RESEARCH

CSIRO BIRD AND VEGETATION SURVEYS IN THE BUNTINE-MARCHAGEE RECOVERY CATCHMENT

Andrew Huggett

CSIRO Sustainable Ecosystems has recently completed field surveys of birds and native vegetation on private and public lands in Buntine-Marchagee catchment, northern wheatbelt. This is part of an interagency project being run by the Department of Conservation and Land Management's Mid West Region to help landholders better manage their impact on the fauna, groundwater and native vegetation resources of this area. The CSIRO bird team of Andrew Huggett, John Ingram and Blair Parsons surveyed birds in 213 bush remnants, recording over 18,000 individual birds from 111 different species from September to early October last year. All mapped remnants in each of three sampling zones were searched for birds in mornings and late afternoons. Point-counts were also conducted along 2 km transects in saline wetlands.

Common woodland and shrubland species recorded were Red-capped Robin, Weebill, White-browed Babbler, Rufous Whistler, Variegated Fairy-wren, and Inland Thornbill. Common wetland species were White-winged Fairy-wren and White-fronted Chat. Several woodland and heathland species considered sensitive to the effects of habitat loss and fragmentation were recorded in some of the larger remnants in the south and north-east. These include Rufous Fieldwren, Shy Hylacola, Malleefowl, Golden Whistler, Western Yellow Robin, Southern Scrub-robin, and Blue-breasted Fairy-wren. Malleefowl were only recorded in 3 remnants despite several old mounds found on lateritic or granitic rises. It seemed that the team was tracing the recent disappearance of Malleefowl from this landscape, especially in the absence of active fox baiting.

The team's work is now focusing on data collation and analysis. Bird data will be combined with the results of vegetation sampling and mapping. This is helping to identify focal bird species of Buntine-Marchagee Catchment and is enabling the design of a landscape that can help conserve the area's remnant bird communities.

Malleefowl appear to have disappeared from many remnants in Buntine-Marchagee. Photo: M. Octhman

Typical mallee woodland habitat surveyed for birds by the CSIRO team

Western Yellow Robins were recorded in small and larger remnants containing dense Melaleuca and Acacia thickets with minimal ground cover

CSIRO's Lesley Brooker is providing key focal species analysis and landscape design expertise to this process, which builds on the work of previous CSIRO projects undertaken in other parts of the WA wheatbelt.

All 631 remnants of native vegetation in the catchment have been surveyed and mapped by the Department's contractors (Melanie Clinch, Clare Forward and Nicole Lincoln) and CSIRO Sustainable Ecosystems (Lyn Atkins). The surveys have identified different plant communities (vegetation association patches) in the remnants using satellite images. Each remnant has been visited (ground-truthed) to check the accuracy of plant community boundaries and describe communities in terms of structure and major species present.

The vegetation mapping work has produced some 'surprises', namely the number of remnants (or patches within the remnants) that are in 'good' condition, especially within the saline areas and uplands; the substantial floristic differences between aeolian 'Geraldton sandplain' shrublands in the southwest and older 'Yilgarn block' sandplain shrublands in the north and east of the catchment; and the numbers of River Red Gums (*Eucalyptus camaldulensis*) on the 'Geraldton sandplain' areas.

A smaller but more detailed survey of plant species present in each layer of vegetation in selected remnants was also completed in spring 2002. This information is being used to correlate with the bird data to see if there are specific characteristics of the plant communities that may be influencing bird responses in this fragmented landscape.

CSIRO will prepare a report based on the results of the focal species analysis and landscape design for presentation to Land and Water Australia and the Department by July 2004.

Andrew Huggett is an ornithologist with interests in the functional ecology of declining woodland birds, landscape management, wetland ecology, bioregional planning, and science communication. He has previously worked in the temperate eucalypt forests and rainforests, coastal upland swamps, montane heath, and coastal freshwater wetlands of eastern Australia. Andrew can be contacted on ph: 9333 6458, email: andrew.huggett@csiro.au