

Further Notes on the Avifauna of the Gibb Rock Area, Western Australia

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Summary

In an area of former sandplain-mallee habitat in south-west Western Australia, changes in the avifauna were monitored as the site was progressively developed for agriculture. About 70% of the site has been cleared and cultivated but considerable reserves of the original habitat, connected by corridors, remain in the district. The birds (total: 115 species) are classified as: (a) those which appeared following development (12 species); (b) those which appear to have benefited from development (15 species); (c) those which have survived development (50 species); (d) those lost or unlikely to survive development (16 species); (e) those recorded elsewhere in the district (22 species). It is considered that while bird diversity has declined on developed areas, it is unlikely that bird density has declined greatly.

Introduction

In a previous paper (Sedgwick 1974) I provided a preliminary survey of the birds of the Gibb Rock area, c. 300 km east of Perth (Western Australia), with special attention to the changes caused by the development of a farm property. Previous information on the effects of farm development upon the avifauna of a sandplain-mallee area is here expanded. A further 26 species are added to the annotated list of 89 species (Sedgwick 1974), and additional notes are provided on six species previously recorded.

Study area and methods

The property 'Sedgmoor' just south of Gibb Rock (32°15'S, 119°05'E) was originally sandplain-mallee, progressively cleared and developed for cultivation since 1966. A description of the native flora and development activities is contained in Sedgwick (1974). About 1 300 ha of the property has now been cleared and cultivated, nearly 70% of the total area (c. 1 800 ha). No further expansion is proposed, at least for some time. Between 200 and 300 trees (mainly River Red Gum *Eucalyptus camaldulensis*) have been planted, mainly about the homestead and its approaches, and about half of these have survived, the more advanced reaching a height of c. 5 m. The trees appear to attract certain birds such as honeyeaters. Apart from mallees, there are few other trees on the property.

It is now almost certain that the natural soak on the farm is the Woolcutty Soak, known to certain travellers in the district but apparently 'lost' for some years. It is shown on the survey map as being on a neighbouring farm but classified as 'position doubtful'. That area is now under cultivation and contains no soak. Except for a period of two or three days the soak on 'Sedgmoor' contained water throughout the 1975-76 summer. There are now four dams on the property.

From 1966 to 1981 inclusive, observations were made incidentally to farm activities or in limited spare time. Thirty-seven visits were made, in all months except July; 11 were made in May and 10 in August-September. Since 1973, four visits were made in May. The early years (1967-1972 inclusive) were critical in that clearing and cultivation were proceeding.

Results

Species diversity

One hundred and fifteen species have been recorded, and these are classified into five categories:

1. Species which have appeared since development commenced (Table 1).
2. Species which appear to have benefited from development (Table 2).
3. Species which have so far survived development (Table 3). This is somewhat of a 'drag net' category, and some species of uncertain status are included.
4. Species lost or unlikely to survive development (Table 4).
5. Species present in the district but not recorded on 'Sedgmoor' (Table 5). Limits of district records are 27 km north, 61 km west-north-west and 32 km south-south-west of 'Sedgmoor'.

Assignment to the above categories, while based on actual records, is of necessity somewhat subjective. For example, in Table 4 Emus still appear on the property, sometimes in numbers, but are deemed unlikely to persist when adjacent areas are cleared. The area surrounding the soak and its immediate environs was cleared in 1968, so provision is made in Tables 2-4 for the soak to appear under both 'uncleared area' and 'developed area'.

Habitat symbols in Tables 1-4 are: mallee-sandplain (MS); soak (S); arable land (A); shelter belts and road verges (SR); dams (D); homestead and tree plantations (HP). Status of species in each habitat is indicated by the following symbols: O (occurs); T (recorded in transit over area); B (breeding recorded).

Bird abundance

So far only species diversity has been considered. An objective assessment of the relative number of individuals on cleared and uncleared areas would have been interesting, but has not been practicable. Certain species such as pipits and chats are rather frequent on the farmland, and others such as quail are sometimes present in numbers. The population is sparse but not negligible. On the other hand, the untouched areas do not impress one as swarming with bird life: rather the contrary. For example, a rough count was made under excellent observing conditions on 22 January 1978. In the hour from 0610 to 0710 h I traversed c. 2 km through typical sandplain-mallee, noting all birds seen or heard. Assuming the effective width of my transect to be 50 m, a probably conservative figure, 10 ha would have been covered. I noted seven species excluding two which I deemed to be marginal to the farmland, and forty-five individuals. It is just doubtful whether this would exceed the density of individuals on farmland.

