On-ground Management of Creek Crossings to Improve Biodiversity and Water Quality

COUNCIL NAME

Hunter Councils Inc. - Gloucester, Dungog, Greater Taree and Great Lakes Councils

WEB ADDRESS

hccrems.com.au

SIZE

12300 square kilometres

POPULATION

87900 people (4 councils combined)

Overview

Four councils in the Hunter region; Gloucester, Dungog, Greater Taree and Great Lakes Councils worked collectively to identify and improve management of water crossings along roadsides. Priority areas were identified, on-ground works undertaken to improve both water quality and vegetation management on sites, and a water crossing field guide produced and added to the existing Roadside Marker Scheme operating across the region.

Example of a water crossing requiring management in the Hunter region. (photo: HCCREMS)

Background

The Hunter & Central Coast Regional Environmental Management Strategy (HCCREMS) have developed and implemented a regional roadside strategy across the 14 LGAs in the region. The strategy is implemented across the region through a Roadside Marker Scheme which identifies management actions for councils based on the coloured-coded markers and accompanying technical guidelines. The Creek Crossings project, funded by the NSW Environmental Trust through the Roadside Vegetation Implementation Project (RVIP), extends the scope of current work to include water quality and riparian issues by addressing water crossing management and maintenance practices through the development of technical guidelines and training. This has relevance to other councils across NSW as a best practice approach to managing water crossings.

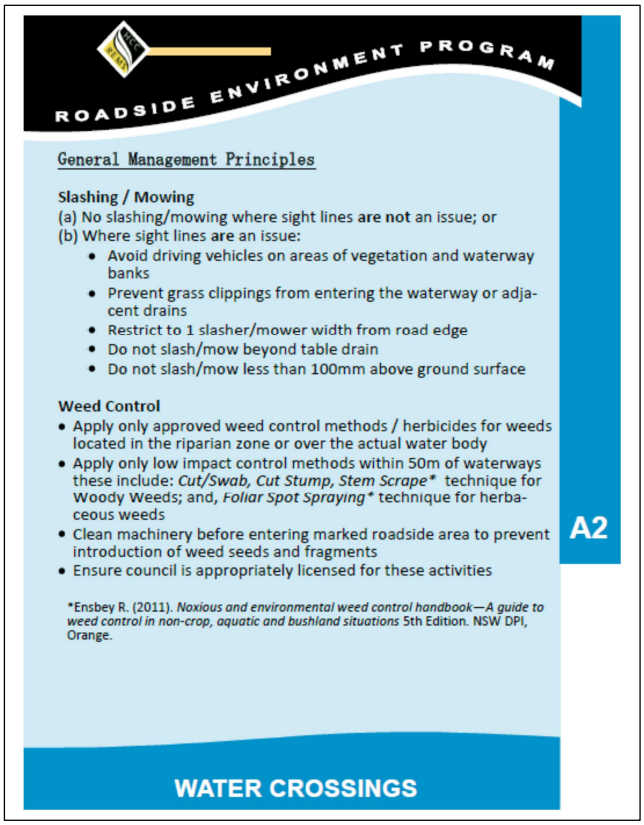
Implementation

The project included a number of components. The first was a **geo-spatial review** of the four LGAs, to identify roads that intersected with rivers and streams and possessed high biodiversity values. This was followed by expert input from biodiversity officers, fishery officers, CMA officers, council road maintenance & planning staff and ground truthing by the HCCREMS team to identify 36 priority sites requiring site analysis audits.

An audit template that captured relevant features and management activities/requirements was developed and water **crossings audits** undertaken. At each audit site, photographs were captured and data collected including road design and condition, roadside verge attributes and condition, adjacent property use and general management, roadside verge maintenance practices, site hydrology, and erosion potential. Audit results were entered into a central database to allow reporting to councils to take place.

Thirty six water crossing site profiles were produced describing the site, including the type of crossing structure, road approaches, hydrological character and drainage patterns to assist council's understanding of environmental issues and impacts (aquatic and terrestrial) and management requirements needed to ensure water quality is not impacted by the ongoing maintenance and management of the road corridor and crossing.

Sites receiving restoration activities were selected based on the biodiversity values (eg presence of Endangered Ecological Communities (EECs) or threatened species) and the sites potential for successful rehabilitation and ongoing management through the roadside program. A Great Lakes Council site supports a population of the endangered species *Grevillea guthrieana.* The site is adjacent to the approach to a newly replaced bridge and council were keen to restore the area as soon as possible following construction, given the proximity of *G. guthrieana*. At this site, weed control was supplemented by the planting of 500 tubestock, including *G. guthrieana* propagated for this project.



A new category "Water Crossings" was added to the Regional Roadside Marker Scheme. This is now an additional environmental consideration for councils when undertaking road construction and maintenance works. A new **field guide,** was also developed (see image) which includes relevant issues and recommendations pertinent to the new category. The image above provides the cover of the field guide, demonstrating the level of detail provided.

Marker posts were purchased through the project and installed by councils. Marker stickers (A2) were attached to the posts, to clearly identify a water crossing site. The location and description of all sites has been incorporated into the regional database of environmentally sensitive sites on roadsides.

Training of council staff at all four LGAs, included one indoor training session and one outdoor session. These sessions focussed on educating staff on using the marker scheme, and in particular, detailed how water crossing sites should be managed. The training reinforced the importance of the Regional Roadside

Project and Marker Scheme, council's legislative responsibilities, and provided guidance in the use and application of the markers, GIS mapping, and technical field guides.

The guides are part of the larger Regional Roadside Marker Scheme project, which provides an important tool for assisting road managers to promote best practice management works and comply with State and Commonwealth environmental legislation.

Outcomes

The project enhanced the ability of councils to protect and manage water crossings into the future through the development and production of location-specific site profiles and the implementation of the Regional Roadside Marker Scheme with a specific water crossing field guide. Councils now have better information on priority sites in their region, and a clear understanding of the importance of managing roadside water crossings for water quality and biodiversity purposes.

Specific outcomes achieved by the project include:

- Four training sessions on the new water crossing guide held, with 35 council staff completing the training
- 174 roadside markers installed across the region
- 127,600 square metres of vegetation rehabilitated and regenerated
- An area of 1400 square metres revegetated including 550 plantings undertaken

Key Learnings

- This project highlighted that there are potentiallly hundreds of sites surrounding roadways that traverse streams and rivers across the region that would benefit from an audit and evaluation of overall site condition and attributes
- The RVIP project has provided an ongoing resource for Councils to continue with the identification, auditing, marking and implementation of best management practices at water crossings into the future.

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