

Southern Mallee Bird Monitoring Report

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Joel Allan



Introduction

In May 2015, a series of sites were surveyed for birds in the Southern Mallee region of the South Australian Murray Darling Basin (SAMDB), east of the River Murray. These surveys were designed to form the basis of an upcoming monitoring program of birds in the region. This report details the methods and findings of these surveys.

Methods

Forty sites were surveyed for birds, spanning an area from just north of Taillem Bend in the SW, to Halidon in the NE. These sites were a subset of those surveyed for birds as part of the Landscape Assessment Framework (LAF) in the region in 2009 and 2012, which was designed to establish the status of different ecosystems in the region using birds as indicators (Willoughby 2010; Gillespie unpublished). The subset of sites selected here, included several different ecosystems, including mallee heath/shrubland on deep sand, mallee with *Triodia* understorey on shallow sand, open mallee on calcrete, *Callitris* woodland and *Eucalyptus porosa* woodland.

Bird surveys were conducted using the same LAF methods employed in 2009 and 2012 (e.g. Willoughby 2012). This involved surveying a circular area of 5 ha around each site (126 m radius) for 30 minutes. All bird species seen or heard within the 5 ha were recorded, while birds detected outside the site or survey time were also noted but not included in the survey data.

These surveys were conducted three times on three different days by three different experienced observers (J. Allan, T. Hunt, and J. Gitsham or G. Carpenter) during May 18-22 and 25-28, 2015. Surveys were all completed within about 4 hours after sunrise each day, and each site was surveyed at least once early in the morning (<1 hr after sunrise) to coincide with the period of highest bird activity and ensure adequate detection across all sites.

In addition to data collected in survey sites, opportunistic records were also taken of birds detected between sites or after surveys. This involved recording a waypoint on a GPS usually at the location of the bird/s or within ca. 1 km (i.e. for open country species seen while driving) and listing all the bird species seen or heard as per the site surveys.

Cover photo: Southern Scrub-Robin taken in 2010 by the author in deep sand mallee regrowth near Yurgo in the Southern Mallee.

All data were entered into the SAMDB vertebrate records access database ('SAMDB_Vert_Rel.mdb') under the 'Southern Mallee Bird Monitoring' project. Queries were then used to extract summary statistics for this report.

During surveys photos were also taken to provide an idea of the habitat for the SAMDB community portal (website). These were all taken ≤ 10 m from the centre of each site at a direction that was judged as most representative of the vegetation throughout the 5 ha. The photos were provided separately to this report and are not included here.

Results and Discussion

Overall, 119 bird species were detected across all survey sites and opportune records (Table 1). Of these, 85 species were associated with survey sites (inside the area or nearby) and nine species were only detected opportunistically between or after surveys. Another 25 species were recorded along the River Murray outside the mallee survey area, and were mainly aquatic species or species associated with the river corridor (e.g. Pied Butcherbird, Laughing Kookaburra).

At the site level, the number of species detected inside the survey time and area, and across all three visits, ranged from 32 species down to 8 species. The site with the most species was a tall open mallee site with hollows and patches of shrubs about 4 km NE of Karoonda. This was closely followed by two other sites with 29 species; one of tall open mallee on the eastern end of Lowan Conservation Park, and the other a clay flat east of Halidon with *Eucalyptus calycogona* that was flowering profusely attracting a diversity of honeyeaters. On the other hand, the site with the lowest number of species was situated small 5 ha patch in a highly cleared landscape east of Walker Flat with no vegetation patches greater than about 10 ha within a radius of ca. 2 km, and was covered in rabbit warrens and prickly pear.

In terms of individual species, the most common birds found associated with survey sites were the Spotted Pardalote and Little Raven being detected at 39 out of 40 sites, closely followed by the Grey Shrike-thrush, Australian Magpie and Weebill being detected at 38 of 40 sites (Table 1). The Little Raven and Australian Magpie are open country species associated with cleared agricultural landscapes so this is not surprising. Similarly, the Grey Shrike-thrush and Weebill are known common and generalist mallee birds, and therefore this is not surprising either. Spotted Pardalotes are generally common, although being found at 39 of 40 sites was more than expected, and this may be a result of surveys being conducted in

the non-breeding season when these lerp-specialists can move around following lerp outbreaks.

