

Aongatete

Sub-Catchment Action Plan 2012



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

Published October 2012



Introduction

The Aongatete sub-catchment is five km south of Katikati. It is 8308 hectares in area and flows from the Kaimai Ranges and enters the harbour between Matahui and Morton Roads. The Aongatete sub-catchment is part of the Tauranga Ecological District.

The sub-catchment is 14.5 km long and 6 km wide. It includes 320 km of riparian margins and 10 km of harbour margin. The primary waterways in the sub-catchment are the Aongatete and Whatakao Rivers. There are four named tributary streams (Kauritatahi, Pahangahanga, Poupou and Waitioka) and numerous unnamed tributaries.

The most widely spread land cover in the sub-catchment is indigenous bush at 56 percent. Pasture covers 32 percent, horticultural 10 percent and exotic forest two percent. Large areas of estuarine wetlands surround the Aongatete estuary.

Sub-catchment soils are derived from air-fall ash and belong to the Katikati soil series. These soils are classified Typic Orthic Allophanic, which have a high allophanic (clay) mineral content. These soils are versatile with no rooting barriers, however the physical structure is poor. This indicates these soils are vulnerable to erosion under poor vegetation cover or intensive land-use. 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 thin rhyolitic tephra overlying loess and weathered rhyolitic tephra



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 Aongatete 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 shows that the Aongatete Stream meets 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 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:

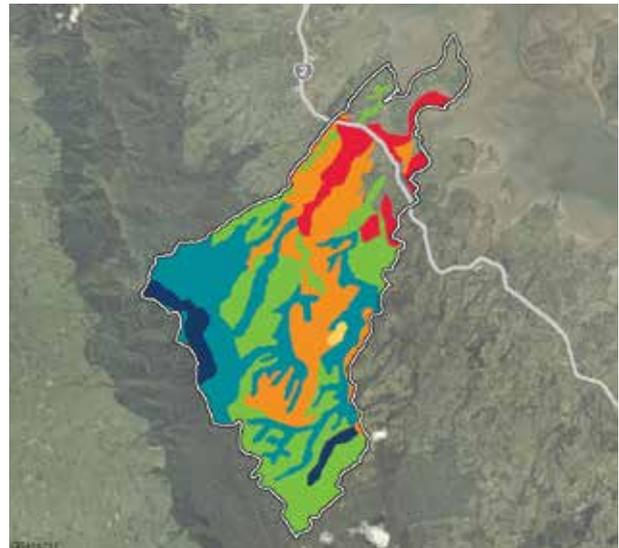
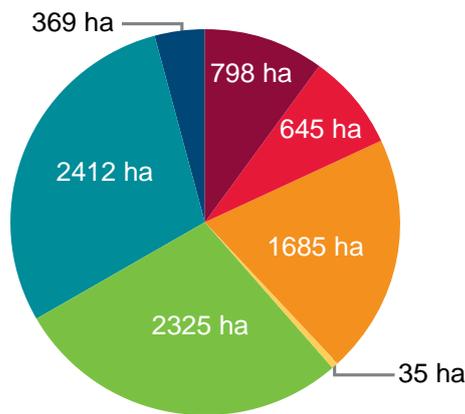


Stock exclusion indicates those stream margins that are fenced off or land that is currently not available for stock grazing, for example, horticulture, forestry, and native bush.

Land use capability classification in the Aongatete 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 6 and 7 – strongly rolling and steep landscapes. Highly productive LUC Class 2, 3 and 4 - gentle to rolling lands - are also well represented across the sub-catchment.

