




# First record of the Mallee Whipbird *Psophodes nigrogularis leucogaster* in Victoria since 1985

Simon J. Verdon<sup>1, 2\*</sup> , Lachlan Wild<sup>3</sup>, Matilda Southgate<sup>4</sup>, Rhys Makdissi<sup>1, 2</sup>   
and William F. Mitchell<sup>1, 2, 5</sup> 

<sup>1</sup>Department of Environment and Genetics, La Trobe University, Bundoora VIC 3086, Australia

<sup>2</sup>Research Centre for Future Landscapes, La Trobe University, Bundoora VIC 3086, Australia

<sup>3</sup>47 Alder Street, Kangaroo Flat VIC 3550, Australia

<sup>4</sup>P.O. Box 244, Mallacoota VIC 3892, Australia

<sup>5</sup>BirdLife Australia, Suite 2-05, 60 Leicester Street, Carlton VIC 3053, Australia

\*Corresponding author. Email: S.Verdon@latrobe.edu.au

**Abstract.** The Mallee Whipbird (White-bellied Whipbird) *Psophodes nigrogularis leucogaster* is a threatened passerine restricted to mallee-heath vegetation in the Eyre Peninsula, Yorke Peninsula and southern Murray Mallee region of eastern South Australia and western Victoria. This taxon is both difficult to detect and has undergone significant declines in range and abundance over the past century. The last records in Victoria were made in 1985 in the Big Desert State Forest. Here, we report a new record in the Big Desert Wilderness Park made in October 2022. This record was the result of extensive field surveys targeting this and other threatened mallee bird taxa. We also recorded the Mallee Whipbird in the adjoining Ngarkat Conservation Park (South Australia), 5 years after the most recent record in that reserve and only the second record there after extensive wildfires in 2014. Both records were in vegetation burnt 8 years earlier, with a mix of low whipstick mallee (Narrow-leaved Red Mallee *Eucalyptus leptophylla*) and diverse regenerating heath vegetation. The Mallee Whipbird must now be considered one of Victoria's rarest resident birds, with only one location known for the state.

## Introduction

The Mallee Whipbird (also known as the White-bellied Whipbird) *Psophodes nigrogularis leucogaster* is a declining mallee bird that occupies semi-arid mallee-heath in eastern Australia (Burbidge *et al.* 2017). Because of substantial declines over the last century, it is listed as Vulnerable federally (*Environment Protection and Biodiversity Conservation Act 1999*), Critically Endangered in Victoria (*Flora and Fauna Guarantee Act 1988*) and Endangered in South Australia (*National Parks and Wildlife Act 1972*).

Mallee Whipbirds occur across three regions (listed in order of population size): Eyre Peninsula, Yorke Peninsula, and the Murray Mallee (Verdon *et al.* 2021). The Eyre and Yorke Peninsula populations, in South Australia, are small (<2000 individuals – Eyre Peninsula, <1000 individuals – Yorke Peninsula). Nevertheless, these two regions support almost all of the global population.

The remainder of this subspecies' range is in the southern Murray Mallee region in South Australia (Ngarkat Conservation Park, Billiatt Wilderness Park) and Victoria ('the Big Desert', which includes Big Desert Wilderness Park, Big Desert State Forest and Wyperfeld National Park) (DELWP 2016). Extensive wildfires burned the only known Mallee Whipbird locations in Billiatt Wilderness Park and Ngarkat Conservation Park in 2014 (Verdon *et al.* 2021). Since that time, there have been no records in Billiatt Wilderness Park (Verdon *et al.* 2021; Verdon 2023) and only one record in Ngarkat Conservation Park (2017: Fiona Paton pers. comm.). In Victoria, there have been no records since the 1985 records of Woinarski *et al.* (1988) (Verdon *et al.* 2021). We also confirmed that there are no Victorian records since 1985 present in any of the

following online biodiversity databases: ebird.org; Victorian Biodiversity Atlas; Atlas of Living Australia; Birddata).