My subjective conclusion is that development has led to a loss in the number of species, and will lead to further losses, but that the number of birds present may not have declined greatly.

Table 1

Avifauna of developed area: species which have appeared following development, and dates of first records. See text for explanation of habitat and status symbols.

Species	A	SR	S	D	HP	First record
Great Cormorant <i>Phalacrocorax carbo</i>				O		Oct 1977
Stubble Quail <i>Coturnix novaezelandiae</i>	B					Dec 1967
Little Button-quail <i>Turnix velox</i>	B					Dec 1972
Banded Lapwing <i>Vanellus tricolor</i>	B					May 1968
Inland Dotterel <i>Peltohyas australis</i>	B					May 1969
Crested Pigeon <i>Ocyphaps lophotes</i>	O	O			O	Sep 1969
Welcome Swallow <i>Hirundo neoxena</i>					B	Mar 1967
Richard's Pipit <i>Anthus novaeseelandiae</i>	B	O			B	Sep 1967
Brown Songlark <i>Cinclorhamphus cruralis</i>	O				O	Sep 1970
White-fronted Chat <i>Ephthianura albifrons</i>	O	O	O		O	May 1967
Australian Magpie-lark <i>Grallina cyanoleuca</i>					O	May 1972
Australian Magpie <i>Gymnorhina tibicen</i>	O	O			O	Mar 1967



Male Crested Bellbird *Oreica gutturalis*: see Table 4.

Table 2

Species which appear to have benefited from development, and dates of first records in cleared areas. See text for explanation of symbols.

Species	Uncleared		A	Developed area			HP	First record
	MS	S		SR	S	D		
White-faced Heron <i>Ardea novaehollandiae</i>		O		O	O			May 1970
Australian Shelduck <i>Tadorna tadornoides</i>		O		O	O			Mar 1970
Pacific Black Duck <i>Anas superciliosa</i>		O				O		Feb 1976
Grey Teal <i>Anas gibberifrons</i>		O			B	O		Mar 1974
Pink-eared Duck <i>Malacorhynchus membranaceus</i>					B	O		Feb 1976
Maned Duck <i>Chenonetta jubata</i>					O	O		Mar 1974
Spotted Harrier <i>Circus assimilis</i>			O	O				May 1970
Brown Falcon <i>Falco berigora</i>			O	O				May 1967
Australian Kestrel <i>Falco cenchroides</i>			O	O	O	O		May 1967
Australian Bustard <i>Ardeotis australis</i>	O		O					May 1968
Black-fronted Plover <i>Charadrius melanops</i>					B	O		May 1974
Galah <i>Cacatua roseicapilla</i>	O		O			O	O	Aug 1967
Willie Wagtail <i>Rhipidura leucophrys</i>	O		O	O	O		B	May 1969
Singing Honeyeater <i>Lichenostomus virescens</i>	O			O			B	Apr 1975
Australian Raven <i>Corvus coronoides</i>	O		O	O	O	O	O	Mar 1967

Table 3

Species which have survived development. See text for explanation of symbols.