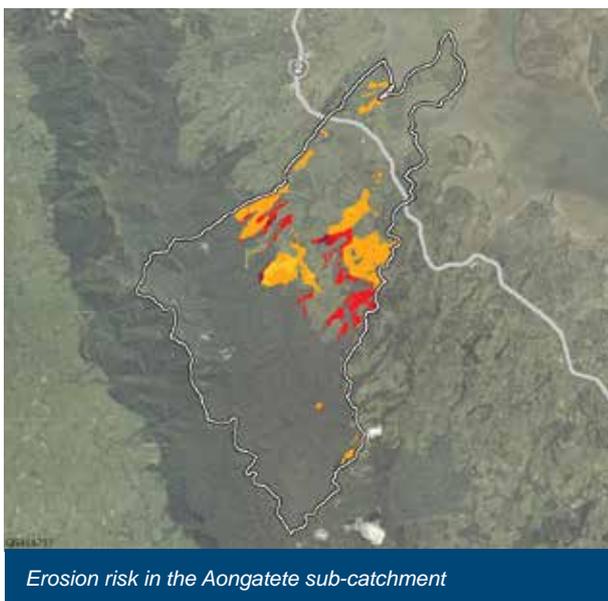


Land use capability classification in the Aongatete sub-catchment

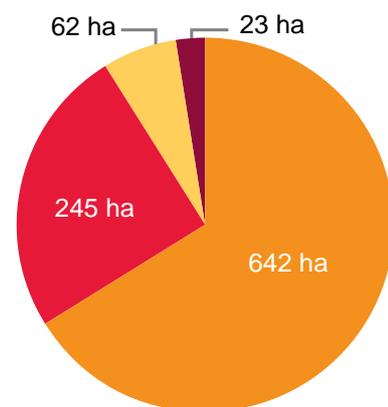
LUC Class	LUC Units	Percent
2	2e 1, 2s 1	10
3	3e 1, 3e 2, 3e 8, 3w 1	8
4	4e 1, 4e 2, 4e 9	20
5	5c 1	0.4
6	6e 2, 6s 3, 6e 4, 6e 11, 6w 1	28
7	7e 1, 7e 2	29
8	8e 4, 8w 1	4

Erosion risk in the Aongatete sub-catchment

A moderate proportion of Land Use Capability Class 6 and 7 lands in the Aongatete sub-catchment have a medium-high risk of erosion occurring due to pastoral land use. Forestry located on this class of land has a medium-high risk of erosion during the post-harvest phase.

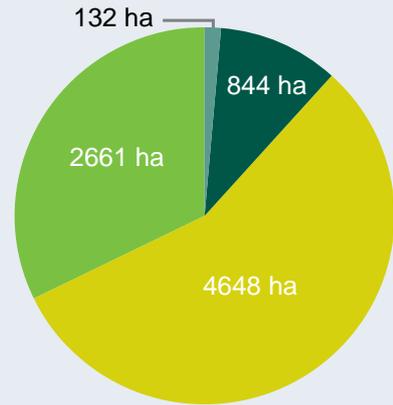
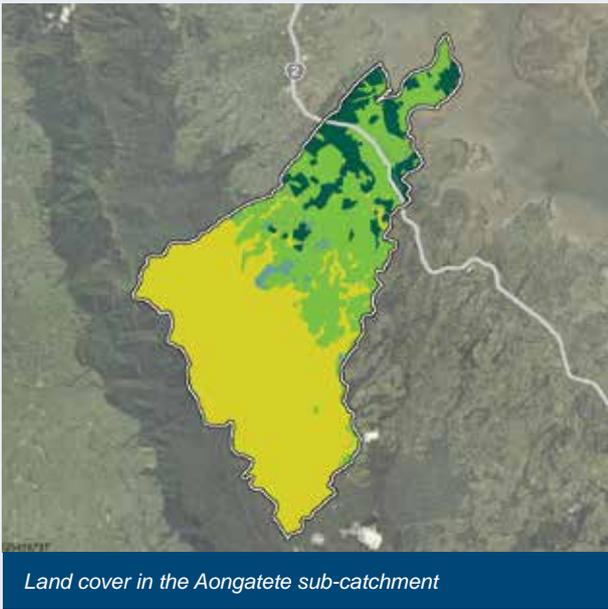


Erosion risk in the Aongatete sub-catchment



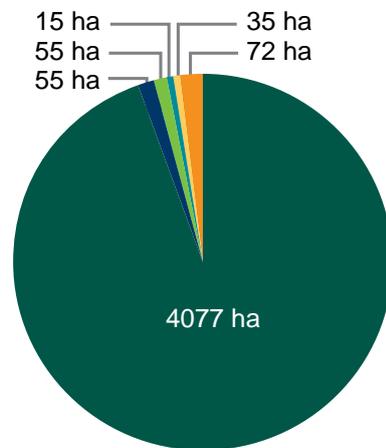
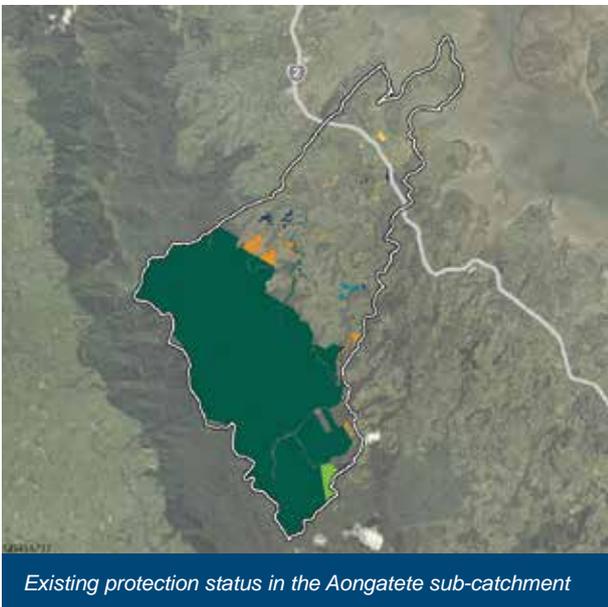
Land Use	Risk	Percent
Pasture	Medium	8
Pasture	High	3
Exotic forest	Medium	1
Exotic forest	High	0.3