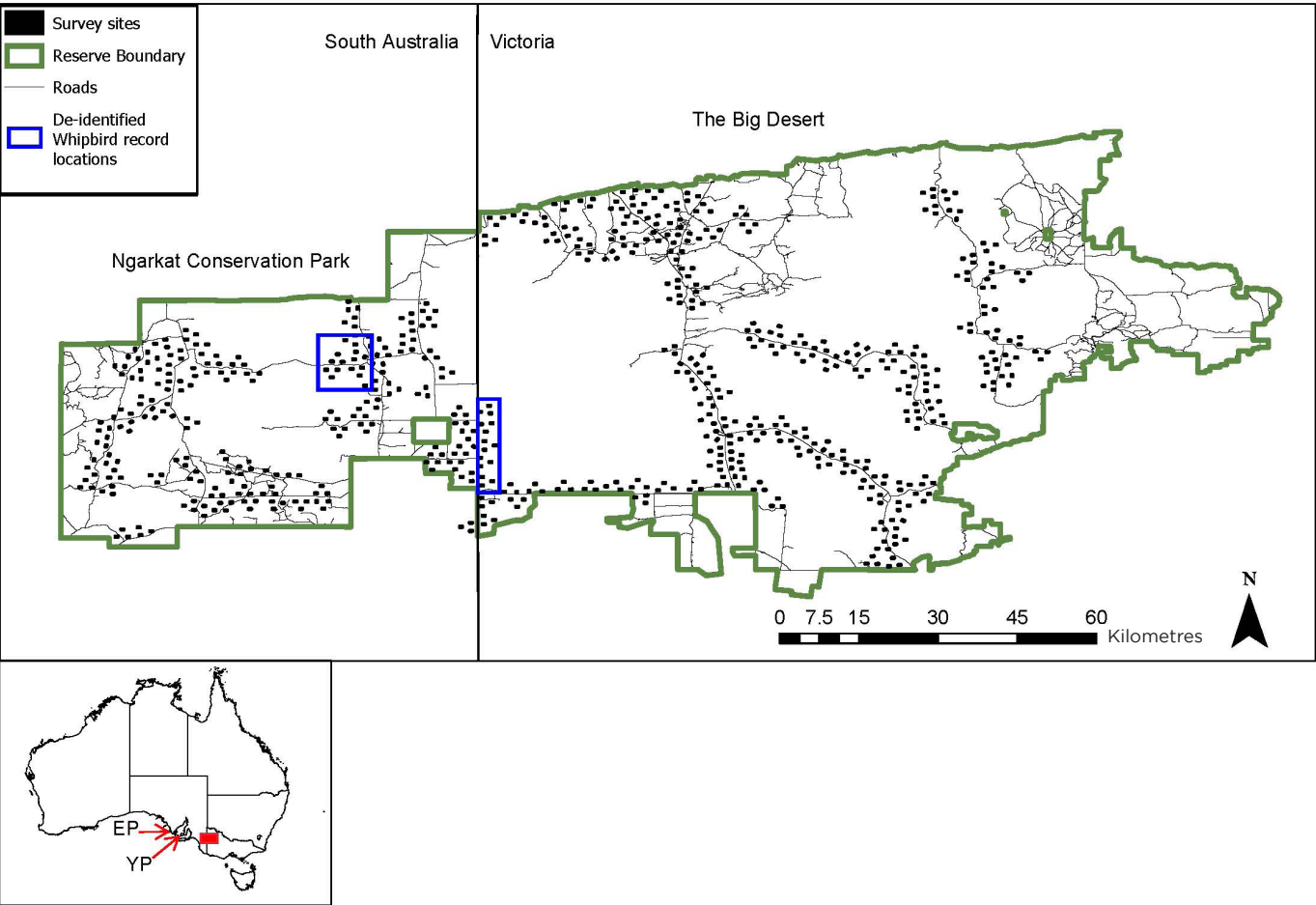
## Methods and results

In 2022 (May–October), we conducted extensive surveys for threatened and declining mallee birds in the Ngarkat Conservation Park and the Big Desert (Verdon 2023). We also conducted surveys in Billiatt Wilderness Park, but these are not reported on here (see Verdon 2023 for more information regarding Billiatt surveys). Surveys consisted of 2-hour area searches of 25-hectare sites, with six bouts of playback for target species, conducted at 20-minute intervals (Verdon 2023). The Mallee Whipbird was one of ten target species. The survey of the first site started 30 minutes before dawn, and surveys finished at around 1400 h  $\pm$  1 hour (three sites surveyed per person per day).

For the Mallee Whipbird, peak calling season and time of day are poorly understood. However, there are anecdotal reports of peak calling at sunrise (Peter Menkhurst pers. comm.), and reports of winter and/or spring being peak calling seasons (Chris Hedger pers. comm.). Therefore, if these anecdotal reports are accurate, our surveys covered peak calling periods for the Mallee Whipbird.

We surveyed 660 sites across Ngarkat Conservation Park and the Big Desert, with each site surveyed twice on average (i.e. 4 hours per site). This effort equates to 33,650 hectares of surveys over 2692 hours and included 5384 km of walking. Structured surveys covered ~2% of the total reserve/public land complex.

