

## MAMMALS AND BIRDS OF BOORINGA SHIRE, QUEENSLAND

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### SUMMARY

A survey of the mammals and birds of Booringa Shire, an area of essentially open forest in southern Queensland, undertaken in 1968-1970 is described. Totals of 33 species of mammals and 123 species of birds are recorded from the area, together with notes on habitat and abundance.

### I. INTRODUCTION

A study of kangaroo populations in an area near the town of Mitchell, southern Queensland, has been in progress since 1965, and regular monthly visits have been made to a group of properties in this area. These provided an opportunity to observe the vegetation and resident fauna of the district over an extended period, and provided a background to a formal fauna survey which was commenced in January, 1968. In the absence of distinct natural boundaries, the boundary of Booringa Shire was used as a convenient means of defining the area surveyed.

Booringa Shire (Figure 1) is approximately 200 miles long and 70 miles at its widest part and lies between latitudes  $24^{\circ} 53' S.$  and  $27^{\circ} 55' S.$ , and longitudes  $147^{\circ} 14' E.$  and  $148^{\circ} 23' E.$  The town of Mitchell is centrally located, with two other townships, Amby and Mungallala, to the east and west of Mitchell respectively.

Topographically, the Shire is divisible into northern and southern parts, and a well-maintained dog-proof dingo fence passing east-west some 12 miles north of Mitchell indicates the dividing line. North of the fence, the country varies from rough to undulating, reflecting the proximity of the Great Dividing and Chesterton Ranges. South of the fence, the land is essentially level to gently undulating. Soils of the northern portion are mostly solodic interspersed with

