

Te Puna/Waipapa

Sub-Catchment Action Plan 2012



The Te Puna/Waipapa 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 Puna/Waipapa sub-catchment, and planned action for land and resource use in the sub-catchment.

Published September 2012



Introduction

The Te Puna/Waipapa sub-catchment is about 15 km north-west of Tauranga. It is 9345 hectares in area and flows from the Kaimai Range north-east to Tauranga Harbour. The Te Puna/Waipapa sub-catchment is part of the Tauranga ecological district.

The sub-catchment is about 18 km long and five km wide. It includes 278 km of stream margins and 12 km of harbour margin. The primary waterways in the sub-catchment are the Waipapa and Te Puna Rivers, with two named tributary streams (Waione and Patirawa) and numerous unnamed tributaries.

The most widely spread class of vegetation cover in the sub-catchment is pastoral vegetation at 55 percent, spread across the catchment. Indigenous land cover (bush) is mainly in the Kaimai Range in the upper sub-catchment (23 percent), and horticultural land cover (13 percent) is in the middle and lower sub-catchment. Exotic forestry is spread throughout the middle catchment (six percent).

Sub-catchment soils are derived from air-fall ash and belong mainly to the Katikati Sandy Loam and Whakamarama Hill soil series, with occasional Otanewainuku steep-land soil series occurring in the upper reaches. These volcanic soils are versatile and naturally well-drained but are vulnerable to erosion under poor vegetation cover due to their shallow profiles.



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.

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.

The Bay of Plenty region has 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.

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 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:

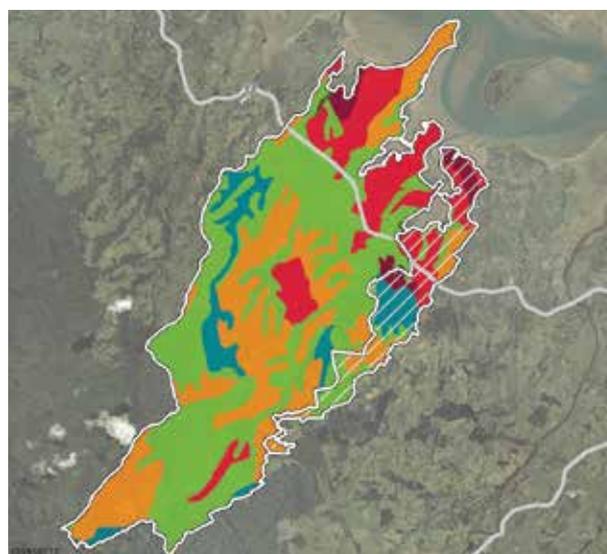
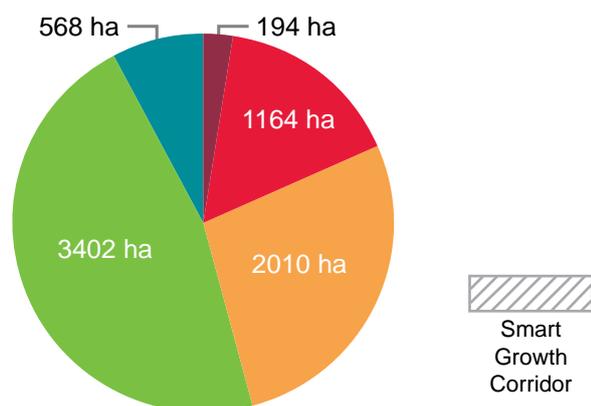


The above stock excluded figure indicates those stream margins that are fenced off or land that is currently not available for stock grazing, for example, horticulture, forestry, and native bush.

Land use capability classification in the Te Puna/Waipapa 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 long-term

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 restricted to the lower catchment. sustainability.

