

BIRDS OF THE WILLOURAN RANGES AND ADJACENT PLAINS

F. J. BADMAN

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INTRODUCTION

The Willouran Ranges in South Australia extend westward from the Marree-Farina road, these two towns also marking the approximate northern and southern extent of the Ranges (see Figure 1). To the north-west they extend as far as Bopeechee on the Central Australian Railway line, and to the south-west almost as far as Mulgaria HS. To the west they are bordered by sandhill country which extends to the eastern and northern edges of Lake Torrens. Frome Creek lies to the east with gibber plains beyond it; gibber plains are also found to the north and north-west where they are bordered by Lake Eyre South and by the sandhills lying between Lake Eyre and the Birdsville Track to the north-east. The Ranges are drained into Lake Torrens to the south-west, into Lake Eyre by Frome Creek and its tributaries on the eastern side and into Lake Eyre South to the north-west.

Being a spur of the Flinders Ranges, the Willouran Ranges are noteworthy because they contain several species that are common in the Flinders Ranges, but which are not found or are uncommon or rare further north in the Lake Eyre district. Red Mallee *Eucalyptus oleosa* is the best example of this: it is common throughout the Flinders Ranges to at least as far north as Parachilna (Black 1977: 624) and is also common throughout much of the Willouran Ranges. The only other mallee I have seen in the North-East of South Australia is a very small isolated patch of *E. socialis* near Bopeechee, not far from the Willouran Ranges. Bullock Bush *Heterodendrum oleaefolium* is another example: it is common in the Flinders Ranges but I have not found it north of the Willouran Ranges, where it is fairly common.

In the avifauna, the Redthroat *Sericornis brunneus* and the Grey-fronted Honeyeater *Lichenostomus plumulus* are both examples of birds of the Flinders Ranges that occur in the Willouran Ranges, but do not occur (in the case of the Grey-fronted Honeyeater) or are rare (Redthroat) in the Lake Eyre district.

HABITATS

Most of the Ranges are covered with Red Mallee which grows on the hills, along some of the smaller watercourses and on flats between the hills. The Ranges contain many large rocky watercourses lined with River Red Gums

Eucalyptus camaldulensis, and smaller watercourses with *Acacia ligulata*, *A. tetragonophylla*, *A. victoriae*, *A. salicina*, *A. stenophylla*, *Santalum lanceolatum* and *Pittosporum phylliraeoides*. Watercourses to the east of the Ranges also contain these *Acacia*, *Santalum*, *Pittosporum* associations. Coolibah *Eucalyptus microtheca* is found along watercourses on the plains to the north of the Ranges, and in the sandhill country to the south and west. Native Myrtle *Myoporum montanum* is found around station dams throughout the area and around salty waterholes in the Ranges. *Heterodendrum oleaefolium* is found mainly near watercourses in the Ranges and on flats in the sandhill country. *Pittosporum phylliraeoides* is also found growing on the plains. Most of the Ranges are covered by an understorey of the saltbush *Atriplex vesicaria*, which is also found on the plains and along several watercourses e.g. Frome Creek. Other plants prominent in the understorey of the area include *Atriplex spongiosa*, *Rhagodia spinescens*, *Maireana astrotricha*, *Enchylaena tomentosa*, *Frankenia* sp., *Solanum* sp. and *Sclerolaena* spp. *Cassia helmsii*, *Eremophila freelingii*, *E. glabra*, *Exocarpos aphyllus* and *Dodonaea lobulata* are all found in the Ranges. The grass *Cymbopogon ambiguus* is common along stony watercourses in the Ranges and *Dactyloctenium radulans*, *Brachiaria praetervisa* and Mitchell Grass *Astrelba pectinata* are common on the plains following good rains. Vegetation in many parts of the Ranges has been detrimentally affected by overgrazing by sheep, feral goats and rabbits.

There are two intermittent lakes in the south-east of the area: Lake Watherston and Minagoona Lake. Both lakes were full when I visited them with Barry and Maureen Wright on 10 March 1979. The two lakes differed considerably at that time: Minagoona Lake was a large area of open water, with no emergent vegetation; Lake Watherston was very full and apart from an area of open water on the southern and western sides, was more in the nature of a swamp from one to two metres in depth with many emergent plants. S. A. Parker (pers. comm.) noted large areas of *Lignum Muehlenbeckia cunninghamii* and *Chenopodium nitrariaceum* on his visit to Lake Watherston in March 1976, whereas I saw neither of these plants. The plants I saw in the water were *Rhagodia spinescens*, *Atriplex vesicaria*

and *Acacia victoriae*. As none of these latter plants is usually found growing in water I can only surmise that the water level in the lake at the time of my visit was much higher than usual and that the Lignum and *Chenopodium* were then completely submerged.

AVIFAUNA

Little has been published on the birds of this region. The only major publication on birds found east of the Flinders Ranges in South Australia is that of McGilp (1923) which treated the birds of the Lake Frome district. Black (1975) and Pedler and Ragless (1978) gave further records of birds in the vicinity of Lakes Frome and Callabonna. Reference is made throughout the present work to those three papers and specific comparisons between birds of the eastern side of the Flinders Ranges, the Willouran Ranges and the Lake Eyre drainage to the north are made where they are of interest. Badman (1979) is used as the reference for the Lake Eyre region.

This paper was written from my notes taken on six visits to the Willouran Ranges during 1979-80 (9-14 March, 9-10 June, 24-25 August and 16 December 1979, and 19-20 January and 3-5 July 1980) and from notes generously supplied to me by Barry and Maureen Wright (BW) who visited this area several times during 1976-77 and who lived at Old Mt Nor-West, an outstation of Witchelina Stn. during 1978-79 and who are now living at Douglas Gully, 25 km SSW of Marree. As the dates of my visits in 1979 and 1980 do not overlap, the year is omitted from these dates. All records and opinions are mine unless otherwise indicated. All breeding records supplied by Barry and Maureen Wright have been entered by them on R.A.O.U. Nest Record Cards from where more details can be obtained. Specimens collected have been lodged in the South Australian Museum and their registration numbers are cited below.

ANNOTATED LIST

EMU *Dromaius novaehollandiae*

Fairly common, in the Ranges and on the plains, moreso in the last 12 months. Emus with up to five chicks were a fairly common sight during 1979 not only in this area but throughout the whole of the North-East of South Australia. This may have been due to the good seasons of 1978-79 and also to the efforts of fox-shooters reducing fox predation on the species. One professional shooter claimed to have taken 1500 fox skins to the west of Lake Eyre in the winter of 1979. The Red Fox must have been significantly reduced in numbers by

shooters' efforts, yet it is still by no means uncommon.

HOARY-HEADED GREBE

Poliiocephalus poliocephalus

Several hundreds present at Lake Watherston on 10 March and 16 at Mirra Dam on 4 July, but usually seen only occasionally in groups of two to four on dams (BW).

AUSTRALASIAN GREBE

Tachybaptus novaehollandiae

Generally more widespread than the preceding species. Two at North Bungarider Dam (= dam defered to as being four km south-east of Tarlton Knob in Badman, 1979) on 28 January 1978, and a single bird at North Dam on 12 March. BW recorded two to four birds at most dams, with breeding at Rocky Dam: 11 January 1979, two birds with three dependent young; 14 February 1979, a nest with five eggs which was inundated on 7 March following heavy rain.

