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MAMMALS, BIRDS, REPTILES AND AMPHIBIANS OF THE KILCOY SHIRE, QUEENSLAND

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SUMMARY

A survey of the mammals, birds, reptiles and amphibians of Kilcoy Shire in south-eastern Queensland from 1975-1977 is described. Three hundred and nine species are recorded comprising 46 mammals, 188 birds, 48 reptiles and 27 amphibians. Habitat types, and estimates of abundance ranging from scarce to abundant, are given.

I. INTRODUCTION

The Kilcoy Shire contains one of the larger tracts of forested lands to be found in the Moreton Region of south-eastern Queensland, and various conservation bodies have promoted national park proposals in the area.

This prospective significance of the Shire to the conservation of fauna in the region was recognised and a more detailed survey of the fauna was undertaken during the period July 1975 to June 1977.

II. THE KILCOY SHIRE

Kilcoy Shire is centred on the town of Kilcoy, which is situated approximately 70 km north-west of Brisbane. Total area is approximately 1 600 km^2. The northern boundary of the Shire follows generally the crests of the Jimna and Conondale Ranges which constitute the watershed within the Shire of the Brisbane River and the Stanley River systems. Somerset Dam, the major source of the water for the City of Brisbane and with a capacity of 890 400 Ml is located on the Stanley River at the southern edge of the Shire. Topography is mountainous with the highest point, Mt. Langley, of 868 m elevation.

The climate of the Shire may be classed as sub-tropical. Monthly rainfall recorded at the town of Jimna is presented in figure 1.

Lands within the Shire present a contrast in land-use patterns. Northern portions, totalling approximately 52 650 ha, or one-third of the area of the Shire, form State Forests and Timber Reserves. Vegetation is a mosaic of eucalypt open forest, closed forests and grasslands. Tracts of microphyll vine-forest on State Forests have been cleared in recent years and plantations of hoop pine *Araucaria cunninghamii* Ait. ex D.Don established. A broad description of vegetation types has been prepared by Boyland (1971).

Approximately 89 100 ha of the freehold and the leasehold lands have been selectively cleared and these are used for agricultural and pastoral activities. Rural industries in the Shire, subject to minor changes associated with vagaries of the rural economy, are based on beef production, dairying and pig raising. Grazing lands are increased in extent by the use of State Forests under Occupation Licence.

A map of the Shire delineating forested and largely-cleared areas is presented in figure 2.

A detailed description of the physical resources and rural industries within the Shire is found in the Kilcoy Shire Handbook (Beal 1971).

Census figures available for the Shire since 1921 indicate that the population reached a peak in 1947 (2 551) and has declined until the most recent census (1976) when the population totalled 2 051. In the interval from 1947 until 1976, the population of Kilcoy increased from 1 014 to 1 289 while the population of Jimna has decreased from 358 to 172. In addition the rural population has declined from 1 179 in 1947 to 590 in 1976.

Despite relocation of the human population within the Shire, land use patterns appear to have altered little since settlement.

III. METHODS

A base camp was established on the north-eastern boundary of the Shire. The Shire was visited at least once per month and, if conditions such as changes in season or in weather conditions warranted, two or three trips per month were undertaken. Each trip was of three to five days duration.

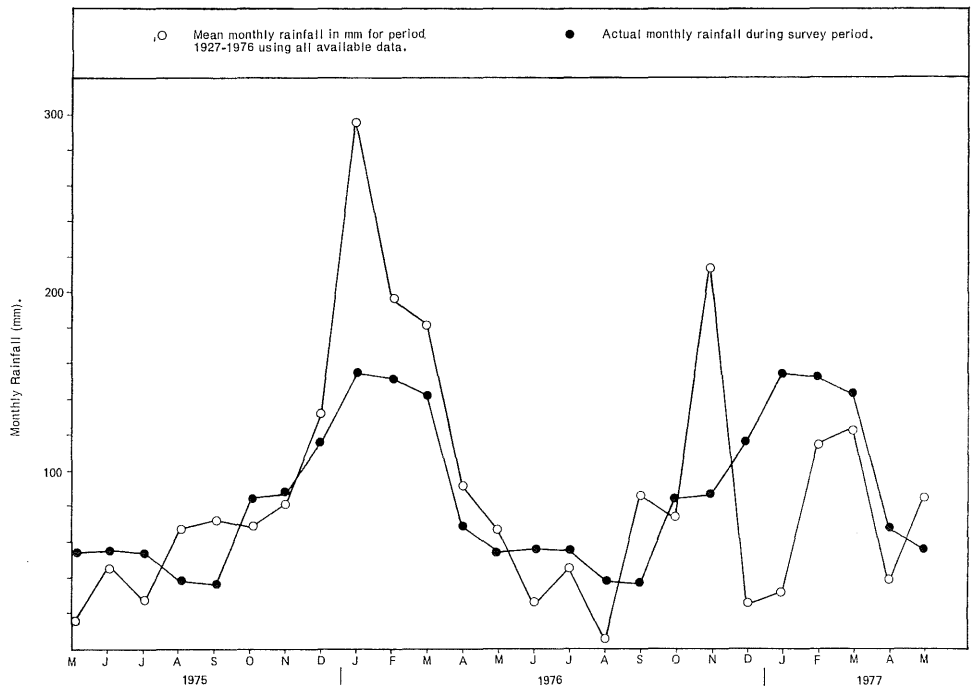

Figure 1. Monthly mean rainfall for the period 1927–1976, and actual monthly rainfall during 1975–1977, at Jimna, Q.