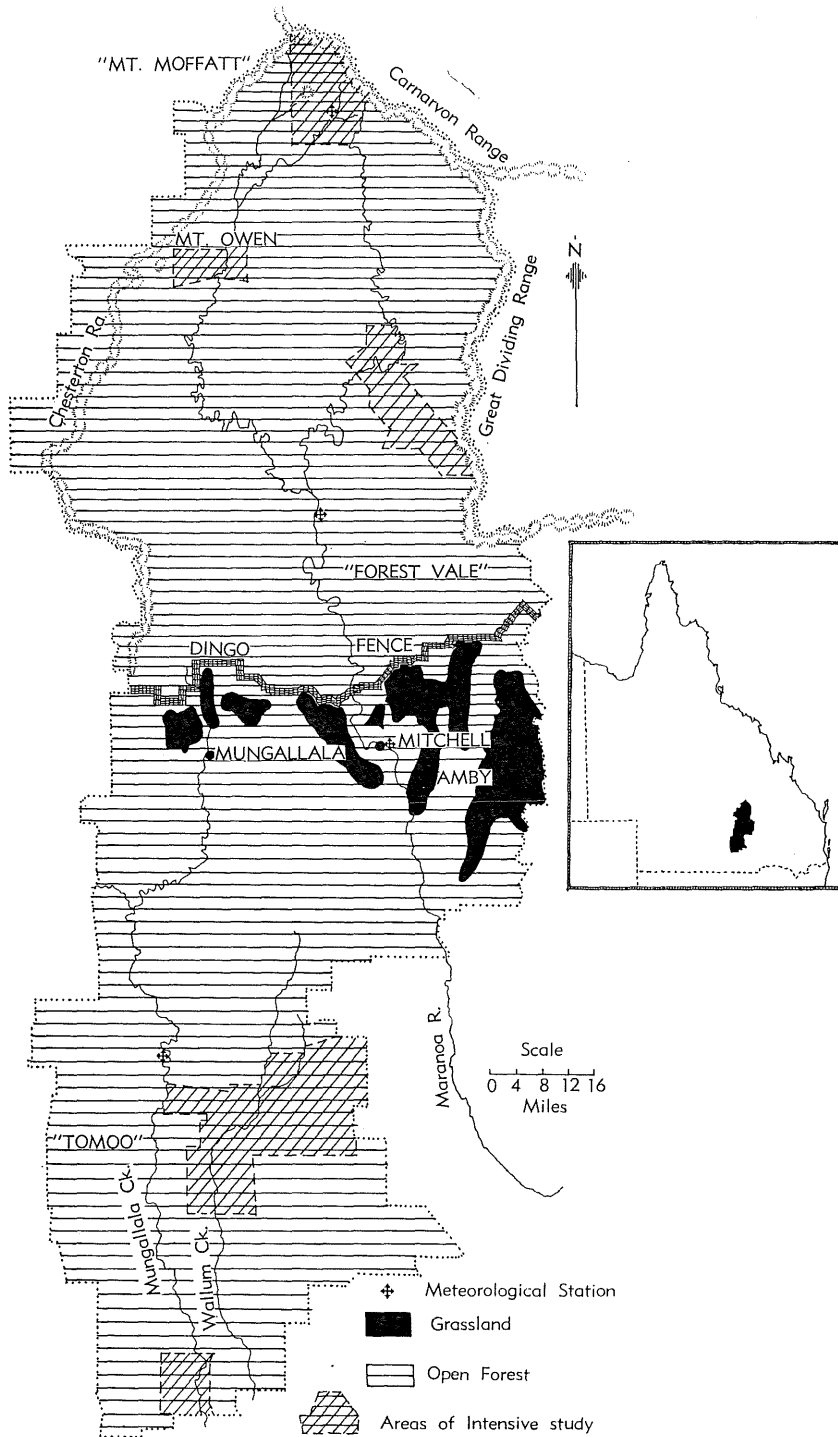


Fig. 1—The Booringa Shire fauna survey, 1968-1970. Map checked from ground traverses. ("Mt. Moffatt" and "Forest Vale" refer to the meteorological stations south-east and north-west of the respective names).

small areas of black earths. Around Mitchell is a large area of black earths, and in the southern portion soils are mainly arid red earths (see Northcote 1967). The vegetation of practically the entire area is an open forest, dominated in the northern division by poplar or bimbil box (*Eucalyptus populnea* F. Muell.) and dusky-leaved ironbark (*Eucalyptus nubilis* Maiden and Blakeley), and in the southern division by poplar box and mulga (*Acacia aneura* F. Muell.). Small areas of brigalow (*Acacia harpophylla* F. Muell. ex Benth.) occur on black earths, and pure stands of cypress pine (*Callitris columellaris* F. Muell.) are to be found throughout the Shire, particularly in the northern division. Near the tops of the Ranges forming the northern boundary of the Shire, particularly in sheltered areas, there is a denser open forest including bracken fern (*Pteridium esculentum* (Forst. f.) Nakai) in the ground cover. The only extensive areas of naturally occurring open grassland occur on black earths around Mitchell, but small areas created by pastoralists by removal of forest cover are present throughout the entire Shire.

The Maranoa River, which runs through the Shire, was flowing only a few times during the survey period. Other rivers and creeks, similarly, were dry during the greater part of the survey.

European settlement commenced during the late 19th century, and today the whole area is grazed by sheep and cattle, the former limited to the southern division of the Shire. The usual property improvements associated with pastoral activities, including partial clearing of forest by ringbarking, fencing and provision of stock watering facilities, have been made throughout, and planting of introduced grasses on a limited scale occurs. Mulga is frequently lopped and pulled during severe drought for stock feeding, but permanent clearing of mulga as a pasture improvement measure is subject to Government restriction. Burning of pastures during spring is a common practice in the range country in the north of the Shire.

Much of the open black soil downs to the east of and around Mitchell has been cultivated at some time, and during suitable seasons grain crops are planted.

Some 40,415 acres of cypress pine forest in the northern half of the Shire have been declared Forestry Reserves, for the purpose of controlling timber harvest. These are fauna sanctuaries under "The Fauna Conservation Act of 1952".

Yearly rainfall varies widely, both in amount and in distribution during the year. Monthly rainfall for the years 1968-1970 registered at Mitchell, "Mt. Moffatt", "Forest Vale" and "Tomoo" (see Figure 1 for locations) are given in Figure 2.

