Oturu

Sub-Catchment Action Plan 2012

The Oturu 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 Oturu 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 Oturu sub-catchment is south east of Tauranga Harbour. It is 8761 hectares in area and flows from the Minden Hill area, north to the harbour. The Oturu sub-catchment is part of the Tauranga ecological district.

The sub-catchment is six km long and two km wide. It includes 20 km of streams and 3.7 km of harbour margin. The primary waterway in the sub-catchment is the Oturu Stream which has numerous unnamed tributaries.

The most widely spread class of vegetation cover in the sub-catchment is pastoral vegetation at 47 percent. Indigenous land cover (bush) is largely confined to the upper slopes of the Minden Hill, (10 percent). Horticultural land covers 33 percent and is in the middle and lower sub-catchment. Exotic forestry is located in the upper sub-catchment (five percent) Moderately large areas of estuarine wetlands surround the Waikaraka estuary.

Sub-catchment soils are derived from air-fall ash and belong to the Katikati Sandy Loam and Katikati Hill soil series, with occasional Otanewainuku steep-land soil series occurring in the upper reaches and stream gullies. These volcanic soils are versatile and naturally well-drained but 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 grazed, or where earthworks are not carefully managed. Soil quality has not been monitored in the Oturu catchment, but results from similar sites indicate generally healthy soils, but with high nitrogen levels on sheep, beef and deer farms, and excessively high levels on dairy farms. While positive from a production perspective, high nitrogen levels are 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 are still a significant risk to water quality if washed into waterways by erosion.

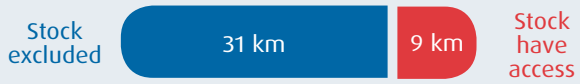
Livestock access to streams or wetlands, or the area around them, degrades water quality by increasing nutrients, faecal matter and sediment. Stock access can increase stream bank erosion by treading and damaged soil structure, and by stock eating and degrading vegetation on the stream bank.

Water quality can also be degraded by excess nutrients 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?

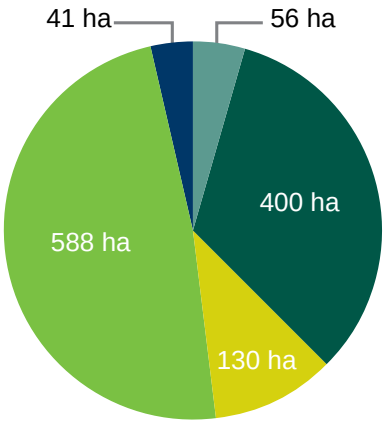
- Promote riparian margin fencing to exclude stock and protect water quality
- Promote and help landowners plant riparian margins, to act as filters and reduce pollutants entering streams through surface runoff
- Encourage stock stream crossings, such as bridges, to protect the water quality of streams
- 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:



The 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 cover in the Oturu sub-catchment



Vegetation	Percent
Exotic	5
Horticulture	32
Indigenous	11
Pasture	48
Urban	3

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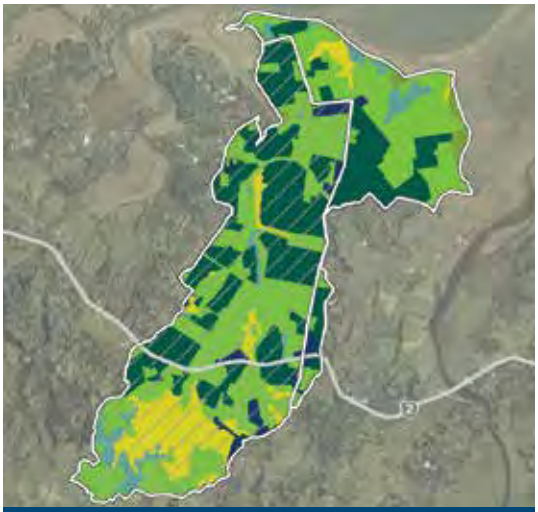
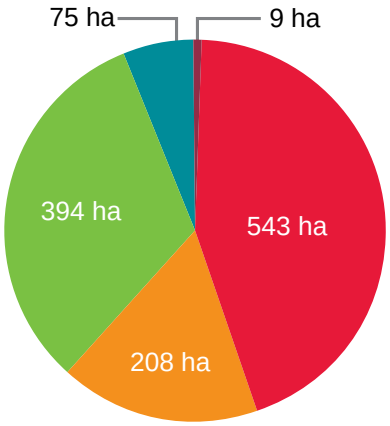


