Fresh Connection

A newsletter from the New Zealand Fish Passage Advisory Group

APRIL 2022 UPDATE

FISH PASSAGE ADVISORY GROUP UPDATES

ADVISORY GROUP MEMBERSHIP UPDATE

We welcomed four new members to New Zealand Fish Passage Advisory Group.

- Kerry South (shared membership with Trevor James) - Tasman District Council
- Beck Reed (shared membership with Mark Webb) - Fish and Game
- Emily Carroll - Environment Canterbury
- Ben Hodgson - Te Rūnanga o Ngāi Tahu

Ministry for the Environment
Manatū Mō Te Taiao

The Ministry for the Environment has a new fish passage webpage. This webpage contains fish passage guidance to support people involved in implementing provisions to help restore and protect fish passage.

This guidance will clarify the requirements around fish passage under the National Policy Statement for Freshwater Management 2020 and the National Environmental Standards for Freshwater 2020. It is intended for council staff and land users, iwi and Māori, farmers, farm advisors, and anyone else with an interest in freshwater policy and implementation.

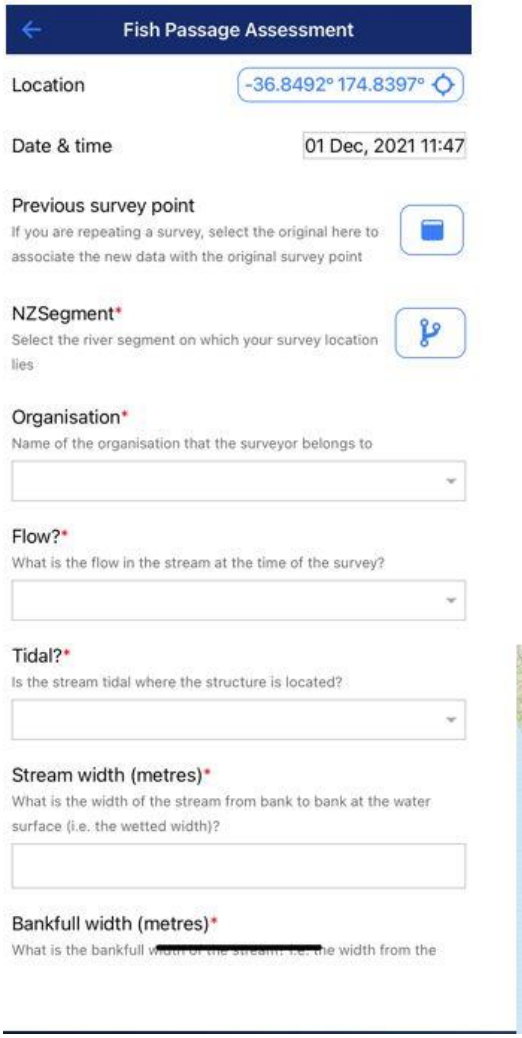
Fish Passage Assessment Tool updates:

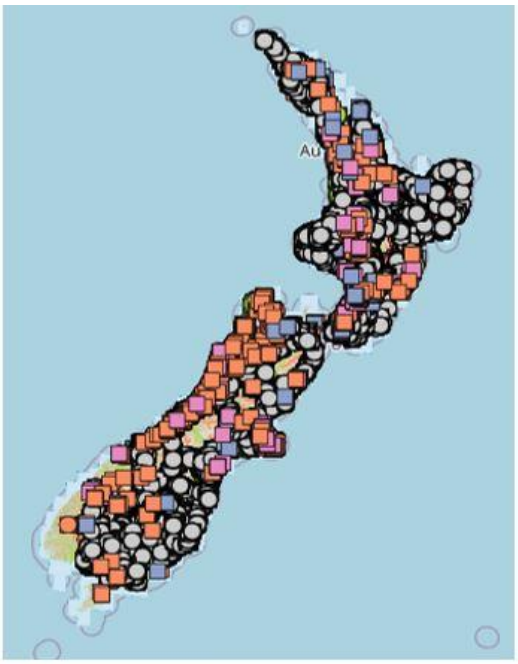
We're encouraged to see plenty of people using the Fish Passage Assessment Tool (FPAT) to assess instream structures in their area. The FPAT can be used to collect the fish passage information required by the National Environmental Standards for Freshwater and National Policy Statement for Freshwater Management and is endorsed by the Ministry for the Environment.

