

A national riparian restoration programme in New Zealand: is it value for money?

Dr William Lee¹, Dr Adam Daigneault², Dr Florian Eppink²

¹Landcare Research/University of Auckland, ²Landcare Research, Auckland

National scale initiatives are being attempted in New Zealand to meet important environmental goals following land-use intensification over recent decades. Riparian restoration to filter agricultural spillover effects is currently the most widely practised mitigation measure but few studies have investigated the cumulative value of these practices at a national level. We use an applied economic land use model for a comparative-static analysis of the benefits (GHG emissions, N leaching, P loss, sedimentation and biodiversity gain) and relevant costs (fencing, alternative stock water supplies, restoration planting and opportunity costs) of restoring riparian margins (5 metres, 10m, 20m, 50m) on all streams located on land that is currently used for primary sector activities. We conduct sensitivity analysis on the cost and benefit values as well as on the effectiveness of riparian margins in reducing environmental impacts of land use. Depending on margin width and cost assumptions, riparian margin restoration generates net benefits of between NZ\$2.1 billion – \$5.2 billion/yr and benefit-cost ratios ranging between 1.9 and 22.4. This suggests that even when not monetising the increase in biodiversity or components of stream ecosystem health and other benefits from planting riparian strips, the benefits to climate and freshwater are significantly greater than the implementation costs of riparian restoration.