

Landscape Restoration Trial Community Summary



The Goulburn Broken Catchment Management Authority (CMA) is undertaking a landscape restoration trial in the Longwood / Violet Town Plains area.

The Goulburn Broken CMA continues to invest in revegetation to enhance biodiversity at a landscape scale. We are undertaking this trial in the form of a management experiment, in which 'experimental' landscapes will receive targeted restoration while other 'reference' landscapes will not.

An important part of the trial is to carry out systematic monitoring to evaluate the outcomes of restoration. This summary presents the results of baseline study of the status of woodland birds. We can use these results, together with ongoing monitoring, to evaluate the outcomes of future restoration work.

The trial has three main objectives:

1. To use a whole-of-landscape experimental approach to investigate the conservation benefits gained from targeted increases in the total amount of native vegetation in selected landscapes, taking into account landscape context, within the Goulburn Broken catchment.
2. To implement a long-term monitoring program to evaluate the outputs and outcomes of the (adaptive) experimental management trial.
3. To identify the changes that may occur in the species richness (i.e. number of species) and the composition of woodland bird communities between those landscapes that have had investment to increase the amount of native vegetation and enhance its configuration, and those landscapes that have not had investment by the Goulburn Broken CMA.

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Methods

Ten pairs of 10 x 10 km (100 km²) landscapes were selected in the Longwood / Violet Town Plains (Productive Plains Socio-Ecological System area). The total amount of native wooded vegetation in each landscape ranged from approximately 2% to 20% of the landscape.

Birds were surveyed at 10 sites in each landscape (on a 2.0 ha transect) in roadside, riparian and remnant sites. Surveys were carried out in the spring and summer breeding season of 2012 and again the following winter 2013, for a total of 800 surveys.

Results

In total, 167 bird species were recorded, of which 133 were landbirds (i.e. excluding ducks, herons and other waterbirds). Eight of these were introduced bird species (e.g. Common Blackbird, Common Starling, House Sparrow).

Woodland-dependent species, those that depend on forest and woodland vegetation for daily requirements for foraging, shelter and nesting, comprised a subset of 66 species. This included a number of 'declining' species, such as the Hooded Robin, Red-capped Robin, Jacky Winter, Grey-crowned Babbler, Black-chinned Honeyeater, Diamond Firetail and Southern Whiteface. The species richness of woodland species per landscape ranged from 19 to 45 species (average = 32.3 species).

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The most common species, recorded in all 20 landscapes, included:

- Australian Magpie
- Striated Pardalote
- Galah
- Sulphur-crested Cockatoo
- White-plumed Honeyeater
- Eastern Rosella
- Laughing Kookaburr
- Willie Wagtail

By contrast, 13 species including Zebra Finch, Square-tailed Kite, Azure Kingfisher and Leaden Flycatcher, were recorded during a single survey only. A further 24 species were recorded during fewer than 8 surveys; that is, more than a quarter (27.8%) of landbird species (37/133) were recorded in less than 8 surveys (i.e. 1% of all surveys).

What determines the number of bird species?

The total amount of wooded vegetation in a landscape (Tree cover) had a positive influence on the richness of woodland birds. As overall tree cover increases, a gradual increase in bird richness is also observed. The diversity of broad vegetation groups in the landscape was also important, with species richness increasing as landscapes supported a greater diversity of vegetation types. Landscapes on the plains, even though having lower tree cover, tended to have a higher diversity of broad vegetation groups than did landscapes along the Goulburn River which were dominated by riverine forest.

Whats next?

Another round of bird surveys will occur in a few years' time when the recent revegetation plantings begin to grow and provide more habitat for birds.



Australian Government

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