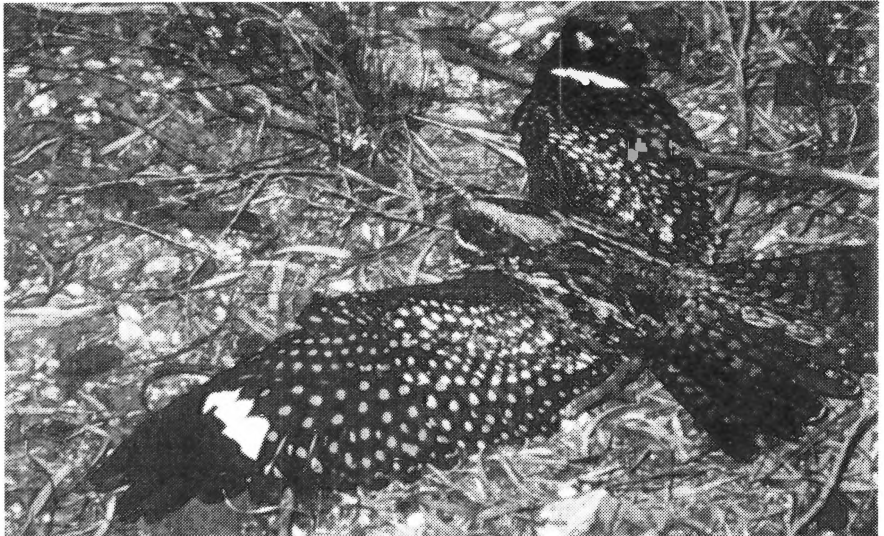
Species	Uncleared		A	Developed area			HP
	MS	S		SR	S	D	
Hoary-headed Grebe <i>Poliiocephalus poliocephalus</i>						O	
Australasian Grebe <i>Tachybaptus novaehollandiae</i>						O	
Pacific Heron <i>Ardea pacifica</i>						O	
Black-shouldered Kite <i>Elanus notatus</i>	O		O				O
Collared Sparrowhawk <i>Accipiter cirrhocephalus</i>							O
Wedge-tailed Eagle <i>Aquila audax</i>	O		O				
Little Eagle <i>Hieraetus morphnoides</i>	O		O				

Table 3 continued

Species	Uncleared		A	Developed area			HP
	MS	S		SR	S	D	
Australian Hobby <i>Falco longipennis</i>			O				
Black-tailed Native-hen <i>Gallinula ventralis</i>					O		
Bush Thick-knee <i>Burhinus magnirostris</i>	O		?	?			O
Red-kneed Dotterel <i>Erythrogonys cinctus</i>					O		
Common Bronzewing <i>Phaps chalcoptera</i>	O		O	O			
'White-tailed' Black-Cockatoo <i>Calyptorhynchus</i> sp.(p).	T		T	T			
Purple-crowned Lorikeet <i>Glossopsitta porphyrocephala</i>	O		T	T			
Regent Parrot <i>Polytelis anthoepus</i>	O		T				
Cockatiel <i>Nymphicus hollandicus</i>							O
Western Rosella <i>Platycercus icterotis</i>	O						
Port Lincoln Ringneck <i>Barnardius zonarius</i>	O		T	O			O
Mulga Parrot <i>Psephotus varius</i>	O						
Pallid Cuckoo <i>Cuculus pallidus</i>	O			O			
Fan-tailed Cuckoo <i>Cuculus pyrrhophanus</i>	O						
Horsfield's Bronze-cuckoo <i>Chrysococcyx basalis</i>	O						
Southern Boobook <i>Ninox novaeseelandiae</i>	O						O
Barn Owl <i>Tyto alba</i>			O				
Tawny Frogmouth <i>Podargus strigoides</i>	O		T				O
Rainbow Bee-eater <i>Merops ornatus</i>	O		T	O			T
White-backed Swallow <i>Cheramoeca leucosternum</i>			T	T			T
Tree Martin <i>Cecropis nigricans</i>	O				O	O	T
Black-faced Cuckoo-shrike <i>Coracina novaehollandiae</i>				T			
White-winged Triller <i>Lalage sueurii</i>				O			
Red-capped Robin <i>Petroica goodenovii</i>				O			B
Hooded Robin <i>Melanodryas cucullata</i>	O		O	O			O
Jacky Winter <i>Microeca leucophaea</i>	O						
Grey Fantail <i>Rhipidura fuliginosa</i>	O						
White-browed Babbler <i>Pomatostomus superciliosus</i>	O						
Calamanthus <i>Sericornis fuliginosus</i>	O			O			

