

IV. BIRDS OF TARIN ROCK AND NORTH TARIN ROCK RESERVES

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INTRODUCTION

Many aspects of the birds of the Western Australia wheatbelt are poorly known. There has been no attempt to document distributions before or after extensive clearing of about 80% of the region for agriculture. The small amount of information published since clearing has tended to include only local lists of species with no attempt to examine the avifauna of the wheatbelt or relate it to the vegetation, for example, McKenzie, Burbidge & Marchant (1973) and McKenzie and Youngson (1975).

This paper is the first part of a series examining the avifauna of the wheatbelt (for outline of the wheatbelt vertebrate survey see Kitchener, Preface, this publication). This series will be presented as separate papers on bird assemblages of specific areas within the wheatbelt. They will then be synthesized to provide an evaluation of the avifauna of the wheatbelt.

In this contribution we present observations on birds of the Tarin Rock area in the south-eastern wheatbelt and attempt to relate these to the plant associations described by Muir (this publication). We also compare the birds of this area with those outlined by Carnaby (1933) for Lake Grace, about 25 km east of Tarin Rock. Carnaby's list was compiled before most of the extensive agricultural clearing took place. It also included a considerable chain of salt lakes and flats which provide habitat for waterfowl and waders not present at Tarin Rock.

The rate of clearing in the wheatbelt and the resultant fragmentation of vegetation has not been documented. Muir (this publication) includes figures on recent clearing (since 1964) around Tarin Rock. The effects of this recent clearing, especially that since 1971, are almost certainly still affecting the bird assemblage at Tarin Rock. It is hoped that further work here will document these subsequent status changes.

The data presented here on birds of Tarin Rock (TR) and North Tarin Rock (NTR) Reserves and their immediate vicinity were obtained between 16—29 May 1971 (Johnstone), 22 September to 3 October 1972 (Dell), 17—19 April 1973 (Dell & Johnstone), 19 October 1974 (Dell) and 12—14 September 1975 (Dell). This information is presented as an annotated list. Where positions of sightings are known, vegetation locations of Muir (this publication) are included, for example, loc. 1.2. Vegetation association terminology used is that of Muir (1976).

ANNOTATED LIST

Emu (*Dromaius novaehollandiae*).

Frequent in NTR Reserve and adjacent farmland and bush in May 1971 and September 1972. During the September survey an Emu shoot was being conducted on farms adjacent to the east side of the Reserve. No Emus were recorded on subsequent trips. Old nest with 7 unhatched eggs near claypan, nest with 8 eggs and one egg in litter near southeast corner of Reserve, and adult sitting on nest with 9 eggs, 300 m inside Reserve boundary at southeast corner of Reserve in May 1971. Adult with 3 striped chicks at north end of Reserve in September 1972.

None seen at TR Reserve in May 1971 but tracks and scats frequent. A flock of 15 in burnt area in September 1972 and one in wheat paddock in September 1975.

Mountain Duck (*Tadorna tadornoides*)

Frequent in Salmon Gums (*Eucalyptus salmonophloia*) loc. 1.2 at NTR Reserve in May 1971. These trees provide good nesting sites. Pair with 9 young on nearby track in September 1972. Occasional pairs over Reserve in May and September.

Four in Flat-topped Yate (*E. occidentalis*) woodland at loc. 1.5 near southwest end of TR Reserve in May 1971.

Black Duck (*Anas superciliosa*)

One on farm dam 3 km north of NTR Reserve in September 1972.

Grey Teal (*Anas gibberifrons*).

Nine adults and five tiny young on farm dam 3 km north of NTR Reserve on 28 September 1972.

Wood Duck (*Chenonetta jubata*).

Three on farm dam 155 m west of NTR Reserve in September 1972.

Two over TR Reserve in May 1971.

Square-tailed Kite (*Lophoictinia isura*).

Occasional birds over TR Reserve in October 1972.

Collared Sparrowhawk (*Accipiter cirrocephalus*).

One at NTR Reserve in May 1971 and one 4 km north of Reserve in September 1972.

One in mallee on edge of TR Reserve in May 1971 and pair in Flat-topped Yate woodland (loc. 1.3) in October 1972.

Wedge-tailed Eagle (*Aquila audax*).

One over NTR Reserve in May 1971 and one in September 1972. An empty nest with fresh green leaves in a Salmon Gum 300 m outside the Reserve opposite loc. 1.2 in May 1971.

None recorded at TR Reserve in May 1971. Pair seen frequently over Reserve in October 1972. Nest with young 15 m from ground at loc. W10 in Wandoo (*E. wandoo*) 0.5 km north of Reserve and nest 15 m from ground in Flat-topped Yate at loc. 1.3 in October 1972.