## II. METHODS

Areas representative of the Shire (see Figure 1) were selected for intensive study and provided most of the records. Other parts of the district were covered to check obvious differences from the studied areas. Main habitat types recognized were open forest and grassland. Random traverses were made at approximately 2-monthly intervals throughout all intensively studied areas, and specimens of all species except those readily identifiable by sight were collected using rifles, shotguns and traps where necessary. A spotlight was used during night traverses, particularly to collect bats.

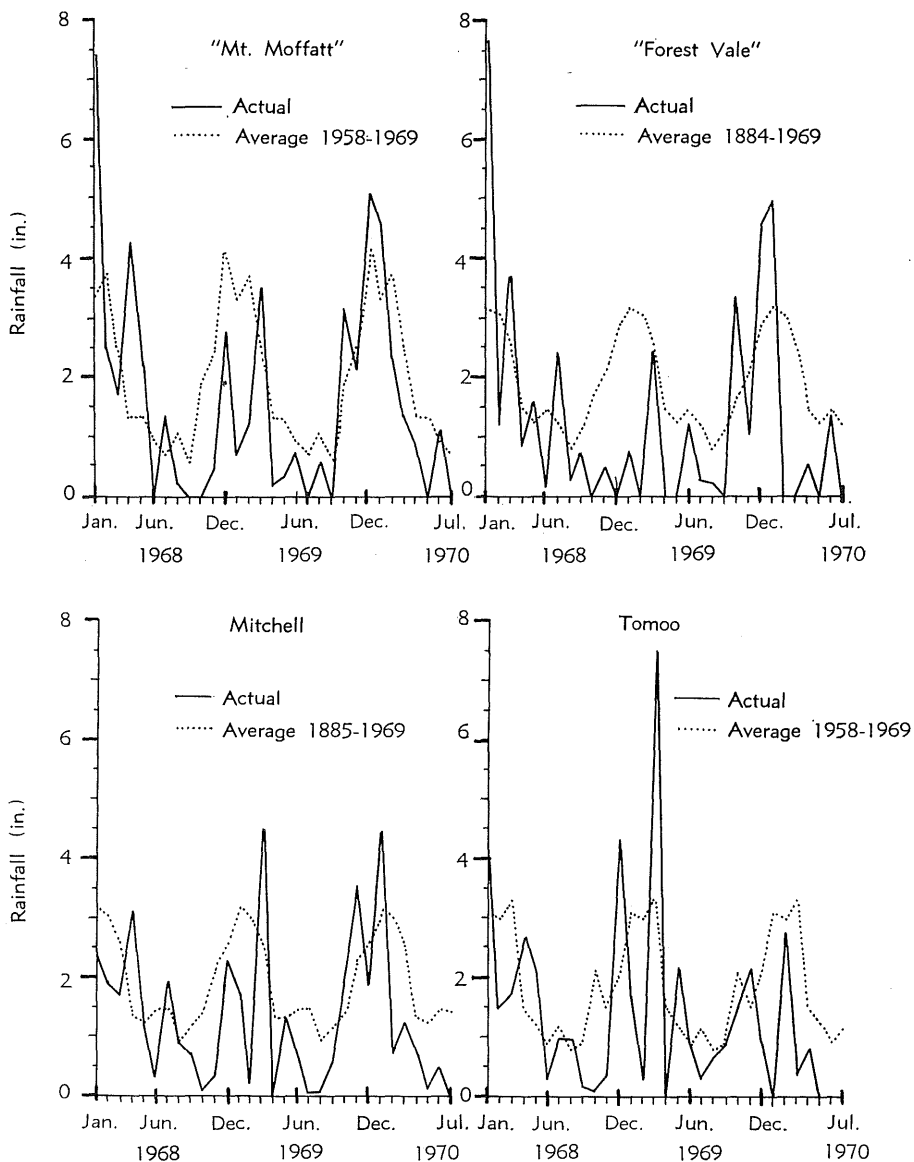


Fig. 2.—Monthly rainfall recorded at Mitchell, "Forest Vale", "Mt. Moffatt" and "Tomoo" (see Fig. 1 for locations), 1968-70. Rainfall is shown in points (100 points = 1 in.).

