

Technical Bulletin # 15

Semi-arid woodland bird surveys



Above: Male Hooded Robin, a characteristic semi-arid woodland species. Photo: Chris Field.

Left: Major Mitchell's Cockatoo leaving a nest hollow. Photo: Victor G. Hurley.

This technical bulletin summarises the finding of surveys undertaken in spring 2011 and summer 2012 of semi-arid woodland birds in the Mallee, including the White-browed Treecreeper (*Climacteris affinis*) and Major Mitchell's Cockatoo (*Lophochoroa leadbeateri*).

This project aimed to increase knowledge about the presence and abundance of threatened woodland birds in selected areas of the Victorian Mallee.

The project involved three separate surveys:

- targeted surveys of White-browed Treecreepers;
- surveys to locate breeding Major Mitchell's Cockatoos; and
- a census survey of semi-arid woodland birds.

Each project builds on survey data collected during the 2001 - 2009 drought.

At a glance

- The White-browed Treecreeper and Major Mitchell's Cockatoo are listed as threatened under the Victorian *Flora and Fauna Guarantee Act* 1988.
- Surveys for these species were undertaken in spring 2011 in blocks of semi-arid woodlands in the Victorian Mallee.
- Results suggest that White-browed Treecreeper and Major Mitchell's Cockatoo populations have not recovered since the end of the drought in 2010-11.