Little Falcon (*Falco longipennis*).

One over NTR Reserve in May 1971; one over paddock 3 km north of Reserve in September 1972.

Peregrine Falcon (*Falco peregrinus*).

One in open mallee near Tarin Rock siding in May 1971.

Brown Falcon (*Falco berigora*).

One over NTR Reserve in May 1971, September 1972 and April 1973 and 4 in September 1975.

Several over TR Reserve in May 1971, October 1972 and September 1975. One sitting on nest in Salmon Gum at top of Tarin Rock in September 1975.

Nankeen Kestrel (*Falco cenchroides*).

One over paddock north of NTR Reserve in May 1971, one carrying small snake over Reserve in September 1972.

Mallee-fowl (*Leipoa ocellata*).

No birds seen at NTR Reserve during these surveys but footprints and an old nest were found in May 1971.

Two in mallee on east side of TR Reserve near an active nest and footprints seen on southwest edge where dense litter was present in May 1971. None seen in October 1972 but an inactive nest was found in *E. falcata* mallee at loc. 2.19 and four old nests in Flat-topped Yate woodland at loc. 1.3.

Little Quail (*Turnix velox*).

One on track near northeast end of NTR Reserve moving from cleared area into dense heath in May 1971.

Not recorded at TR Reserve but a male was collected at "Tarin Rock" in December 1948 by A.M. Douglas.

Banded Plover (*Vanellus tricolor*).

Sparse over NTR Reserve, widespread but not common in surrounding farm country in May 1971 and September 1972.

Two in burnt area on west side of TR Reserve in May 1971. Widespread in farm country in May 1971 and October 1972. Adults with 2 chicks in paddock on east side of Reserve in October.

Common Bronzewing (*Phaps chalcoptera*).

Common in NTR Reserve, sparse in adjacent country in May 1971 and September 1972. Most common in Salmon Gum woodland and mallee

adjacent to cleared areas. Frequent throughout mallee, low woodland and tall scrub elsewhere on Reserve. Breeding in hollow branch of Salmon Gum at loc. 1.2 in September 1972.

Common throughout mallee at TR Reserve in May 1971. One in shrubs under Flat-topped Yate woodland at loc. 1.3 and two in Wandoo woodland 1 km north of Reserve at loc. W10 in October 1972.

Purple-crowned Lorikeet (*Glossopsitta porphyrocephala*).

Small flocks of 6–8 birds were frequent in Salmon Gum woodland (loc. 1.2) at NTR Reserve in May 1971. Only 3 birds seen in same area in September, 1972.

White-tailed Black Cockatoo (*Calyptorhynchus baudinii*).

Group of 5 birds recorded twice on southeast edge of NTR Reserve in May 1971. Frequent during September 1972 and 1975 when flocks of up to 30 birds were feeding in regenerating scrub north of the Reserve at loc. 3.1 and on seeds of *Casuarina pinaster* in the Reserve at loc. 4.1. Several nesting in small belt of woodland 3 km north of Reserve in September 1972. Drinking from roadside pools in September.

Galah (*Cacatua roseicapilla*).

Four in Salmon Gum woodland (loc. 1.2) at NTR Reserve in September 1972 and 2 over heath in September 1975.

Smoker Parrot (*Polytelis anthopeplus*).

Frequent in wooded areas (loc. 1.2) of NTR Reserve in May 1971. None recorded in Reserve during other visits. Five in small woodland 3 km north of Reserve in September may have been nesting.

Six in Wandoo woodland (loc. W10) 1 km northwest of TR Reserve in October 1972 were probably nesting.

Western Rosella (*Platycercus icterotis*).

Pair nesting in Salmon Gum at loc. 1.2 at NTR Reserve in September 1972. Male was feeding female when she came out of the nesting spout.

A male in Wandoo woodland (loc. W10) 1 km northwest of TR Reserve in October 1972.

Port Lincoln Parrot (*Platycercus zonarius*).

Frequent in wooded areas of NTR Reserve in May 1971, September 1972, April 1973 and September 1975. Mating behaviour recorded in May. Feeding on flowers of *Grevillea hookeriana* in regrowth adjacent to north boundary at loc. 3.1 in September 1972.

Plentiful at TR Reserve in May 1971. Seventeen birds scattered through Flat-topped Yate woodland at loc. 1.3 and in Wandoo woodland (loc. W10) 1 km north west of Reserve in October 1972. None seen in September 1975.

Elegant Parrot (*Neophema elegans*).

Five in woodland (loc. 1.2) at NTR Reserve in May 1971. Frequent in same woodland and adjacent farmland in September 1972. Feeding on flowers of *Grevillea hookeriana* in regrowth (loc. 3.1) in September.