These surveys resulted in two Mallee Whipbird records, one in Ngarkat and one in Big Desert Wilderness Park (Figure 1). Both records were aural and the Mallee Whipbird



**Figure 1.** Location of the 2022 Mallee Whipbird records in the Ngarkat/Big Desert reserve/public land complex (‘Reserve Boundary’). The record locations have been de-identified (i.e. only the general area is provided) to protect these sensitive sites from potential poaching and excessive disturbance from birdwatchers. The other two known Mallee Whipbird populations are marked on the continental-scale inset. EP is Eyre Peninsula and YP is Yorke Peninsula. The red rectangle in the inset indicates the area presented in the main figure.

calls were recorded using a smartphone or tablet for later validation by multiple experts. In both cases, the surveyor had been conducting a survey (including playing Mallee Whipbird playback) at the time of the record. However, it is difficult to say whether the birds recorded were responding to playback. At the time of each record, the surveyor was operating alone, and the nearest person was >3 km away. Thus we are confident that the sounds heard were wild Mallee Whipbirds, rather than digital recordings being broadcast by other surveyors (Menkhorst *et al.* 2020). Details regarding each record are presented in Table 1.

Both Mallee Whipbird records were in the 2014 fire-scar (8 years since fire) and were on the edge of two distinct

vegetation types: low, dense whipstick mallee (dominated by Narrow-leaved Red Mallee *Eucalyptus leptophylla*) and low diverse regenerating heath (dominated by *Eucalyptus* spp., Porcupine Grass *Triodia scariosa*, Dwarf Sheoak *Allocasuarina pusilla*, Slaty Sheoak *A. muelleriana*, Mallee Teatree *Leptospermum coriaceum* and Broom Baeckea *Hysterobaeckea behrii*) (Figure 2).