McGilp (1923) and Black (1975) did not record the Australasian Grebe in the Lake Frome district. Pedler and Ragless (1978) recorded it only once, further south at Frome Downs. McGilp wrote of the Hoary-headed Grebe: "Odd pairs may be found at any time on small pools of water in hilly country". S. A. Parker (pers. comm.) pointed out that this is more likely to be referable to the Australasian Grebe, and from my field experience with both species I am inclined to agree. The Hoary-headed Grebe favours larger, more open bodies of water (e.g. Lake Watherston), although it is occasionally seen on smaller ones (see also Parker 1969).

AUSTRALIAN PELICAN

Pelecanus conspicillatus

A single record of three or four birds at Witchelina HS on 23 November 1977 (BW). This was at a time when large numbers of this species were dispersing from Lake Eyre (see Badman 1979).

GREAT CORMORANT *Phalacrocorax carbo*

Seen occasionally by BW: single birds at Old Mt Nor-West in September or November 1978 and on 21 September and 17 October 1979.

LITTLE BLACK CORMORANT

Phalacrocorax sulcirostris

More than 100 at Minagoona Lake on 10 March. Small numbers only occasionally at other locations (BW).

LITTLE PIED CORMORANT

Phalacrocorax melanoleucos

One at South Dam on 19 January 1979 (BW) and three at Lake Watherston on 10 March.

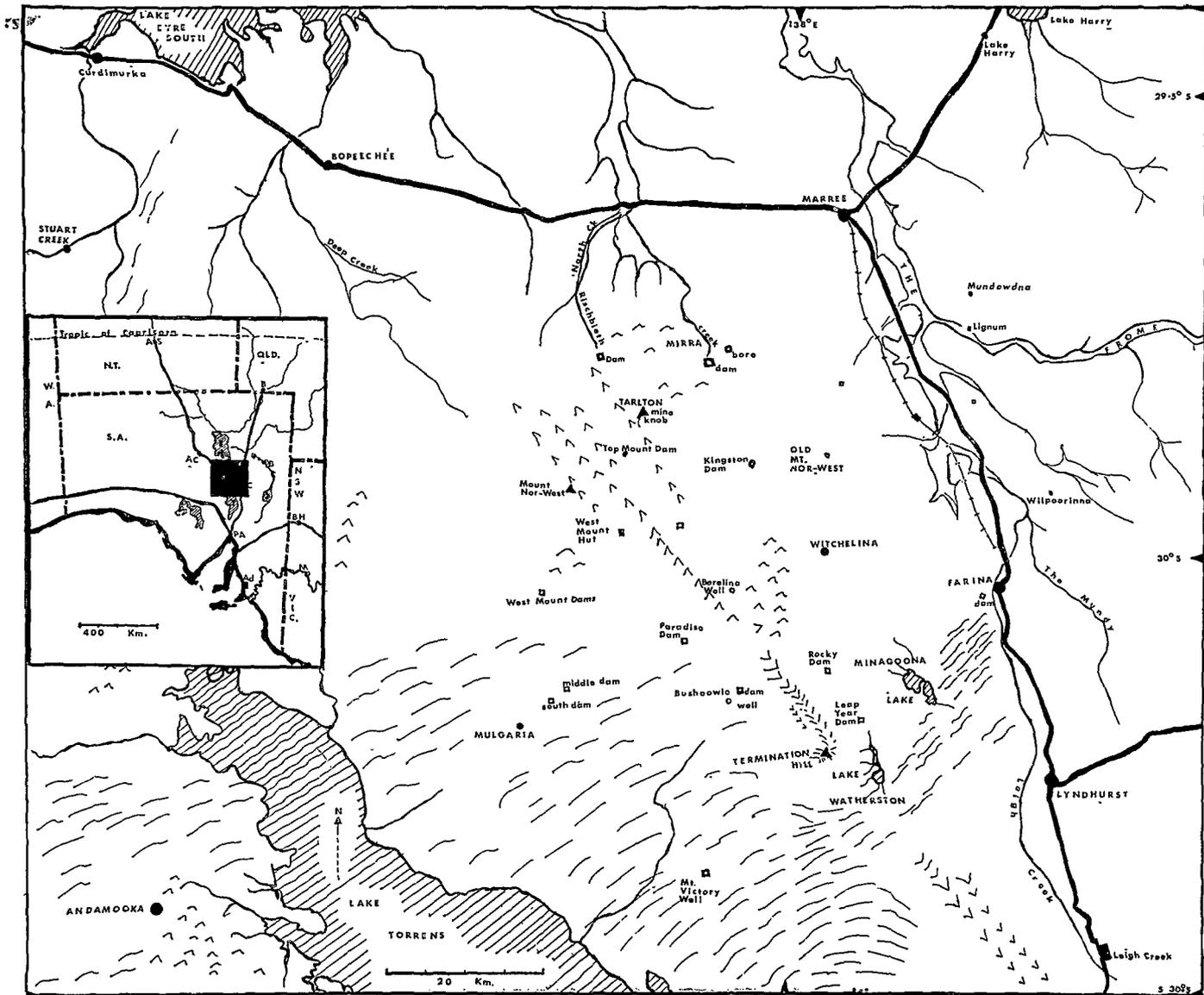


Figure 1. Map of Willouran Ranges and surrounding areas showing major localities mentioned in text.

PACIFIC HERON *Ardea pacifica*

Uncommon. One at Witchelina HS Dam on 15 March and 29 May 1979 and on 17 January 1980 (BW); one at a small pool of water in a claypan 15 km east of Old Mt Nor-West on 7 April 1979 (BW); one at the western end of the gorge, three km west of the old Mt Nor-West HS, on 25 August.

WHITE-FACED HERON

Ardea novaehollandiae

Fairly common. Resident at Old Mt Nor-West and often seen at Kingston, Mirra Creek and Bungarider Gorge (BW); two at Lake Watherston on 10 March.

GREAT EGRET *Egretta alba*

Uncommon. Usually seen only on the larger areas of water. One at Lake Watherston on 10 March. Identified by its large size, with neck length equal to body length, yellow bill and black legs (I am familiar with the Intermediate Egret *E. intermedia* and the Little Egret *E. garzetta*, the only other white egrets so far known in the North-East of South Australia); one at Old Mt Nor-West on 10 June; one at Witchelina HS Dam on 17 January 1980 (BW).

STRAW-NECKED IBIS

Threskiornis spinicollis

Only recorded in 1979, and then only in small numbers. One at South Dam on 19 January (BW); five at Wilpoorinna HS on 4 July (Gordon and Lyn Litchfield); at least two at The Bend, Rocky Dam and Witchelina HS Dam on 21 September (BW).

YELLOW-BILLED SPOONBILL

Platalea flavipes

Uncommon, being recorded twice. Single birds at Witchelina HS Dam during August 1979 and on 21 September 1979 (BW).

BLACK SWAN *Cygnus atratus*

Few records, and never more than two together: two at Double Dam on 21 November 1978 and 18 January 1979 (BW); two at Lake Watherston and one at Minagoona Lake on 10 March.