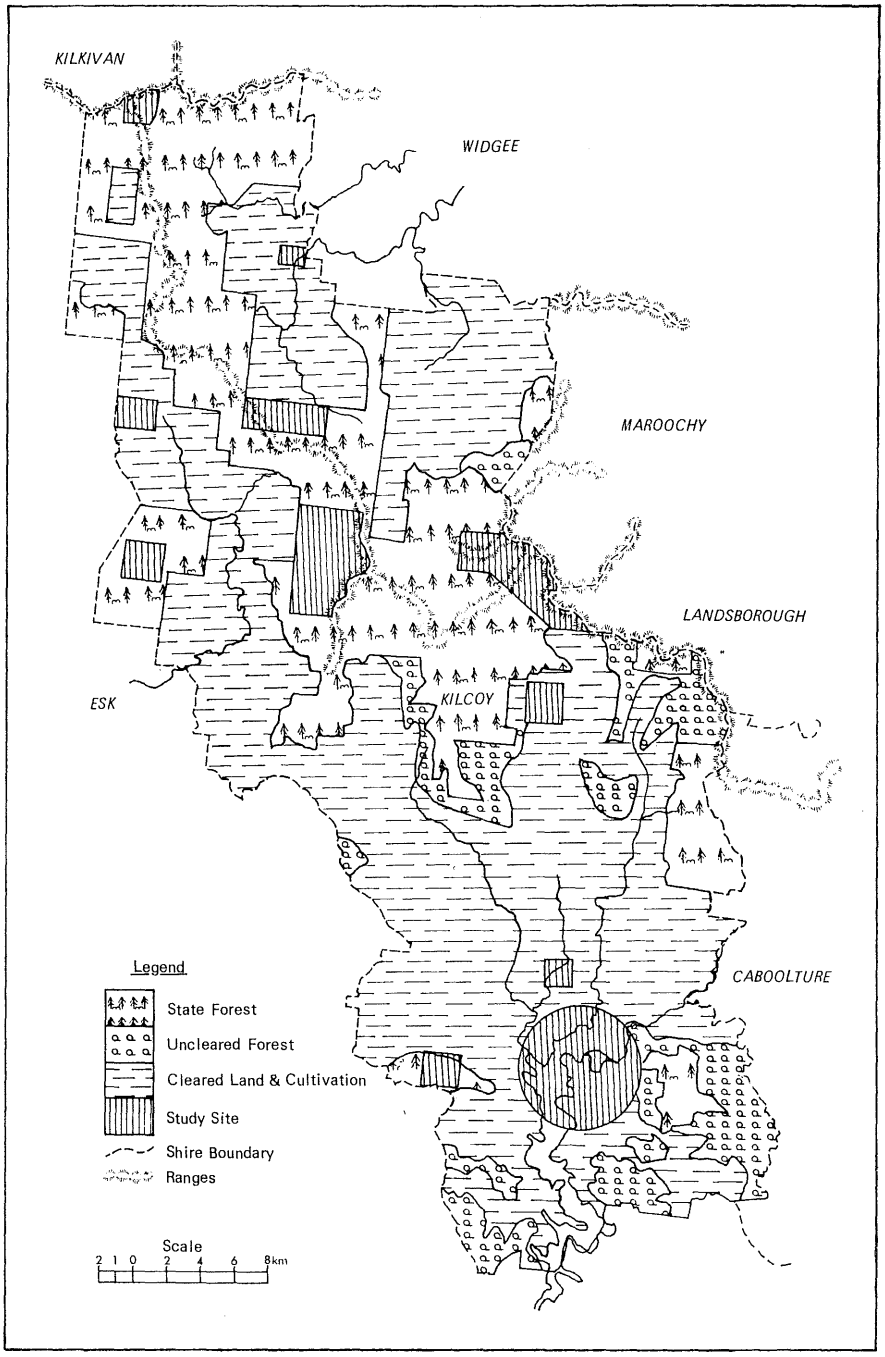

Figure 2. The Kilcoy Shire fauna survey area 1975–1977. Areas of intensive study ("study sites") are indicated.

Several broad habitat types were recognizable within the Shire and these are listed below:

NVF *(Notophyll vine forest).* For the purpose of this study, a sub-climax forest dominated either by brush box *Tristania conferta* R.Br. or flooded gum *Eucalyptus grandis* W. Hill ex Maiden and with a vine forest underlayer is included in the above category.

MVF *(Microphyll vine forest).* Includes former Araucarian microphyll vine woodland of Webb (1959) from which the greater portion of the mature hoop pine component has been removed.

BF *(Blackbutt forest).* Tall blackbutt *Eucalyptus pilularis* Sm.—dominant forest which varies in structure and species composition according to past fire and logging history and which may have either a layered or grassy understorey.

MF *(Medium forest).* Dominated by either grey box *Eucalyptus moluccana* Roxb., narrow-leafed ironbark *Eucalyptus creba* F. Muell. or Queensland white stringybark *Eucalyptus phaeotricha* Blackey et McKie. The understorey may be either grassy or layered

H *(Hoop pine plantations).*

G *(Grassland).* Replaces formerly grassy woodland in lower areas and formerly medium forest on ranges.

F *(Freshwater).*

U *(Urban).*

Areas representative of main habitat types were selected for intensive study, and traverses between intensive study sites also provided an opportunity to obtain additional records and increase familiarity with the Shire. A motor boat was used to facilitate observations and to reach islands in Somerset Dam. Intensive study sites are identified in figure 2.

Observations were generally made soon after dawn and at night when a spotlight or head-torches were used. Break-back, aluminium collapsible, and wire-cage traps were employed at each intensive study site. Fence traps were used at two sites. Bats were collected with the aid of shotgun and spotlight.

All mammalian, avian, reptilian and amphibian species encountered were recorded together with the broad habitat type with which each was then associated.

The list of amphibian species includes an additional noting on the habitat in which the breeding occurs. The notings are as follows: S-stream; P-pool; T–terrestrial.