Four at Tarin Rock siding and 6 feeding in paddock in May 1971. One seen twice over burn in centre of TR Reserve in October 1972.

Pallid Cuckoo (*Cuculus pallidus*).

One calling at NTR Reserve in sparse mallee over heath at loc. 2.5 on 22 September 1972.

Three solitary birds at TR Reserve in October 1972 — in burnt area, in woodland, and in heath.

Fan-tailed Cuckoo (*Cuculus flabelliformis*).

One recorded frequently in mallee among Salmon Gums at NTR Reserve at loc. 1.2 in September 1972.

One calling at TR Reserve in mallee at loc. 2.5 in October 1972.

Horsfield Bronze Cuckoo (*Chrysococcyx basalis*).

One calling at NTR Reserve in mallee over heath at loc. 2.5 in September 1972.

Four single birds at TR Reserve in mallee, dense heath, and woodland in October 1972.

Golden Bronze Cuckoo (*Chrysococcyx lucidus*).

Three in open mallee at NTR Reserve in May 1971. Two in Salmon Gum woodland at loc. 1.2 and two in dense scrub in September 1972.

One in Wandoo woodland (loc. W10) 1 km northwest of TR Reserve in October 1972.

Boobook Owl (*Ninox novaeseelandiae*).

One calling in Salmon Gum woodland at loc. 1.2 at NTR Reserve in September 1972.

Barn Owl (*Tyto alba*).

One seen in Salmon Gum woodland at loc. 1.2 in NTR Reserve in May 1971. One roosting in hollow Salmon Gum at same location in September 1972. Pellets collected from the roost contained numerous bones including 239 skulls of *Mus musculus*, lower jaws of 3 *Sminthopsis murina* and a partial skull of *S. crassicaudata*. Additional pellets obtained in April 1973 contained skulls of *M. musculus* as well as some frog bones.

One calling in Wandoo woodland (loc. W10) 1 km northwest of TR Reserve in October 1972.

Tawny Frogmouth (*Podargus strigoides*).

One seen at night in mallee on edge of NTR Reserve in May 1971.

Pair in Flat-topped Yate woodland (loc. 1.3), another sitting on nest 6 m from ground in Flat-topped Yate (loc. 1.3), and pair feeding on ground in burnt area at TR Reserve in October 1972.

Crested Owlet-nightjar (*Aegotheles cristatus*).

Several seen and heard at night in mallee and Salmon Gums at NTR Reserve at loc. 1.2 in September 1972 and April 1973.

One feeding on track through burnt area at TR Reserve in October 1972.

Spotted Nightjar (*Eurostopodus guttatus*).

One seen at night on track on northeast edge of NTR Reserve in May 1971.

One over small laterite breakaway near north edge of TR Reserve in October 1972.

Sacred Kingfisher (*Halcyon sancta*).

One in mallee over heath at NTR Reserve near loc. 2.7 in September 1972.

Welcome Swallow (*Hirundo neoxena*).

Widespread throughout NTR Reserve and adjacent country in May 1971. Not recorded subsequently.

Widespread throughout TR Reserve and four at Tarin Rock siding in May 1971. Not recorded subsequently.

Tree Martin (*Hirundo nigricans*).

Small flocks of 5—8 birds common over woodland (loc. 1.2) at NTR Reserve in May 1971. During September 1972 none were recorded between 23—26 September but flocks of up to 10 were recorded between 27 September and the completion of the survey on 29 September. Several parties hawking over Reserve in April 1973.

Fairly numerous over woodland at TR Reserve in May 1971; four flocks totalling 30 birds mainly over woodland in October 1972.

Australian Pipit (*Anthus novaeseelandiae*).

Frequent in farmland, sparse on edges of NTR Reserve during all visits.

Frequent in farmland on edge of TR Reserve during all visits. Two in burnt area on southwest end of TR Reserve in May 1971 and several in burnt area in centre of TR Reserve in October 1972.

Black-faced Cuckoo-shrike (*Coracina novaehollandiae*).

Frequent and widespread at NTR Reserve in May 1971. Three groups totalling 7 birds in September 1972. Several flying north through Reserve in April 1973.

Widespread and common at TR Reserve in May 1971; four seen in October 1972; one flying south in September 1975.

White-winged Triller (*Lalage sueurii*).

Male and two females catching caterpillars among foliage of Wandoo trees in woodland (loc. W10) 1 km northwest of TR Reserve on 3 October 1972.

Southern Scrub-robin (*Drymodes brunneopygia*).