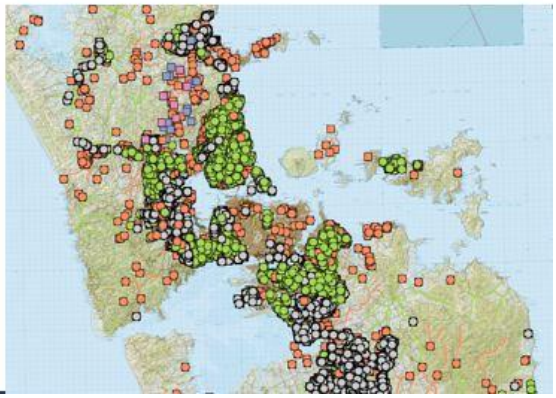
So far more than 7,700 structures have been assessed using the FPAT

app, with over 3,500 being identified as a high or very high risk to fish passage. NIWA has recently released a new version of the app and an updated User Guide to assist users. The updates allow better handling of photos and location information and have removed known bugs in the tool.

For more information on the tool and to access the User Guide, please visit here. To view the data collected using the app visit here.



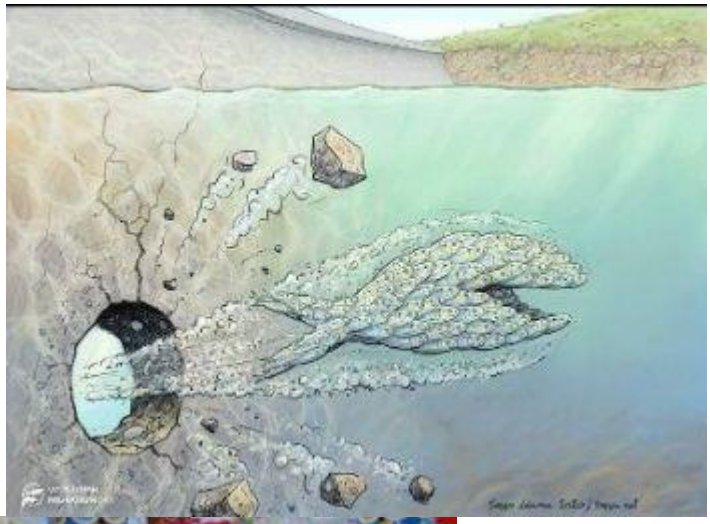


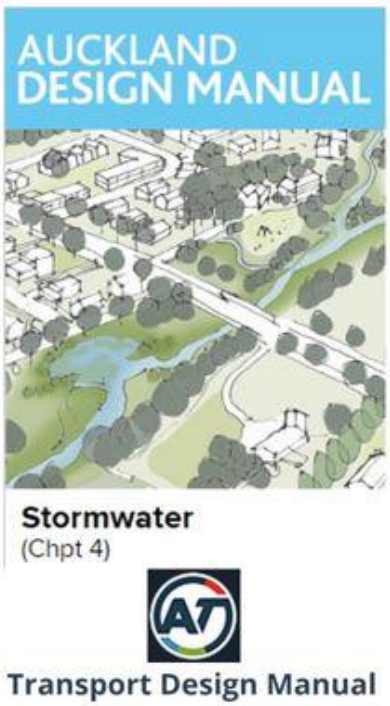


General updates

World Fish Migration Day is coming up on May 21, 2022, with this year's theme titled "Break Free"! From Aotearoa to Hawai'i, WFMD inspires action and connects people to the rivers and fascinating migratory fish that sustain us and the planet. WFMD is a great opportunity to spread the word and advocate for our rivers and our migratory fish species! If you have any planned events, register them on: https://www.worldfishmigrationday.com/join/ (136 have been registered around the globe already). We are also happy to assist with resources such as cool fish photos, posters, colouring sheets and flyers to jazz up your displays so let us know at: advisorygroup@fishpassagenz.org

For those in education, it would be great if you could also promote and circulate the Fish Flag Contest where Wildlife Forever has collaborated with the World Fish Migration Foundation to host the Migratory Fish award, in which children from all corners of the globe submit fish flags of their favourite freshwater fish. This contest helps youth of all ages connect to the natural world, and teaches the artist and those around them about the importance of free flowing rivers and migratory fish!





The Auckland Council Stormwater Code of Practice & the Auckland Transport Transport Design Manual have been updated to include fish passage and refer to the NES-F 2020 and fish passage requirements. These updates are part of a programme of works to raise awareness of fish friendly design in the engineering community.

These updates are also accompanied by a training session for 150 of Auckland Council's regulatory engineers on 21 March 2022 for further details about the design requirements for fish passage under the NES-F and examples of compliant and non-compliant designs by New Zealand Fish Passage Advisory Group member Christina Bloom from Auckland Council & Vanessa Castro of Healthy Waters.

The perched Te Arai Point Road culvert in Tāmaki Makaurau prevents several diadromous fish species from reaching the foraging area for the New Zealand fairy tern (*Sternula nereis davisae*), Aotearoa's rarest endemic bird (ranked Nationally Critical).