Table 3 continued

Species	Uncleared		A.	Developed area			HP
	MS	S		SR	S	D	
Weebill							
<i>Smicromnis brevirostris</i>	O						O
Inland Thornbill							
<i>Acanthiza apicalis</i>	B	O		O	O		
Red Wattlebird							
<i>Anthochaera carunculata</i>	O						
Spiny-cheeked Honeyeater							
<i>Acanthagenys rufogularis</i>	O			O			
Purple-gaped Honeyeater							
<i>Lichenostomus cratitius</i>	O			O			
Yellow-plumed Honeyeater							
<i>Lichenostomus ornatus</i>	O						
Brown-headed Honeyeater							
<i>Melithreptus brevirostris</i>	O						
Brown Honeyeater							
<i>Lichmera indistincta</i>	O			O			
Tawny-crowned Honeyeater							
<i>Phylidonyris melanops</i>	O			O			
White-fronted Honeyeater							
<i>Phylidonyris albifrons</i>	O			O			
Crimson Chat							
<i>Epthianura tricolor</i>			O	O			
Striated Pardalote							
<i>Pardalotus striatus</i>	O						O
Black-faced Woodswallow							
<i>Artamus cinereus</i>	O			O			
Grey Butcherbird							
<i>Cracticus torquatus</i>	O						



Spotted Nightjar *Caprimulgus guttatus*, threat display: a species lost or unlikely to survive development in the area.

Table 4

Species lost or unlikely to survive development. See text for explanation of symbols.

Species	Cleared		A	Developed area			HP
	MS	S		SR	S	D	
Emu							
<i>Dromaius novaehollandiae</i>	B		O	O			
Malleefowl							
<i>Leipoa ocellata</i>	B						
Barking Owl							
<i>Ninox connivens</i>	O						
Spotted Nightjar							
<i>Caprimulgus guttatus</i>	B			O			
Southern Scrub-robin							
<i>Drymodes brunneopygia</i>	B						
Western Yellow Robin							
<i>Eopsaltria griseogularis</i>	B						
Golden Whistler							
<i>Pachycephala pectoralis</i>	O						
Grey Shrike-thrush							
<i>Colluricincla harmonica</i>	O						
Crested Bellbird							
<i>Oreoica gutturalis</i>	O			O			
Blue-breasted Fairy-wren							
<i>Malurus pulcherrimus</i>	O			O			
Shy Hylacola							
<i>Sericornis cautus</i>	O						
Redthroat							
<i>Sericornis brunneus</i>	O						
Chestnut-rumped Thornbill							
<i>Acanthiza uropygialis</i>	O						
White-eared Honeyeater							
<i>Lichenostomus leucotis</i>	O						
Yellow-rumped Pardalote							
<i>Pardalotus xanthopygus</i>	O						
Grey Currawong							
<i>Strepera versicolor</i>	O			O			

*Species not previously recorded***Australian Pelican** *Pelecanus conspicillatus*

Neighbours, Mr and Mrs S. Towers of Gibb Rock reported a flock of birds which appeared to be Pelicans soaring at a considerable height over their property. A description of the birds and their behaviour confirmed the identification beyond reasonable doubt.

Great Cormorant *Phalacrocorax carbo*

On 10 October 1977 seven birds passed low overhead in leisurely flight. The birds had evidently just left a dam near which I was working. Diagnostic features were easily observed.

Pacific Heron *Ardea pacifica*

In 1975 and 1976, a period of invasion of this species, a few birds appeared in the general area. My son Malcolm (MCS) saw one on the farm on 13 January 1976 and I saw one, possibly the same bird, by the soak on 8 February 1976.

Black Swan *Cygnus atratus*

MCS noted swans on the lake north of Hyden early in 1975, but none was present on 30 March when we visited the lake.

Pacific Black Duck *Anas superciliosa*

Four were present on the soak on 20 May 1974. In 1976 one was present on a small dam on 12 February and two were present on a large dam from 20 to 24 February.

Chestnut Teal *Anas castanea*

On 30 March 1975 we located two - drake and duck - on a salt lake 7 km north of Hyden.

Pink-eared Duck *Malacorhynchus membranaceus*

One was observed daily on a farm dam from 8 to 13 February 1976, and two were noted on the same dam on 15 January 1977.

Musk Duck *Biziura lobata*

One bird was on the lake north of Hyden on 30 March 1975, when the lake was almost full.

Whistling Kite *Haliastur sphenurus*

One bird noted in October 1973.

Peregrine Falcon *Falco peregrinus*

One seen on 1 February 1981, perched in a large Salmon Gum *Eucalyptus salmonophloia* - one of a small group - in mallee just to the south of the farm.

Red-kneed Dotterel *Erythrogonyx cinctus*

Two at the soak on 21 September 1978.