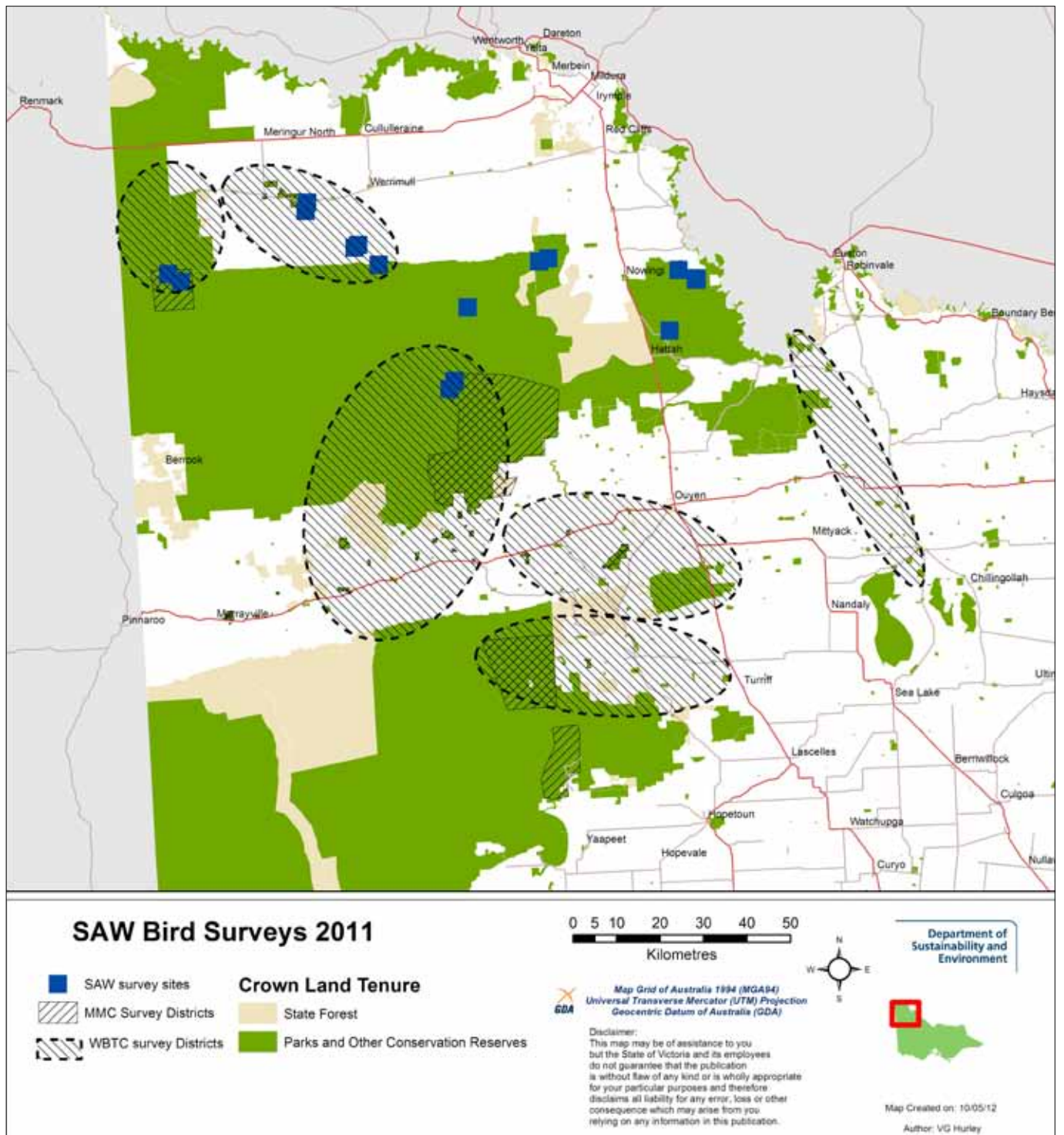


Figure 1: Map of bird survey sites.

Background

Semi-arid woodlands are characterised by an overstorey dominated by non-eucalypt species, such as Slender Cypress-pine (*Callitris gracilis*) and Buloke (*Allocasuarina luehmannii*). Almost 80% of semi-arid woodlands in Victoria have been cleared since settlement, and one quarter of the birds which occur in these woodlands are considered rare or threatened, making these bird communities among the most threatened in Victoria.

White-browed Treecreepers and Major Mitchell's Cockatoos are both listed as threatened under the Victorian *Flora and Fauna Guarantee Act 1988*; they are the two species most dependent on semi-arid woodlands for their survival. The White-browed Treecreeper has evolved a specialised foraging strategy whereby it gleans insects from the trunk and large branches of large trees. They need the rough deeply fissured bark of the non-eucalypt species so they can hang on

during their search for insects. The Major Mitchell's Cockatoo relies on hollows in large old Slender Cypress-pine and feeds heavily on the cones of this species (Garnett *et al.*, 2011 and Hurley, 2011).

The ending of the drought with the 2010-11 La Niña rainfall event presented an opportunity to monitor how these species and semi-arid woodland birds more generally, have survived the drought and responded to improved conditions.

Methods

White-browed Treecreeper surveys

These surveys aimed to determine the presence/absence of White-browed Treecreepers at 49 transects within 11 blocks of semi-arid woodlands in north-west Victoria. Surveys involved walking a 500 m transect and broadcasting calls of the White-browed Treecreeper with a megaphone. The presence/absence of White-browed Treecreepers was recorded for each transect. Transect locations were based on a previous study conducted in 1997 (Radford, 2002).

Major Mitchell's Cockatoo nest surveys

These surveys were designed to detect active Major Mitchell's Cockatoo nests in 28 locations in semi-arid woodland blocks across the Victorian Mallee. Surveys involved driving slowly or walking along tracks in each location for one hour looking for suitable hollow trees (usually Slender Cypress-pine). Nests were identified as active if an adult or pair of Major Mitchell's Cockatoos was sighted entering or leaving a nest hollow, or if young were seen at a hollow entrance. A 6,000 hectare area within the Pine Plains area of Wyperfeld National Park was also surveyed over three days, using the same method to identify active nests.

Semi-arid woodland bird census

The purpose of these surveys was to re-count the species present at 15 different semi-arid woodland blocks surveyed in 2006/08. These surveys involved searching a two hectare area for 20 minutes. All birds seen or heard within the two hectare area were recorded.

Results

White-browed Treecreeper surveys

The White-browed Treecreeper was recorded at every transect except two in Dering Flora and Fauna Reserve. Previous studies found a 25% decrease in the number of woodland blocks occupied by White-browed Treecreepers between 1997 and 2006 (Radford and Bennett, 2003; Hurley and Cheers, 2006). Results from the current survey suggest that this decline has reduced but not stopped. While this species may lay more than one clutch per spring breeding season (Radford, 2002), it is unknown how long dispersal back into the semi-arid woodland blocks which were abandoned during the drought may take.

Major Mitchell's Cockatoo nest surveys

In the 28 locations outside of Pine Plains, only three active Major Mitchell nests were located. Two of these were in mallee eucalypts and one in a dead River Red Gum (*Eucalyptus camaldulensis*). The Pine Plains surveys were a continuation of ongoing annual tree hollow surveys

conducted by the Department of Sustainability and Environment (DSE) and Parks Victoria staff (Hurley, 2011). The earlier surveys confirmed competition from Galahs and feral bees for nest hollows are a current threat to Major Mitchell's Cockatoos at Pine Plains (Hurley, 2011). The spring 2011 surveys located 23 active nests, which represents a 63.5% decrease in the number of active nests located within Pine Plains since 1995 when annual tree hollow surveys first began (Hurley, 2011). The continuing decline of the breeding population of Major Mitchell's Cockatoo at Pine Plains presents a significant conservation challenge.