Waka Kotahi NZTA, Auckland Transport and Auckland Council are

collaborating on a project to remove the existing culvert and replace it with a large capacity, embedded box culvert to restore fish passage - benefitting both the native fish and the critically endangered fairy tern.

KiwiRail has commenced works on two weirs currently restricting fish passage in the Manganui River and Waipuku Streams, 35km southeast of New Plymouth. The new rock ramp structures are designed to provide fish passage for the following species shortjaw and banded kōkopu; redfin, common, and crans bully; longfin eel and shortfin eel; lamprey, kōaro, torrentfish, and brown trout.

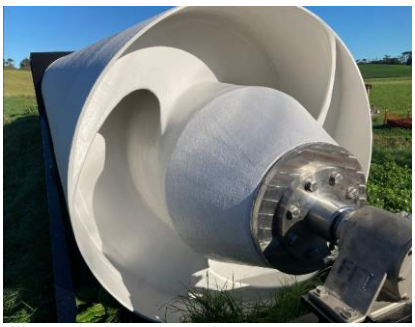
Works have commenced on the Manganui River by contractors Fulton Hogan, and all works will be completed by May 2022 (pending good weather conditions) in accordance with the NZ fish passage guidelines. We will update you on how the works go in our next edition!

Waikato Regional Council commissioned its first Archimedes screw pump at Mangawhero Pump Station near Aka Aka, north Waikato in March 2022. The pump is the first of its kind in New Zealand. Waikato Regional Council received $4.48 million from funds administered by the government's regional economic development Unit, Kanoa – RDU, to support the upgrade of up to five pump stations in the Waikato Region to enable safe fish passage.

The screw pump was sourced from the Netherlands. The pump is 10 metres in length and 1.6 metres in diameter. The pumps offer many benefits over conventional pumps. They rotate very slowly, deliver very high efficiency, have a long-life expectancy, and their design means the screw should not inflict damage on fish.

Enclosed Archimedes screw pumps have proven to be 100 percent fish friendly in Europe. Waikato Regional Council will be testing the pump to see how successfully it passes New Zealand native fish species as part of its research into minimising fish mortality through pump stations. The monitoring will look at whether tuna/ eels avoid the pump, what size tuna are passing through and assessing to see if there is any injury or mortality as a result of tuna passing through. The monitoring will take place during the migration season in 2023.

A second Archimedes screw pump will be installed at Churchill East pump station, near Te Kauwhata. Other sites are still being assessed for suitability.



AND TO WRAP IT UP....

REMOVING ROAD DAMS IN EUROPE

In January, the World Fish Migration Foundation presented a webinar series on retrofitting/removing culverts in Europe and beyond. With over 630 attendees it was a busy webinar session. The links to the presentations and recordings for this recent webinar are provided below.

- Recordings Dam Removal Europe Youtube Channel
- Presentations are available on the Dam Removal Europe website.
- The chat is available here in PDF format

For information on future webinar series have a look through the World Fish Migration Foundation website located here .

RESEARCH UPDATE

Magaju, D., Montgomery, J., Franklin, P., Baker, C., Friedrich, H. 2021. Spoiler baffle patch design for improved upstream passage of small-bodied fish. Ecological Engineering. 169.

This recent paper in Ecological Engineering delved into the complexities of spoiler baffle design for improved upstream passage for small-bodied fish. The scope of the research was to conduct a laboratory study to evaluate three spoiler baffle designs. The tested designs included:

- the spacing recommendations of the New Zealand Fish Passage Guidelines
- a shorter baffle with increased clearance
- the same shorter baffle but with a further extension in lateral clearance.

Testing of each baffle design was undertaken at two different flow rates and a consistent water depth. The laboratory tests showed that the New Zealand Fish Passage Guidelines design had less maximum mean velocity and specific turbulence parameters than the other two designs. However, and importantly, the distribution of flow parameters was significantly different for all tested designs. In general, a shorter size baffle arranged at a medium spatial density exhibited highly heterogeneous flow, with numerous low velocity zones, as well as providing wider pathways compared to the New Zealand Fish Passage Guidelines.

To read the full journal article see Magaju *et al.* 2021 here

Who are we?

The New Zealand Fish Passage Advisory Group (NZFPAG) is a group of environmental advisors established in August 2014 to represent the key parties involved in fish passage management in New Zealand.

This newsletter aims to provide updates on progress of the group and from others on fish passage work, information and research within New Zealand and internationally.

Check out our web pages for the latest information and guidance, and email us if you wish to subscribe to this newsletter and keep updated with our progress.

Want to see our website? Click here!