Black-fronted Plover *Charadrius melanops*

Two recorded near the soak on 20 May 1974. Since then, birds have been noted at two of the dams.

Common Sandpiper *Tringa hypoleucos*

Two at one of the subsidiary pools at the salt lake north of Hyden on 30 May 1975.

Laughing Turtle-Dove *Streptopelia senegalensis*

Fairly frequent in Narembeen but has not, as yet, been noted further east.

Cockatiel *Nymphicus hollandicus*

On 9 October 1977 four birds visited the trees at the homestead. A bird seen in flight near Hyden on 12 October was almost certainly of this species.

Table 5

Species present in the district but not recorded on the property. Locations are:

1. The Humps (17 km SSW); 2. Hyden, adjacent lakes and Wave Rock (c. 30 km SSW);
3. Mt Walker (27 km WNW); 4. Narembeen and environs (61 km WNW);
5. Holleton (27 km N); 6. other localities.

Species	Location
Australian Pelican <i>Pelecanus conspicillatus</i>	6
Black Swan <i>Cygnus atratus</i>	2
Chestnut Teal <i>Anas castanea</i>	2
Musk Duck <i>Biziura lobata</i>	2
Whistling Kite <i>Haliastur sphenurus</i>	6
Peregrine Falcon <i>Falco peregrinus</i>	6
Black-winged Stilt <i>Himantopus himantopus</i>	4
Common Sandpiper <i>Tringa hypoleucos</i>	2
Laughing Turtle-Dove <i>Streptopelia senegalensis</i>	4
Red-tailed Black-Cockatoo <i>Calyptorhynchus magnificus</i>	4
Elegant Parrot <i>Neophema elegans</i>	2, 4, 6
Fairy Martin <i>Cecropis ariel</i>	5
Rufous Whistler <i>Pachycephala rufiventris</i>	1
Restless Flycatcher <i>Myiagra inquieta</i>	2
Western Gerygone <i>Gerygone fusca</i>	1
Yellow-rumped Thornbill <i>Acanthiza chrysorrhoa</i>	1, 2, 4
Rufous Treecreeper <i>Climacteris rufa</i>	2
Yellow-throated Miner <i>Manorina flavigula</i>	1, 2, 4, 6
Grey-fronted Honeyeater <i>Lichenostomus plumulus</i>	5
White-cheeked Honeyeater <i>Phylidonyris nigra</i>	1
Mistletoebird <i>Dicaeum hirundinaceum</i>	1
Pied Butcherbird <i>Cracticus nigrogularis</i>	1, 2, 3

Fairy Martin *Cecropis ariel*

Identified provisionally at Holleton on 15 October 1973. Birds were seen only on the wing, which made identification difficult. Old mines in the vicinity could provide nesting sites.

White-winged Triller *Lalage sueurii*

Seen and heard at Hyden on 20 January 1977. On 24 October 1977 some 15 birds were present in mallee-sandplain at the farm boundary, at least half of them fully plumaged males. They could not be located on the following day, which suggests that the group may have been in passage.

Restless Flycatcher *Myiagra inquieta*

One observed on 4 May 1977, 6 km west of Hyden, as it hovered over the edge of a paddock near roadside and other light timber.

Redthroat *Sericornis brunneus*

I suspected this species to be present on the farm, but could not obtain a satisfactory sighting. On 2 June 1975 I found birds frequent and easy to observe in the understorey of the forest by the lake to the north of Hyden.

Rufous Treecreeper *Climacteris rufa*

I obtained very favourable views of two, perhaps three, in forest on the shores of the lake north of Hyden.

Spiny-cheeked Honeyeater *Acanthagenys rufogularis*

Several in roadside vegetation 14 km north of Hyden on 28 April 1975 and in blossoming mallee 5 km south of the farm on 30 January 1977.

Grey-fronted Honeyeater *Lichenostomus plumulus*

On 15 October 1973 birds which appeared to be of this species were observed at Holleton feeding on a large flowering *Calothamnus*. One was seen very plainly through 8 x 30 binoculars at c. 25 m. Unfortunately I did not immediately realise that the occurrence of this species in this area would be a considerable extension of its known range. Had I done so, I would have obtained further data to confirm identification. The habitat was open forest recovered from the effects of extensive gold mining and prospecting. Mining has since resumed in the area and is now closed to the public, preventing further visits.