Semi-arid woodland bird census

The bird census surveys recorded 65 different species across the 15 semi-arid woodland blocks. This is an increase from the 60 species recorded during studies undertaken in 2006-2008 (Sanderson *et al.*, 2009). While the increase is not statistically significant, it is a positive sign that species diversity has not reduced since the drought. Results from this study showed that where the non-eucalypt overstorey remains White-browed Treecreepers will respond to increases in the shrub layer density during recovery from drought (see figures 2 and 3). It is hoped other bird species living in semi-arid woodlands will similarly respond.

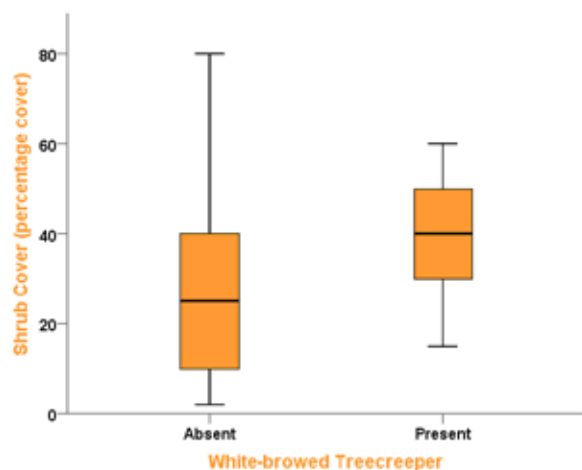


Figure 2: The presence/absence of White-browed Treecreepers in response to the percentage of shrub cover.

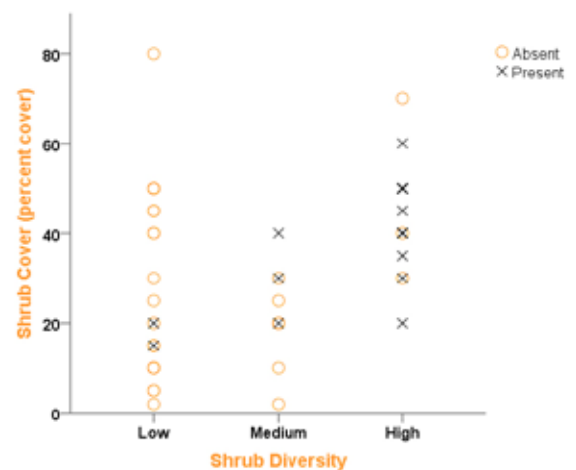


Figure 3: Shrub diversity compared to percentage shrub cover at sites where White-browed Treecreepers were present (x) or absent (o). Shrub diversity is the number of species present: low < 5 species, medium = 5-8 species and high > 8 species.



Above: Semi-arid woodland at Yarrara Flora and Fauna Reserve. Photo: Victor G. Hurley.

Left: White-browed Treecreeper. Photo: Alex Holmes, GHD.

Recommendations

Recommendations from this project include:

- Enhance existing semi-arid woodland blocks through fencing to exclude stock and pest animals, and intensive rabbit control works to encourage regeneration of overstorey species;
- Set protection and rehabilitation of remnant semi-arid woodlands on private and public land as the highest priority for native vegetation management in the Mallee;
- Prioritise White-browed Treecreeper survey locations and undertake surveys at least every five years;
- Continue annual monitoring of tree hollows at Pine Plains to identify active Major Mitchell's Cockatoo nests;
- Remove Galahs competing for Major Mitchell's Cockatoo nest hollows in Slender Cypress-pine at Pine Plains; and
- Undertake more detailed surveys at the larger semi-arid woodland blocks (i.e. Yarrara, Mallanbool and Meringur Flora and Fauna Reserves and Hattah-Kulkyne National Park) for longer time periods in spring 2012 to locate active Major Mitchell's Cockatoo nests.

Acknowledgements

The Mallee Catchment Management Authority (CMA) engaged DSE to undertake this study, with funding from the Victorian Government.

Further information

The information for this bulletin has been taken from 'Semi-arid woodland birds in the Victorian Mallee: results from spring 2011 surveys', a report by DSE for the Mallee CMA. For further information on this report please contact the Mallee CMA on 03 5051 4377.

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Published July 2012

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