

Management issue 10:

Development and application of a method for the Rapid Appraisal of Riparian Condition

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Given the critical role of riparian areas within catchments, and their extensive degradation in Australia, there is a need for improved management of these areas. A baseline for improved management must be an understanding of current condition*, and the factors which determine this. We felt that there was a need for a rapid method of measuring riparian condition, both to enable assessment of a large number of sites in a catchment and to investigate relationships with current management practices. This project focused on developing a rapid method which could be used at a large number of sites and was responsive to changes in grazing management.

Rapid Appraisal of Riparian Condition (RARC)

Assessment methods incorporating indicators of geophysical and biological properties and processes are likely to provide reliable estimates of ecological condition in riverine ecosystems. Ladson et al. (1999) described an index of stream condition based on 18 indicators that measure alterations to the hydrology, physical form, streamside vegetation, water quality and biota of streams. This project used a similar approach, and chose indicators to reflect functional aspects of the physical, community and landscape features of the riparian zone. Some of the indicators chosen reflect a variety of functions, for example, different aspects of vegetation cover can play a role in reducing bank erosion, providing organic matter and habitat for fauna, and providing connections in the landscape. The RARC index is made up of five sub-indices, each with a number of indicator variables.



Photo 1. A site in excellent condition (RARC score = 41).

1. Habitat continuity and extent (HABITAT)
2. Vegetation cover and structural complexity (COVER)
3. Dominance of native versus exotics (NATIVES)
4. Standing dead trees, fallen logs and litter (DEBRIS)
5. Indicative features (FEATURES)

Each sub-index is scored out of 10, with a total possible score of 50 representing best condition. Photos 1 and 2 show contrasting sites in excellent and very poor condition. The RARC has now been in use across Australia for a couple of years, and has proved to be an extremely popular assessment method. It has been modified for riparian environments in the tropics (see next article), South Australia and Tasmania, and we are currently in the process of developing a RARC for the New South Wales tablelands region. These three 'regional RARCs' make it easy for people in these areas to pick up and use the assessment method, as the descriptions of riparian areas, photographs and data (most people undertake at least 20–30 assessments using the original RARC and use the information gathered in this process to then modify the assessment method to meet their regional characteristics) relate directly

****Condition refers to the degree to which human-altered ecosystems diverge from local semi-natural ecosystems in their ability to support a community of organisms and perform ecological functions.***



Photo 2. A site in very poor condition (RARC score = 10). Both photos Robyn Watts.

to them. For more information on how to 'tailor' the RARC visit www.rivers.gov.au and select 'tools and techniques'.

Concluding comment

The RARC is a general tool for assessing riparian zone function and biodiversity. It shows clear relationships with more detailed measures of biodiversity and function in catchments where this has been tested. It is also simple to use, easily taught to new users, and shows good

inter-observer reliability. It is freely available and has been updated in our *River and Riparian Management Technical Guideline* series. The South Australia and Tasmania regional RARCs are also now available in hard copy (CanPrint on freecall 1800 776 616) and via www.rivers.gov.au ■

For further information

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RESOURCES



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