An estimate of relative abundance was made only for species where presence might be expected to be noted because of its ubiquity or its conspicuousness. An example of ubiquitous species was the red-browed finch (*Aegintha temporalis* (Latham)) encountered in large numbers along roadsides in closed forests. It was the most abundant species encountered during the survey. The black swan (*Cygnus atratus* Latham) was an example of a conspicuous element of the fauna. No estimate of relative abundance was attempted for a number of cryptic species where it was surmised that large numbers could have been present but where individuals were encountered infrequently. These included some of the small carnivorous marsupials and many of the reptiles.

Estimates of relative abundance follow the terminology of Kirkpatrick (1966):

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

IV. RESULTS

A list of the mammalian, avian, reptilian and amphibian species encountered together with the associated habitat and an estimate of relative abundance, where this could be determined, is presented. Names of most mammalian species are based on Ride (1970); avian species' names follow Lavery (1969); reptilian names are based on Cogger (1975); and amphibian names follow Tyler (1976).

MAMMALS

Monotremata

Tachyglossus aculeatus (Shaw & Nodder). Echidna. BF, MF, G, uncommon.

Marsupialia

Antechinus stuartii Macleay. Brown marsupial-mouse. NVF, MVF, BF, common.
Antechinus flavipes (Waterhouse). Yellow-footed marsupial-mouse. BF, H, common.
Phascogale tapoatafa (Meyer). Brush-tailed phascogale. MF, scarce.
Sminthopsis murina (Waterhouse). Common marsupial-mouse, BF, MF, common.
Isoodon macrourus (Gould). Brindled bandicoot. BF, MF, H, G, common.
Perameles nasuta Geoffroy. Long-nosed bandicoot. NVF, MVF, BF, common.
Petaurus australis Shaw & Nodder. Yellow-bellied glider. BF, MF, uncommon.
Petaurus breviceps Waterhouse. Sugar glider. BF, uncommon.
Pseudocheirus peregrinus (Boddaert). Common ring-tail. NVF, MVF, BF, common.
Schoinobates volans (Kerr). Greater glider. BF, MF, abundant.
Trichosurus vulpecula (Kerr). Common brush-tail. MF, common.
Trichosurus caninus (Ogilby). Short-eared possum. NVF, MVF, common.
Phascolarctos cinereus (Goldfuss). Koala. MF, BF, uncommon.
Aepyprymnus rufescens (Gray). Rufous rat-kangaroo. BF, MF, common.
Potorous tridactylus (Kerr). Potoroo. BF, uncommon.
Thylogale stigmatica (Gould). Red-legged pademelon. MVF, abundant; NVF, common.
Thylogale thetis (Lesson). Red-necked pademelon. MVF, abundant; NVF, common.
Wallabia bicolor (Desmarest). Black-tailed wallaby. BF, MF, H, abundant.
Macropus rufogriseus (Desmarest). Red-necked wallaby. BF, MF, abundant.
Macropus dorsalis (Gray). Black-striped wallaby. MVF, MF, common.
Macropus parryi (Bennett). Whiptail wallaby. BF, MF, common.
Macropus giganteus (Shaw). Grey kangaroo. MF, G (on ranges), common.

Chiroptera

Pteropus poliocephalus Temminck, Grey-headed flying fox. NVF (margins—areas of flowering bloodwood (*Eucalyptus intermedia* R. T. Baker)).
Pteropus scapulatus Peters. Little red flying fox. BF, uncommon.
Chalinolobus gouldii (Gray). Gould's bat. One collected.
Chalinolobus morio (Gray). Chocolate bat. One collected.
Nycticeius rueppellii (Peters). Greater broad-nosed bat. Two collected.
Nycticeius sp. Three collected.
Miniopterus schreibersii (Kuhl). Bent-winged bat. Two collected.
Tadarida planiceps (Peters). Little mastiff bat. Three collected.
Tadarida norfolkensis (Gray). Norfolk Island scurrying bat. One collected.

Lagomorpha

Lepus europaeus Pallas. Hare. MF, G, uncommon.

Rodentia

Hydromys chrysogaster Geoffroy. Water rat, F, common.
Mus musculus (L.). House mouse. MF, H, G, U, common.
Rattus rattus L. Ship rat. U, uncommon.

Rattus fuscipes Waterhouse. Southern bush rat. NVF, MVF, abundant.
Rattus lutreolus (Gray). Eastern swamp rat. Stream margins in NVF, BF, H, common.
Rattus tunneyi (Thomas & Dollman). Brown field rat. BF, MF, G, H, on ranges, common.
Mesomys cervinipes (Gould). Fawn-footed scale-tailed rat. NVF, MVF, H, abundant.

Carnivora

Canis familiaris L. Dingo. All forested areas, heard commonly during breeding season, observed infrequently.
Vulpes vulpes (L.). Fox. G, scarce
Felis catus L. Feral cat. NVF, MVF, BF, MF, H, G, common.

Artiodactyla

Sus scrofa L. Feral pig. NVF, BF, H, uncommon.
Cervus elaphus (L.). Red Deer. NVF, MVF, BF, MF, H, G, common.
Bos taurus (L.). Feral European cattle. NVF, scarce.

BIRDS

Podicipitiformes

Tachybaptus novaehollandiae (Stephens). Little grebe. F, abundant.
Podiceps cristatus (L.). Great crested grebe. F, common.

Pelecaniformes

Pelecanus conspicillatus Temminck. Australian pelican. F, common.
Phalacrocorax sulcirostris (Brandt). Little black cormorant. F, abundant.
Phalacrocorax carbo (L.). Black cormorant. F, common.
Phalacrocorax varius (Gmelin). Pied cormorant. F, common.
Phalacrocorax melanoleucos (Vieillot). Little pied cormorant. F, common.
Anhinga anhinga (L.). Darter. F, common.

