

Mangatawa

Sub-Catchment Action Plan 2012



The Mangatawa 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 Mangatawa sub-catchment, and planned action for land and resource use of the sub-catchment.

Published June 2012



Introduction

The Mangatawa sub-catchment includes all of Mount Maunganui south to Domain Road in Papamoa and across to the Papamoa Hills and Kopukairua. The catchment is 4675 hectares in area and is part of the Tauranga ecological district.

The sub-catchment is 2.5 km wide and 15 km long and has 86 km of stream margins, 19 km of harbour margin and 14 km of open coast. The primary stream is the Mangatawa but there are many modified waterways in this highly developed catchment, including the Wairakei stream in Papamoa.

A large proportion of the sub-catchment land cover is urban and industrial development. The majority of which is located in the Mount Maunganui and Papamoa areas. A similar amount of the sub-catchments' land cover is pastoral and found primarily in the south towards Welcome Bay.

Sub-catchment soils are the result of coastal processes and volcanic activity. The soils to the south are mainly Te Puke sandy loam derived from rhyolitic tephra (volcanic ash). This soil is highly versatile although it has weak topsoil structure and low fertility. There are seven other soil types identified in this sub-catchment that have high proportions of sand and silt. Man-made soils cover a large area of Mount Maunganui due to modification of sand dune landscape.



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 grazing, or where earthworks are not carefully managed. Soil quality has not been monitored in the Mangatawa 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 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 fencing protection:

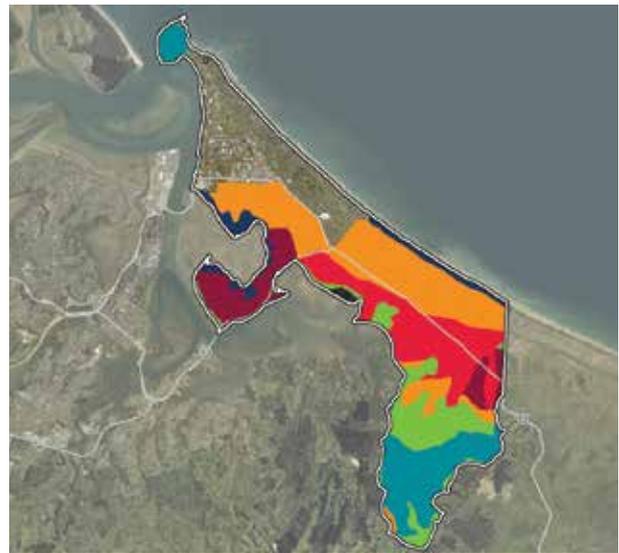
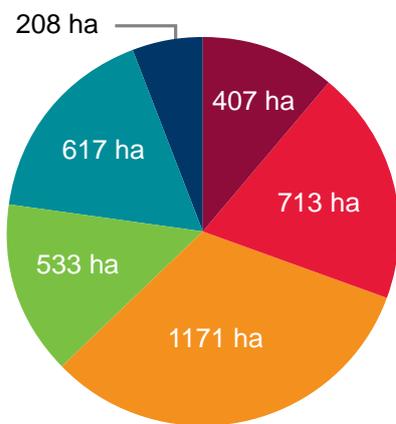


Stock exclusion indicates those stream margins that are fenced off or land that is currently not available for stock grazing, for example, horticulture, forestry, and native bush.

Land use capability classification in the Mangatawa 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 2, 3 and 4 – flat to gently rolling landscapes. In this sub-catchment, these landscapes are generally summer dry (high sand content) or very wet in low lying areas that are poorly drained. LUC Class 6 and 7 lands are located in the middle and upper catchment.

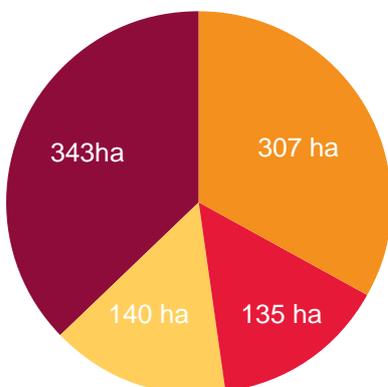


Land use capability classification in the Mangatawa sub-catchment

LUC Class	LUC Units	Percent
2	2e 1, 2s 1, 2w 1	9
3	3e 1, 3w 1	15
4	4e 1, 4e 2, 4s 2	25
6	6e 1, 6e 2, 6e 3, 6e 7, 6s 3+4s 2, 6w 1	11
7	7e 1, 7e 2, 7e 8, 7e 11	13
8	8e 1, 8w 1	4