AUSTRALIAN SHELDUCK

Tadorna tadornoides

A single record of two at Old Mt Nor-West on 3-4 January 1979 (BW). These birds remained around the homestead for two days and spent some time at a water-drum outside the house.

PACIFIC BLACK DUCK

Anas superciliosa

Fairly common though in small numbers; not as common as the following species or the Maned Duck *Chenonetta jubata*. Often found

on quite small bodies of water and also on open water of Minagoona Lake and on Lake Watherston.

GREY TEAL *Anas gibberifrons*

Fairly common in flocks of up to 200, though more usually in flocks of 20-30 on dams. Several hundreds at Lake Watherston and Minagoona Lake on 10 March.

PINK-EARED DUCK

Malacorhynchus membranaceus

Uncommon, with no more than four being seen together. It was recorded at Double Dam on 21 November 1978 (BW) and two were at Lake Watherston on 10 March.

HARDHEAD *Aythya australis*

More common than preceding species, but not as common as the Grey Teal. Up to 50 present at Lake Watherston on 10 March.

MANED DUCK *Chenonetta jubata*

Common, often outnumbering Grey Teal on dams. Also recorded on Lake Watherston and Minagoona Lake on 10 March, four and six being seen respectively.

MUSK DUCK *Biziura lobata*

A single record of one female at Lake Watherston on 10 March, seen at close range from a canoe.

BLACK KITE *Milvus migrans*

Uncommon during 1977-78, but abundant after February or March 1979, with numbers increasing throughout the year to reach a peak in January 1980, when 150+ were present at Witchelina HS (BW). On 12 March, 100+ at St Francis Pool, Mundowdna Stn. At this time few birds were seen away from creeks and permanent waters, but towards the end of the year Black Kites were seen singly or in small flocks almost anywhere along the watercourses or on the plains. On 18 November 1979 a nest containing two young was found 300 m from the Wilpoorinna HS (G. and L. Litchfield). Two more nests containing young were found along Willawalpa Creek in January 1980 (BW).

BLACK-BREASTED BUZZARD

Hamirostra melanosternon

Uncommon, being recorded twice: one light phase bird near Old Mt Nor-West on 30 June 1977 (BW); one at Top Mount Well on 4 December 1979 (BW).

WHISTLING KITE *Haliastur sphenurus*

Uncommon. Up to 10 present at St Francis Pool on 12 March. All other sightings were of one or two birds and then it was seen only occasionally (BW).

BROWN GOSHAWK *Accipiter fasciatus*

Uncommon. One immature at St Francis Pool, Mundowdna Stn., on 12 March — first seen in a small *Acacia stenophylla* at one end of the waterhole and later in Coolibahs at the opposite end; one about two km from Berlina Dam in May 1979 (BW); two in dense *Acacia stenophylla* at Mundys Creek, near its junction with Leigh Creek on Wilpoorinna Stn., on 17 February 1980 — one of these birds was an immature and the other probably a female.

COLLARED SPARROWHAWK*Accipiter cirrhocephalus*

More common than the Brown Goshawk, unlike the situation noted by McGilp (1923) in the Lake Frome district and by me in the Lake Eyre region (Badman 1979). Pedler and Ragless (1978) recorded the Collared Sparrowhawk in the vicinity of Lake Callabonna, but did not record the Brown Goshawk there.

The Wrights found a nest with two young, almost ready to fledge, in a River Red Gum at Old Mt Nor-West on 30 November 1978. Feeding of fledged young was carried out by an adult bird dropping food in the air (a small bird on one occasion) and one of the young birds catching it whilst in the air. Both young birds had attempted to catch the dead bird. (This feeding procedure was also seen again in 1979 by BW). On 31 December both young were flying freely. They were observed chasing other birds, mainly large birds such as Galahs *Cacatua roseicapilla*. A dead juvenile in a dehydrated condition was brought in to the house by a station dog on 27 January 1979. Severe weather conditions were experienced in the North-East of South Aust. during January 1979, with shade temperatures in the vicinity of 50°C for the first two weeks of the month.

During 1979 a pair of Collared Sparrowhawks again nested near the Old Mt Nor-West HS (BW), again in a River Red Gum, but in a different tree to the one used in 1978. One fledgeling from this nest was seen for two weeks after fledging in which time it was still being fed.

Other records of Collared Sparrowhawks are: one at Kingston Bore on 22 December 1978, 17 November and 27 December 1979 (BW); one at Old Mt Nor-West on 9 June; a pair bred successfully in a River Red Gum near Rischbieth Well during 1978 (BW). Apparently resident at Old Mt Nor-West (BW).

WEDGE-TAILED EAGLE *Aquila audax*

Very common, especially in the Ranges. A nest was found near Witchelina HS on 29 August 1979 (BW). It contained two nestlings,

but only one survived to leave the nest on 17 October. Another nest containing one chick was found near Douglas Gully in June 1980.

LITTLE EAGLE *Hieraaetus morphnoides*

Uncommon. One at Old Mt Nor-West on 6 April 1979 (BW) and two on 19 January 1980; one at Witchelina HS on 12 November 1979 (BW).

SPOTTED HARRIER *Circus assimilis*

Fairly common during 1979 but not recorded before this: BW recorded one at Lignum Dam, Mundowdna Stn., on 14 January, one at Old Mt Nor-West on 23 February, one at Mt Termination on 6 September, one dead in Glenview Tank (six km south-east of West Mount Hut) on 21 September, one at Kingston on 31 October, and one near Victory Well, which is 13 km from Lake Torrens, in August. One bird observed soaring very high up at Mundys Creek, near its junction with Leigh Creek on Wilpoorinna Stn., on 17 February 1980 — unusual behaviour for this species. The sightings at Old Mt Nor-West and Kingston are in the Ranges, all other records are from sandhills or open plains.

MARSH HARRIER *Circus aeruginosus*

A single bird was seen at Lake Watherston (BW). McGilp (1923) regarded this as a very rare species, with odd birds appearing only in good seasons. It was not recorded by Black (1975) or Pedler and Ragless (1978) in the Lake Frome and Lake Callabonna regions. To the north it is more common in the North-East (Cox and Pedler 1977) and in the vicinity of Lake Eyre (Badman 1979). During the good seasons of 1978-79 it enjoyed an increase in numbers and at times was fairly common throughout much of the North-East (Badman in prep.).

AUSTRALIAN HOBBY *Falco longipennis*

Uncommon. BW recorded it as follows: one at Wilpoorinna on 16 July 1977 — this bird was observed chasing Galahs; one at Witchelina HS in November 1977 and one on 21 September 1979; one near Old Mt Nor-West on 26 December 1978 and 16 September 1979. One at Lake Watherston on 10 March. McGilp (1923) regarded the Australian Hobby as "fairly numerous" in the Lake Frome district, but it was recorded only once by Black in 1974 and not at all by Pedler and Ragless in this area in 1977 (Pedler and Ragless 1978).

