Erosion Control

The erosion control methods took a soft approach designed to have minimal impact on the natural environment. Methods included installing coir logs, check dams and revegetation.

We also contracted Soil Conservation Service to install rock armour and riffles to protect stream banks and reduce flow energy in more vulnerable creeks. These structures were installed to absorb and deflect the impact of the water flow. The erosion control structures will have ongoing benefits, reducing erosion, sedimentation and turbidity in the waterways and wetlands.

Water Sensitive Urban Design

Water Sensitive Urban Design (WSUD) takes a 'whole of catchment approach' to minimise impacts on the natural water cycle and increase the health of aquatic ecosystems.

The team used WSUD at a suburban oval to install a series of ponds cascading down the slope. The ponds capture and retain water in the landscape, reduce peak-flows in the stormwater system and create habitat for local flora and fauna.

This collaborative project successfully converted urban parkland to nature habitat.

Australian Government

wetlandcare australia

Conservation Volunteers Australia

This project was coordinated by WetlandCare Australia (now merged with Conservation Volunteers Australia) through funding from the Australian Government

Program partners

Local Land Services Hunter

The Tom Farrell Institute

hunterwetlandscentre

Hunter Water

The University of Newcastle Australia

The City of Newcastle

Hunter Region Landcare Network

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Email wetlands@conservationvolunteers.com.au

Visit our website www.conservationvolunteers.com.au

Newcastle Wetland Connections was a 4-year project to restore the upstream catchment of the Hunter Wetlands Centre, a Ramsar-listed wetland of international significance. The project improved the health and biodiversity of urban waterways and coastal wetlands in the city of Newcastle.

Habitat Restoration

Summary

From 2013-17 our project team undertook on-ground restoration works at 14 urban waterway sites in the Ironbark Creek catchment, which flows into the Hunter Estuary Wetlands Ramsar site.

These sites have a variety of vegetation and habitat types including urban creeks, drainage lines and wetlands. The objective was to reduce sedimentation and improve the water quality of waterways within the catchment, prior to reaching the Ramsar-listed wetlands. Restoration works also improved and expanded habitat for a diversity of wildlife, including threatened and migratory species.

Key statistics

- **Controlled weeds across 15 hectares, targeting weeds of national significance**
- **Planted over 50,000 native trees, shrubs and groundcovers from over 130 species**
- **Installed 12 erosion control structures stabilising 0.6 hectares within creeks and drainage lines**
- **Held two Water Sensitive Urban Design workshops resulting in a project to naturalise Allowah Reserve**

Assisted regeneration

Assisted regeneration involves creating the appropriate conditions for a damaged ecosystem to recover. The project included assisted regeneration methods via weed control to remove barriers to natural regeneration from the native seed bank, and reconstruction methods, where either turf or 100% weed zones were sprayed, ripped and revegetated.

An integrated weed management approach was used at some sites. This approach controls weeds through a long term plan, using several different weed management techniques. Strategic revegetation was also used in some of the urban remnant patches where the seed bank had been diminished after decades of weed infestation. By using several different techniques for weed control over a long period of time we were able to reduce the chance that the weed species would adapt to a certain control method e.g. build up a resistance to the chemicals being used.

Assisted regeneration methods will continue to have advantages for the sites by creating conditions that favour the ecosystem's recovery and improving the resilience of sites to naturally regenerate.

Improving Biodiversity

The project team used erosion control methods, the incorporation of water sensitive urban design, noxious weed control and assisted regeneration to increase the biodiversity value of the project sites. We planted over 50,000 trees, shrubs and groundcovers, comprising 130 local species.

Planting local species on site helped to create and improve important habitat and food resources for threatened species. Flowering canopy species such as Eucalypts and Melaleucas will help provide additional food resources and habitat for threatened species recorded at the project sites including the Grey Headed Flying Fox and Powerful Owl.

The Hunter Wetlands Centre site is listed under the Ramsar Convention, which defines wetlands of international importance. The Hunter Wetlands Centre has recorded a total of 217 bird species on site, including migratory species such as Latham's Snipe, and threatened species such as the Black-necked Stork.

Left: Water Sensitive Urban Design and revegetation at Allowah Reserve. The ponds capture and store water in the landscape, providing natural habitat

Front page: Volunteers planting a wetland buffer at the University of Newcastle

Above and below: Wetland buffer revegetation at Warabrook Wetland