Abundance ratings were given following the system of Kirkpatrick (1966), based on the numbers seen or collected during each visit to, or trapping period in, any habitat type as follows:

- Abundant: Usually large numbers.
- Common: Always at least once, often more.
- Uncommon: Not every visit, but more than twice during the survey.
- Scarce: Not more than twice during the survey.

No estimate of abundance is provided for a number of hard-to-collect species found to be present but for which an extensive search was not made. The rating occasional is provided for some birds whose presence in either small or large numbers was recorded at irregular intervals.

### III. RESULTS

Species collected, together with habitat type and an estimate of abundance, are listed below. The exclusive presence of a species in either the northern or the southern divisions of the Shire or a variation in the abundance of a species between divisions in areas of similar habitat is noted. For migratory birds and birds exhibiting seasonal variations in abundance, ratings apply for periods of greatest concentration. An asterisk indicates that the record is based on sightings only.

Mammal names generally follow Iredale and Troughton (1934). All Chiroptera were identified by the Queensland Museum. Bird names follow Lavery (1969).

#### MONOTREMATA

\**Tachyglossus aculeatus* (Shaw and Nodder). Echidna. Open forest and grasslands; uncommon.

#### MARSUPIALIA

*Sminthopsis* (?) *murina* (Waterhouse). Slender mouse-sminthopsis. Open forest; three records.

*Dasyurinus geoffroii* (Gould). Black-tailed native cat. Two records from open forest range country on the northern boundary of the Shire.

*Schoinobates volans* (Kerr). Greater possum-glider. Open forest on ranges; common.

*Trichosurus vulpecula* (Kerr). Common brush-tailed possum. Open forest on ranges; abundant: open forest elsewhere; uncommon.

\**Phascolarctos cinereus* (Goldfuss). Koala. Open forest; uncommon.

*Aepyprymnus rufescens* (Gray). Rufous rat kangaroo. Open forest on foothills of ranges; common.

*Petrogale penicillata* (Griffith, Smith and Pidgeon). Brush-tailed rock-wallaby. Rock strewn ridges and banks in open forest on ranges; abundant.

*Wallabia bicolor* (Desmarest). Swamp wallaby. Open forest. Common, northern division. Uncommon, southern division.

*Wallabia rufogrisea* (Desmarest). Red-necked wallaby. Open forest. Abundant, northern division. No record, southern division.

*Wallabia dorsalis* (Gray). Black-striped wallaby. Open forest. Common, northern division. No record, southern division.

\**Wallabia elegans* (Lambert). Whiptail wallaby. Open forest on ranges; common.

\**Osphranter robustus* (Gould). Eastern wallaroo. Open forest on ranges and broken country; common. Open forest elsewhere; scarce.

*Megaleia rufa* (Desmarest). Red kangaroo. Open forest and grasslands. Common, southern division. Uncommon, northern division.

*Macropus giganteus* (Shaw). Grey kangaroo. Open forest and adjacent grasslands; abundant.