Erosion risk in the Mangatawa sub-catchment

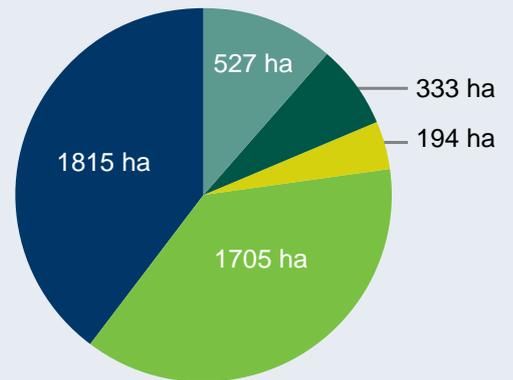
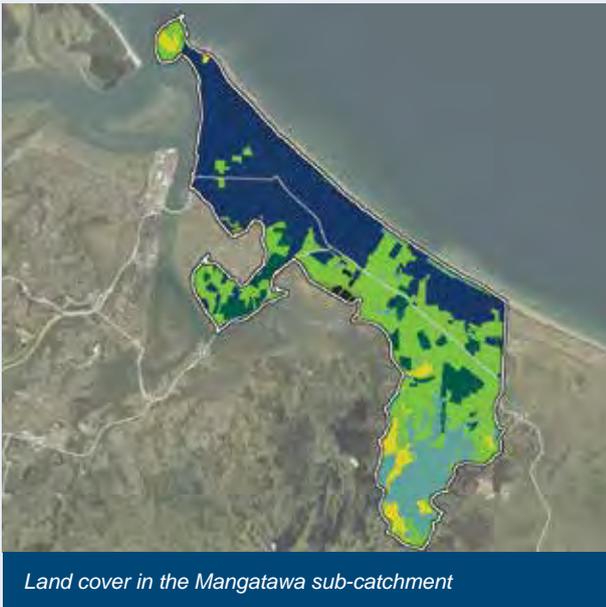
A high proportion of Land Use Capability Classes 6 & 7 land in the Mangatawa sub-catchment is medium to high risk erosion-prone land due to pastoral land use. Forestry located on these classes of land has a medium to high risk of erosion during the post-harvest phase.



Erosion risk in the Mangatawa sub-catchment

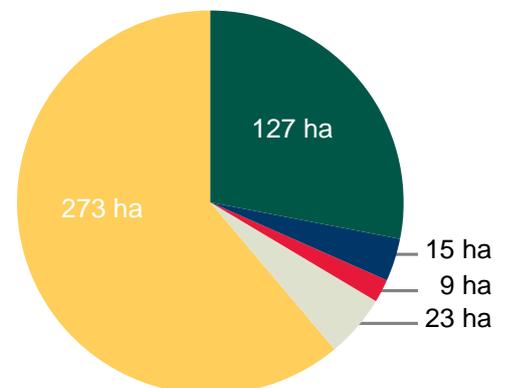
Land Use	Risk	percent
Pasture	Medium	7
Pasture	High	3
Exotic forest	Medium	3
Exotic forest	High	7

Land cover in the Mangatawa sub-catchment



Vegetation	Percent
Exotic	11
Horticulture	7
Indigenous	4
Pasture	36
Urban	39

Existing protection status in the Mangatawa sub-catchment



Class	Percent
DOC	3
BOPRC Covenant	0.3
Māori	0.2
Regional Park	1
District Reserve	6

Land management survey 2011

Field work

In developing the Mangatawa Sub-Catchment Action Plan, Bay of Plenty Regional Council undertook field surveys of 10 properties in December 2011. The properties surveyed account for 13 percent of the catchment area. 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 action plans in place.

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

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 Estimation of 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"> Protection measures (if any) in place General condition and upkeep Estimation of length (both protected and unprotected) GPS track of any stream channels not evident in the GIS database maps
Biodiversity features	<ul style="list-style-type: none"> Estimation of extent of land area covered and the type of vegetation (e.g. native, introduced species)

Land owner feedback

Bay of Plenty Regional Council met with land owners in the Mangatawa sub-catchment area in December 2011. The purpose was to gather the concerns, priorities and challenges of these land owners. The following list provides a summary of the land management issues raised by land owners:

- Erosion caused from stormwater runoff from local roads;
- Sedimentation in drains in the lower reaches of the catchment during/ after strong rain events;
- Waterway blockages and related erosion;
- Slips/ erosion as result of intense rain events;
- Weed control;
- Education and information regarding good, practical sustainable land use practices;
- Better promotion of funding options for riparian and biodiversity protection.

Iwi/hapū feedback

Comments from Nga Potiki RMU note Tangata Whenua would like to see less pest plants particularly Woolley Nightshade and be able to enhance and restore biodiversity around the Tahuna (Rangataua Bay especially where Mangatawa has land adjacent to foreshore areas).

Actions

The three main land management issues common to the surveyed properties in the Mangatawa Sub-Catchment areas are set out in the table below. Proposed actions to maintain and improve riparian protection, erosion, unsuitable land use and biodiversity loss within the catchment area are listed along with who is involved to implement the action.

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. ▪ Completely remove stock access to streams, fence remaining 4km 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>0.4 km of new riparian fencing 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>10 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 ▪ 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 10 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

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

	Key performance indicator	Mangatawa 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.	95% - 82 km	0.4 km	0.4 km	0.4 km	0.4 km	0.4 km	0.4 km	4 km (86 km 100%)
	Number of properties 'at risk' for erosion which are managed by a property management plan.	New measure	1	1	1	1	1	1	10
Biodiversity	Identified High Value Ecological Sites (HVES) on private land that are under active management.	No identified high value ecological sites	n/a	n/a	n/a	n/a	n/a	n/a	n/a
	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

Mangatawa - Pāpāmoa Blocks Incorporated is a Māori trust that owns significant tracts of land around Mangatawa and Pāpāmoa. In 2010 the trust, with the assistance of Bay of Plenty Regional Council, entered into a project on their farm land that borders Tauranga Harbour and includes the Mangatawa Stream. This project is aimed at reducing the impact of stock on the waterways on the block in Tareha Lane.

This farm is 186 hectares in total and is low lying with wet areas. They have beef grazing and some horticulture. Permanent stock exclusion is planned for the 3.8 kilometres of the Mangatawa Stream and tributaries that run through this property. These areas of riparian margin will then be planted with 6000 native plants from Mangatawa Nurseries to assist in enhancing the soil and water values in the Mangatawa Stream and catchment.



Chrissy McLeod from Mangatawa-Pāpāmoa Blocks Inc and Land Management Officer Chris McKay looking at recent pest plant control work to support planned native riparian planting.

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