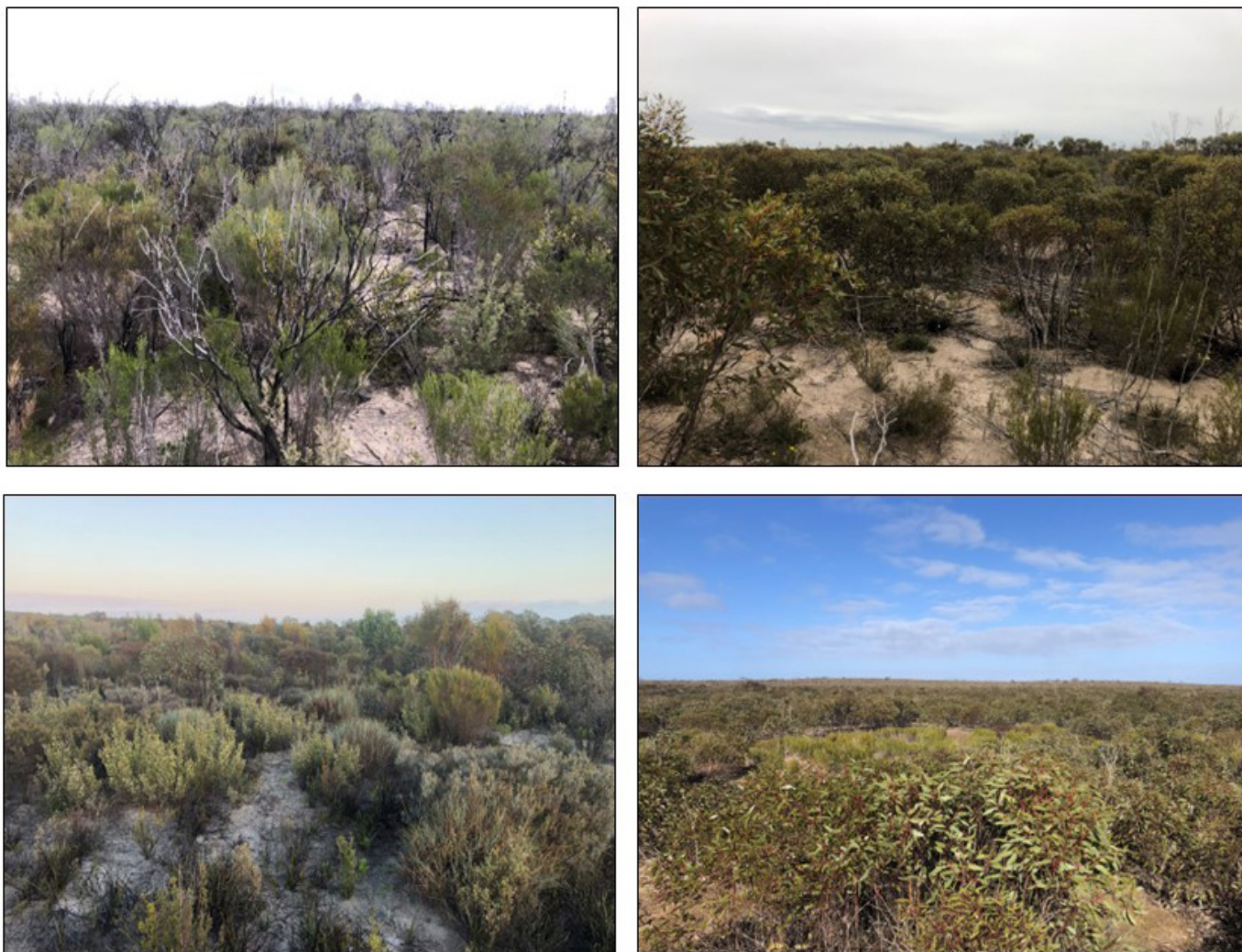
Discussion

Recording the Mallee Whipbird in Victoria, nearly four decades after the most recent record in that state, highlights the challenges in detecting this taxon, which is notoriously

**Table 1.** Details of each Mallee Whipbird record. In each case, the revisits to sites occurred immediately after the initial record (i.e. the following day onwards). Distance is estimated distance between observer and bird; the date is given as day.month.year.

Record location	Observer	Detection method	Distance (m)	Date	Time (h)	Wind/rain	Revisits (days)	Redetections
Ngarkat, South Australia	MS	Aural	~80	25.07.22	1015	Breeze	3	0
Big Desert, Victoria	LW	Aural	~60	11.10.22	0756	Breeze, light rain	5	0





**Figure 2.** Vegetation at each record location. Two photographs are presented per location because in both cases, the bird was recorded on the edge of these two distinct vegetation types. The left panels show regenerating heathland and the right panels show whipstick vegetation. Photos: Simon J. Verdon

elusive (Woinarski *et al.* 1988; McGuire *et al.* 2011). This multi-decade gap in detections in Victoria also highlights the need for (a) new methods of effectively surveying for this taxon and (b) greater investment in field surveys in the region. The time, money and effort required to undertake surveys on this scale were substantial, but yielded results for this rare bird that smaller survey programs have missed (e.g. 2019 and 2020 surveys: RM unpubl. manuscript).

#### *Fire-age and vegetation at record locations*

Both Mallee Whipbird records were in the 2014 fire-scar (8 years since fire), which covered an area with many historic records. As a result, it is difficult to determine from these data the relative importance of post-fire age and intrinsic environmental factors at those locations. However, given the strong influence of fire on vegetation in this region (Cheal 2010), and indications from previous studies that Mallee Whipbirds may prefer vegetation c. 5–25 years since fire (Woinarski *et al.* 1988), we consider it likely that post-fire age is an important factor in determining the occurrence of this subspecies. Multiple large fires have occurred in the study area in the last 20 years. As a result, 60% of the study area had had <25 years since fire at the time of the surveys.

Although it is difficult to glean much reliable ecological information from only two records, the fire-age and habitat types of record locations are concordant with those noted by previous authors (Hunt 1969; Hunt & Kenyon 1970; Woinarski *et al.* 1988; Higgins & Peter 2002). Similarly, the lack of redetections at either site is concordant with the experiences of some previous surveyors (e.g. Red Bluff 1984 in Woinarski *et al.* 1988) and highlights the extremely low detectability of this subspecies (Hunt 1969; Hunt & Kenyon 1970; Woinarski *et al.* 1988).

#### *Record locations and future research*

Our record of a Mallee Whipbird in Ngarkat Conservation Park is also a significant finding, as only the second Mallee Whipbird record in that reserve since extensive wildfires in 2014, and the first record in 5 years (Fiona Paton pers. comm.). Our two records are 28 km apart. Whether there are more Whipbirds occupying the vegetation between these locations is unknown. Despite extensive surveys between the two record locations, no additional birds were detected but, given their elusive nature, we cannot confirm their absence from these areas. We are currently undertaking additional surveys (spring 2023) to develop a greater understanding of Mallee Whipbirds in the region.

These surveys are using gridded arrays of automated acoustic recorders, with arrays centred on the record locations presented in this document.

Automated acoustic recorders are likely to be a much more effective survey method for this subspecies than field surveys, as has been documented for other threatened birds (e.g. Plains-wanderer *Pedionomus torquatus*: Rowe et al. 2023). However, past efforts to develop an automated call recogniser algorithm for the Mallee Whipbird have failed because of its hyper-variable call repertoire (Chris Hedger pers. comm.). The lack of an effective recogniser is a major impediment to ramping up survey effort for this subspecies, and the development of a recogniser is a top conservation/research priority (Boulton et al. 2020).

