

Riparian buffer tools: what's working and what next!

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Many New Zealanders are planning and implementing riparian restoration; and riparian fencing and planting are now standard best practice tools for water quality and habitat restoration. New Zealand has a long history of action, with the first catchment riparian schemes and science dating back to the 1970s. On-ground action has accelerated considerably in the last decade, and current major freshwater reforms (National Policy Statement for Freshwater and associated National Objectives Framework) may further accelerate adoption. There is now solid scientific evidence that demonstrates the value of a range of management actions including: riparian zones and buffers for livestock exclusion (fencing with or without planting); nutrient processing; shading small streams for temperature control; providing leaf and wood input to stream ecosystems; and, enhancing fish and invertebrate habitat. Despite considerable scientific research, evaluation of outcomes from riparian restoration has historically been poor. Tools for designing and implementing simple fixed width riparian buffers have proliferated, informed by on-ground successes and failures; tools for monitoring environmental outcomes are available but evaluations are rare. Monitoring and defining environmental success can be challenging, as goals, outcomes, appropriate indicators and time-scales of response will vary from place to place. In 2015, the Land and Water Forum asserted that New Zealand's current riparian management guidance is outdated, and called for a comprehensive review, update and consolidation of assessment tools. We will review existing tools and demonstrate how they might be combined to maximise successful environmental outcomes for farms and catchments. We will also provide an overview of key challenges facing riparian professionals and share some ideas on building resilient and enduring riparian buffers for New Zealand pastoral systems.