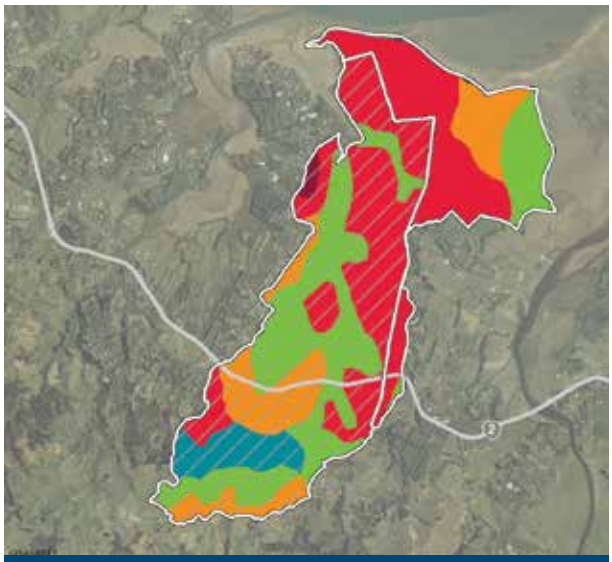
Land cover in the Oturu sub-catchment

Land use capability classification in the Oturu 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 highly productive Land Use Capability (LUC) Class 3 and 4 – gently rolling to rolling landscapes. Both LUC Class 6 and 7 lands are found on the erosion prone slopes of Minden Hill or adjacent to the Wairoa were the ground is frequently saturated.





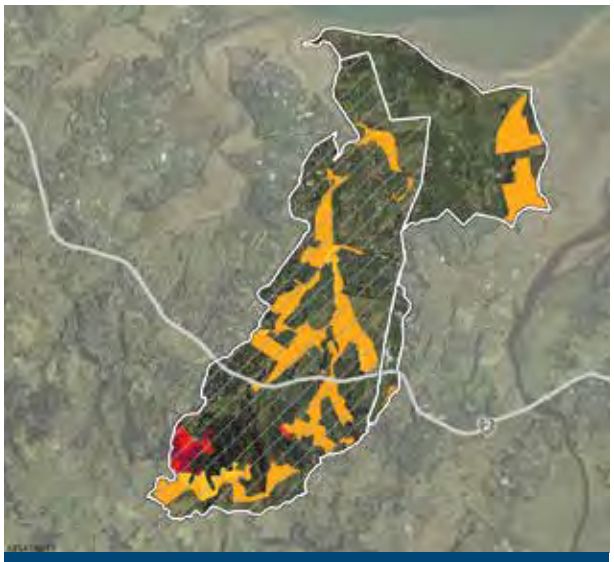
Land use capability classification in the Oturu sub-catchment

LUC Class	LUC Units	Percent
2	2e 1	1
3	3e 1	44
4	4e 1, 4w 1	17
6	6e 1, 6e 2, 6w 1	32
7	7e 4	6

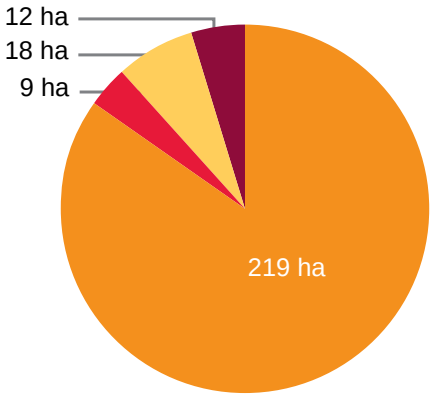
Smart Growth Corridor

Erosion risk in the Oturu sub-catchment

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



Erosion risk in the Oturu sub-catchment



Land Use	Risk	Percent
Pasture	Medium	18
Pasture	High	1
Exotic forest	Medium	1
Exotic forest	High	1

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Existing protection status in the Oturu sub-catchment

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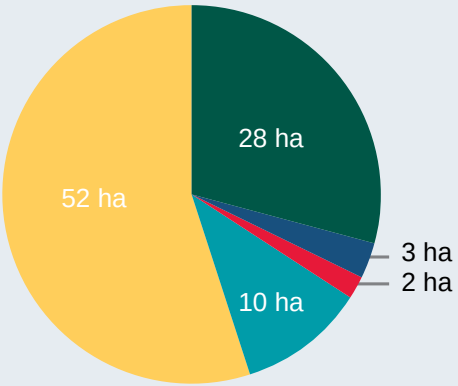

Class	Percent
DOC Reserve	2
BOPRC Covenant	0.2
Māori	0.2
QEII	1
District Reserve	4