GREY FALCON *Falco hypoleucos*

Two were seen and photographed at Old Mt Nor-West in June 1977 (BW). The birds were seen almost daily between 14 and 23 June, but

not after the latter date. Habitat was a large rocky watercourse lined with River Red Gums, between hills covered with Red Mallee, *Atriplex vesicaria* and *Eremophila freelingii*. The grass *Cymbopogon ambiguus* was abundant in the creek bed. McGilp (1923) regarded this species as being "fairly numerous", a status which the Grey Falcon apparently no longer enjoys.

BROWN FALCON *Falco berigora*

Common, mainly on the plains. BW regards this species as being almost as common as the Australian Kestrel *Falco cenchroides* in this area. I have found Australian Kestrels to be much more common than Brown Falcons between Marree and Oodnadatta, with Brown Falcons increasing in numbers north of Oodnadatta (Badman 1979). McGilp (1923) considered both species to be "very numerous" in the Lake Frome district. Pedler and Ragless (1978) recorded Brown Falcons more often than Australian Kestrels in the Lake Frome and Lake Callabonna areas.

AUSTRALIAN KESTREL *Falco cenchroides*

Very common, both in the Ranges and on the plains, being the most common bird of prey. BW recorded one bird carrying a young rabbit in its talons whilst flying on 24 November 1979. I found a nest with three eggs on 25 August. The eggs were laid on top of a concrete pillar of a railway bridge, 25 cm below the track where trains were running daily. One of the eggs was less than half the size of the other two, although its markings were similar to those of the two normal size eggs. This clutch is now in the South Australian Museum (B32284).

STUBBLE QUAIL *Coturnix novaezelandiae*

Fairly common during the winter of 1979, but not recorded at any other time. Six were seen at night whilst spotlighting in the swamp near Two Hills Dam on 9 June (one was later photographed here by BW). Two at North Bungarider Dam on 24 June (BW). This was the only sighting in the Ranges, but BW and Gordon Litchfield often saw this species on the plains at night whilst spotlighting. The appearance of the Stubble Quail in the winter of 1979 coincided with its appearance in many places to the west of Lake Eyre (Badman in prep.). This was following good winter rains for the second successive year. McGilp (1923) noted the species appearing in large numbers in the Lake Frome district following good seasons. I did not record it in the Lake Eyre drainage prior to 1979.

AUSTRALIAN CRAKE *Porzana fluminea*

One at Lake Watherston on 10 March. This bird was seen from a canoe and soon retreated

into *Atriplex vesicaria* and *Rhagodia spinescens* at the edge of the swamp. McGilp (1923) regarded this species as rare in the Lake Frome district and it was not recorded there by Black (1975) or Pedler and Ragless (1978). However, it is common in suitable habitat to the west of Lake Eyre (Badman 1979; in prep.).

BLACK-TAILED NATIVE-HEN

Gallinula ventralis

Very few were seen before July 1979, but after this date it was seen in flocks of 50+ wherever there was water (BW).

EURASIAN COOT *Fulica atra*

Uncommon. Usually up to four or five birds seen on dams (BW), but one sighting of 100+ on Lake Watherston on 10 March.

AUSTRALIAN BUSTARD

Ardeotis australis

One on a small plain near Mirra, in the Ranges, on 1 May 1979 and one at North Dam, at the edge of the Ranges, on 17 June 1979 (BW). Gordon Litchfield from Wilpoorinna Stn. saw several whilst mustering in the swamp near Two Hills Dam in early September 1979 and two at Wilpoorinna on 1 October 1979 — both locations are on the plains.

MASKED LAPWING *Vanellus miles*

Uncommon: two at North Dam on 12 March; up to six at Farina Dam on 6 January 1980 (BW).

BANDED LAPWING *Vanellus tricolor*

Fairly common on the plains, much more so than the Masked Lapwing. Five were seen with two Masked Lapwings at North Dam on 12 March and 12 at St Francis Pool the same day. This species is often seen near the Wilpoorinna HS (G. Litchfield).

RED-KNEED DOTTEREL

Erythrogonys cinctus

Uncommon. One at Lake Watherston on 10 March and two at St Francis Pool, Mundowdna Stn., on 12 March. Further records made by BW were of two birds at Lignum Dam, Mundowdna Stn., on 14 January 1979; two at Leap Year Dam (at the base of Termination Hill) on 7 March 1979 and at least two there on 19 December 1979.

RED-CAPPED PLOVER

Charadrius ruficapillus

One at Minagoona Lake on 10 March.

BLACK-FRONTED PLOVER

Charadrius melanops

Found at any water, in the Ranges and on the plains including salty rock-holes in the gorges.

INLAND DOTTEREL *Peltohyas australis*

Common on Wilpoorinna Stn. and fairly common elsewhere on the plains. BW found a nest with three young during October 1979. Although seen several times during daylight hours, the majority of sightings were made at night, either in car headlights or whilst spotlighting (BW).

BLACK-WINGED STILT

Himantopus himantopus

Uncommon. Six at Lake Watherston and two at Minagoona Lake on 10 March; elsewhere recorded only occasionally on dams and swamps, and then only in small numbers (BW). The Black-winged Stilt is common at bores and swamps further north in the Lake Eyre district (Badman 1979). McGilp (1923) regarded it as a rare visitor in the Lake Frome district, where it was recorded by Black, but not by Pedler and Ragless (Pedler and Ragless 1978).

RED-NECKED AVOCET

Recurvirostra novaehollandiae

Only three records: two at Minagoona Lake on 10 March; about five at Double Dam on 2 April 1979 and 27 December 1979 (BW).

COMMON SANDPIPER *Tringa hypoleucos*

One at a water trough at the Witchelina HS on 4, 6, and 23 November 1977 (BW).

AUSTRALIAN PRATINCOLE

Stiltia isabella

Common on the plains between September and March. Single birds were seen near Old Mt Nor-West in December 1979 and January 1980 and both stayed in the area for several days (BW), and these were the only times this species was seen in the Ranges. BW found three nests while mustering on 9 October 1979; one was near the Witchelina HS and the other two near Farina. All three nests contained two eggs. A nest containing two eggs was found near the Wilpoorinna HS on 22 September 1979 (G. Litchfield). The nest contained two young on 16 October.

SILVER GULL *Larus novaehollandiae*

400+ at Minagoona Lake on 10 March, but at other times this species was seen only occasionally. BW recorded it at Double Dam on 9 January and 2 April 1979 and ca 10 at Witchelina HS during January 1980.

WHISKERED TERN *Chlidonias hybrida*

Many hundreds were present at Lake Watherston and ca 1000 at Minagoona Lake on 10 March. Whilst on Lake Watherston in a canoe BW and I found several nests of this species in various stages of construction. We

found three of the floating nests containing one egg and one with two eggs. The nests were among small bushes of *Rhagodia spinescens* and *Atriplex vesicaria* in water up to one metre deep.

These are the most northerly nesting records for this species in South Australia. McGilp (1923) did not record the Whiskered Tern breeding, but on 12 January 1931 Morgan and McGilp found it breeding at Broken Swamp, west of Lake Callabonna (the exact location of this swamp is apparently now unknown); this was the previous most northerly breeding record for South Australia and eggs from Broken Swamp are now in the South Australian Museum.

The only other records of this species were at Double Dam on 2 April 1979 (BW) and one at Mundowdna HS on 25 December 1979 (BW).