Ciconiiformes

Ardea pacifica Latham. White-necked heron. F, common.
Ardea novaehollandiae Latham. White-faced heron. F, common.
Ardeola ibis (L.). Cattle egret. G, F, common.
Egretta alba (L.). White egret. F, common.
Egretta garzetta (L.). Little egret. F, common.
Egretta intermedia (Wagler). Plumed egret. G, F, abundant.
Nycticorax caledonicus (Gmelin). Nankeen night heron. F, common.
Xenorhynchus asiaticus (Latham). Jabiru. F, scarce.
Threskiornis molucca (Cuvier). Australian white ibis. F, abundant.
Threskiornis spinicollis (Jameson). Straw-necked ibis. G, F, abundant.
Plegadis falcinellus (L.). Glossy ibis. F, uncommon.
Platalea regia Gould. Royal spoonbill. F, common.
Platalea flavipes Gould. Yellow-billed spoonbill. F, common.

Anseriformes

Cygnus atratus (Latham). Black swan. F, abundant.
Stictonetta naevosa (Gould). Freckled duck. F, scarce.
Anas superciliosa Gmelin. Black duck. F, abundant.
Anas gibberifrons Muller. Gray teal. F, common.
Chenonetta jubata (Latham). Maned wood duck. F, abundant.
Aythya australis (Eyton). White-eyed duck. F, common.
Biziura lobata (Shaw). Musk duck. F, scarce.

Falconiformes

Elanus notatus Gould. Black-shouldered kite. G, uncommon.
Aviceda subscristata (Gould). Crested hawk. MF, uncommon.
Haliastur sphenurus (Vieillot). Whistling eagle. BF, MF, G, F, common.
Accipiter novaehollandiae (Gmelin). Grey goshawk. BF, H, common.
Accipiter fasciatus (Vigors & Horsfield). Australian goshawk. MF, G, common.
Aquila audax (Latham). Wedge-tailed eagle. MF, H, G, uncommon.
Haliaeetus leucogaster (Gmelin). White-breasted sea eagle. F, one observed.
Falco subniger Gray. Black falcon. F, one observed.
Falco peregrinus Tunstall. Peregrine falcon. BF, one observed.
Falco cenchroides Vigors & Horsfield. Nankeen kestrel. MF, G, abundant.
Falco berigora Vigors & Horsfield. Brown hawk. H, G, F, common.

Galliformes
Alectura lathami Gray. Brush turkey. NVF, MVF, H (margins), common.
Coturnix ypsilophorus Bosc. Brown quail. BF, MF, common.
Excalfactoria chinensis (L.). King quail. G, common.

Gruiformes
Turnix maculosa (Temminck). Red-backed button-quail. G, scarce.
Turnix melanogaster (Gould). Black-breasted button-quail. MVF, scarce.
Rallus pectoralis Temminck. Lewin water rail. BF, scarce.
Rallus philippensis L. Banded land rail. G, two observed.
Gallinula tenebrosa Gould. Dusky moorhen. F, abundant.
Porphyrio porphyrio (L.). Swamphen. F, abundant.
Fulica atra L. Coot. F, abundant.

Charadriiformes
Irediparra gallinacea (Temminck). Lotus bird. F, common.
Vanellus novaehollandiae (Stephens). Spur-winged plover. G, common.
Vanellus miles (Boddaert). Masked plover. G, scarce.
Charadrius ruficapillus Temminck. Red-capped dotterel. F, common.
Charadrius melanops (Vieillot). Black-fronted dotterel. F, common.
Gallinago hardwickii (Gray). Australian snipe. G, uncommon.
Himantopus himantopus (L.). White-headed stilt. F, common.
Burhinus magnirostris (Latham). Southern stone curlew. MF, H (margins), common.
Chlidonias hybrida (Pallas). Marsh tern. F, uncommon.
Gelochelidon nilotica (Gmelin). Gull-billed tern. F, uncommon.

Columbiformes
Ptilinopus regina Swainson. Red-crowned pigeon. NVF, MVF, common.
Ptilinopus magnificus (Temminck). Wompoo pigeon. NVF, MVF, common.
Lopholaimus antarcticus (Shaw). Top-knot pigeon. NVF, MVF, common.
Columba livia (Gmelin). Feral pigeon. U, common.
Columba leucomela (Temminck). White-headed pigeon. NVF, MVF, uncommon.
Macropygia phasianella (Temminck). Brown pigeon. NVF, MVF, BF, abundant; mature H, common.
Geopelia humeralis (Temminck). Bar-shouldered dove. MF, H, G, common.
Geopelia striata (L.). Peaceful dove. MF, H, G, common.
Chalcophaps indica (L.). Green-winged pigeon. NVF, MVF, common.
Ocyphaps lophotes (Temminck). Crested pigeon. MF, G, common.
Leucosarcia melanoleuca (Latham). Wonga pigeon. NVF, MVF, BF, H, abundant.

Psittaciformes
Trichoglossus haematodus (L.). Rainbow lorikeet. NVF, BF, MF, G, common.
Trichoglossus chlorolepidotus (Kuhl). Scaly-breasted lorikeet. BF, MF, G, common.
Glossopsitta pusilla (Shaw). Little lorikeet. BF, MF, common.
Calyptorhynchus funereus (Shaw). Yellow-tailed black cockatoo. BF, MF, common.
Calyptorhynchus magnificus (Shaw). Red-tailed black cockatoo. BF, MF, uncommon.
Calyptorhynchus lathami (Temminck). Glossy black cockatoo. MF, scarce.
Cacatua galerita (Latham). Sulphur-crested cockatoo. NVF, MVF, BF, MF, common.
Cacatua roseicapilla Vieillot. Galah. G, uncommon.
Alisterus scapularis (Lichtenstein). King parrot. NVF, MVF, BF, common.
Platycercus elegans (Gmelin). Crimson rosella. NVF, MVF, BF, H, abundant.
Platycercus adscitus (Latham). Pale-headed rosella. MF, G, common.

