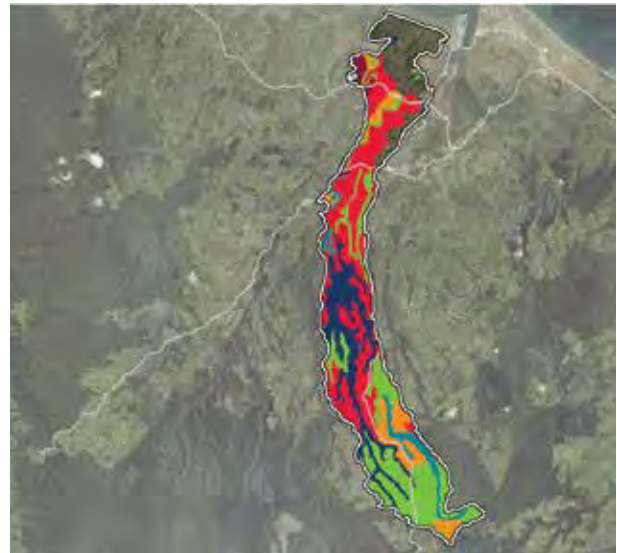
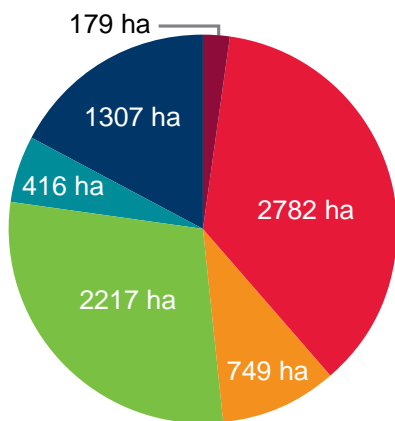


Stock exclusion indicates those stream margins that are fenced off or land that is currently not available for stock grazing, for example, horticulture, forestry, and native bush

Land use capability classification in the Kopurererua 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 highly productive Land Use Capability (LUC) Class 3 – undulating to rolling landscapes - found throughout the middle and lower sub-catchment. Moderately erodible LUC Class 6 and 7 lands – rolling to steep landscapes - are in the middle and upper catchment. Highly erodible LUC Class 8 – very steep gully sides - is primarily in the middle catchment.

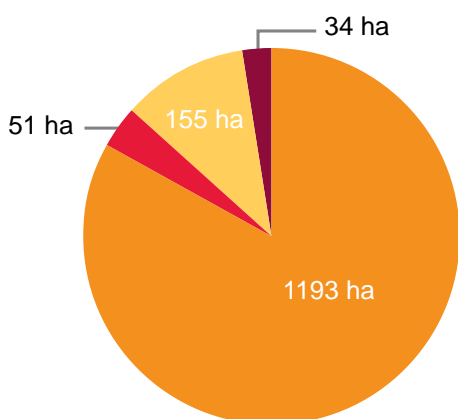


Land use capability classification in the Kopurererua sub-catchment

LUC Class	LUC Units	Percent
2	2e 1, 2s 1	2
3	3e 1, 3e 2, 3e 8, 3w 1	31
4	4e 1, 4e 2, 4e 9	8
6	6e 2, 6s 3, 6e 4, 6e 11, 6w 1	25
7	7e 1, 7e 2	5
8	8e 4, 8w 1	15

Erosion risk in the Kopurererua sub-catchment

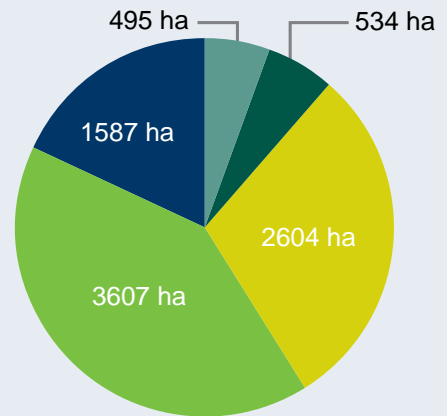
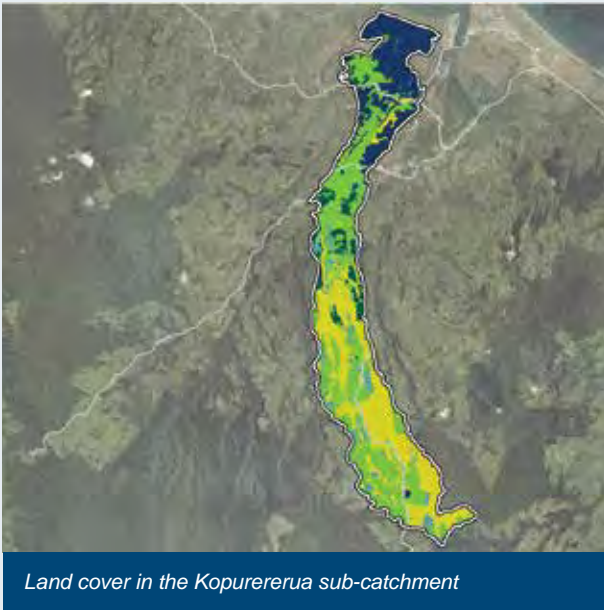
A high proportion of Land Use Capability Class 6 land in the Kopurererua sub-catchment is medium-risk, erosion-prone land due to pastoral land use.