## EUTHERIA

- \**Hydromys chrysogaster* (Geoffroy). Eastern water rat. Water; uncommon.
- Rattus villosissimus* (Waite). Long-haired rat. Open forest on ranges; uncommon.
- Rattus rattus* Linnaeus. Ship rat. Open forest near habitation, urban; common.
- \**Notomys sp.* Hopping mouse. Open forest, grassland in northern division. Several sightings.
- Mus musculus* Linnaeus. House mouse. Open forest, grasslands, and urban; abundant.
- \**Canis dingo* Meyer. Dingo. Open forest; Common, northern division. Scarce, southern division.
- Oryctolagus cuniculus* Linnaeus. Wild rabbit. Open forest and grasslands; abundant.
- Vulpes vulpes* Linnaeus. Fox. Open forest and grasslands; abundant.
- Felis catus* Linnaeus. Feral cat. Open forest and grasslands; common.
- Capra hircus* Linnaeus. Feral goat. Open forest; Scarce, southern division. No record, northern division.
- Sus scrofa* Linnaeus. Feral pig. Open forest; uncommon.
- \**Equus equus* Linnaeus. Feral horse. Open forest. Uncommon, northern division. Scarce, southern division.
- Eptesicus pumilus* (Gray). Little bat. Open forest; common.
- Chalinolobus gouldii* (Gray). Gould's lobe-lipped bat. Open forest; abundant.
- Chalinolobus morio* (Gray). Chocolate lobe-lipped bat. Open forest; common.
- Miniopterus schreibersii blepotis* (Temminck). Bent-winged bat. Open forest; uncommon.
- Taphozous flaviventris* Peters. Yellow-bellied free-tailed bat. Open forest; common.
- Tadarida planiceps* (Peters). Western micromys. Open forest; uncommon.
- Nycticeius greyi* (Gould). Grey's bat. Open forest; one specimen collected.
- Nyctophilus geoffroyi* Leach. Long eared bat. Open forest; one specimen collected.

## BIRDS

- \**Dromaius novaehollandiae* (Latham). Emu. Grassland and open forest; common.
- Podiceps ruficollis* (Vroeg). Little grebe. Open water; common.
- \**Pelecanus conspicillatus* Temminck. Australian pelican. Water; occasional.
- \**Phalacrocorax sulcirostris* (Brandt). Little black cormorant. Water; common.
- \**Phalacrocorax carbo* (Linnaeus). Black cormorant. Water; common.
- \**Ardea pacifica* Latham. White-necked heron. Water; common.

- \**Ardea novaehollandiae* Latham. White-faced heron. Usually near water; common.
- \**Nycticorax caledonicus* (Gmelin). Nankeen night heron. Stream margins; one specimen observed.
- \**Threskiornis molucca* (Cuvier). Australian white ibis. Open forest; uncommon.
- \**Threskiornis spinicollis* (Jameson). Straw necked ibis. Open forest; uncommon.
- \**Platalea regia* Gould. Royal spoonbill. Water and margins; uncommon.
- \**Platalea flavipes* Gould. Yellow-billed spoonbill. Water and margins; uncommon.
- Anas superciliosa* Gmelin. Black duck. Water; common.
- Anas gibberifrons* Muller. Grey teal. Water; uncommon.
- \**Malacorhynchus membranaceus* (Latham). Pink-eared duck. Water; occasional.
- Chenonetta jubata* (Latham). Maned wood duck. Water; abundant.
- \**Aythya australis* (Eyton). White-eyed duck. Water; uncommon.
- Milvus migrans* (Boddaert). Fork-tailed kite. Open forest, grassland; common.
- \**Lophoictinia isura* (Gould). Square-tailed kite. Open forest, grassland; uncommon.
- Haliastur sphenurus* (Vieillot). Whistling eagle. Open forest, grassland; common.
- Aquila audax* (Latham). Wedge-tailed eagle. Open forest, grassland; abundant.
- Circus assimilis* Jardine and Selby. Spotted harrier. Grasslands; scarce.
- \**Falco peregrinus* Tunstall. Peregrine falcon. Open forest; uncommon.
- \**Falco hypoleucos* Gould. Grey falcon. Open forest; uncommon.
- Falco cenchroides* Vigors and Horsfield. Nankeen kestrel. Open forest, grassland and cultivation; abundant.
- Falco berigora* Vigors and Horsfield. Brown hawk. Open forest; common.
- Coturnix pectoralis* (Gould). Stubble quail. Open forest, grassland; common.
- Turnix velox*. Gould. Little button-quail. Open forest, grassland; common.
- \**Grus rubicundus* (Perry). Brolga. Open forest and near water; occasional.
- Ardeotis australis* (Gray). Australian bustard. Open forest. Uncommon, northern division. Scarce, southern division.
- \**Vanellus novaehollandiae* Stephens. Spur-winged plover. Open forest, grassland; abundant.
- \**Vanellus tricolor* (Vieillot). Banded plover. Open forest, grassland; common.
- Charadrius melanops* Vieillot. Black-fronted dotterel. Water margins; common.
- \**Himantopus himantopus* (Linnaeus). White-headed stilt. Water margins; uncommon.