Incidental records of rare species provide insufficient information for reliable conservation management. However, it is our hope that the Mallee Whipbird records presented here can trigger further conservation action for this rare and elusive bird.

## Acknowledgements

This project was conducted on the traditional lands of the Wotjobaluk and Ngarkat peoples. It was supported by the Mallee Catchment Management Authority, through joint funding from the Australian Government's Environment Restoration Fund, the National Landcare Program, Murraylands and Riverland Landscape Board and South Australian Department for Environment and Water and La Trobe University, with additional funding from Zoos Victoria. It was conducted under La Trobe University Research Ethics Permit AEC21025; Department for Environment and Water Research Permit Y27096-1 (SA); Wildlife Permit 10010105 (Vic), Parks Victoria Access Agreement and State Forest Permit LOMA71 (Vic). This work was only possible through contributions from project partners from multiple agencies and a small army of 54 volunteer surveyors and six volunteer camp helpers who generously donated their time.

## References

- Boulton, R.L., Lau, J. & Howling, G. (2020). *Threatened Mallee Birds Conservation Action Plan, Report 2021*. Threatened Mallee Birds Implementation Team, BirdLife Australia, Melbourne.
- Burbidge, A.H., Joseph, L., Toon, A., White, L.C., McGuire, A. & Austin, J.J. (2017). A case for realigning species limits in the southern Australian whipbirds long recognised as the Western Whipbird (*Psophodes nigrogularis*). *Emu* **117**, 254–263.
- Cheal, D.C. (2010). *Growth Stages and Tolerable Fire Intervals for Victoria's Native Vegetation Data Sets*. Victorian Government Department of Sustainability & Environment, Melbourne.
- DELWP (Department of Environment, Land, Water and Planning) (2016). *National Recovery Plan for the Mallee Emu-Wren Stipiturus mallee, Red-lored Whistler Pachycephala rufogularis and Western Whipbird Psophodes nigrogularis leucogaster*. Australian Government, Canberra.
- Higgins, P.J. & Peter, J.M. (Eds) (2002). *Handbook of Australian, New Zealand & Antarctic Birds, Volume 6: Pardalotes to Shrike-thrushes*. Oxford University Press, Melbourne.
- Hunt, T.J. (1969). *The Mallee Whipbird*. Privately published pamphlet. Melbourne.
- Hunt, T.J. & Kenyon, R.F. (1970). The rediscovery of the Mallee Whipbird in Victoria. *Australian Bird Watcher* **3**, 222–226.
- McGuire, A., Johnson, G., Robertson, J. & Kleindorfer, S. (2011). Comparison of survey methods for detection of the elusive Western Whipbird *Psophodes nigrogularis* with notes on its distribution. *South Australian Ornithologist* **37**, 49–59.
- Menkhorst, P., Fitzsimons, J., Loyn, R. & Woinarski, J. (2020). Assessing the strength of evidence for records of Night Parrots at Kalamurina Wildlife Sanctuary (South Australia) and Diamantina National Park (Queensland), 2016–2018. *Emu – Austral Ornithology* **120**, 173–177.
- Rowe, K.M.C., Selwood, K.E., Bryant, D. & Baker-Gabb, D. (2023). Acoustic surveys improve landscape-scale detection of a critically endangered Australian bird, the plains-wanderer (*Pedionomus torquatus*). *Wildlife Research* Available online: <https://doi.org/10.1071/WR22187>.
- Verdon, S.J. (2023). *The Threatened Mallee Birds in Heathlands Project: Final Report*. La Trobe University, Melbourne.
- Verdon, S.J., Hodder, G., Hedger, C., Ireland, L., Clarke, R.H., Todd, M.K., Wilkins, P., Carpenter, G.A., Boulton, R.H., Menkhorst, P.W. & Garnett, S.T. (2021). Mallee Whipbird *Psophodes nigrogularis leucogaster*. In: Garnett, S.T. & Baker, G.B. (Eds). *The Action Plan for Australian Birds 2020*, pp. 716–719. CSIRO Publishing, Melbourne.
- Woinarski, J.C.Z., Eckert, H.J. & Menkhorst, P.W. (1988). A review of the distribution, habitat and conservation status of the Western Whipbird *Psophodes nigrogularis leucogaster* in the Murray Mallee. *South Australian Ornithologist* **30**, 146–153.

Received 25 July 2023, accepted 25 September 2023,  
published online 11 December 2023