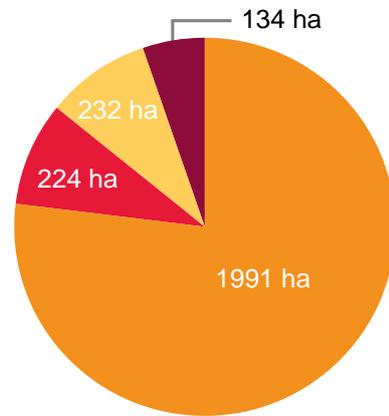
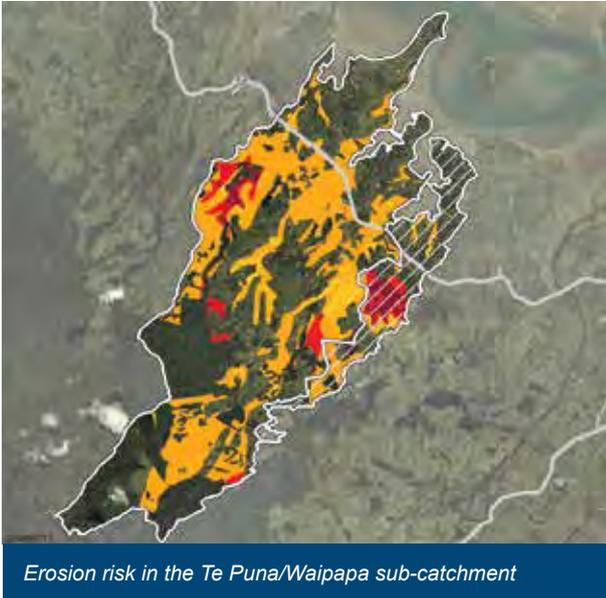


Land use capability classification in the Te Puna/Waipapa sub-catchment

LUC Class	LUC Units	Percent
2	2e 1	3
3	3e 1, 3w 1	16
4	4e 1, 4e 9	27
6	6e 1, 6e 2, 6e 11, 6e 2 + 4e 1, 6w 1	46
7	7e 7, 7e 8	8

Erosion risk in the Te Puna/Waipapa sub-catchment

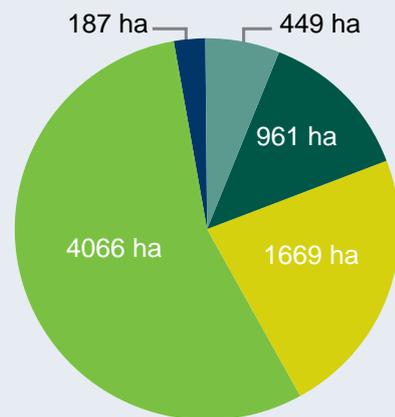
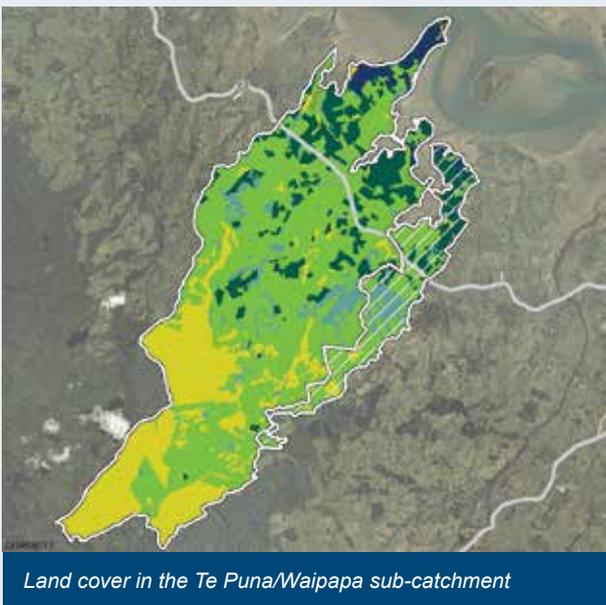
A high proportion of Land Use Capability Class 6 land in the Te Puna/Waipapa sub-catchment is medium risk erosion-prone land due to pastoral land use.



Land Use	Risk	Percent	
Pasture	Medium	27	
Pasture	High	3	
Exotic forest	Medium	3	
Exotic forest	High	2	

