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Stream-bed and flood-plain rehabilitation at Mulloon Creek, Australia: a financial and economic perspective

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Prior to European settlement, many Australian rivers were characterised by interconnected 'chains of ponds', with riparian vegetation preventing scour and subsequent channel erosion. Damage and destruction of vegetation by grazing animals has resulted in stream-channel incision and associated lowering of watertables on adjacent flood-plains. Proponents of natural sequence farming seek to restore hydro-geomorphic functionality by raising stream levels through construction of leaky weirs and revegetation. Lack of documentation of 'before and after' production data precludes evaluation of either the financial viability or the broader economic merits of raising stream levels. A case study, based on financial and economic costs, and possible benefits, at one site, highlighted the need for more targeted research that can be combined with an economic evaluation of stream rehabilitation. Only a more focussed, multidisciplinary research effort can reveal whether it is likely to be financially viable for individual properties or to be socially beneficial. The study also identified that government agencies should commission, and publish, the results of assessments of alternative schemes that have been used to control erosion or to rehabilitate streams, for comparative purposes. Similarly, a comprehensive cost–benefit analysis should be undertaken to ensure an objective basis for regulatory control over the management of water resources on Australian properties.

Keywords: benefit, cost, floodplain, natural sequence farming, rehabilitation, rehydrating, streambed

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