Cuculiformes
Cacomantis variolosus (Vigors & Horsfield). Brush cuckoo. MVF, BF, common.
Cacomantis pyrrhophanus (Vieillot). Fan-tailed cuckoo. NVF, BF, MF, common.
Chrysococcyx lucidus (Gmelin). Golden bronze cuckoo. MVF, one collected.
Eudynamys scolopacea L. Koel. BF, MF, G, common.
Scythrops novaehollandiae Latham. Channel-billed cuckoo. MF, one collected.
Centropus phasianinus (Latham). Pheasant coucal. BF, MF, H, G, common.

Strigiformes
Tyto alba (Scopoli). Barn owl. MF, one collected.
Tyto tenebricosa (Gould). Sooty owl. NVF, one seen.
Ninox connivens (Latham). Barking owl. NVF, one seen.
Ninox novaeseelandiae (Gmelin). Boobook owl. BF, MF, common.

Caprimulgiformes

Podargus strigoides (Latham). Tawny frogmouth. BF, MF, common.
Aetheles cristatus (White). Owlet nightjar. BF, MF, common.
Eurostopodus mystacalis (Temminck & Laugier). White-throated nightjar. MF, uncommon.

Apodiformes

Chaetura caudacuta (Latham). Spine-tailed swift. Above all habitat types in ranges, common.

Coraciiformes

Alcyone azurea (Latham). Azure kingfisher. BF, MF (along creeks), common.
Dacelo novaeguineae (Hermann). Laughing kookaburra. BF, MF, G, abundant.
Halcyon macleayii Jardine & Selby. Forest kingfisher. BF, MF, G, common.
Halcyon sancta Vigors & Horsfield. Sacred kingfisher. BF, MF, G, common.
Merops ornatus (Latham). Rainbow-bird. MF, G, common.
Eurystromus orientalis (L.) Eastern broad-billed roller. BF, MF, G, common.

Passeriformes

Pitta versicolor Swainson. Noisy pitta. NVF, MVF, common.
Hirundo tahitica Gmelin. Welcome swallow. H. G, abundant.
Petrochelidon migricans (Vieillot). Tree martin. MF, H, G, abundant.
Petrochelidon ariel (Gould). Fairy martin. MF, H, F, abundant.
Anthus novaeseelandiae (Gmelin). Australian pipit. H, G, common.
Coracina novaehollandiae (Gmelin). Black-faced cuckoo-shrike. BF, MF, H, G, common.
Coracina lineata (Swainson). Barred cuckoo-shrike. MVF, one observed.
Coracina papuensis (Gmelin). Little cuckoo-shrike. BF, MF, common.
Lalage sueurii (Vieillot). White-winged triller. MF, common.
Zoothera dauma (Latham). Australian ground thrush. NVF, MVF, common.
Orthonyx temminckii Ranzani. Southern chowchilla. NVF, MVF, common.
Psophodes olivaceus (Latham). Eastern whipbird. NVF, MVF, abundant; BF, common.
Pomatostomus temporalis (Vigors & Horsfield). Grey-crowned babbler. MF, common.
Gerygone olivacea (Gould). White-throated warbler. MF, common.
Gerygone igata (Quoy & Gaimard). Brown warbler. NVF, MVF, BF, abundant.
Cisticola exilis (Vigors & Horsfield). Golden-headed fantail warbler. H, G, common.
Malurus lamberti (Vigors & Horsfield). Variegated wren. BF, MF, H, G, abundant.
Malurus melanocephalus (Latham). Red-backed wren. BF, MF, H, abundant.
Acanthiza lineata Gould. Striated thornbill. BF, MF, abundant.
Acanthiza pusilla (Shaw). Brown thornbill. BF, MF, abundant.
Acanthiza reguloides Vigors & Horsfield. Buff-tailed thornbill. MF, common.
Acanthiza chrysorrhoa (Quoy & Gaimard). Yellow-tailed thornbill. G, one flock only seen.
Sericornis frontalis (Vigors & Horsfield). White-browed scrub-wren. NVF, MVF, abundant.
Sericornis citreogularis Gould. Yellow-throated scrub-wren. NVF, MVF, abundant.
Sericornis magnirostris (Gould). Large-billed scrub-wren. NVF, MVF, common.
Chthonicola sagittata (Latham). Speckled warbler. MF, common.
Cincloramphus mathewsi Iredale. Rufous songlark. G, common.
Megalurus timoriensis Wallace. Tawny grassbird. G, common.
Microeca leucophaea (Latham). Jacky winter. BF, MF, G, common.
Petroica rosea Gould. Rose robin. NVF, MVF, uncommon.
Eopsaltria australis (Shaw). Yellow robin. NVF, MVF, BF, H, abundant.
Eopsaltria capito Gould. Pale yellow robin. NVF, common.
Myiagra rubecula (Latham). Leaden flycatcher. NVF, MF, common.
Myiagra inquieta (Latham). Restless flycatcher. MF, common.
Monarcha melanopsis (Vieillot). Black-faced flycatcher. NVF, BF, common.
Monarcha trivirgata (Temminck & Laugier). Spectacled flycatcher. MF, uncommon.
Pachycephala pectoralis (Latham). Golden whistler. NVF, MVF, BF, MF, H, common.
Pachycephala rufiventris (Latham). Rufous whistler. NVF, MF, common.
Colluricincla harmonica (Latham). Grey shrike-thrush. NVF, MVF, BF, MF, H, G, abundant.
Colluricincla megarhyncha (Quoy & Gaimard). Rufous shrike-thrush. NVF, common.
Falcunculus frontatus (Latham). Shrike-tit. NVF, BF, MF, common.
Rhipidura fuliginosa (Sparrman). Grey fantail. Margins of NVF, MVF, BF, MF, abundant.
Rhipidura rufifrons (Latham). Rufous fantail. NVF, MVF, common.
Rhipidura leucophrys (Latham). Willie wagtail. BF, MF, G, abundant.
Neositta chrysoptera (Latham). Orange-winged sittella. BF, MF, common.
Climacteris picumnus Temminck & Laugier. Brown tree-creeper. MF, common.
Climacteris leucophaea (Latham). White-throated tree-creeper. BF, MF, abundant.
Climacteris erythrops Gould. Red-browed tree-creeper. BF, one only seen.
Dicaem hirundinaceum (Shaw & Nodder). Mistletoe bird. BF, MF, common.