Land cover in the Aongatete sub-catchment



Vegetation	Percent
Exotic	2
Horticulture	10
Indigenous	56
Pasture	32

Existing protection status in the Aongatete sub-catchment



Class	Percent
DOC	49
BOPRC Covenant	1
Nga Whenua Rāhui	1
QEII	0.2
District Reserve	0.4
WBOPDC Covenant	1

Land management survey 2011

Field work

In developing the Aongatete Sub-Catchment Action Plan, Bay of Plenty Regional Council undertook field surveys of 47 properties between April and May 2012. The properties surveyed covered 24 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 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 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 land cover 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 landowners on 10 October 2011. The meeting gathered their concerns, challenges and priorities.

Priority 1 – Erosion

- Sediment from metal (gravel) roads, especially Wright Road, Walford Road, Works Road and Lockington Road.
- Sediment from erosion. Erosion management.
- Silting at harbour edge.
- Erosion – hills, riverbanks, water frontages.
- Planting for erosion control.
- Erosion – Matahū Peninsula and other north-facing land that borders the harbour.
- Erosion.
- Harbour margin erosion.
- Erosion in the Kaimais.

Priority 2 – Pests

- Sea lettuce.
- Noxious weeds: blackberry, gorse, ragwort.
- Canadian geese. Swan control.
- Pest animals.

Priority 3 – Water quality

- Water quality monitoring.
- When is research going to be done on horticultural use of fertiliser and sprays?
- Protection of stream margins.
- Stock in waterways.

Priority 4 – Mangroves

- Spread of mangroves.
- Mangroves.
- Mangroves' eradication.
- Mangroves: control management.

Priority 5 – Protecting native biodiversity

- Protection of ecological values.
- Inanga – loss of habitat; create more wetlands.

Priority 6 – Balancing the economics

- Need to balance economics and the environment.

Priority 7 – Communications

- Agency, individual and landowner communication.

Iwi/hapū feedback

Representatives of hapū within the Aongatete 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 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, common to the surveyed properties, were identified in the Aongatete sub-catchment. We have identified solutions that will help 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>Improve 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 wetlands and stream banks to improve water quality. Completely remove stock access to streams, fence remaining 33km 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>3.3 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 Tauranga City Council for projects which benefit the city NZ Landcare Trust working with community care groups
<p>Improve soil health, help control erosion and encourage sustainable land use</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. Work to ensure that earthworks, track construction and roading complies with best practice to minimise run-off. Increase the awareness of the impact of cattle and deer on steeper slopes. Ensure that landowners apply appropriate land management practices. 	<p>44 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 protection and restoration of valuable 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 30 sites, including the 2 High Value Ecological Value sites are managed for biodiversity protection and enhancement.</p>	<ul style="list-style-type: none"> Bay of Plenty Regional Council Land owners Western Bay of Plenty District Council Department of Conservation Community Care Groups NZ Landcare Trust working with community care groups

Monitoring

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

	Key performance indicator	Aongatete 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.	89% - 287 km	3.3 km	3.3 km	3.3 km	3.3 km	3.3 km	3.3 km	33 km (100% 320 km)
	Number of properties 'at risk' for erosion which are managed by a property management plan.	New measure	3	3	4	4	5	5	44
Biodiversity	High value ecological sites on private land that are under active management.	New measure	0	1	0	1	0	0	2
	Number of areas of indigenous forest or wetland being actively managed by the community to protect their biodiversity values.	New measure	2	2	3	3	3	3	28

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

In 2007 Aongatete catchment landowners John and Kaye Baldock worked with council staff to draw up a five year Environmental plan which aimed to retire, fence, control pest plants (such as willow, black berry, and mercer grass), and restore native vegetation in 2.5 ha of stream margins including 1.75 ha of wetland. The riparian margin had been degraded by stock access causing erosion and pugging as well as degradation of existing native vegetation due to browsing.

Over the last five years John and Kaye have followed the Environmental plan and with the help from the funding provided under the plan have fenced, planted, and controlled pest plants and this work has proved extremely successful with the riparian margins and wetland requiring little maintenance and almost entirely dominated by native vegetation.

John takes enjoyment from watching the wetland year to year establishing and become self-sustaining with



John Baldock in his wetland protection area.

self-sown native seedlings now present throughout the protection area and what remains of the mercer grass diminishing as native vegetation begins to dominate. John also enjoys the increase in birdlife to his property with Tui becoming common in the area. He sees the benefit and value of the areas he has created in terms of stream health as well as the habitat it creates and is looking to other areas on his property to further protect and restore.

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