Erosion risk in the Kopurererua sub-catchment

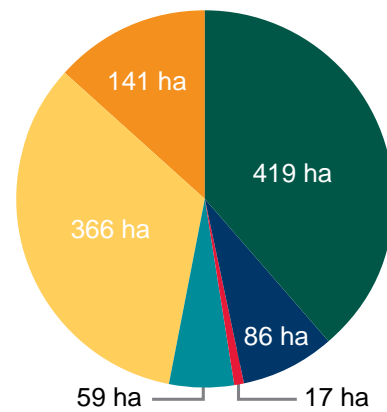
Land Use	Risk	Percent
Pasture	Medium	13
Pasture	High	1
Exotic forest	Medium	2
Exotic forest	High	0.4

Land cover in the Kopurererua sub-catchment



Vegetation	Percent
Exotic	6
Horticulture	6
Indigenous	29
Pasture	41
Urban	18

Existing protection status in the Kopurererua sub-catchment



Class	Percent
DOC	5
BOPRC Covenant	1
Māori	0.1
QEII	1
District Reserve	4
WBOPDC Covenant	2

Land management survey 2011

Field work

In developing the Kopurererua Sub-Catchment Action Plan, Bay of Plenty Regional Council undertook field surveys of 26 properties in the catchment area in December 2011 and February 2012. The properties surveyed covered 23 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, 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 21 July 2011 to gather their concerns, challenges and priorities. The land management issues raised included:

Priority 1 – Pest Control

- Eradication of unwanted pests to promote native species, especially within bush and bush boundaries.
- Simple pest control methods that can be adopted by the public, particularly the introduction and use of new technologies.

Priority 2 – Information Transfer

- Catchment coordination to identify and support the community to engage in community projects.
- Council advice and support to control those practices which cause erosion.
- There is a lack of understanding on council regulations for land activities.
- Community motivation and engagement to promote the community to take ownership of the challenges and become more involved in their catchment.

Priority 3 – Water Quality

- A decreasing trend of contamination and e-coli so the water can be drinkable and available for domestic use.
- Effective run-off control is required with better monitoring to identify the source of sediment and to provide clear facts on the issue.

Priority 4 – Economic Viability

- Economic business sustainability is to be maintained in the catchment.

Priority 5 – Lead by example

- The local authorities and government agencies should practice good land management on their own land, including mitigation action to reduce flooding for landowners and road users.

Iwi/hapū feedback

Representatives of hapū within the Kopurererua 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 in 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 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 were identified, common to the surveyed properties, in the Kopurererua 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?
<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 13 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. 	1.3 km of new riparian fencing per year	<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 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	<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 with 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 31 sites, including the High Value Ecological Value site, are managed for biodiversity protection and enhancement.	<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

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

	Key performance indicator	Kopurererua 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.	91% – 143 km	1.3 km	1.3 km	1.3 km	1.3 km	1.3 km	1.3 km	13 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	0	0	0	0	0	1	1
	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

The Kopurererua Valley Redevelopment Project is the largest wetland restoration project in the southern hemisphere and includes a 300 hectare block of low lying land being restored to a wetland reserve. The partners to the project include Tauranga Rotary Centennial Trust; Iwi, Opus; Comvita; OfficeMax, Naturally Native; Downer NZ; and Tauranga City Council.

Already many people in the Tauranga community have been involved and many companies have supported the project. A number of developments have taken place and there are plenty more programmed in years to come.

Some of the milestones achieved so far include:

- 30 hectares of land cleared
- 15 hectares of land replanted with more than 150,000 native plants and trees
- six km of boardwalks and walkways developed
- A visitor kiosk constructed at Faulkner Street
- Partial stream realignment
- 55 community Planting Days



Councillor David Stewart, MP for Tauranga Simon Bridges and Chairperson of the Kopurererua Valley Rotary Centennial Trust, Ian Wilson planting Kahikatea trees at the opening ceremony of the bridge walkway.

- Visits by 35 school groups
- More than \$7.5M of investment through the Rotary Centennial Trust and other City Partners

This project aims to return a significant wetland habitat to the valley and increase ecological, cultural and recreational opportunities to the Tauranga area.

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