Pardalotus punctatus (Shaw & Nodder). Spotted pardalote. BF, MF, common.
Pardalotus melanocephalus Gould. Black-headed pardalote. BF, MF, common.
Zosterops lateralis (Latham). Grey-breasted silvereye. NVF, MVF, BF, MF, H, G, abundant.
Melithreptus lunatus (Vieillot). White-naped honeyeater. BF, common.
Melithreptus albogularis Gould. White-throated honeyeater. MF, uncommon.
Melithreptus gularis (Gould). Black-chinned honeyeater. MF, one seen.
Myzomela dibapha (Latham). Scarlet honeyeater. BF, MF, common.
Acanthorhynchus tenuirostris (Latham). Eastern spinebill. NVF, BF, MF, common.
Lichmera indistincta (Vigors & Horsfield). Brown honeyeater. MF, common.
Meliphaga lewinii (Swainson). Lewin honeyeater. NVF, MVF, BF, H, abundant.
Meliphaga fusca Gould. Fuscous honeyeater. MF, abundant.
Meliphaga chrysops (Latham). Yellow-faced honeyeater. BF, MF, abundant.
Meliphaga melanops (Latham). Yellow-tufted honeyeater. MF, BF, common.
Manorhina melanophrys (Latham). Bell miner. MVF (edge), BF, MF, abundant.
Myzantha melanocephala (Latham). Noisy miner. BF, MF, G, abundant.
Entomyzon cyanotis (Latham). Blue-faced honeyeater. MF, common.
Philemon corniculatus (Latham). Noisy friar bird. BF, MF, common.
Peophila bichenovii (Vigors and Horsfield). Banded finch. BF, MF, G, common.
Lonchura castaneothorax (Gould). Chestnut-breasted finch. G. common.
Aegintha temporalis (Latham). Red-browed finch. NVF (margins), MVF (margins), BF, MF, H (margins), abundant.
Passer domesticus (L.). House sparrow. G, U, common.
Sturnus vulgaris (L.). Starling. G, U, abundant.
Oriolus sagittatus (Latham). Olive-backed oriole. MVF, BF, MF, common.
Sphecotheres vieilloti Vigors & Horsfield. Southern figbird. MVF, uncommon.
Dicrurus hottentottus (L.). Sprangled drongo. BF, MF, common.
Grallina cyanoleuca (Latham). Magpie lark. BF, MF, G, abundant.
Artamus leucorhynchurs (L.). White-breasted wood-swallow. G, uncommon.
Artamus personatus (Gould). Masked wood-swallow. G. uncommon; H, scarce.
Artamus cyanopterus (Latham). Dusky wood-swallow. BF, MF, H, G, F, abundant.
Cracticus torquatus (Latham). Grey butcher-bird. BF, MF, common.
Cracticus nigrogularis (Gould). Pied butcher-bird. BF, MF, G, abundant.
Gymnorhina tibicen (Latham). Black-backed magpie. BF, MF, G, abundant.
Strepera graculina (White). Pied currawong. MVF, BF, MF, common.
Ailuroedus crassirostris (Paykull). Green catbird. NVF, MVF, common.
Sericulus chrysocephalus (Lewin). Regent bowerbird. NVF, MVF, common.
Ptilonorhynchus violaceus (Vieillot). Satin bowerbird. NVF, MVF, BF, H (margins), abundant.
Ptiloris paradiseus Swainson. Paradise riflebird. NVF, MVF, BF, common.
Corvus orru Bonaparte. Australian crow. BF, MF, H, G, F, abundant.

REPTILES

Chelonia

Emydura signata Ahl. F (Somerset Dam), common.

Squamata

Diplodactylus vittatus Gray. Wood gecko. MF, common.
Oedura lesueurii (Dumeril & Bibron). MF (arboreal), two collected.
Oedura robusta Boulenger. Robust velvet gecko. MF, common.
Oedura tryoni De Vis. Southern spotted velvet gecko. MF, common.
Underwoodisaurus milii (Bory). Thick-tailed gecko. MF (rocky areas), one collected.
Pygopus lepidopodus (Lacepede). Common scaly-foot. MF, one collected.
Amphibolurus barbatus (Cuvier). Bearded dragon. MF, G, common.
Amphibolurus nobbi Written. Nobbi. BF, MF, H, uncommon.
Diporiphora sp. G, one collected.
Gonocephalus spinipes (Dumeril). Southern rainforest dragon. NVF, MVF, common.
Physignathus lesueurii (Gray). Water dragon. MVF, BF, MF, G, abundant.
Varanus varius (Shaw). Lace monitor. BF, MF, G, abundant.
Varanus gouldii (Gray). Gould's sand goanna, M.F., uncommon.
Anomalopus verreauxii Dumeril. BF, two collected.
Hemiergis graciloides (Lonnberg & Anderson). MVF, one collected.
Carlia vivax (De Vis). MF, common.
Cryptoblepharus virgatus Garman. BF, MF, G, U, common.
Ctenotus robustus Storr. BF, MF, G, common.