GULL-BILLED TERN *Gelochelidon nilotica*

Four at Double Dam on 5 January 1979 (BW) and at least three at Leap Year Dam on 19 December 1979 (BW).

FERAL PIGEON *Columba livia*

Two records, both of single birds at Witchelina HS, on 26 November 1976 and towards the end of 1977 (BW).

PEACEFUL DOVE *Geopelia placida*

A single bird seen twice, drinking at a trough at Old Mt Nor-West HS, about July 1978 and on 20 December 1979 (BW).

DIAMOND DOVE *Geopelia cuneata*

A single record of one or more birds in a scrubby watercourse, with *Acacia victoriae*, at the edge of sandhills near Middle Dam on 20 September 1979 (BW).

COMMON BRONZEWING

Phaps chalcoptera

Only recorded at Old Mt Nor-West: one on 10 March; BW recorded a single bird drinking at the Old Mt Nor-West HS house trough on several occasions during the summer of 1978-79.

CRESTED PIGEON *Ocyphaps lophotes*

A very common species, both in the Ranges and on the plains; occurs wherever there are a few bushes.

GALAH *Cacatua roseicapilla*

Abundant, both in the Ranges and on the plains. Many nests were found along Willawalpa Creek near the Old Mt Nor-West HS.

LITTLE CORELLA *Cacatua sanguinea*

Common on the plains, and also occasionally in the Ranges. When seen in large numbers in the Ranges it was usually found nesting and

probably visits the large eucalypt-lined creeks in the Ranges, in large numbers, only to breed.

COCKATIEL *Nymphicus hollandicus*

Uncommon. The only record from the Ranges was of *ca* 10 at Kingston on 24 November 1978 (BW). On the plains it was seen by BW at Paradise on 24 November 1978 and 15 May 1979, and at Double Dam on 2 January 1979. Also recorded at Wilpoorinna during February 1978 by G. Litchfield.

BUDGERIGAR *Melopsittacus undulatus*

Uncommon. A small flock in the Ranges near Tarlton Knob about October 1978 (BW); single birds seen occasionally along Rischbieth Creek (BW); a small flock at Old Mt Nor-West in January 1980 (BW).

PORT LINCOLN RINGNECK

Barnardius zonarius

Fairly common in River Red Gums bordering watercourses in the Ranges. Most of the birds were hybrids between *B. z. zonarius* and the Mallee Ringneck *B. z. barnardi*, but tending towards *B. z. zonarius*. Typical birds seen had red frontal bands, greyish-brown heads, extensive yellow abdomens, generally pale to very pale blue-green plumage and, in some cases, blue cheeks. This hybrid population is an extension of the hybrid zone of the Flinders Ranges (Parker 1979). All birds recorded by me to the north-west of the Willouran Ranges have appeared to be *B. z. zonarius* and the hybrids are probably confined to the Ranges. Most birds seen around Old Mt Nor-West had red frontal bands, while further north, near Rischbieth and North Creeks, many birds seen appeared to be pure *zonarius* with black caps, no red frontal band and plumage a brighter green than that of birds to the south. One dead bird found near Rischbieth Well by BW in January 1979 (probably a casualty of the extremely hot weather experienced in the area at that time) had no red frontal band, but was very pale and apparently a hybrid. It would seem that birds in the Rischbieth area are generally closer to *B. z. zonarius* than the birds seen further south and that furthermore they may be in contact and breed with birds from the north-west from time to time. One flock of five birds seen at Spring Creek also appeared to be very close to *B. z. zonarius*, but these were the only birds seen in the southern part of the Ranges that were not obvious hybrids. Birds I saw along Deep Creek, on Finnis Springs Stn. to the north-west of the Ranges (Badman 1979) also showed no apparent signs of hybridization. I have not recorded *B. zonarius* between Deep Creek and Anna Creek Stn. (see Badman

1979), a distance of *ca* 140 km, but Mr N. Wood, formerly of Stuart Creek Stn., told me that Ringnecks are occasionally to be seen in the River Red Gums along the upper parts of Stuart Creek. More work would clarify the status of Ringnecks in the northern Willouran Ranges and in the country to the north-west.

MULGA PARROT *Psephotus varius*

Fairly common. Favours mallee along creeks in the Ranges rather than River Red Gums. Not recorded on the plains. On 10 June at Spring Creek the female of a pair was investigating holes in a dead limb of a River Red Gum while the male perched on the limb. A short distance away I saw a further nine Mulga Parrots among *Eremophila freelingii* at the base of a stony hill.

BLUE BONNET *Northiella haematogaster*

The only records are from the sandhill country to the west of the Ranges. Pairs or small flocks at Yadlakina Bore during August 1979 and at West Mount Hut on 20 September 1979 (BW).

PALLID CUCKOO *Cuculus pallidus*

An occasional visitor. McGilp (1923) recorded this species only from June to August, it being absent for the rest of the year, and with no breeding record from the Lake Frome district. Although all my records from the Lake Eyre region have been from April to September (Badman in prep.), BW recorded one bird at Bungarider Gorge on 18 November 1978. An immature Pallid Cuckoo was seen begging for food and twice being fed by a Grey-fronted Honeyeater near Old Mt Nor-West on 20 January. The Cuckoo was out of the nest and able to fly. All other records were from May to August.

BLACK-EARED CUCKOO

Chrysococcyx osculans

Three records: one in River Red Gums and Red Mallee at Old Mt Nor-West on 9 June; one at the Dog Fence at 29° 50'S, 137° 35'E on 16 October 1979 (BW); one near Douglas Gully on 4 and 5 July. McGilp (1923) recorded this species only during early autumn in the Lake Frome district.

HORSFIELD'S BRONZE-CUCKOO

Chrysococcyx basalis

Fairly common in the Ranges and on the plains; recorded throughout the year. McGilp (1923) recorded this species only in August and September in the Lake Frome district. Black recorded it on the western side of Lake Callabonna in November 1974 (Pedler and Ragless 1978). I have recorded this species in every

month except February in the Lake Eyre district.

SOUTHERN BOOBOOK

Ninox novaeseelandiae

Uncommon. Seen occasionally at night whilst spotlighting (BW). All owls appear to have been uncommon in the North-East in the late 1970's.

BARN OWL *Tyto alba*

Slightly more common than the Southern Boobook. Breeding at Old Mt Nor-West: two seen feeding young at night on several occasions between 4 and 12 November 1979 (BW). A dead bird was found in Mirra Tank on 8 January 1979 (BW).

TAWNY FROGMOUTH *Podargus strigoides*

Fairly common, much more so than the preceding two species, especially among River Red Gums in the Ranges. Seen on the plains at night whilst spotlighting; three near Two Hills Dam on 9 June and by BW on many other occasions. One chick was flushed from a tree at Berlina Well during the daytime on 14 November 1978 (BW).

AUSTRALIAN OWLET NIGHTJAR

Aegotheles cristatus

Fairly common, mainly in the Mallee in the Ranges. One bird was seen and heard regularly at Old Mt Nor-West (BW).

SPOTTED NIGHTJAR *Caprimulgus guttatus*

Fairly common in the Ranges and on the plains, often being seen at night whilst spotlighting.