Several individual species identified as at risk of extinction based on the previous 2009 and 2012 LAF surveys (Willoughby 2010; Gillespie unpublished) were also recorded in the current surveys. These were the 'large patch' response group consisting of the Crested Bellbird, Chestnut Quail-thrush, Southern Whiteface, and Brown Treecreeper. All of these species were again found in low numbers being detected at ≤ 7 sites. In addition, the Malleefowl, which is a nationally threatened species was also detected, with three active mounds being found (two at sites and one opportunistically).

Compared to the previous LAF surveys at these 40 sites, the detection rates for most species were similar overall, although the detection rates for some species varied significantly (Table 2). Most of the large variation though, could be attributed to seasonal differences between the surveys (spring for the 2009/12 surveys and autumn for the current 2015 survey). For instance, most of the species detected at ≥ 10 fewer sites in the current surveys were spring/summer migrants that usually move north during the cooler months in which these surveys were conducted (e.g. Brown Songlark, Masked Woodswallow, White-winged Triller, Rainbow Bee-eater). Conversely, most of the species that were detected in ≥ 10 more sites in the current surveys were those that are known to disperse widely after breeding during the cooler months (e.g. Grey Fantail, Golden Whistler, Silvereeye), while local post-breeding dispersal may also account for the greater prevalence of species such as the Australian Ringneck, Mulga Parrot and Inland Thornbill in the current surveys. In addition, the higher occurrence of nectar-feeding species (Purple-crowned Lorikeet, Red Wattlebird, Spiny-cheeked Honeyeater, Striped Honeyeater, Yellow-plumed Honeyeater) during the recent surveys, is probably due to the greater abundance of flowering mallees, particularly the Square-fruited Mallee, *Eucalyptus calycogona*.

Finally, another notable difference between the surveys was the reduced occurrence of the Chestnut Quail-thrush, which was detected in 5 fewer survey sites (40% less) in the current compared to the previous surveys. This is concerning, because as mentioned previously this species was identified as at risk in the region. These differences though, could also be due to the seasonal differences between the current and previous surveys, as there may be reduced detectability during the non-breeding season compared to spring when the birds may call more often to defend their territory. Nonetheless, given the status of this species in the region, this would need to be verified to ensure that it is not an actual decline.

Table 1. List of 119 bird species found during the May 2015 Southern Mallee monitoring bird surveys, the number of sites and opportune records for which they were recorded, and the general area (Mallee or River Murray) in which they were found. Species are ordered by the number of sites for which they were recorded (out of 40), in decreasing order. Site records include instances where a bird was only detected outside the site area or survey time. The last 25 records are of species only detected along the River Murray at the survey base at Bowhill. Continued over page.

