Tukituki Land Care

Mangarara

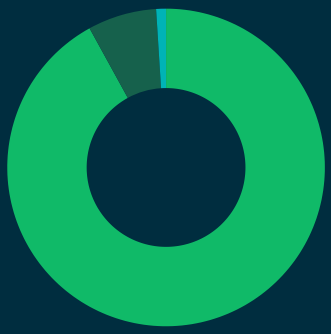
DRAFT

SUB-CATCHMENT PLAN: SUMMARY

MANGARARA AT A GLANCE

The Mangarara catchment, east of the Patangata Bridge, is the smallest in the Tukituki region, covering just under 4,000ha. Despite its size, it faces significant soil erosion and sedimentation. Cyclone Gabrielle exacerbated these issues, raising the stream bed by up to 60cm in some areas and contributing to one of the highest sediment yields in the region - approximately 6.5 tonnes per hectare annually.

A lack of woody vegetation and invasive crack willows compounded these problems, increasing flood risks. To address this, the community, with TLC's support and advice from Access2Experts, has developed a two-phase erosion and sediment control strategy. Immediate actions include crack willow removal and afforestation with poplars and hardy natives like kanuka. The catchment also secured $50,000 from the Cyclone Gabrielle Appeal Trust to clear willows from priority sites. Initial work is complete at the Tukituki-Mangarara confluence.



- Pasture
- Exotic Forest
- Native Vegetation

92 percent of the catchment is in pasture and seven percent in exotic forest. Notably, less than one percent of land cover is in native vegetation.

"Tukituki Land Care (TLC) is tackling the big issues sub-catchment by sub-catchment, to piece together The Big Picture."

Richard Hilson
Chair, Tukituki Land Care

SCAN FOR FULL REPORT

WWW.TUKITUKILANDCARE.ORG

FACEBOOK: TUKITUKI LAND CARE

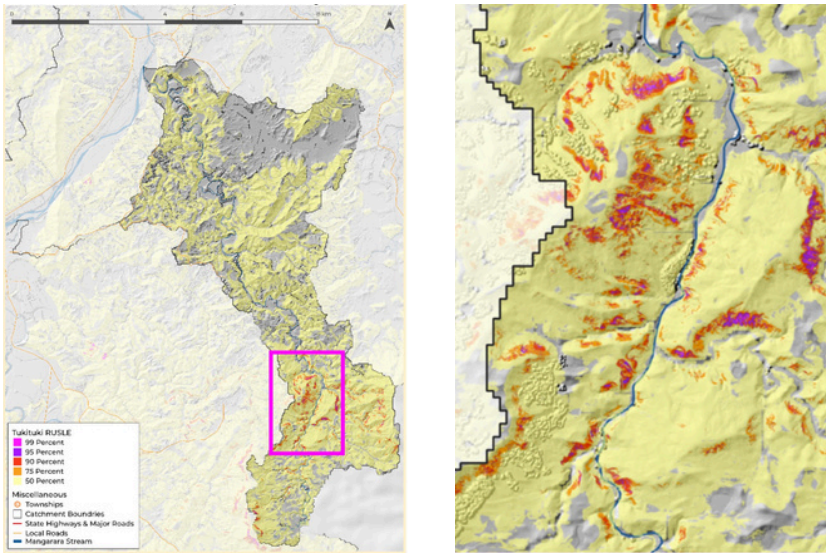
MANGARARA: CONTEXT AND

EROSION

A significant portion of the catchment has an erosion risk in excess of 50 percent, with some sections surpassing 90 percent erosion risk.

The Mangarara has one of the highest percentages of land classified as being highly susceptible to landslides in the entire Tukituki (31 percent), second only to Hāwea (53 percent).

The Mangarara catchment has an existing erosion and sediment reduction plan, highlighting both the challenges and opportunities for soil conservation. Complementing this, TLC's The Big Picture Project has developed a surface erosion model to help guide targeted action within the catchment.