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Land management survey 2011

Field work

In developing the Oturu Sub-Catchment Action Plan, Bay of Plenty Regional Council undertook field surveys of 21 properties during December 2011. The properties surveyed covered 65 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	▪ Type and rationale ▪ Land Use Capability classification based on physical resources present
Stream margins	▪ 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	▪ Estimated size and trend direction ▪ Photographs and GPS points (either at feature or where the photo was taken)
Biodiversity features	▪ Estimated size and trend direction ▪ Photographs and GPS points (either at feature or where the photo was taken)

Landowner feedback

Bay of Plenty Regional Council, NZ Landcare Trust and Department of Conservation held a meeting with landowners on 26 July 2011. The meeting gathered their concerns, challenges and priorities for the Oturu catchment.

In order of priority, the challenges and solutions suggested were:

Priority 1 – Water Quality

- Contamination of waterways by cattle and refuse.
- Preservation of water quality right from the source.
- Clear waters in the "green wedge".

Priority 2 – Impact of development

- Stormwater and septic tank discharges and hard surface runoff to streams out of commercial properties is an issue.
- Too much run-off from roading and roading construction not being managed.
- Accountability by developers for the impact and effect of future development.
- The local community needs to understand the implications of the Minden Lifestyle Zone with regards to stormwater, earthworks, streams and biodiversity objectives and guidelines. The regulators need to enforce the guidelines and objectives.

Priority 3 – Western BOP District Council Reserves

- I' Anson Reserve; silty water flowing into it could be retained rather than flow to the estuary.
- Fish ladder and access for whitebait to go upstream.
- I' Anson Park – overgrown. Maintenance needed.

Priority 4 – Land management skills / knowledge

- Sedimentation –containment needed; prevention of hill erosion through use of appropriate cropping technique.
- Minden steepland soils need to be managed properly through expert advice on options such as sediment retention ponds, suitable building platforms, and specific run off management controls.
- Nutrient and spray run-off from orchards needs to be monitored.
- Tree impediments (e.g. willow and blackberry) in streams create sediment build-up in the estuary and more mangroves.

Priority 5 – Support and $ for volunteers Paparoa Wetlands – preservation and extension.

- Volunteers need assistance – more mechanical methods and skilled labour instead of manual labour please.

Priority 6 – Catchment reference group needed

- Need a reference group formed to facilitate future consultation and planning for the catchment.

Iwi/hapū feedback

The Oturu catchment hosts ancestral and contemporary interests for Pirirakau who maintain relationships to all natural resources including natural waterways in the hapu rohe tribal area.

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 the Oturu catchment is shared by: the establishment of appropriate recreational infrastructure, restoration and protection of historical sites including natural waterways and 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, common to the surveyed properties, were identified in the Oturu 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?
Improving riparian protection ▪ 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 9km 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.	0.9 km of new riparian fencing per year 0.5 km of riparian planting per year	▪ Bay of Plenty Regional Council ▪ Landowners ▪ Western Bay of Plenty District Council ▪ NZ Landcare Trust working with community care groups
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.	19 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 ▪ NZ Landcare Trust working with community care groups
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 ▪ 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 ▪ NZ Landcare Trust working with community care groups

Monitoring

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

	Key performance indicator	Oturu 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.	77% - 31 km	0.9 km	0.9 km	0.9 km	0.9 km	0.9 km	0.9 km	9 km
	Number of properties 'at risk' for erosion which are managed by a property management plan.	New measure	1	2	2	2	2	2	19
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

In 2009, landowners Graham and Pin Hill approached the council for advice and funding assistance with restoring a highly degraded wetland at the rear of their property in Te Puna. The Oturu Creek flows through the property and enters the Tauranga Harbour at Waikaraka Estuary. Pest plants such as grey willow and green goddess lily needed to be removed and native plants within the wetland were being smothered out by reed sweet grass.

Council staff worked with Graham and Pin to draw up a five year management plan which aimed to return suitable native plant species to the wetland. Funding provided under the plan allowed the them to start removing the pest plants and to source 1,750 native plants from a local nursery and to grow them on until planting time the following year. The pest plant control and planting regime is now being repeated in the remaining half of the wetland.

Graham is amazed at the results so far. Keeping on top of the reed sweet grass has allowed the native watercress to grow back and the flow of water from springs within the wetland has improved. Tackling the area in two halves was a good idea, as it has made the pest plant control work more manageable for him. The native plants will quickly cover the bare areas and help to prevent any new pest plants from establishing. The Hills enjoy being able to see ducks and other birds as they begin to populate the wetland.

Graham Hill in front of a section of wetland dominated by Reed Sweet Grass

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

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