Bird Species	Sites	Opportune	Area	Bird Species	Sites	Opportune	Area
Spotted Pardalote	39	18	Mallee	Varied Sittella	10	2	Mallee
Little Raven	39	25	Mallee	Blue Bonnet	10	12	Mallee
Grey Shrike-thrush	38	11	Mallee	Rufous Whistler	9	2	Mallee
Australian Magpie	38	34	Mallee	Striped Honeyeater	8	1	Mallee
Weebill	38	20	Mallee	Splendid Fairy-wren	7	1	Mallee
Golden Whistler	34	5	Mallee	Chestnut Quail-thrush	7	0	Mallee
Grey Butcherbird	33	7	Mallee	Restless Flycatcher	7	3	Mallee
Striated Pardalote	33	7	Mallee	Eurasian Skylark	7	1	Mallee
Grey Fantail	33	16	Mallee	Wedge-tailed Eagle	7	3	Mallee
Grey Currawong	31	7	Mallee	Peaceful Dove	5	4	Mallee
Red Wattlebird	31	14	Mallee	White-fronted Honeyeater	5	0	Mallee
White-browed Babbler	30	15	Mallee	Dusky Woodswallow	5	3	Mallee
Spiny-cheeked Honeyeater	30	18	Mallee	Crested Bellbird	5	0	Mallee
Brown-headed Honeyeater	30	2	Mallee	Banded Lapwing	5	3	Mallee
Galah	29	11	Mallee	Magpie-lark	4	7	Mallee
Australian Ringneck	29	10	Mallee	Hooded Robin	4	2	Mallee
Chestnut-rumped Thornbill	29	14	Mallee	Nankeen Kestrel	3	5	Mallee
Willie Wagtail	29	27	Mallee	Malleefowl	3	2	Mallee
Yellow-throated Miner	28	11	Mallee	Tawny Frogmouth	3	0	Mallee
White-eared Honeyeater	28	4	Mallee	Southern Whiteface	3	1	Mallee
Common Bronzewing	28	3	Mallee	Elegant Parrot	3	1	Mallee
Yellow-plumed Honeyeater	27	7	Mallee	White-backed Swallow	2	0	Mallee
Silvereye	25	8	Mallee	Emu	2	0	Mallee
Yellow-rumped Thornbill	25	21	Mallee	Spotted Nightjar	2	2	Mallee
Mulga Parrot	24	5	Mallee	Painted Button-quail	2	0	Mallee
White-winged Chough	24	9	Mallee	Australasian Pipit	2	6	Mallee
Singing Honeyeater	22	21	Mallee	Crimson Rosella	2	1	Mallee
Yellow Thornbill	19	11	Mallee	Brown Falcon	2	2	Mallee
Purple-gaped Honeyeater	18	4	Mallee	Southern Boobook	2	1	Mallee
Southern Scrub-robin	17	1	Mallee	Whistling Kite	2	3	Mallee
Inland Thornbill	16	2	Mallee	Red-rumped Parrot	2	3	Mallee
Jacky Winter	14	2	Mallee	Brown Goshawk	1	1	Mallee
Common Starling	13	9	Mallee	Collared Sparrowhawk	1	0	Mallee
Red-capped Robin	13	2	Mallee	White-fronted Chat	1	2	Mallee
Crested Pigeon	13	8	Mallee	Brown Treecreeper	1	1	Mallee
Shy Heathwren	12	0	Mallee	Black-faced Cuckoo-shrike	1	4	Mallee
Variiegated Fairy-wren	12	4	Mallee	Australian Owlet-nightjar	1	0	Mallee
Welcome Swallow	12	14	Mallee	Pallid Cuckoo	1	0	Mallee
Purple-crowned Lorikeet	11	2	Mallee	Musk Lorikeet	1	3	Mallee

Table 1. (Continued)

Bird Species	Sites	Opportune	Area
Tree Martin	1	0	Mallee
Little Corella	1	1	Mallee
Horsfield's Bronze-cuckoo	1	0	Mallee
Australian Raven	1	1	Mallee
House Sparrow	1	5	Mallee
Little Eagle	1	0	Mallee
Australasian Grebe	0	1	Mallee
Black-shouldered Kite	0	4	Mallee
Black-faced Woodswallow	0	1	Mallee
Noisy Miner	0	2	Mallee
White-plumed Honeyeater	0	3	Mallee
Masked Lapwing	0	2	Mallee
New Holland Honeyeater	0	2	Mallee
Grey Teal	0	2	Mallee
Mistletoebird	0	1	Mallee
Australian Pelican	0	1	River
Australian Hobby	0	1	River
Australian White Ibis	0	1	River
Australian Barn Owl	0	1	River
Black Swan	0	1	River
Black-fronted Dotterel	0	1	River
Australasian Shoveler	0	1	River
Australian Wood Duck	0	1	River
Yellow-billed Spoonbill	0	1	River
Superb Fairy-wren	0	1	River
Straw-necked Ibis	0	1	River
Spotted Dove	0	1	River
Silver Gull	0	1	River
Red-kneed Dotterel	0	1	River
Purple Swamphen	0	1	River
Pied Cormorant	0	1	River
Pacific Black Duck	0	1	River
Caspian Tern	0	1	River
Nankeen Night-Heron	0	1	River
Australasian Darter	0	1	River
Laughing Kookaburra	0	1	River
Great Egret	0	1	River
Great Cormorant	0	1	River
Common Blackbird	0	1	River
Pied Butcherbird	0	1	River

Table 2. Comparison of the number of sites species were detected at in the current 2015 surveys to those detected in the previous LAF surveys in 2009 and 2012. Species are listed in alphabetical order.