Egernia frerei Gunther. Major skink. NVF, MVF, BF, MF, common.
Egernia major (Gray). Land mullet. NVF, MVF, common.
Lampropholis challengeri (Boulenger). NVF, MVF, BF, uncommon.
Lampropholis of. *challengeri* (Boulenger). BF, uncommon.
Lampropholis delicata (De Vis). BF, MF, abundant.
Lampropholis guichenoti (Dumeril & Bibron). BF, MF, common.
Lampropholis sp. MVF, common.
Sphenomorphus murrayi (Boulenger). NVF, MVF, common.
Sphenomorphus quoyii (Dumeril & Bibron). Eastern water skink. Rocky creeks in NVF and BF, common.
Sphenomorphus scutirostrum (Peters). NVF, uncommon.
Sphenomorphus cf. *scutirostrum* (Peters). BF, common.
Sphenomorphus tenuis (Gray). BF, MF, common.
Tiliqua gerrardii (Gray). Pink-tongue lizard. NVF, MVF, BF, common.
Tiliqua scincoides (Shaw). Blue-tongue lizard. MF, H, scarce.

Serpentes

Typhlina sp. BF, one collected.
Morelia spilotus (Cogger). Carpet snake. NVF, MVF, BF, G, abundant.
Amphiesma mairii (Gray). Freshwater snake. MF, G, F, common.
Boiga irregularis (Merrem). Brown tree snake. BF, one collected.
Dendrelaphis punctulatus (Gray). Green tree snake. NVF (edge), MVF, BF, MF, G, common.
Acanthophis antarcticus (Shaw). Death adder. BF, reported from Bellthorpe.
Cacophis squamulosus (Dumeril, Bibron & Dumeril). Golden crowned snake. NVF, MVF, common.
Cryptophis nigrescens (Gunther). Eastern small-eyed snake. NVF, MVF, BF, common.
Hemiaspis signata (Jan). Black-bellied swamp snake. NVF, BF, common.
Hoplocephalus stephensi Krefft. Stephen's banded snake. NVF, MVF, BF, common.
Pseudechis porphyriacus (Shaw). Red-bellied black snake. BF, NVF, MVF, G, common.
Pseudonaja textilis (Dumeril, Bibron & Dumeril). Common brown snake. MF, G, common.
Tropidechis carinatus (Krefft). Rough-scaled snake. NVF, MVF, BF, abundant.
Vermicella annulata (Gray). Bandy-bandy. BF, one collected.

AMPHIBIANS

Anura

Adelotus brevis (Gunther). Tusked frog. NVF, MVF, BF, MF, H, S and P, abundant.
Limnodynastes peronii (Dumeril & Bibron). Brown-striped frog. MF, BF, G, P, abundant.
Limnodynastes tasmaniensis Gunther. Spotted grass frog. MF, G, P, abundant.
Mixophyes fasciolatus Gunther. Great barred frog. NVF, MVF, BF, MF, T (edge of pools), abundant.
Mixophyes iteratus Straughan. Giant barred frog. NVF, T (edge of streams), abundant.
Lymnodynastes terraereginae (Cogger). Northern banjo frog. MF, one collected.
Pseudophryne coriacea Keferstein. Red-backed toadlet. BF, MF, T (in moist bogs and gutters), abundant.
Crinia parinsignifera (Cogger). G, P, common.
Crinia signifera (Cogger). Common eastern froglet. MF, S, common.
Rheobatrachus silus Liem. Gastric-brooding frog. NVF, S (in P), common.
Taudactylus diurnus Straughan and Lee. Southern day frog. NVF, S, abundant.
Uperoleia marmorata (Gray). Yellow-spotted toadlet. BF, MF, P, abundant.
Litoria brevipalmata Tyler, Martin & Watson. Green-thighed frog. BF, MF, P, common.
Litoria caerulea (White). Common green tree frog. BF, MF, G, U, P, common.
Litoria chloris (Boulenger). Red-eyed green tree frog. NVF, MVF, S and P, abundant.
Litoria dentata Keferstein. Bleating tree frog. MF, G, P, common.
Litoria fallax (Peters). Eastern dwarf green tree frog. BF, MF, G, P, abundant.
Litoria gracilenta (Peters). Dainty green tree frog. BF, G, P, common.
Litoria latopalmata Gunther. BF, MF, G, P, abundant.
Litoria lesueurii (Dumeril & Bibron). Lesueur's frog. NVF, MVF, BF, MF, S and P, H, abundant.
Litoria nasuta (Grah.). Rocket frog. MF, G, P, abundant.
Litoria peronii (Tschudei). Peron's tree frog. BF, MF, G, P, abundant.
Litoria sp. (*L. peronii* complex). MF, BF, G, P, abundant.
Litoria pearsoniana (Copland). Pearson's frog. NVF, MVF, BF, H, S, abundant.
Litoria rubella (Gray). Red tree frog. MF, G, P, common.
Litoria verreauxii (Dumeril). BF, MF, S, and P, common.
Bufo marinus (L.). Cane toad. NVF, MVF, BF, MF, U, P, abundant.

V. DISCUSSION

Publication of the Moreton Region Growth Strategy (Queensland Co-ordinator General's Department 1976) has drawn attention to the Kilcoy Shire as an area containing extensive tracts rated as significant to the conservation of fauna in the Moreton Region. That study concluded that "The area of the Conondale and Jimna Ranges emerges as being supremely important in terms of suitability for fauna conservation purposes . . .". The report also noted the potential of conflicting demands upon portions of the Shire to alter the existing vegetational patterns with possible consequent changes in the diversity of the fauna. In conjunction with a botanical survey, the present survey proposed to indicate areas that might be reserved as national parks.

The Shire presents a sharp contrast in habitat types within a relatively limited area. The associated fauna is diverse and many species were found to be abundant or common in the respective habitat types. Most species that have recognised distributions which include this region were encountered during the survey.

Of several notable absences from the list, the platypus *Ornithorhynchus anatinus* (Shaw & Nodder), which was encountered in streams just outside the Shire boundary during the survey period, illustrates one of the difficulties with surveys. That is, observations or abundance ratings are often dependent upon the prevailing weather or are made fortuitously. This may be so despite considerable efforts to locate a species. Thus absence of a species from a list need not be taken as an indication that the species is absent from the survey area.