RED-BACKED KINGFISHER

Halcyon pyrrhopygia

A fairly common spring and summer visitor; seen more often in the Ranges than on the plains. One bird was observed feeding young at Kingston (in the Ranges) on 24 November 1979 (BW). The only kingfisher species recorded.

RAINBOW BEE-EATER *Merops ornatus*

An uncommon summer visitor to both the Ranges and the plains. Usually encountered singly or in pairs. One bird was observed carrying food in the Ranges north of Kingston on 13 December 1978 (BW).

WHITE-BACKED SWALLOW

Cheramoeca leucosternum

Fairly common, in the Ranges and on the plains, particularly in the sandhill country towards Lake Torrens.

WELCOME SWALLOW *Hirundo neoxena*

Fairly common and widespread on the plains, and around buildings in the Ranges.

Often found around wells, where it will sometimes nest.

TREE MARTIN *Cecropis nigricans*

Very common. Recorded along the River Red Gum lined watercourses in the Ranges in June and August, and at Deviation Creek, on the plains, in February 1978 (Badman 1979). Common in the Ranges and on the plains, especially near water (BW). I have recorded this species in every month in the Lake Eyre district.

FAIRY MARTIN *Cecropis ariel*

Not recorded by me, but very common at times (BW). BW counted 175 occupied nests on an old shed at Middle Dam on 20 September 1979, and 33 nests under an old truck at Witchelina HS on 6 September 1979.

RICHARD'S PIPIT *Anthus novaeseelandiae*

Abundant on the plains and very occasionally in the Ranges. At least four on a large plain between mallee covered hills in the Ranges near Old Mt Nor-West on 20 January. The plain was lightly covered with *Sclerolaena* spp. and *Atriplex vesicaria*.

BLACK-FACED CUCKOO-SHRIKE

Coracina novaehollandiae

Common in River Red Gums along watercourses in the Ranges and on the plains; 10+ along Willawalpa Creek near Old Mt Nor-West HS in June 1979.

GROUND CUCKOO-SHRIKE

Coracina maxima

Uncommon. Six on a small plain between mallee-covered hills near the Old Mt Nor-West HS on 20 January. The plain was covered with low *Atriplex vesicaria* and *Sclerolaena* spp. BW recorded about six at Old Mt Nor-West on 1 July 1979; about six at Witchelina HS in the spring of 1977, October 1978, and 12 November 1979.

WHITE-WINGED TRILLER *Lalage sueurii*

An occasional visitor to the Ranges and plains, with most records from the Ranges.

RED-CAPPED ROBIN *Petroica goodenovii*

Fairly common in the Ranges, less so on the plains. One female-phase bird at Old Mt Nor-West on 11 March and three female-phase birds six km to the west on 13 March; one male and three female-phase birds at Old Mt Nor-West on 9 June and one male 11 km to the south on the following day; one male at Douglas Gully on 4 July. Surprisingly, the Wrights had very few records of this species: single birds at Old Mt Nor-West on 9 June 1979; the northern tip of Lake Torrens; between Old Mt Nor-West

and the Marree-Farina road on 5 April 1979; a female feeding young at Wilpoorinna HS.

HOODED ROBIN *Melanodryas cucullata*

Uncommon. A pair was seen occasionally near Spring Well, always in the same area, between April 1979 and January 1980 (BW); one at Farina on 5 April 1979 (Lyn Litchfield); a pair at Douglas Gully on 4 July.

RUFOUS WHISTLER

Pachycephala rufiventris

A single female-phase bird in River Red Gums at Old Mt Nor-West on 6 June 1979 (BW) and on 9 June.

CRESTED BELLBIRD *Oreoica gutturalis*

Very common in the sandhills west of the Ranges (BW). Often heard near Old Mt Nor-West and Douglas Gully, and one seen at Rischbieth Well on 9 January 1980 (BW).

WILLIE WAGTAIL *Rhipidura leucophrys*

Common, singly and in pairs, throughout the Ranges and on the plains.

CHIRRUPING WEDGEBILL

Psophodes cristatus

Very common in the Ranges, the plains and in sandhill country. It is found in most scrubby watercourses, especially in the Ranges, but not in River Red Gums and only occasionally in areas of mallee.

CINNAMON QUAIL-THRUSH

Cinlosoma cinnamomeum

Very common, especially in the Ranges where it is found on open, chenopod covered slopes and open flats between the hills. It is also common on the plains and slightly less common in sandhill country.

WHITE-BROWED BABBLER

Pomatostomus superciliosus

Fairly common, more so in the Ranges than on the plains. Often seen from the track between Witchelina HS and Old Mt Nor-West. A nest with two eggs at Douglas Gully in July 1980 (BW).

LITTLE GRASSBIRD *Megalurus gramineus*

A single record of several birds in *Atriplex vesicaria* and *Rhagodia spinescens* in the water at Lake Watherston on 10 March. McGilp (1923) does not mention this species in the Lake Frome district, but it was recorded by Black (1975) to the east of Lake Frome. It is common to the west of Lake Eyre (Badman 1979).

RUFOUS SONGLARK

Cinchorhamphus mathewsi

Not recorded until June 1979, but subsequently it was common along tree-lined

watercourses, in the Ranges and on the plains. McGilp (1923) does not mention this species, but it was recorded by Black (1975) east of Lake Frome and also west of Lake Callabonna. It was not present in the Lake Eyre district until August 1978, but was subsequently very common there (Badman in prep.).

BROWN SONGLARK

Cinchorhamphus cruralis

Common on the plains, but only seen on rare occasions in the Ranges (see Badman 1979).

VARIEGATED FAIRY-WREN

Malurus lamberti

Fairly common, especially in the Ranges, but not as common as the following species. Not found on the open plains.

WHITE-WINGED FAIRY-WREN

Malurus leucopterus

Very common, in the Ranges and on the plains, in open saltbush and bluebush country. This species is often seen in larger bushes and trees, sometimes in company with the Variegated Fairy-Wren.

THICK-BILLED GRASSWREN

Amytornis textilis

Fairly common in the open saltbush country to the east of Old Mt Nor-West and also in saltbush on rocky hillsides. Seen regularly near Douglas Gully (BW).

REDTHROAT *Sericornis brunneus*

Locally fairly common to the west of Old Mt Nor-West HS. On 13 March a pair was seen two km west of the HS and on the same date another pair was seen six km west of the HS. On 25 August at least four birds were at the latter locality. Four were seen two km west of Douglas Gully on 5 July. Also recorded by BW at Old Mt Nor-West on 6 April 1979 and near Douglas Gully in May 1980.

CALAMANTHUS *Sericornis fuliginosus*

Fairly common in open saltbush country, in the Ranges and on the plains. Frequently seen between Old Mt Nor-West and the Farina-Marree road.

WEEBILL *Smicronis brevirostris*

Fairly common in mallee in the Ranges, but not recorded on the plains. Seen occasionally in River Red Gums. The nearest record to the north is that from 70 km south of Oodnadatta (Badman 1979) thus indicating a gap in the species' range. It is fairly common to the south, in the Flinders Ranges and on the adjacent plains in suitable habitat (McGilp 1923; Pedler and Ragless 1978).