Bird Species	Current	Previous	Difference	Bird Species	Current	Previous	Difference
Australasian Pipit	2	4	-2	Elegant Parrot	3	6	-3
Australian Magpie	38	38	0	Emu	2	0	2
Australian Owllet-nightjar	1	1	0	Eurasian Skylark	7	11	-4
Australian Raven	1	3	-2	Galah	29	32	-3
Australian Ringneck	29	23	6	Golden Whistler	34	22	12
Banded Lapwing	5	1	4	Grey Butcherbird	33	30	3
Black Falcon	0	1	-1	Grey Currawong	31	29	2
Black Kite	0	1	-1	Grey Fantail	33	2	31
Black-faced Cuckoo-shrike	1	10	-9	Grey Shrike-thrush	38	39	-1
Blue Bonnet	10	8	2	Hooded Robin	4	5	-1
Brown Falcon	2	2	0	Horsfield's Bronze-cuckoo	1	10	-9
Brown Goshawk	1	1	0	House Sparrow	1	0	1
Brown Songlark	0	17	-17	Inland Thornbill	16	8	8
Brown Treecreeper	1	1	0	Jacky Winter	14	16	-2
Brown-headed Honeyeater	30	28	2	Little Corella	1	0	1
Chestnut Quail-thrush	7	12	-5	Little Eagle	1	0	1
Chestnut-rumped Thornbill	29	27	2	Little Raven	39	38	1
Cockatiel	0	3	-3	Magpie-lark	4	3	1
Collared Sparrowhawk	1	0	1	Malleefowl	3	3	0
Common Bronzewing	28	35	-7	Masked Woodswallow	0	23	-23
Common Starling	13	7	6	Mulga Parrot	24	18	6
Crested Bellbird	5	7	-2	Musk Lorikeet	1	0	1
Crested Pigeon	13	16	-3	Nankeen Kestrel	3	0	3
Crimson Rosella	2	0	2	Nankeen Night-Heron	0	1	-1
Dusky Woodswallow	5	2	3	Painted Button-quail	2	0	2

Table 2. (Continued)

Bird Species	Current	Previous	Difference
Pallid Cuckoo	1	2	-1
Peaceful Dove	5	8	-3
Purple-crowned Lorikeet	11	2	9
Purple-gaped Honeyeater	18	16	2
Rainbow Bee-eater	0	16	-16
Red Wattlebird	31	20	11
Red-capped Robin	13	14	-1
Red-rumped Parrot	2	3	-1
Restless Flycatcher	7	4	3
Rufous Whistler	9	7	2
Shy Heathwren	12	9	3
Silvereye	25	4	21
Singing Honeyeater	22	5	17
Southern Boobook	2	0	2
Southern Scrub-robin	17	19	-2
Southern Whiteface	3	2	1
Spiny-cheeked Honeyeater	30	23	7
Splendid Fairy-wren	7	7	0
Spotted Harrier	0	1	-1
Spotted Nightjar	2	1	1
Spotted Pardalote	39	34	5
Striated Pardalote	33	20	13
Striped Honeyeater	8	2	6
Stubble Quail	0	5	-5

Bird Species	Current	Previous	Difference
Superb Fairy-wren	0	1	-1
Tawny Frogmouth	3	2	1
Tree Martin	1	1	0
Varied Sittella	10	4	6
Variiegated Fairy-wren	12	16	-4
Wedge-tailed Eagle	7	2	5
Weebill	38	29	9
Welcome Swallow	12	4	8
Whistling Kite	2	1	1
White-backed Swallow	2	0	2
White-browed Babbler	30	33	-3
White-browed Woodswallow	0	7	-7
White-eared Honeyeater	28	19	9
White-fronted Chat	1	3	-2
White-fronted Honeyeater	5	3	2
White-winged Chough	23	26	-3
White-winged Triller	0	10	-10
Willie Wagtail	29	24	5
Yellow Thornbill	19	16	3
Yellow-plumed Honeyeater	27	14	13
Yellow-rumped Thornbill	25	23	2
Yellow-throated Miner	28	11	17
Zebra Finch	0	2	-2

References

Willoughby, N. (2012). Report on Murray Mallee Landscape Restoration Outcome Monitoring – 2011. Department of Environment and Natural Resources, South Australia.

Willoughby, N. (2010). A Landscape Assessment Framework: As applied to the Murray Mallee IBRA Sub-region. Version 1.0. Department of Environment and Natural Resources, South Australia