- Burhinus magnirostris* Latham. Southern stone curlew. Open forest; common, northern division. Scarce, southern division.
- Geopelia humeralis* (Temminck). Bar-shouldered dove. Open forest; common, northern division. No record, southern division.
- Geopelia striata* (Linnaeus). Peaceful dove. Open forest; abundant.
- Geopelia cuneata* (Latham). Diamond dove. Open forest; common.
- Phaps chalcoptera* (Latham). Common bronzewing. Open forest and adjacent grasslands; common.
- Ocyphaps lophotes* (Temminck). Crested pigeon. Open forest and adjacent grassland; abundant.
- Geohaps scripta* (Temminck). Squatter pigeon. Open forest; uncommon, southern division. Common, northern division.
- Trichoglossus haematodus* (Linnaeus). Rainbow lorikeet. Open forest on ranges; abundant.
- \**Calyptorhynchus funereus* (Shaw). Yellow-tailed black cockatoo. Open forest on ranges; uncommon.
- \**Cacatua galerita* (Latham). Sulphur-crested cockatoo. Open forest on and near ranges; common.
- \**Cacatua leadbeateri* (Vigors). Major Mitchell. Open forest; uncommon.
- Cacatua roseicapilla* Vieillot. Galah. Open forest, grasslands and cultivation; abundant.
- Nymphicus hollandicus* (Kerr). Cockatiel. Open forest, grasslands and cultivation; abundant.
- Aprosmictus erythropterus* (Gmelin). Red-winged parrot. Open forest; abundant.
- Alisterus scapularis* (Lichtenstein). King parrot. Open forest on ranges; abundant.
- Platycercus adscitus* (Latham). Pale-headed rosella. Open forest; abundant.
- Barnardius barnardi* (Vigors and Horsfield). Ringneck parrot. Open forest; abundant.
- Psephotus haematogaster* (Gould). Blue bonnet. Open forest; common.
- Psephotus varius* Clark. Mulga parrot. Open forest; abundant.
- Melopsittacus undulatus* (Shaw). Budgerigar. Open forest, grassland; abundant.
- Cuculus pallidus* (Latham). Pallid cuckoo. Open forest; uncommon.
- Cacomantis pyrrhophanus* (Vieillot). Fan-tailed cuckoo. Open forest; uncommon.
- Tyto alba* (Scopoli). Barn owl. Open forest; uncommon.
- Ninox novaeseelandiae* (Gmelin). Boobook owl. Open forest; uncommon.
- Podargus strigoides* (Latham). Tawny frogmouth. Open forest; abundant.
- Aegotheles cristatus* (White). Owlet-nightjar. Open forest; uncommon.
- Eurostopodus guttatus* (Vigors and Horsfield). Spotted nightjar. Open forest; uncommon.