Some vagrants may be expected and several were apparent during the survey; these included the black falcon. The finding of the green-thighed frog previously known from only two specimens in the inland Moreton Region of South-eastern Queensland (McDonald 1974), represents an extension of range. The species was common at several localities within the Shire.

The habitat types referred to in the species list were found to be the minimum definable to include the distribution of all species encountered and to include consideration to abundance ratings. Assessment of the survey results is based on a consideration of the fauna associated with these broad habitat types.

The Shire has been settled for more than 100 years and it may be presumed that the greater part of land clearing occurred soon after settlement and that the major changes in patterns of abundance and distribution of the fauna occurred at this time. Areas on freehold lands which formerly supported dry vine scrubs or open forests may have lost the range of species usually associated with such areas while the abundance of open forest and grassland species may have increased with the increase in the extent of suitable habitat. These areas, while constituting habitat for fauna, may be considered of value only to species associated with the manipulated environment.

Further alteration of existing grassland and fresh water habitat types would require changes in primary industry practice, which seem unlikely. Much of the cleared freehold land area is not suitable for intensive agriculture because of the constraints imposed by unsuitable slope and soil types; the draining of remaining swamps on freehold lands is unlikely because of the limited agricultural benefits which would follow. Additionally, the Shire is the major catchment for Somerset Dam and major alterations in existing land-use patterns may be expected to be unacceptable.

Limited areas of forest exist outside the State Forests and Timber Reserves and retention of even a semblance of the pre-settlement forest-dwelling fauna of the Shire now depends on these forests being saved.

Retention of the diversity and abundance of the forest-dwelling fauna will not only depend on the continued existence of this habitat but also on retaining the structure of the forests within each habitat type. The mosaic of vegetation alliances present in the Forestry Department-owned lands provides habitat types supporting a diversity of species. Several species were found within one vegetation alliance only and this presence may be related to the structure of the forest. Forestry practices have had the greatest effect in the microphyll vine forest, the tall blackbutt-dominated forest and the medium forest. The essential structure of these habitat types is created and maintained largely by forest management practices. "Burn" patterns in the tall blackbutt-dominated forests have created a mosaic of forests with either an understorey principally of kangaroo grass *Themeda australis* (R.Br.) Stapf and blady grass *Imperata cylinrica* (L.) Beauv. or a rainforest understorey where there has been no fire for many years. Similarly, regular burning coupled with grazing of medium forest has resulted, in some areas, in a mosaic of forest types with either grassy or layered understoreys.

The microphyll vine forests are important for fauna, yet within the Shire these represent a habitat type subject to the greatest disturbance. Hoop pine has been extensively logged and large tracts have been cleared to permit the establishment of hoop pine plantations as a monoculture. The microphyll vine forests share a variety of species of the fauna with the notophyll vine forest and may represent the major habitat for some species. As examples, the most conspicuous mammals encountered during the survey were the red-necked pademelon and the red-legged pademelon. Both occur abundantly in the microphyll vine forest and are common in the complex notophyll vine forest.

While it is not possible to appreciate the identity and relative abundance of a pre-settlement fauna in the Shire, there can be no doubt that the existing man-made range of habitat types has resulted in the survival of a diversity of fauna, thus confirming the observation of the significance of the Conondale and Jimna Ranges referred to in section II ("The Kilcoy Shire"). While this situation pertains for the time being, the possibility of changes in forest management practices to the detriment of the fauna cannot be overlooked. Practices that could alter the existing pattern of habitat type on forestry lands include increased logging, major changes in fire management, removal of inferior stems, thinning to promote growth, removal of large, 'over-mature' trees, partial or total clearing of non-commercial stems for wood-chipping, and clearing to permit the establishment of pine plantations.

While each of these forest management practices may be expected to provide a greater yield of timber, the effects should be balanced against conservation interests for the area. It would be difficult, with present limited knowledge, to evaluate the relative significance of each management practice to the conservation of fauna in the region. While clearing may have a dramatic effect on the fauna of the immediate area the consequence of thinning over a wide area could well result in the disappearance of a species. As an example, the uncommon yellow-bellied glider may be lost to the Kilcoy Shire as a result of apparently innocuous forest management practices. Siltation and increased turbidity in streams could well interfere with the amphibian fauna, particularly the gastric-brooding frog.

The value to fauna conservation in the Shire of lands under Forestry Department control cannot be ignored. Such lands in the region extend well outside the Shire both to the north and west, and extensive tracts, largely outside the Shire, are currently the subject of national park proposals.

Within the forested areas in the Kilcoy Shire, past forest management practices appear not to have been entirely to the detriment of the fauna and it is perhaps fortunate that extensive tracts of forested lands in south-east Queensland were placed under Forestry Department control. It should now be recognized that these same areas, in many instances, represent the last strong-holds of the forest-dwelling fauna. The apparent conflict in values is a common problem in developed nations to the extent that Schemnitz (1976) concluded, "On forested land, forest management practices in the eastern United States are the dominant influence on wildlife habitat".

Two apparent courses are available for conservation of fauna in the region. Either large tracts must be reserved for conservation purposes alone, excluding all alternative forms of land-use, or the Forestry Department might consider the gross impact of management practices and accept some loss of production on large and representative areas. The latter, multi-purpose form of land use is considered to be a viable alternative, except for possible areas of great conservation significance. The selection of areas where the principle of minimum disturbance should apply demands further study, including a major complementary botanical study, before reliable recommendations might be made. As a preliminary observation, it would appear that scant regard has been paid to the prospect of including a representative sample of hoop pine forest in a national park and it might be considered that a large tract of this forest type should be reserved in the region.

Since the completion of the survey, a new national park (N.P. 1100) has been declared which includes a portion of the Shire near the north-eastern boundary. Habitat types represented in N.P. 1100 include the notophyll vine forest and blackbutt forest classifications used in this survey.

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