Smart Growth Corridor

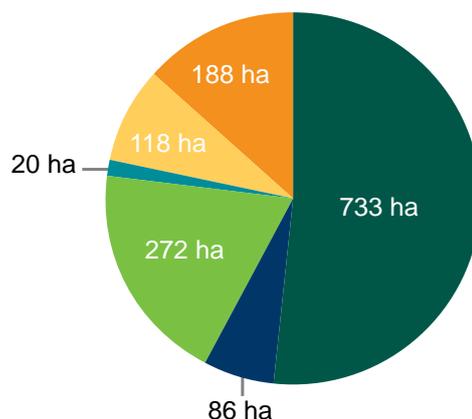
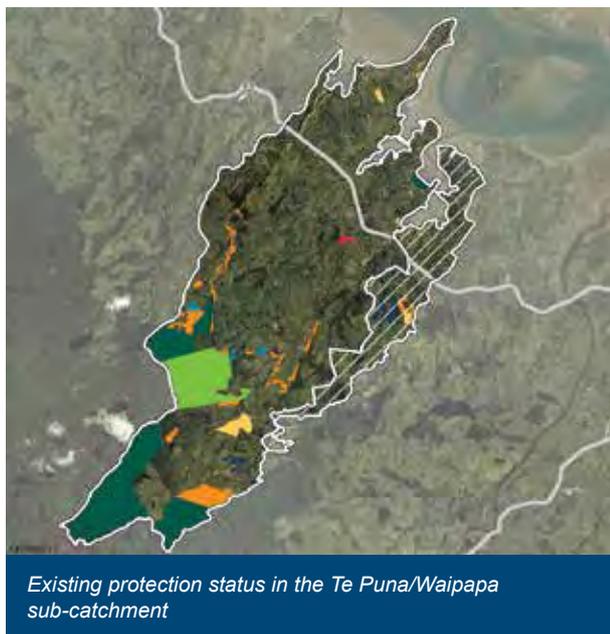
Land cover in the Te Puna/Waipapa sub-catchment



Vegetation	Percent	
Exotic	6	
Horticulture	13	
Indigenous	22	
Pasture	55	
Urban	3	

Smart Growth Corridor

Existing protection status in the Te Puna/Waipapa sub-catchment



Class	Percent
DOC Reserve	10
BOPRC Covenant	1
Nga Whenua Rāhui	4
QEII	0.3
District Reserve	2
WBOPDC Covenant	3

 Smart Growth Corridor

Land management survey 2011

Field work

In developing the Te Puna/Waipapa Sub-Catchment Action Plan, Bay of Plenty Regional Council undertook field surveys of 69 properties in the catchment area between April and October 2011. The properties surveyed covered 46 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 have management plans in place. Field work included an assessment of land use, stream margins, erosion features and biodiversity features.

The table summarises the field work undertaken:

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 Estimated 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"> 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 held a meeting with land owners on 20 September 2011. The meeting gathered their concerns, challenges and priorities.

Priority 1 – Sediment control

- Mangroves: Hand removal of seedlings to historic levels. Control the cause, not the symptom.
- Sediment control and erosion management: keep own dirt at home, Tauranga Harbour water quality.

Priority 2 – Education

- Getting landowners on-board for action i.e. education on covenants, etc.
- List of suitable plants to use in riparian strips.
- Rigorous scientific input needed.
- How to determine size of water courses to be fenced and protected.
- Practical solutions to water issues available.
- Public understanding about the differences between esplanade reserves and riparian margins; public access areas vs private protection areas.

Priority 3 – Water quality

- Water quality: nutrients, pathogens, chemicals, leaching from septic tanks.
- Run-off: wastewater, pasture, farm tracks, cultivated areas. Interception and filtering.
- Stormwater run-off – rural and urban.
- Water run-off from solid surfaces e.g. roads.

Priority 4 – Riparian management

- Riparian strips. Fencing is a priority before planting.
- Interagency planning and coordinating. For example, Regional Council is promoting river and stream protection yet District Council is creating walkways along Esplanade Reserves. Conflict of people, dogs, access tracks, vegetation and birds.
- Land access (need roads to reach all streams) vital to stream protection.
- Soil erosion. Exclusion of stock and riparian planting of rivers and streams.
- Stock control in waterways.

Priority 5 – Economic and Priority 9 – Soil contaminant

- Fall-out of kiwifruit PSA: economic and environmental (chemical controls). Disposal of infected plants.

Priority 6 – Native biodiversity

- Native species (inconspicuous/little known species): where are they? Abundance? Viable populations? Diversity of habitat available? Monitoring needed.
- Fish passage.

Priority 7 – Pests

- Need more biological control of weeds: e.g. tobacco weed, gorse and wild kiwifruit, passionfruit and ginger.
- Control of pests: rats, possums, stoats etc along riparian strips of multiple ownership.