RUSLE - Revised Universal Soil Loss Equation - Mangarara

FOR MORE INFORMATION HEAD TO WWW.TUKITUKILANDCARE/MANGARARA

WATER QUALITY

The table below shows Managarara catchment water quality indicators over a five-year rolling average. The standard represents water quality levels based on the Tukituki plan or national standards.

Water Quality Parameter	Mangarara	Standard
Nitrogen (DIN)	0.134 mg/ L	0.8
Phosphorus (DRP)	0.24 mg/ L	0.010
Bacteria (E.coli)	110 (count)	260
Freshwater invertebrates (MCI)	54.8 (index)	120
Sediment (Turbidity)	4 mg/ L	5.6 FNU (light)

CHALLENGES

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WILLOWS

The Mangarara Stream is significantly affected by crack willow, an invasive species that obstructs waterways, accelerates bank erosion, and increases flood risk. While it does not produce seed in New Zealand, its brittle branches readily take root, enabling rapid colonisation of bare sites downstream.

In the Mangarara catchment, aging crack willows are breaking apart, drifting downstream, and clogging the river. Large willows dominate extensive sections of the riparian zone, exacerbating erosion and flooding risks. Observations from field visits indicate that past removal efforts have been effective, with treated streambanks remaining stable over extended periods.

RESTORATION GOALS

A TLC Mangarara workshop in December 2024 focused on restoration goals, particularly willow management, sediment control, and water quality. Discussion centred on implementing a two-phase strategy prioritising crack willow removal, afforestation, and sediment capture.

Attendees reviewed progress and assessed the next steps, including digger access, mapping and drill-and-fill methods for hard to reach areas. With key landowners involved, the goal is a willow-free catchment within a decade.

TO READ THE FULL REPORT GO TO WWW.TUKITUKILANDCARE.ORG/MANGARARA OR SCAN:

MANGARARA CATCHMENT: SUMMARY AND ACTIONS

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Objective	**Primary Objective: Remove willow in the catchment in 10 years**	**Secondary Objective: Erosion and sediment reduction**
Challenge	The catchment waterways are choked with invasive willows and control efforts operate at small scale.	Erosion and sediment loss is likely to be widespread in the catchment.
Impact	Without a catchment scale plan, willow will re- invade Mangarara waterways.	Loss of productive land. Impact on water quality. Erosion and sedimentation is a major driver of flooding.
Priority action	Create a prioritisation plan to remove willows over 10 years. Use the LiDAR vegetation mapping provided through The Big Picture project and work with partners to deliver a willow eradication plan.	Using the highly erodible land map and the plant selection tool from The Big Picture project, work with farmers to plant highly erodible land and riparian margins.

WANT MORE DETAIL? HEAD TO WWW.TUKITUKILANDCARE/MANGARARA

Check out the online TLC Farmer Toolbox www.tukitukilandcare.org/toolbox

MANGARARA CATCHMENT: NEXT STEPS

- Get involved with the Mangarara Catchment Group to review The TLC Catchment Plan and build on baseline work, share knowledge and coordinate actions.
- Create a willow eradication plan to achieve the catchment goal of a willow-free catchment within the next 10 years. Refer to TLC Willow Control Factsheet*.
- Consider opportunities for income from timber, agroforestry, ETS* or biodiversity credits.
- Develop erosion management strategy. Consider poplar planting, oversowing with legumes, strategic fencing to retire or manage grazing, and native or exotic afforestation. Use TLC's Surface Erosion Tool*, TLC's On-Farm Action Planning Tool* and TLC's Plant Selection Tool*.
- Address water quality issues, in particular sediment. Use TLC's On-Farm Action Planning Tool*.
- Connect with local advisors* for tailored advice and potential funding opportunities.
- Commit to TLC's THR3E: three practical steps you can implement on your farm over the next three years.

*** The TLC Toolbox and the full catchment report are now available on the TLC website www.tukitukilandcare.org**