CHESTNUT-RUMPED THORNBILL

Acanthiza uropygialis

Common in mallee in the Ranges. Also fairly common in the Flinders Ranges and adjacent plains (McGilp 1923; Pedler and Ragless 1978) but uncommon to the north and north-west (Badman 1979). Flocks of about six birds were often recorded in the Ranges near Old Mt Nor-West while *ca* 10 were seen five km north-west of the Tarlton Knob Mine on 14 March.

SOUTHERN WHITEFACE

Aphelocephala leucopsis

Fairly common in the Ranges. Like the two preceding species, the Southern Whiteface is also common in the Flinders Ranges and adjacent plains (McGilp 1923; Pedler and Ragless 1978) and less common in the Lake Eyre district (Badman 1979).

CHESTNUT-BREADED WHITEFACE

Aphelocephala pectoralis

On 12 March 1979, whilst driving along a track three km south of North Tank, Witchelina Stn., Maureen Wright and I encountered two individuals of this species. We first saw them in *Atriplex vesicaria* by the side of the track, in company with several White-winged Fairywrens. The whitefaces flew off together and landed in *Rhagodia spinescens* and then on to a small *Acacia tetragonophylla* growing on a two metre high rocky knob. We were able to approach to within 20 m of the birds and a wide chestnut breast-band was clearly seen on both birds. The general area was a saltbush plain at the eastern edge of the Ranges, with many rocky outcrops. The Chestnut-breasted Whitefaces were also seen in *Eremophila glabra*, and after more than 10 minutes of observation both birds flew away towards the Ranges. Other vegetation in the area included *Cassia helmsii*, *Salsola kali*, *Frankenia* sp. and samphire. The afternoon was hot and humid, with a thundery shower visible on the eastern horizon. Time of the sighting was 17.30 and visibility was excellent.

At 16.30 on 22 June 1979 Barry and Maureen Wright saw four Chestnut-breasted Whitefaces at Kingston in the Ranges. They were in very open country consisting of undulating grassland on a shaly ridge near a bore. This area had been overgrazed by sheep and feral goats. *Eremophila freelingii* with scattered, low (0.3 m) *Atriplex vesicaria* grew in the area. The birds were seen flying from bush to bush and across the road.

SPINY-CHEEKED HONEYEATER

Acanthagenys rufogularis

Uncommon, with most records from

Busheowie and West Mount, to the west of the Ranges. Other sightings were at Old Mt Nor-West and Witchelina, HS, and at Deviation Creek where at least six birds were seen on 24 August. This is the least common of the resident honeyeaters.

YELLOW-THROATED MINER

Manorina flavigula

Abundant wherever there are eucalypts. The Wrights found several nests with young in the July-September period. One nest in a River Red Gum was used by Yellow-throated Miners in two successive years.

SINGING HONEYEATER

Lichenostomus virescens

Very common, in the Ranges and on the plains, in scrubby watercourses and wherever there are a few bushes, but not usually in eucalypts. Usually seen singly or in pairs, but at times up to six were seen together.

GREY-FRONTED HONEYEATER

Lichenostomus plumulus

Fairly common in mallee but only in the Ranges. This species is common throughout the Flinders Ranges, but is not found in the Lake Eyre district to the north of the Willouran Ranges. Except for a small isolated patch of *Eucalyptus socialis* near Bopeechee, I know of no other mallee north of the Willouran Ranges, and this is probably the factor limiting any further northward occurrence of the Grey-fronted Honeyeater in this region. On 25 August I collected one specimen, an adult male, B32286, on the west side of the gorge on Willawalpa Creek, about three km west of the Old Nor-West HS. This bird was in *Exocarpos aphyllus* at the edge of the mallee. Though usually seen in mallee, I also recorded the Grey-fronted Honeyeater in River Red Gums, *Acacia tetragonophylla*, *Santalum lanceolatum*, an *Eremophila* sp., and in Mulga *Acacia aneura* parasitized by *Lysiana exocarpi*. On 20 January a Grey-fronted Honeyeater was recorded feeding a young Pallid Cockoo (see notes on Pallid Cuckoo).

WHITE-PLUMED HONEYEATER

Lichenostomus penicillatus

Abundant, in the Ranges and on the plains, showing a preference for eucalypts; probably the most common honeyeater recorded.

WHITE-FRONTED HONEYEATER

Phylidonyris albifrons

Recorded twice: one in a River Red Gum at Old Mt Nor-West on 10 March; six to eight at Middle Dam, at the edge of the sandhills west of the Ranges, on 20 September 1979 (BW).

CRIMSON CHAT *Ephthianura tricolor*

Two at St Francis Pool, Mundowdna Stn., on 12 March. BW recorded Crimson Chats only occasionally, and then in small numbers and mainly on the plains. The Wrights found a nest with two young in a bush on a stony flat between sandhills ca 30 km north of Andamooka on 17 March 1979; the male bird was seen feeding the young.

ORANGE CHAT *Ephthianura aurifrons*

Common at times, mainly on the plains; it was seen only occasionally in the Ranges. Most birds seen were in female-phase plumage. A nest was found ca 15 cm above the ground in a small bush of *Frankenia* sp. on an open saltbush plain near Witchelina HS on 26 September 1979 and a male was flushed from the nest (BW).

WHITE-FRONTED CHAT

Ephthianura albifrons

A single record of several birds at Busheowie Dam, which is west of Termination Hill, during July and August 1978 (BW).

MISTLETOEBIRD *Dicaeum hirundinaceum*

A single record of one female-phase bird at Busheowie Dam on 1 May 1979 (BW).

RED-BROWED PARDALOTE

Pardalotus rubricatus

At least one in *Acacia salicina* near Douglas Gully on 5 July.

STRIATED PARDALOTE *Pardalotus striatus*

Very common in River Red Gums, but not present at all times. I recorded it at Old Mt Nor-West during my visits in June and August 1979 and in January 1980, and at Douglas Gully in July 1980. BW recorded it during December 1978 and May 1979. On 25 August I collected one specimen (an adult female of the race *P.s. substriatus*, B32285) three km west of the Old Mt Nor-West HS. It was investigating, or feeding in, holes in a River Red Gum and many more were heard in the surrounding mallee.

EUROPEAN GOLDFINCH

Carduelis carduelis

Two were seen drinking at a water-drum at the Old Mt Nor-West HS on 30 December 1978 (BW). They were first seen at 09.30 and stayed for two hours. They were not seen again. Both observers are familiar with this species and are positive of their identification. BW thought that the birds were too wild to have been aviary escapees, but their provenance remains uncertain.

HOUSE SPARROW *Passer domesticus*

Resident at most human habitations. A flock of 20-30 is resident at the ruins of the woolshed

at Old Mt Nor-West, and yet they have never approached the house.

ZEBRA FINCH *Poephila guttata*

Abundant in the Ranges and on the plains.

COMMON STARLING *Sturna vulgaris*

Up to six birds were seen occasionally at Witchelina HS (BW).

AUSTRALIAN MAGPIE-LARK

Grallina cyanoleuca

Common, in the Ranges and on the plains, mainly in eucalypts along watercourses and near water.