- Pest control – such as rabbits, stoats, cats, invasive weed plants.
- Pest eradication using non-toxic methods.
- Control of weeds in fenced and protected areas – ongoing cost of labour and chemicals.
- Fall-out of kiwifruit PSA: economic and environmental (chemical controls). Disposal of infected plants.

Priority 8 – Balance planning

- Balance is needed between the needs of people, a modern economy and conservation practices.
- Retain recreational possibilities.

Priority 10 – Protection of water supply

Iwi/hapū feedback

The following iwi and hapū have an interest in the area:

- Iwi: Ngati Ranginui
- Hapū: Pirirakau, Ngati Taka

The following summarises land management issues raised by Pirirakau:

- The Pirirakau Hapū Environmental Management Plan “Nga Taonga Tuku Iho” serves as an important reference into the aspirations of Pirirakau within this catchment.
- It is important that the cultural history of Te Puna / Waipapa catchments is shared by the establishment of appropriate recreational infrastructure and restoration and protection of historical sites including inner harbour positioned urupa and artefacts in situ where appropriate.
- Where it is appropriate, recognition and inclusion is given to the Pirirakau identity and culture and promoted amongst agencies and local community as the tribal hapu of the area whilst noting Pirirakau is a hapu of Ngati Ranginui Iwi.
- It is important to have a balanced approach to pest management, so that Tangatawhenua have access to areas of larger pest animals such as pigs and deer and that those access areas are not decreased

in size, this provision is fundamental to the cultural practice of manaakitanga.

- Planners, consenting authorities and landowners do not award enough weight to the state of the environment.
- It is important that all water quality is maintained and enhanced to protect and promote marine environments, kaimoana and fresh water species.
- Where it is appropriate Tangatawhenua are included to participate in environmental enhancement opportunities and development.

The following summarises land management issues raised by Ngāti Taka:

- Hapu recognition.

- Recognition of cultural sites.
- Loss of knowledge of cultural sites.
- Protection of sites of cultural and traditional values and use e.g wetlands.
- Support for development of Hapu Environmental Plans including developing relationships and development of monitoring tools for a Māori Cultural Health Index e.g mahinga mataitai (key species as indicators of environmental health).
- Sedimentation.
- Water quality.
- Land management- riparian margins protection.
- Effects on kaimoana – protection of indicator taonga species and the foodwebs that support these species through a holistic, catchment-based approach.
- Erosion.
- Biosecurity.
- Recognition of the link between environmental effects and social aspects of the hapu.

Actions

Three main land management issues were identified, common to the surveyed properties, in the Te Puna/Waipapa Sub-Catchment. These are set out in the table below.

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 60 km 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>2 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 and 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 awareness of impacts of cattle and deer at high stocking rates on steeper slopes. • Encourage landowners to apply appropriate land management practices. 	<p>57 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 28 sites, including the 1 High Value Ecological site, 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

Te Puna/Waipapa catchment action plan key performance indicators (KPI's)

Key performance indicator	Te Puna/Waipapa 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.	78% - 218 km	2 km	2 km	2 km	2 km	2 km	2 km	20 km
	Number of properties 'at risk' for erosion which are managed by a property management plan.	New measure	5	5	5	6	6	6	57
Biodiversity	High value ecological sites on private land under active management.	New measure	0	0	0	1	0	1	1
	Number of areas of indigenous forest or wetland being actively managed by the community to protect their biodiversity values.	New measure	0	0	0	0	0	1	1

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

Barry Scott's lifestyle block carries a small number of cattle year-round and is relatively steep in parts. Patirawa Stream divides the property as it flows to Puketoki Nature Reserve near Whakamarama, eventually entering Tauranga Harbour at Te Puna Estuary. Barry has fenced off the entire stream on the property and plans to plant both sides over the next few years. Planting will prevent weeds establishing, provide shade over the water and help prevent erosion in high rainfall events.

Barry is one of several landowners who have fenced off and planted their land alongside the Patirawa Stream over the last five years. Completing the stream protection work from the stream's origin to Puketoki Reserve two km away is a major project for the Whakamarama Community Incorporated Care



Barry Scott (left) and neighbour Ian Hardwick take a break from fencing along the Patirawa Stream.

Group. The group aims to create a corridor of native habitat and clean water for native fish and birds to thrive in.

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