White-cheeked Honeyeater *Phylidonyris nigra*

We noted several on 30 March 1975 among flowering *Banksia* at Bottle Rocks 49 km south-south-east of Hyden, perhaps a slight extension of known range. This was outside the study area, but on 28 April 1975 I encountered several birds about flowering *Banksia* c. 3 km east of The Humps.

Mistletoebird *Dicaeum hirundinaceum*

This species was recorded by a W.A. Naturalists Club party at Wave Rock, but I did not encounter the species until 20 January 1977 when I watched a female feeding on *Loranthus* fruit in Salmon Gum forest near Bates Cave, The Humps.

Yellow-rumped Pardalote *Pardalotus xanthopygus*

On 28 April and 2 June 1975 I heard calls assigned to this species in forest adjacent to the lake north of Hyden, but I was unable to obtain a sighting though there appeared to be several birds, or groups of birds, in the vicinity. On 10 June 1975 I readily located two birds in mallee with scattered Salmon Gums on the farm boundary. In one the rump pattern appeared very like that of the Spotted Pardalote *P. punctatus*, but in the other - they were sitting side by side - the rump appeared bright yellow.

Additional notes on species previously recorded

Hoary-headed Grebe *Poliiocephalus poliocephalus*

Three on the soak on 22 September 1978.

Bush Thick-knee *Burhinus magnirostris*

Previously recorded at Gibb Rock on the basis of reports and a fragmentary call. On 27 August 1975 on a property a few kilometres north of Hyden we were shown two birds and a nest with two eggs, in Salmon Gum forest. The birds had disregarded clearing and the excavation of a dam which had encroached on the forest to within a few metres of the nest.

Jacky Winter *Microeca leucophaea*

Previously recorded on the basis of a call only. On 2 June 1975 one bird was seen in forest by the lake c. 7 km north of Hyden.

Chestnut-rumped Thornbill *Acanthiza uropygialis*

Previously recorded at The Humps. On 28 April 1975 I obtained good views of individuals in the forest by the lake to the north of Hyden, and on 9 October 1977 confirmed the presence of the species at Gibb Rock when I watched a single bird in mallee-sandplain interface.

Crimson Chat *Ephthianura tricolor*

Previously recorded in the spring and summer of 1970-71. On 4 and 7 October 1977 I located 10-15 birds in a wheat crop adjacent to a mallee shelter belt. On both occasions Black-faced Woodswallows *Artamus cinereus* appeared to be loosely associated. On 27 October 1977 a few Chats were in roadside vegetation adjacent to a property boundary c. 6 km from the above location.

Little Crow *Corvus bennetti*

Suspected to occur (Sedgwick 1974); subsequently confirmed by remains of a dead bird and by positive field identification.

Discussion

I suppose that the ideal method of carrying out this project would have been to make an intensive survey of the avifauna of the location while it was in its primitive state, to completely clear the blocks - and the adjacent properties - and then carry out another survey of the modified area. Even if practicable, this would hardly have been desirable.

As the matter stands, we have a much less clear-cut situation: not only is part of the farm uncleared, but despite extensive clearing in the neighbourhood there are still uncleared areas contiguous with the farm boundaries and these, together with the road reserves, provide reservoirs of sandplain-mallee birds and corridors which enable them to move freely about the area. This should be borne in mind when interpreting Tables 1-5: the uncleared portion of the farm and the shelter belts on the developed portion are not isolated but, for the present, are part of an extensive unmodified area. As this area is reduced and fragmented, some impoverishment of the fauna of the remaining pockets of vegetation is almost certain to occur. I have classified all the honeyeaters recorded on the property as 'surviving': I suspect that the nomadic species flow through the area from time to time, but this situation could change with further clearing.

Reference

Sedgwick, E.H. (1974), 'Birds of the Gibb Rock area', *West. Aust. Nat.* 13, 7-14. ■

Corrigendum-

Vol. 11 no. 5 pp. 137-145 'Age-related colour changes and behaviour in the northern Funereal Black-Cockatoo *Calyptorhynchus funereus funereus*': in several places in this paper *xanthonotus* should read *xanthanotus*. Our apologies to the author.