WHITE-BREASTED WOODSWALLOW

Artamus leucorhynchus

A single record at West Mount Dam on 21 September 1979 (BW). This lack of records is surprising, as this species is common a short distance away at Frome Creek, Muloorina, and also at Lake Harry HS ruins (Badman 1979). Pedler and Ragless (1978) recorded it at Lake Callabonna, but McGilp (1923) recorded it only in sandhill country adjoining the South Australia-New South Wales border.

WHITE-BROWED WOODSWALLOW

Artamus superciliosus

A single record of at least four on the Witchelina-Mulgaria boundary, near West Mount Hut, on 20 September 1979 (BW).

BLACK-FACED WOODSWALLOW

Artamus cinereus

By far the commonest of the woodswallows, it is abundant and widespread throughout the Ranges and on the plains.

GREY BUTCHERBIRD *Cracticus torquatus*

Two are apparently resident at Old Mt Nor-West. This species was also seen near Douglas Gully on 4 July, and at Boorloo Creek, at the extreme northern tip of the ranges about 10 km south-west of Marree, in June 1980 (BW). Not recorded elsewhere. This species is rare in the Lake Eyre district (Badman 1979).

AUSTRALIAN MAGPIE *Gymnorhina tibicen*

Common in the Ranges and on the plains. All birds seen were of the black-backed race *G.t. tibicen*.

AUSTRALIAN RAVEN *Corvus coronoides*

Common, mainly in the Ranges. This was the only corvid recorded at Old Mt Nor-West. It was identified by the drawn-out, wailing call of the adult birds, by its large size, pronounced throat hackles and grey feather-bases. A nest was found 20 m up in a River Red Gum and three young were successfully reared in September 1979. In another nest five metres up in a Red Mallee three young were reared in October 1979 (BW).

LITTLE CROW *Corvus bennetti*

Common, mainly on the plains and at waters on flats between hills in the Ranges. Several nests were found, mainly on crossarms on telephone poles beside the Central Australian Railway line.

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APPENDIX

Gazetteer of localities mentioned in the text.

Andamooka Opal Field	300 29'S, 1370 13'E	Lake Watherston	300 16'S, 1380 07'E
Anna Creek, cattle station	280 54'S, 1360 10'E	Leap Year Dam,	
Berlina Dam, Witchelina Stn.	300 01'S, 1370 54'E	Witchelina Stn.	300 13'S, 1380 05'E
Berlina Well, Witchelina Stn.	300 05'S, 1370 55'E	Leigh Creek, Wilpoorinna Stn.	300 00'S, 1380 18'E
Bopechee, railway riding	290 36'S, 1370 23'E	Lignum Dam, Mundowdna Stn.	200 46'S, 1380 14'E
Bungarider Gorge,		Marree	290 39'S, 1380 04'E
Witchelina Stn.	290 56'S, 1370 52'E	Middle Dam,	
Busheowie Dam,		Witchelina Stn.	300 11'S, 1370 42'E
Witchelina Stn.	300 12'S, 1370 56'E	Mirra Creek	290 47'S, 1370 42'E
Busheowie Well,		Mirra Dam, Witchelina Stn.	290 49'S, 1370 53'E
Witchelina Stn.	300 12'S, 1370 55'E	Mirra Tank, Witchelina Stn.	290 51'S, 1370 54'E
Deep Creek		Minagoona Lake	300 10'S, 1380 11'E
Finniss Springs Stn.	290 44'S, 1370 28'E	Mulgaria, cattle station	300 14'S, 1370 39'E
Deviation Creek	290 50'S, 1380 10'E	Mundowdna, sheep station	290 44'S, 1380 14'E
Double Dam, Witchelina Stn.	290 59'S, 1370 55'E	Mundys Creek,	
Douglas Gully, Witchelina Stn.	290 51'S, 1370 58'E	Wilpoorinna Stn.	290 59'S, 1380 19'E
Farina	300 04'S, 1380 17'E	Muloorina,	
Flinders Ranges	300 40'S, 1380 55'E	sheep and cattle station	290 14'S, 1370 54'E
Finniss Springs,		Myrtle Springs,	
cattle station	290 45'S, 1370 31'E	cattle station	300 27'S, 1380 13'E
Frome Creek	290 45'S, 1380 10'E	Neales, The	280 08'S, 1360 18'E
Frome Downs, cattle station	310 13'S, 1390 46'E	North Bungarider Dam,	
Glenview Tank,		Witchelina Stn.	290 54'S, 1370 49'E
Witchelina Stn.	300 04'S, 1370 49'E	North Creek, Callanna Stn.	290 46'S, 1370 41'E
Kingston Bore and Dam,		North Dam, Witchelina Stn.	290 46'S, 1380 07'E
Witchelina Stn.	290 56'S, 1370 57'E	North Tank, Witchelina Stn.	290 47'S, 1380 03'E
Lake Callabonna	290 40'S, 1400 01'E	Old Mt Nor-West,	
Lake Eyre	270 57'S, 1370 03'E	outstation of Witchelina	290 55'S, 1380 02'E
Lake Eyre South	290 15'S, 1370 23'E	Oodnadatta	270 33'S, 1350 27'E
Lake Frome	300 40'S, 1390 50'E	Parachilna	310 08'S, 1380 24'E
Lake Harry	290 25'S, 1380 19'E	Paradise Dam,	
Lake Torrens	300 40'S, 1370 40'E	Witchelina Stn.	300 08'S, 1370 51'E
		Rischbieth Creek	290 49'S, 1370 45'E
		Rischbieth Well,	
		Witchelina Stn.	290 49'S, 1370 45'E
		Rocky Dam, Witchelina Stn.	300 09'S, 1380 03'E
		Saint Francis Pool,	
		Mundowdna Stn. approx.	290 45'S, 1380 10'E
		South Dam, Witchelina Stn.	290 58'S, 1380 08'E
		Spring Creek,	
		Witchelina Stn.	290 57'S, 1380 07'E
		Stuart Creek	290 32'S, 1370 04'E
		Stuart Creek,	
		cattle station	290 42'S, 1370 02'E
		Tarlton Knob,	
		Witchelina Stn.	290 53'S, 1370 48'E
		Tarlton Knob Mine,	
		Witchelina Stn.	290 53'S, 1370 49'E
		Termination Dam,	
		Witchelina Stn.	300 16'S, 1370 56'E
		Termination Hill	
		Witchelina Stn.	300 15'S, 1380 03'E
		The Bend, outstation	
		of Witchelina	300 07'S, 1370 55'E
		Top Mount Well,	
		Witchelina Stn.	290 58'S, 1370 46'E
		Victory Well, Mt,	
		Witchelina Stn.	300 24'S, 1370 53'E
		West Mount Dams,	
		Witchelina Stn.	300 05'S, 1370 40'E
		West Mount Hut,	
		outstation of Witchelina	300 01'S, 1370 46'E
		Willawaipa Creek,	
		Witchelina Stn.	290 53'S, 1380 07'E
		Willouran Hill	290 50'S, 1370 58'E
		Willouran Ranges	290 50'S, 1370 58'E
		Wilpoorinna, sheep station	290 58'S, 1380 20'E
		Witchelina, sheep and	
		cattle station	300 01'S, 1380 03'E
		Yadlakina Bore,	
		Witchelina Stn.	300 21'S, 1380 08'E