

Tukituki Land Care

Kahahakuri

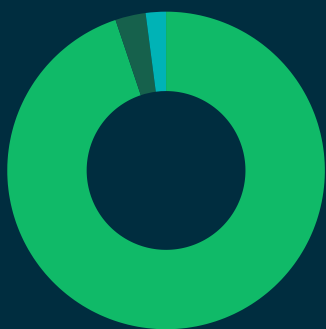
SUB-CATCHMENT PLAN: SUMMARY



KAHAHAKURI AT A GLANCE

The Kahahakuri catchment, covering approximately 7,778ha, lies near the village of Ongaonga. This area features a mix of pastoral farming, cropping, and orchards, with a range of soil types.

The spread of cow cress, a fast-growing aquatic weed, has become a significant problem in the catchment. It blocks streams and causes damage in flood events. At the same time, streambank erosion and shingle build-up threaten productive farmland and water quality. Recognising the need for a long-term solution, farmers in the catchment, with support from TLC, have accessed expert advice through the Access2Experts programme, working alongside technical experts from Massey University.



- Pasture
- Orchard and Vineyards
- Indigenous Forest

92 percent of the catchment is in pasture, three percent in orchard and vineyards and two percent in indigenous forest.

"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



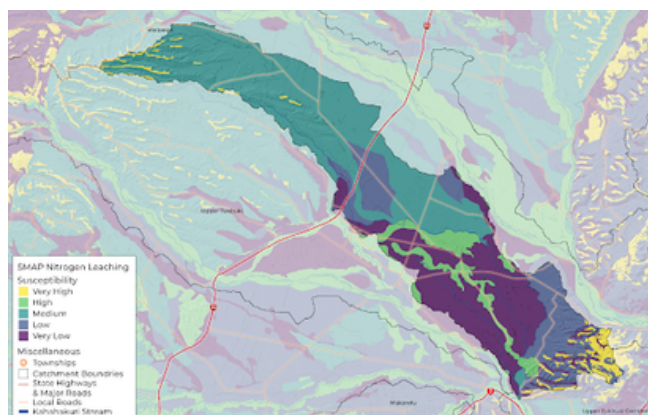
KAHAHAKURI CATCHMENT: CONTEXT

LANDSCAPE CONTEXT

From a geophysical standpoint, the Kahahakuri catchment can be divided into upper and lower sections, distinguished not only by elevation but also by differences in soils, geology, and associated environmental risks.

The upper catchment is characterised by gravel-based geology and Allophanic soils. Beneath this area lies an unconfined aquifer, which presents a high risk of nitrogen loss due to the permeability of the soil and shallow groundwater. Limited denitrification capacity further increases the risk of nitrogen leaching into waterways.

In contrast, the lower catchment sits above a confined aquifer, where an impermeable layer separates farming activities from groundwater. The soils in this are primarily Gley, Melanic, and Pallic, which contribute to a significantly lower nitrogen loss risk compared to the upper catchment. This distinction has important implications for land management and agricultural practices within the catchment, as well as how the group might focus efforts to manage currently high DIN levels.



SMAP Nitrogen Leaching Susceptibility - Kahahakuri

WATER QUALITY

Water quality in the catchment remains a concern with particularly high nitrogen levels in the monitored site at the bottom of the catchment. Springs across the area show varying nitrogen levels and groundwater and surface water levels fluctuate significantly. Much of the Kahahakuri's flow disappears halfway down the catchment, Likely due to groundwater recharge, raising questions about how water moves through the system and where water quality testing should be focused.

Water Quality Parameter	Kahahakuri	Standard
Nitrogen (DIN)	3.27 mg/ L	0.8 mg/ L
Phosphorus (DRP)	0.03 mg/ L	0.015 mg/ L
Bacteria (E.coli)	140 (count)	260 (count)
Freshwater invertebrates (MCI)	88.85 (index)	100 (index)
Sediment (Turbidity)	1.51 mg/ L	5.6 FNU (light)

COW CRESS IN THE KAHAAHAKURI CATCHMENT

In 2024, TLC facilitated a visit to the catchment by scientists from Massey University, local farmers and regional council representatives. They assessed the extent of cow cress spread, streambank erosion, and sediment movement in the waterways. Through water quality sampling and catchment data analysis, they identified that high nutrient levels in the water contribute to cow cress's rapid growth. They also found that erosion and sediment transport are being worsened by past flooding events, particularly in the middle and upper reaches of the stream.

Following this assessment, the Massey team analysed river flow data, historical land use patterns, and digital elevation models (LiDAR) to better understand erosion processes and how sediment moves through the catchment. This work has helped pinpoint where erosion is most active and where interventions like riparian planting, sediment traps, and erosion control structures could be most effective. Massey also provided insights into the best ways to manage cow cress, drawing on experiences from other parts of New Zealand. They recommended a combined approach, including;

- carefully planned mechanical removal to clear problem areas while minimising bank disturbance,
- selective herbicide trials to test the effectiveness of different spray options in controlling cow cress while maintaining stream health,
- riparian planting with native sedges to shade out cow cress and stabilise stream banks,

With support from a TLC Demonstration Grant, a multi-pronged approach is now being tested to manage cow cress and improve waterway health. These trials are designed to find cost-effective and scalable solutions that can be used by other farmers facing similar issues.



LOCAL CONCERNS

During a TLC workshop in the catchment in December 2024, frustration was voiced about HBRC's lack of communication and engagement with the local community. Farmers want clearer information from HBRC on water quality testing, including where, when, and why samples are taken, especially in summer when parts of the river dry up. Farmers also discussed working more closely with Waipawa and other Tukituki catchment groups on flood response and gravel management.

SCAN FOR FULL REPORT



WWW.TUKITUKILANDCARE.ORG/KAHAHAKURI

KAHAHAKURI CATCHMENT: SUMMARY AND ACTIONS



Objective	Water Quality	Cow cress	Understanding of issues and opportunities
Challenge	High DIN levels, four times the standard, but little information about where it is coming from or how to manage it.	Cow cress has entered the catchment and is very challenging to control or eradicate.	Despite regulatory pressure (e.g. DIN), the group does not have a good handle from regulators on the issues and opportunities for change.
Impact	Waterway health reduced. Decline in aquatic biodiversity. Regulation risks.	Cow cress is an invasive weed which competes with native riparian planting, narrows waterways and block culverts.	Without guidance and clarity from regulators the community will not be able to implement effective change.
Priority action	Implement high priority good practice on farms through farm planning. Focus on understanding water quality in different areas/springs and manage nitrate through constructed or enhance wetland areas.	Cow cress is spread throughout the catchment and actions should be taken to advocate for good practice to slow its spread. Trial control methods to enable scaled up control.	Work with HBRC ICM staff and scientists to understand water quality variation in the catchment and appropriate actions to reduce DIN and DRP levels.

WANT MORE DETAIL? HEAD TO WWW.TUKITUKILANDCARE/KAHAHAKURI

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

KAHAHAKURI CATCHMENT: NEXT STEPS

- Get involved with the Kahahakuri Catchment Group to review The TLC Catchment Plan and build on baseline work, share knowledge and coordinate actions.
- Continue to work with HBRC and other experts on cow cress management.
- Address water quality issues, in particular P and N. Use TLC's [On-Farm Action Planning Tool](#)* Investigate water testing.
- Use [TLC's Plant Selection Tool](#)* or local advisors to address low levels of riparian vegetation.
- 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 [Plant Selection Tool](#)*.
- Identify potential sites for wetlands, dams or detention bunds. Use [TLC's Water Runoff Mapping 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