Common throughout NTR Reserve except woodland (loc. 1.1 and 1.2). Birds giving territorial calls in May 1971. Probably breeding in September 1972 when they were mainly silent and wary and showed alarm when disturbed.

Common in heath below mallee and in heath at TR Reserve in May 1971. Restricted to similar habitat in unburnt areas in September 1972 and subsequently.

White-browed Babbler (*Pomatostomus superciliosus*).

Flock of five birds near breakaway in southwest part of NTR Reserve in May 1971. None seen subsequently. Two old nests, one in Quondong (*Santalum acuminatum*) and one in a *Hakea*, were recorded in woodland 3 km north of Reserve in September 1972.

Flocks of six to eight birds at TR Reserve in mallee at loc. 2.20 and loc. 2.5 and in nearby road-verges in May 1971. Only four birds seen in same area in October 1972 and one in April 1973.

Blue-breasted Wren (*Malurus pulcherrimus*).

Common in heath below mallee and in heath throughout NTR and TR Reserves and adjacent areas. In October 1972 most males were in nuptial plumage, some groups of six birds included 3 nuptial males. The stomachs of 2 collected in May 1971 contained Curculionidae, Diptera and ant fragments.

Southern Emu-wren (*Stipiturus malachurus*).

Frequent in heath and heath below mallee at NTR Reserve; recorded in September 1972, April 1973 and September 1975.

Western Warbler (*Gerygone fusca*).

Two birds in mallee over heath at loc. 2.6 at NTR Reserve on 23 September 1972.

One in Wandoo woodland (loc. W10) 1 km northwest of TR Reserve on 3 October 1972.

Broad-tailed Thornbill (*Acanthiza pusilla*).

Common in all associations at NTR and TR Reserves. Not present in burnt area at TR Reserve in October 1972 but fairly common throughout regenerating mallee in September 1975, 31 months after being burnt.

Chestnut-tailed Thornbill (*Acanthiza uropygialis*).

One in heath near breakaway in centre of NTR Reserve in May 1971. Two in open country near Tarin Rock in May 1971.

Yellow-tailed Thornbill (*Acanthiza chrysorrhoa*).

Occasional groups of up to 5 birds along roadsides and in farm country in vicinity of woodland near NTR Reserve.

None recorded at TR Reserve in May 1971. Two on burnt slopes of Tarin Rock, 3 in Flat-topped Yate woodland (loc. 1.3), and 4 attending nest containing young 15 m from ground in Wandoo tree (loc. W10) 1 km northwest of TR Reserve in October 1972. This nest was built into base of an old Wedge-tailed Eagle nest. Nest with large young in *Melaleuca eleutherostachya* 1.1 m from ground under Flat-topped Yate woodland (loc. 1.5) on 14 September 1975.

Spotted Scrub-wren (*Sericornis maculatus*).

Frequent throughout heath and heath below mallee at NTR Reserve. The stomach of one collected in May 1971 contained beetle elytra and grasshopper and ant fragments.

A few in dense heath and thickets on east side of TR Reserve in May 1971. None recorded after 1972 burn.

Weebill (*Smicrornis brevirostris*).

Very common in all eucalypts throughout NTR and TR Reserves. Similar status in May 1971, September 1972, April 1973 and September 1975.

Shy Ground-wren (*Hylacola cauta*).

Frequent throughout dense heath below mallee at loc. 2.13, 2.14, 2.6, 2.7, 4.2 and 2.37 at NTR Reserve and in adjacent uncleared country. Adults with juveniles still being fed in September 1972.

Field-wren (*Calamanthus fuliginosus*).

Sparse throughout heath and heath below mallee in NTR Reserve and adjacent similar country. The stomach of a female collected in May 1971 contained many seeds and a few insect fragments.

Frequent in heath and heath below mallee at TR Reserve. None present in burnt area in October 1972 but fairly frequent here in September 1975.

White-fronted Chat (*Epthianura albifrons*).

Sparse on edges of NTR Reserve but frequent in adjacent cleared country in May 1971 and September 1972.

Small flocks of up to 8 in dense tree mallee at loc. 1.2 at TR Reserve in October 1972. Common in nearby paddocks in May 1971 and September — October 1972.

Brown Flycatcher (*Microeca leucophaea*).

One in Salmon Gum woodland 3 km north of NTR Reserve in September 1972. Pair feeding under Wandoo woodland at loc. W10 1 km northwest of TR Reserve in October 1972.

Scarlet Robin (*Petroica multicolor*).

Two in open shrub mallee and heath near breakaway in centre of NTR Reserve and one in watercourse area (loc. 1.2) in May 1971. Not recorded subsequently.

One at Tarin Rock siding in May 1971.

Red-capped Robin (*Petroica goodenovii*).

