Resilient River Communities

Te Uru Kahika Regional and Unitary Councils Aotearoa

Kānoa Regional Economic Development & Investment Unit

Waikato Regional Council Te Kaunihera ā Rohe o Waikato

PREVENTING HIGH MORTALITY FOR NATIVE TUNA

WAIKATO REGIONAL COUNCIL

Project: Fish Passage Pumps **Location:** multiple locations, Waikato

The challenge

Safe fish passage through flood protection assets is a complex legacy issue. Many of Waikato's flood protection assets were installed 50-60 years ago by central government when little consideration was given to native species.

Non fish-friendly pumps have significant implications for the tuna (eels) that have been living in drains and streams for many decades and their mortality rate can be very high during migration, when they return to the sea to breed.

The programme

With current infrastructure due for replacement, Waikato Regional Council is installing fish-friendly pumps at up to five sites across the region. An Archimedes screw pump, built in the Netherlands, has been installed in the upgraded pump station in the Mangawhero catchment near Waiuku. Two more Archimedes screw pumps will be put in at the upgraded Churchill East pump station, with construction planned to start in 2023. Planning and investigation for the next three sites has also begun.

This project is part of Pathways to the Sea, a research and strategy development programme by the regional council to help identify ways to manage flood pump impediments to fish passage and which will lead to the development of a regional fish passage strategy.

The council is also working with MacEwans Pumping Systems and Callaghan Innovation to develop a fish-friendly pump to replace existing MacEwans PPF axial pumps – found widely in New Zealand – without the need to make any civil structure modifications to pump stations.

Project funding

Kānoa $4.48m

Total project cost

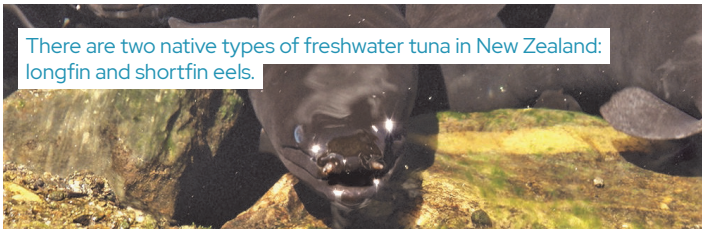
$7m

Project duration

3.5 years

Jobs

29.75 anticipated over life of project



There are two native types of freshwater tuna in New Zealand: longfin and shortfin eels.

Key Benefits

- ✔ **Tuna migration**
  Fish-friendly pumps allow safe migration passage to the sea for tuna (native eels) for once-in-a-lifetime breeding. The Archimedes screw pump design has proven 100% effective overseas and aligns to national directives for safe fish passage.
- ✔ **Monitoring programme**
  Being developed with iwi to take place during the 2023 migration at the Mangawhero pump station to see if the Archimedes screw pump safely passes NZ's significantly large tuna.
- ✔ **Enabling affordability**
  Many communities cannot absorb increased cost of rates to pay for new or upgraded flood protection schemes. Contribution by central government has enabled increased resilience to climate change and protection against flooding.
- ✔ **Employment**
  The equivalent of 29.75 jobs will be created over the 3.5 years of this project.
- ✔ **Protection**
  Maintaining flood protection to productive farmland for the next 80 years.
- ✔ **Efficiency**
  Archimedes screw pumps rotate slowly making them more energy efficient and cheaper to run, resulting in savings to ratepayers.

The Archimedes screw pump, which is 10 metres in length and 1.6 metres in diameter and built in the Netherlands, is the first of its kind in New Zealand.