- Dacelo novaeguineae* (Hermann). Laughing kookaburra. Open forest; common.
- Halcyon pyrrhopygia* Gould. Red-backed kingfisher. Open forest; common.
- \**Merops ornatus* Latham. Rainbow-bird. Open forest; occasional.
- Mirafra javanica* Horsfield. Singing bushlark. Open forest and grassland; abundant.
- Hirundo tahitica* Gmelin. Welcome swallow. Open forest, grassland, urban; abundant.
- Petrochelidon nigricans* (Vieillot). Tree martin. Open forest; abundant.
- Petrochelidon ariel* (Gould). Fairy martin. Open forest; abundant.
- Anthus novaeseelandiae* (Gmelin). Australian pipit. Open forest and grassland; common.
- Coracina novaehollandiae* (Gmelin). Black-faced cuckoo-shrike. Open forest; uncommon.
- Lalage sueurii* (Vieillot). White-winged triller. Open forest; abundant.
- Pomatostomus temporalis* (Vigors and Horsfield). Grey-crowned babbler. Open forest; common.
- Pomatostomus ruficeps* (Hartlaub). Chestnut-crowned babbler. Open forest; uncommon.
- Malurus melanotus* Gould. Black-backed blue wren. Open forest; uncommon.
- Malurus melanocephalus* (Latham). Red-backed wren. Open forest along creek margins, northern division only; uncommon.
- Smicrornis brevirostris* (Gould). Weebill. Open forest; abundant.
- Acanthiza lineata* Gould. Striated thornbill. Open forest; abundant.
- Acanthiza uropygialis* Gould. Chestnut-tailed thornbill. Open forest; common.
- Acanthiza reguloides* Vigors and Horsfield. Buff-tailed thornbill. Open forest; abundant.
- Acanthiza chrysorrhoa* (Quoy and Gaimard). Yellow-tailed thornbill. Open forest; common.
- Chthonicola sagittata* (Latham). Speckled warbler. Open forest; abundant.
- Microeca leucophaea* (Latham). Jacky winter. Open forest; common.
- Petroica goodenovii* (Vigors and Horsfield). Red-capped robin. Open forest; common.
- Petroica cucullata* (Latham). Hooded robin. Open forest; common.
- Pachycephala rufiventris* (Latham). Rufous whistler. Open forest; abundant.
- Colluricincla harmonica* (Latham). Grey shrike-thrush. Open forest; common.
- Oreoica gutturalis* (Vigors and Horsfield). Crested bell-bird. Open forest; uncommon.
- Rhipidura fuliginosa* (Sparrman). Grey fantail. Open forest; common.
- Rhipidura leucophrys* (Latham). Willie wagtail. Open forest; uncommon.

- Ephthianura tricolor* Gould. Crimson chat. Open forest; abundant.
- Neositta chrysoptera* (Latham). Orange-winged sitella. Open forest; uncommon.
- Climacteris picumnus* Temminck and Laugier. Brown tree-creeper. Open forest; abundant.
- Climacteris leucophaea* (Latham). White-throated tree-creeper. Open forest; uncommon.
- Dicaeum hirundinaceum* (Shaw and Nodder). Mistletoe bird. Open forest; abundant.
- Pardalotus substriatus* Mathews. Striated pardalote. Open forest; uncommon.
- Pardalotus rubricatus* Gould. Red-browed pardalote. Open forest; scarce.
- Melithreptus lunatus* (Vieillot). White-naped honeyeater. Open forest on ranges; uncommon.
- Plectorhyncha lanceolata* Gould. Striped honeyeater. Open forest; uncommon.
- Phylidonyris albifrons* (Gould). White-fronted honeyeater. Open forest; uncommon.
- Meliphaga novaehollandiae* (Latham). Yellow-faced honeyeater. Open forest on ranges; common.
- Meliphaga leucotis* (Latham). White-eared honeyeater. Open forest; common, northern division. No record, southern division.
- Meliphaga plumula* (Gould). Yellow-fronted honeyeater. Open forest; uncommon.
- Meliphaga penicillata* Gould. White-plumed honeyeater. Open forest; uncommon.
- Myzantha melanocephala* (Latham). Noisy miner. Open forest; uncommon.
- Myzantha flavigula* Gould. Yellow-throated miner. Open forest; common.
- Acanthagenys rufogularis* Gould. Spiny-cheeked honeyeater. Open forest; uncommon.
- Philemon corniculatus* (Latham). Noisy friar bird. Open forest; common.
- Zonaeginthus guttatus* (Shaw). Diamond firetail. Open forest; uncommon, southern division. Common, northern division.
- Taeniopygia guttata* (Vieillot). Zebra finch. Open forest; occasional.
- Aidemosyne modesta* (Gould). Plum-headed finch. Open forest; occasional.
- Aegintha temporalis* (Latham). Red-browed finch. Open forest on ranges; common.
- Passer domesticus* (Linnaeus). House sparrow. Urban; common.
- Oriolus sagittatus* (Latham). Olive-backed oriole. Open forest. Common, northern division. No record, southern division.
- Corcorax melanorhamphos* (Vieillot). White-winged chough. Open forest. Abundant, northern division. Uncommon, southern division.
- Struthidea cinerea* Gould. Apostle bird. Open forest; abundant.

