Actions to restore fish passage in New Zealand: From science to policy and back again

Paul Franklin, Eleanor Gee, Cindy Baker

National Institute of Water and Atmospheric Research (NIWA), New Zealand

Waikato Regional Council, Waikato, New Zealand

New Zealand’s native freshwater fish communities are characterised by a prevalence of diadromy, with a dominance of amphidromous species that undertake their primary upstream migrations as small-bodied (20-60 mm TL) juveniles. These species are highly susceptible to even small impediments to upstream movement (e.g., vertical drops <100 mm), presenting a significant challenge for managing the impacts of riverine infrastructure on river connectivity.

Effective action to restore fish passage requires awareness of the problem, evidence-based solutions, and an appropriate policy context. We describe how delivering credible, relevant and legitimate fish passage science and tools has facilitated a new approach to fish passage management in New Zealand. This includes new national policies designed to prevent the creation of new instream barriers at common infrastructure such as culverts and weirs, and that require documentation and remediation of existing fish passage barriers across the national river network.

We expect the new policies to drive a step-change in actions to restore fish passage in New Zealand. However, they present significant challenges for the practitioners responsible for implementing the policies – particularly a limited toolbox of fish passage remediation options specifically designed and tested for small-bodied species. Scientists are now being urgently called on to deliver cost-effective solutions for remediating a diverse array of instream barriers.