One in mallee on east side of TR Reserve in May 1971.

Hooded Robin (*Petroica cucullata*).

Pair at northeast edge of NTR Reserve (loc. 4.2) in September 1972. One in burnt area at southwest end of TR Reserve in May 1971.

Western Yellow Robin (*Eopsaltria australis griseogularis*).

Frequent in NTR Reserve in mallee. Nests with young on 23 September 1972 at loc. 2.32 and 13 September 1975 at loc. 2.21. Mainly feeding round *Melaleuca lateriflora* shrubs under mallee.

Frequent at TR Reserve in dense mallee and mallee over heath in May 1971. A few in Flat-topped Yate woodland at loc. 1.3 in October 1972. The stomach of one collected in May contained fragments of clerid and cucujid beetles.

Grey Fantail (*Rhipidura fuliginosa*).

Frequent in woodland at loc. 1.2 and in mallee near southwest corner of NTR Reserve in May 1971. One pair at loc. 1.2 in September 1972 and September 1975. Several passing northwards through Reserve in April 1973.

Common in woodland, mallee and thickets at TR Reserve in May 1971. Pair in Wandoo woodland (loc. W10) 1 km northwest of Reserve and one in mallee at loc. 2.27 in October 1972. Several pairs in Railway Reserve south of TR Reserve in September 1975.

Willie Wagtail (*Rhipidura leucophrys*).

Two in mallee on northeast side of NTR Reserve in May 1971. Pair in *Melaleuca* — *Casuarina* scrub (loc. 2.32) and pair in Salmon Gum woodland 1 km northwest of Reserve in September 1975. Three single birds on nearby roadsides in September 1975.

One at Tarin Rock siding and one at east end of TR Reserve in May 1971.

Restless Flycatcher (*Myiagra inquieta*).

One in small woodland 3 km north of NTR Reserve in September 1972. Recorded twice in mallee at east end of TR Reserve in May 1971.

Golden Whistler (*Pachycephala pectoralis*).

Frequent throughout woodland, mallee and thickets at NTR Reserve. Plentiful in woodland and mallee at TR Reserve. Female building nest in *Casuarina* thicket at TR loc. 2.6 on 2 October 1972.

Rufous Whistler (*Pachycephala rufiventris*).

Pair in Wandoo woodland (loc. W10) 1 km northwest of TR Reserve in October 1972.

Western Shrike-thrush (*Colluricincla harmonica rufiventris*).

Frequent throughout woodland, mallee and thickets at NTR and TR Reserves.

Crested Bellbird (*Oreoica gutturalis*).

Common in all habitats at NTR and TR Reserves except woodlands.

Black-capped Sittella (*Neositta chrysoptera pileata*).

Flocks of up to 8 birds in all woodland and mallee habitats at NTR Reserve in May 1971, September 1972 and April 1973. One in mallee over heath in September 1975.

Eight in mallee at TR Reserve in May 1971.

Red-tipped Pardalote (*Pardalotus striatus*).

Sporadic throughout eucalypts at NTR Reserve on all visits. Possibly breeding in Salmon Gums at loc. 1.2 in September 1972. Groups flying south in September 1972 and 1975.

Sporadic throughout eucalypts at TR Reserve on all visits. Small groups heard high up giving migratory calls and moving west in May and south in October.

Spotted Pardalote (*Pardalotus punctatus*).

Several birds in Flat-topped Yate woodland at loc. 1.5 at TR Reserve in September 1975.

Western Silvereye (*Zosterops lateralis gouldi*).

Common throughout NTR Reserve in May 1971 and April 1973. Eight scattered through dense heath (loc. 4.1) in September 1972 and 3 pairs in September 1975.

Common at TR Reserve in heath and tall scrub in May 1971. One in heath at loc. 2.11 and 2 in heath below mallee at loc. 2.6 in October 1972 and 2 in September 1975 at loc. 2.5

Brown Honeyeater (*Lichmera indistincta*).

Fairly common at NTR Reserve in all habitats in May 1971, September 1972 and September 1975. Feeding on flowers of *Eucalyptus redunca* at loc. 2.34 and flowers and insects in heath in May. Young scarcely able to fly on 26 September.

Common in all habitats at TR Reserve in May 1971. Restricted to unburnt area in October 1972 and September 1975. The stomach of one collected in May contained minute carab beetle fragments, adult Diptera, Coleoptera elytra and Lepidoptera fragments.

Singing Honeyeater (*Meliphaga virescens*).

One at NTR Reserve in May 1971, 4 in September 1972.