- Artamus personatus* (Gould). Masked wood-swallow. Open forest; uncommon.
- Artamus cinereus* (Vieillot). Black-faced wood-swallow. Open forest; uncommon.
- Artamus cyanopterus* (Latham). Dusky wood-swallow. Open forest; abundant.
- Cracticus torquatus* (Latham). Grey butcher-bird. Open forest; abundant.
- Cracticus nigrogularis* (Gould). Pied butcher-bird. Open forest; uncommon.
- \**Gymnorhina tibicen* (Latham). Black-backed magpie. Open forest, grassland and cultivation; abundant.
- Strepera graculina* (White). Pied currawong. Open forest on ranges; abundant.
- Chlamydera maculata* (Gould). Spotted bowerbird. Open forest; uncommon.
- Corvus orru* Bonaparte. Australian crow. Open forest and grasslands; abundant.

#### IV. DISCUSSION

This survey was undertaken in order to provide a factual list of bird and mammal species found in an area of southern inland Queensland: the list so provided is now available for comparison with the results of future surveys. The 33 mammal and 123 bird species collected include a large proportion of those which, based on accepted distribution, were expected from the area. A number of species, however, particularly of water-birds and birds of prey of known Australia-wide occurrence, were not located, and the abundance of others, for example the long-haired rat (*Rattus villosissimus*) which is known to plague, was low. There can be little doubt that seasonal conditions were responsible, as the survey period was abnormally dry (Figure 2).

The effects of European settlement on the mammal and bird fauna are difficult to assess in detail. The more conspicuous forms of habitat alteration, such as partial forest clearing and the provision of stock watering facilities, are by themselves largely beneficial, particularly to herbivorous and graminivorous species, and the conspicuous abundance of such species as the grey kangaroo (*Macropus giganteus*) and the maned wood duck (*Chenonetta jubata*) are undoubtedly correlated with these changes. The more subtle and potentially serious changes, however, have been wrought by the introduced domestic stock which trample the soil, alter pasture composition by selective grazing, and compete significantly for pasture during dry times with herbivorous and graminivorous fauna. The rufous rat kangaroo (*Aepyprymnus rufescens*) is probably much less widespread than it was prior to settlement as a result of competition by sheep, although it is still quite common in the foothills of the ranges in the northern division of the Shire, and indeed, seems secure in those areas.

Predation on the fauna by man is significant only on species of commercial interest, particularly the red kangaroo (*Megaleia rufa*) and the grey kangaroo (*Macropus giganteus*), and to a lesser extent the wallaroo (*Osphranter robustus*), all of which are harvested extensively for an industry based on the skins and meat (Roff and Kirkpatrick 1962, 1966) but there is no reason for believing that shooting is adversely affecting survival of these species.

Introduced species including the house mouse (*Mus musculus*), the feral pig (*Sus scrofa*), the fox (*Vulpes vulpes*) and the rabbit (*Oryctolagus cuniculus*) occur throughout the district, and although numbers of the last tend to fluctuate due to control measures, particularly myxomatosis, these exotics are a conspicuous feature of the fauna. Both the fox and the feral pig feed extensively on carrion, particularly the offal left by kangaroo shooters. The feral cat (*Felis catus*) also lives throughout the district and preys extensively on rabbits and native birds.

The dingo (*Canis dingo*) is common in the range country north of the dingo fence, and poison campaigns are constantly in progress against it. It is interesting to note, however, that some graziers refuse to spread dingo baits, but instead exercise protection over the fauna as a whole in the belief, founded on experience, that dingo attacks on stock occur mainly in the absence of the alternative food source that the native fauna represents.

The Booringa Shire is still a refuge for native fauna, and there is no evidence that the existence of any mammal or bird species has been seriously affected by settlement.

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