INFO SHEET 09

TOITŪ TE HAKAPUPU
PLEASANT RIVER CATCHMENT RESTORATION PROJECT

Benefits of fencing and planting around waterways

There are many benefits to water quality and biodiversity from planting native vegetation in riparian areas alongside waterways. Cultural and community values are also enhanced as a result.

The Toitū Te Hakapupu / Pleasant River Catchment Restoration Project (2021–2025) is a water quality improvement project that enhances conservation, cultural and community values throughout Te Hakapupu / Pleasant River catchment.

Sediment in the catchment's waterways, estuary, and local marine environment was identified as an issue by Kāti Huirapa Rūnaka ki Puketeraki and Otago Regional Council. Scientific work during the project showed that historically, streambank erosion has been a significant source of this sediment.

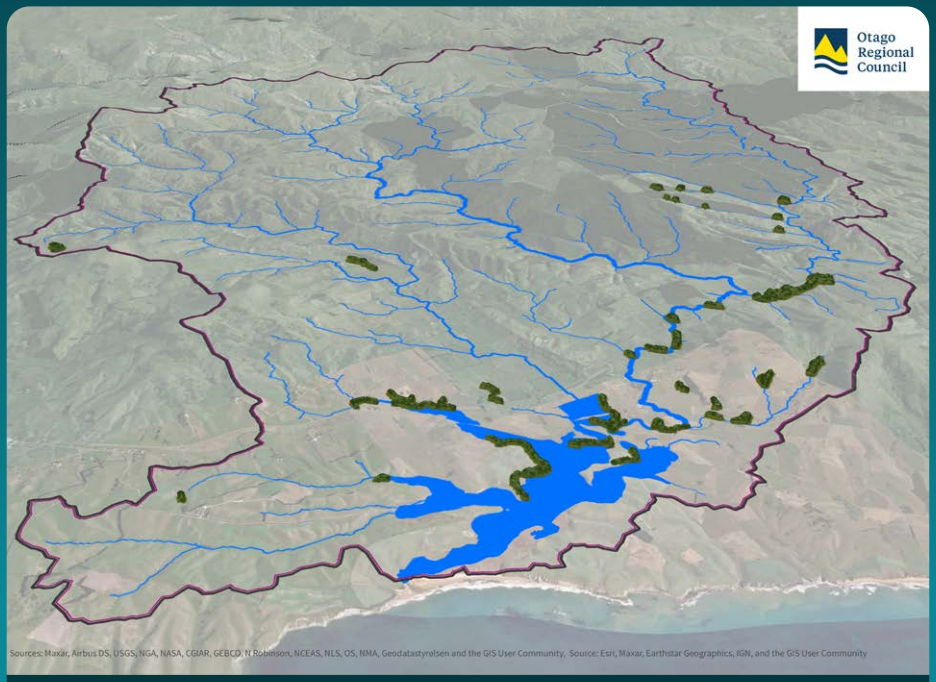

Figure 1. Riparian plantings (green areas) established around Te Hakapupu / Pleasant River estuary wetland complex and waterways in the catchment.

Fencing waterways and wetland areas and establishing native plants (mapped in Figure 1) will help reduce streambank erosion. These activities have been a big part of the project.

From 2023 to 2025 Otago Regional Council, Kāti Huirapa Rūnaka ki Puketeraki, local landowners and community members have erected 39 km of fencing. This has created riparian areas (stretches of land alongside waterways) and wetlands (including the estuary) which are free of livestock. Almost all waterways in the lower catchment's areas of pastoral farming are now fenced. The benefits to water quality are immediate, with heavy livestock now excluded and no longer able to walk through the stream or up and down the streambanks and into wetland and estuarine areas.

Figure 2. Community members helping to get plants in the ground at a community planting day in July 2025. © Otago Regional Council

Over 92,000 young native plants have been established in these riparian areas and around the estuary. A range of plant types have been used to help replicate the natural structure of native vegetation in the area. The community (Figure 2) including land owners and contractors have all contributed to getting this large number of plants in the ground.

Over time the root systems of the new plants will grow deep into the soil to help maintain the bank structure and stabilise the soil along riverbanks and stream edges. The benefits to water quality will continue to increase for years to come as the plantings mature.

Biodiversity support

The new native vegetation in riparian areas will develop over time to provide habitat for a wide range of wildlife. Birds, fish and other aquatic organisms, as well as amphibians and insects, all benefit from this habitat, which offers food, shelter, and breeding/spawning grounds for them.

Mature plants will also provide shade to the river, helping to regulate water temperature. This is especially beneficial for Te Hakapupu / Pleasant River catchment, where instream flows can be low for months during the hotter summer and autumn period. The low flow and high temperatures can stress aquatic organisms by reducing the levels of dissolved oxygen and creating conditions that encourage the growth of high amounts of algae and macrophytes (water plants).

Mahika kai and mātauraka Māori

The stretches of waterways with native riparian plantings will improve habitat for tuna (longfin eel, *Anguilla dieffenbachia*, and shortfin eel, *Anguilla australis*) and īnaka (whitebait, *Galaxia spp.*). These species are already present in the catchment and are important sources of mahika kai for Kāti Huirapa Rūnaka ki Puketeraki. They are also important for mātauraka Māori, which is the cultural body of knowledge passed down from Māori ancestors.

Giant kōkopu © Angus McIntosh

Enhancing natural filtration and flood mitigation

Riparian areas act as natural filters, trapping sediment, bacteria (such as *E. coli*), pollutants and nutrients before they enter waterways. In the long term, this improves water quality (Figure 3).

During high flows, areas of riparian plantings help buffer and slow the speed of floodwaters. This helps reduce the erosive force of the water and lets sediment settle in the riparian zone instead of in the streambed and estuary.

Figure 3. Planting native vegetation in the riparian zone helps filter runoff before it enters Te Hakapupu / Pleasant River. © Otago Regional Council

Figure 4. A simulated image of mature native vegetation in riparian areas planted next to State Highway 1 near Karitāne.

Benefits to the catchment for the future

The Toitū Te Hakapupu / Pleasant River Catchment Restoration Project has successfully created many new areas of native vegetation in the catchment. These natives have been planted along waterways and are protected from livestock. Some of the benefits of this for water quality and other objectives of the project are immediate, while others will take time to fully develop. The simulated image in Figure 4 shows how one of these areas will look in the future. More of this activity in the coming years can build on the gains so far, to extend the enhancement and protection of ecological, cultural, and community values within the catchment.

A partnership project by:

Otago Regional Council

Kāti Huirapa Runaka ki Puketeraki

In collaboration with:

Ministry for the Environment
Manatū Mō Te Taiao
Essential Freshwater Fund
A JOBS FOR NATURE PROJECT

East Otago Catchment Group

Find out more at orc.govt.nz/toitutehakapupu