Two in mallee (*Eucalyptus eremophila* — *E. flocktoniae* association) near loc. 1.9 on steep hillslope at TR Reserve in May 1971, two in mallee — *Casuarina* thickets at loc. 2.6 in October 1972, one in mallee and 4 in Flat-topped Yate woodland (loc. 1.3) in September 1975.

Yellow-plumed Honeyeater (*Meliphaga ornata*).

One collected at NTR Reserve while feeding in *E. redunca* at loc. 1.2 in May 1971. Several feeding in *E. falcata* and in *Casuarina* — *Melaleuca* thickets in September 1972.

One in mallee at east end of TR Reserve in May 1971.

Purple-gaped Honeyeater (*Meliphaga cratitia*).

Common throughout all habitats with eucalypts at NTR Reserve on all visits. A juvenile collected and adults copulating in open mallee in May 1971. Nest with 2 eggs 1 m from ground in *Hakea* beneath mallee at loc. 2.7 in September 1972. Nest had many spider cocoons in walls and was thickly lined with Emu feathers. Feeding on insects round top of mallee and Salmon Gums in May and September, and feeding on flowers of *Banksia sphaerocarpa* in September 1972.

Common in all habitats at TR Reserve in May 1971 with concentrations in mallee and thickets. One pair in mallee in October 1972. Common in mallee and mallee above heath especially loc. 2.19 in April 1973 and September 1975.

White-eared Honeyeater (*Meliphaga leucotis*).

Present in all mallee and woodland associations at NTR and TR Reserves where the eucalypt canopy cover is more than about 10%.

Brown-headed Honeyeater (*Melithreptus brevirostris*).

At NTR Reserve flocks of 8, 19 and 15 birds in woodland at loc. 1.2, 20 near north boundary in mallee over heath and small flocks in mallee on west side of Reserve in May 1971. Pairs and groups of up to 5 scattered throughout woodland and mallee in September 1972. In April 1973 flocks similar to May.

At TR Reserve flocks of between 10 and 12 birds in dense mallee and woodland at loc. 1.2 in May 1971 and April 1973. Pairs or adults with young in same habitats in October 1972. Adults feeding young on insects collected from leaves of mallee.

Tawny-crowned Honeyeater (*Gliciphila melanops*).

Common in heath and heath below mallee at both NTR and TR Reserves during all visits. Feeding on flowers of *Grevillea hookeriana* at NTR loc. 3.1 in September 1972. Birds copulating in May 1971. Many juveniles present in September. Nest with 2 eggs in *Dryandra* affinis *cirsioides* at loc. 2.13 on 13 September 1975; nest with 2 tiny chicks on 27 September 1972 at loc. 2.26; and nest with 2 eggs in *dryandra* on 28 September 1972 at loc. 4.1 at NTR Reserve. Two eggs in nest at TR Reserve (loc. 2.29) hatched on 2 October 1972. Some birds giving aerial displays in September 1972 at both Reserves.

New Holland Honeyeater (*Phylidonyris novaehollandiae*).

Frequent throughout mallee above heath in May 1971 at NTR Reserve. Not recorded subsequently.

Frequent throughout mallee above heath at TR Reserve in May 1971 and at loc. 2.25 and 2.20 in April 1973. Not recorded in October 1972.

White-cheeked Honeyeater (*Phylidonyris niger*).

Sparse in heath and heath below mallee at NTR Reserve in May 1971 but common throughout similar habitats in September 1972, April 1973 and September 1975. Two young flew from a nest on 26 September 1972 and a nest with 2 eggs was found on 29 September; both nests at loc. 4.1. The stomach of one adult collected in May contained beetle elytra and wings and adult dipterans.

Not recorded at TR Reserve in May 1971. Frequent in heath below mallee in October 1972, April 1973 and September 1975. Three newly-flying young being fed by 2 adults on 2 October.

Yellow-throated Miner (*Manorina flavigula*).

Two in Wandoo woodland at loc. W10 1 km northwest of TR Reserve in October 1972.

Red Wattlebird (*Anthochaera carunculata*).

Flocks of between 15 and 20 common throughout eucalypts at NTR Reserve in May 1971 and April 1973. One pair recorded in September 1972 and 1975.

Common throughout all eucalypts at TR Reserve in May 1971; occasional pairs in September — October 1972.

Zebra Finch (*Poephila guttata*).

Flock flying south over breakaway in centre of NTR Reserve in May 1971 and flock of about 14 at Tarin Rock siding in May.

Magpie Lark (*Grallina cyanoleuca*).

A few in road verges and in farm country near both Reserves on each visit. A few feeding in burnt area in middle of TR Reserve in October 1972.

Masked Wood-swallow (*Artamus personatus*).

Flock of 34 flying south over TR Reserve on 30 September 1972.

Black-faced Wood-swallow (*Artamus cinereus*).

Two over farm 11 km northeast of NTR Reserve in September 1972. Two at Tarin Rock siding in May 1971.

Dusky Wood-swallow (*Artamus cyanopterus*).

Frequent round NTR Reserve in May 1971. Flock of 20 and flock of 16 on north side of NTR Reserve in September 1972.

Frequent over Tarin Rock siding, the burnt area at the southwest end of TR Reserve and in cleared country surrounding the Reserve in May 1971. Less abundant and mainly in woodland at loc. 1.2 on TR Reserve and in adjacent country in October 1972.

Grey Currawong (*Strepera versicolor*).

Frequent in mallee and woodland at both Reserves on all visits. Nest in Salmon Gum at loc. 1.2 with adult incubating on 24 September, nest in mallee at loc. 2.3 with adult incubating on 26 September 1972.

Grey Butcherbird (*Cracticus torquatus*).

Widespread but sparse in woodland and mallee at both Reserves and adjacent uncleared country. Adult on nest in a mallee at loc. 2.3 on 26 September 1972.

Western Magpie (*Cracticus tibicen dorsalis*).

Sparse in farm country adjacent to NTR Reserve. Nest with adult incubating in Salmon Gum 1 km northwest of NTR Reserve on 23 September 1972.

Frequent round edges of TR Reserve and in road verges near Reserve. A flock of about 9 had a territory in the burnt area on west side of Reserve in October 1972. The burnt woodland at loc. 1.5 was the roosting area.

Raven (*Corvus coronoides*).

Frequent throughout wooded areas of both Reserves and adjacent farm land. Adult incubating on nest in Salmon Gum on 23 September 1972 at loc. 1.2.

Little Crow (*Corvus bennetti*).

Four in thermal over NTR Reserve in May, and two flying north over TR Reserve in May.

DISCUSSION

At North Tarin Rock 59 species were recorded in May 1971. Fifty of these, plus an additional 23, were recorded in September 1972 making a total of 82.

No additional species were added during the subsequent visits. Eleven species had eggs or young in nests in September but only one, the Emu, in May. Purple-gaped and Tawny-crowned Honeyeaters were seen copulating in May. Those breeding in September were White-tailed Black Cockatoo, Western Rosella, Common Bronzewing, Western Yellow Robin, Purple-gaped, Tawny-crowned and White-cheeked Honeyeaters, Grey Currawong, Grey Butcher-bird, Magpie and Raven. Six species had young out of the nest in September: Emu, Mountain Duck, Grey Teal, Shy Ground-wren, and Brown and Tawny-crowned Honeyeaters.

At Tarin Rock 57 species were recorded in May 1971. Thirty-eight of these, plus an additional 19, were recorded in September—October 1972 making a total of 76. One more species, the Spotted Pardalote, was added during September 1975. No breeding was detected in May, but four species were breeding in September—October: these were Wedgetailed Eagle, Yellow-tailed Thornbill, Golden Whistler, and Tawny-crowned Honeyeater. Brown-headed Honeyeater and White-cheeked Honeyeater were feeding young out of the nest in October.

Between May 1971 and September 1972 much land north of North Tarin Rock Reserve was rolled and cleared. Some displaced birds from these areas may have temporarily sought refuge in the Reserve. For example, the Shy Ground-wren and White-cheeked Honeyeater were apparently much more numerous in the Reserve in September than in May.

Muir (this publication) lists figures for clearing since 1964 which illustrate the increasing isolation of North Tarin Rock Reserve. It is likely that the bird assemblage is still in a state of change because the effective area of the Reserve is constantly being reduced. Once the Reserve is completely isolated the bird assemblage should stabilize, possibly with some species entirely disappearing.

Birds which are now scarce at North Tarin Rock and whose survival there are in question include Western Rosella, White-browed Babbler, Field-wren, Yellow-tailed Thornbill, Hooded Robin, Scarlet Robin and Yellow-plumed Honeyeater. Species which are common or moderately so but are likely to decline include Southern Scrub-robin, Shy Ground-wren and White-cheeked Honeyeater.

Tarin Rock Reserve is undergoing a similar trend towards isolation as North Tarin Rock and the same downward trends in bird numbers and species is predictable. In addition, bird numbers have been seriously affected by a fierce bushfire which burnt about 56% of the Reserve including the *Eucalyptus occidentalis* woodland on the west side, the *Eucalyptus gardneri* slopes of Tarin Rock (including the *E. salmonophloia* trees at the top of the hill), together with considerable mallee and mallee-heath during 6—7 February 1972. This burnt area had regenerated little by October 1972 and afforded little habitat for birds with the exception of Emu, Magpie and

an occasional Pipit. By September 1975 regeneration was considerable and the burnt area then supported populations of Broad-tailed Thornbill, Field-wren, Weebill, Tawny-crowned Honeyeater, and Brown Falcon (nesting). The burnt *E. occidentalis* woodland supported the following birds: Red-tipped Pardalote, Spotted Pardalote, Yellow-tailed Thornbill (nesting) Singing Honeyeater, White-eared Honeyeater, Magpie (nesting) and Raven (nesting).

Some birds were apparently much scarcer at Tarin Rock in October 1972 than they were in May 1971. These included Common Bronzewing, Mallee-fowl, Southern Scrub-robin, Blue-breasted Wren, Tawny-crowned Honeyeater, White-cheeked Honeyeater and New Holland Honeyeater. Their status appeared similar in September 1975 to October 1972.

All the species which have survived the burn are likely to persist there. As the burnt area matures, habitats for various bird species will increase and there will be a constant infiltration of birds from the unburnt area. This is illustrated by the above example where eight months after the fire, the burnt area provided habitat for only three species, whereas 44 months after the fire it provided habitat for 12 species, including four breeding.

Both Reserves have similar avifaunas. Of the 85 species actually found on these Reserves 69 species were common to both. Only 9 species were found at North Tarin Rock Reserve alone, and 7 at Tarin Rock Reserve. These records from a single Reserve included single sightings of migrants such as Sacred Kingfisher, White-winged Triller and Masked Wood-swallow and nomads like Square-tailed Kite, Little Falcon, Peregrine Falcon, Nankeen Kestrel, Purple-crowned Lorikeet, White-tailed Black Cockatoo, Galah, Boobook Owl and Spotted Pardalote.

Although the Reserves are dissimilar floristically (Muir, this publication) the reason for the similar avifauna is possibly the fact that over 90% of each Reserve is mallee, mallee-heath, heath, or mallee/heath mosaic. Muir suggests that of the known plants only about 30% are common to both Reserves but what his figures do not illustrate is that some of the larger plants which are frequently utilized by birds, such as the mallees *E. albida* and *E. eremophila*, *Banksia sphaerocarpa*, *Casuarina campestris* and *Dryandra cirsioides*, are common to both Reserves.

North Tarin Rock Reserve is different from Tarin Rock Reserve in that it has a heath formation. However it is not significantly different floristically from other heaths with sparse mallee. These areas of heath do not have any birds confined to them.

Basically the birds of Tarin Rock and North Tarin Rock Reserves fall into two categories — those occupying eucalypts (irrespective of whether these are in woodland, mallee or mallee-heath) and those occupying heaths (irrespective of whether these are heaths, mallee-heaths or a mosaic of both). In the second category are a group of small insectivorous birds (Southern

Emu-wren, Shy Ground-wren, Field-wren, Blue-breasted Wren and Spotted Scrub-wren) which are rarely all found together. These Reserves are important then in maintaining populations of these as well as other sedentary birds. Therefore the heaths and mallee-heaths are the most important associations of these Reserves. Birds which occupy denser mallee and woodlands are more mobile and can more readily recolonize areas that are disturbed, such as by burning.

Some worthwhile comparisons may be made between the status of birds at Tarin Rock now and the status known for Lake Grace about 1930 (Carnaby, 1933). There are fundamental difference in the two bird assemblages because the area included by Carnaby contained a major salt lake system with its related samphire and *Casuarina obesa* associations. However, if we compare only the land birds we have some interesting comparisons. A number of species have apparently declined while others have increased. Both these changes are probably directly related to clearing. Some species have suffered because of habitat destruction, while open country birds have increased or penetrated this area.

Birds which Carnaby described as common or plentiful and which are now either scarce or occupy only small uncleared areas include Brown Falcon, Western Rosella, Willie Wagtail, Restless Flycatcher, Red-capped Robin, Hooded Robin, Western Yellow Robin, Golden Whistler, Crested Bellbird, Southern Scrub-robin, White-browed Babbler, Chestnut-tailed Thornbill, Redthroat, Southern Emu-wren, Yellow-plumed Honeyeater, Yellow-throated Miner, Spiny-cheeked Honeyeater, and Grey Butcher-bird.

Those species which are now more common than in Carnaby's time include Galah (not included by Carnaby), Rufous Whistler, Black-faced Wood-swallow (included as a rare migrant by Carnaby), Purple-gaped Honeyeater, White-cheeked Honeyeater (not included by Carnaby), Raven and Little Crow (probably referable to Carnaby's Australian Crow, *Corvus orru*). Generally this group of birds have benefited from clearing and have increased throughout the wheatbelt, not only the south-eastern portion.

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