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THE SUNBIRD

Volume 16 No. 1

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A SURVEY OF THE BIRD COMMUNITY OF "BULLAMON PLAINS" THALLON, SOUTHERN QUEENSLAND R.A.O.U. 1985 CAMPOUT

DARRYL JONES

Participants in the Royal Australasian Ornithologists Union 1985 Campout conducted an intensive survey of the bird community of the Campout site, the property "Bullamon Plains", near Thallon, Queensland (28° 39'S, 148° 49'E). The aim of the survey was to obtain quantitative information on the main bird species found in each of the major habitat types which occur on the property. The property had been selected as a suitable Campout site because of the occurrence of extensive areas of dryland vegetation formations, as well as riverine, swamp and lagoon habitats. Although the drought conditions which existed during mid-1985 had virtually dried out the lagoon and swamp areas, excellent rain received prior to the Campout had produced much fresh plant growth.

Bullamon Plains lies within the Murray-Darling biogeographical zone but is also close to the boundaries of both the Eastern Queensland and South-east zones. Thus birds representative of inland, coastal and northern distributions could occur. The Campout attracted a large number of participants many of whom had not experienced central Queensland environments. The area's bird fauna is not well known and it was hoped these reliable and detailed investigations would make a valuable contribution to our knowledge of this.

STUDY SITE AND METHODS

Bullamon Plains is a 16,000 ha grazing property straddling the Moonee River, 3 km north of Thallon. The property contains open forest, open woodland, grassland, swamp, lagoon, cultivation and riverine habitats. All but cultivation were included in the surveys. The swamps and lagoons had little water.

Open forest, the tallest and densest formation, contained such tree species as Moreton Bay Ash *Eucalyptus tessellaris*, River Red Gum *E. camaldulensis*, Cypress Pine *Callitris collumelaris* and Belah *Casuarina cristata*. Wilga Geijera *parviflora* was a common mid-story tree. Smaller areas of Brigalow *Acacia harpophylla* were also common. Much of the property had a low woodland of eucalypts, including Poplar Box *E. populnea*. Riverine habitat was dominated by River Red Gum, Black Box *E. largiflorens* and Coolibah *E. microtheca*. The swamp areas which were largely dry, contained numerous tall tussock grasses and Lignum *Meuhlenbeckia* sp..

Participants in the project were divided into three groups of 10-30 persons. Each group went on one of the three survey routes each morning. Surveys were conducted on three consecutive days (1, 2, 3 October, 1985). One person kept records of all sightings made by the group. Data were recorded directly onto sheets provided in the Campout booklet. Each bird had to be identified visually by two persons or aurally by three before it was recorded.

Survey routes were chosen to cover a representative sample of the habitat types on the property. The "West" route traversed grassland, open woodland and a dry Lignum swamp; the "East" route was through grasslands and discrete woodland areas, and also incorporated a circuit of the dry lagoon; and the "Local" route encompassed a large area of open forest, an adjoining woodland and a short, narrow band of riverine habitat. The West and East routes were conducted by vehicle with foot surveys of particular locations. The Local route was undertaken entirely on foot and these surveys were probably more thorough than the driving-walking surveys.

Crude estimates of the areas of each habitat type covered were obtained from aerial photographs. These can only be regarded as approximate but do show the relative proportions of each habitat covered.

RESULTS

Table 1 shows the areas of each habitat type surveyed in each survey route. Open woodland and grassland were the dominant formations, representing 86% of the total area. These were covered by all surveys. The small areas of open forest, swamp, lagoon and riverine habitat reflected their limited availability.

Table 1

Approximate areas of main habitat types covered on the West, East and Local survey routes.

Habitat	Survey Routes and Areas (ha)				% of Total Area
	West	East	Local	Total	
Open forest	-	-	80	80	8
Open woodland	215	130	50	395	41
Grassland	115	280	40	435	45
Swamp	20	10	-	30	3
Lagoon	-	10	-	10	1
Riverine	-	-	16	16	2
Total	350	430	186	966	

There was very little obvious observer variability between groups in that the three groups consistently detected very similar numbers of birds on each route (mean number of species seen per route per day: West 53.0 ± 6.1 , East 57.3 ± 2.9 , Local 58.7 ± 3.4). This suggests a similar amount of search effort among the groups.

A total of 116 species were detected during the surveys (Appendix A). A further 32 species were recorded at other times during the Campout (Appendix B). As would be expected many species were seen in woodland (87) and grassland (60) (Table 2). Despite the much smaller size of the open forest section species numbers were equally high in this habitat (74). The density of species is better revealed by expressing the figures as number of species per ha (Table 2).

The small lagoon and riverine habitats are shown to have a particularly diverse community for their area even in the absence of many waterbirds which do occur commonly in the district. Most (75%) of the species recorded for the lagoon and swamp habitats were land species detected in passage through the area, or having invaded the site while it was dry. Some species were closely associated with the swamp areas despite their dry state. Thus the Black Honeyeaters were seen mainly in trees in an open Lignum area, and Variegated Wrens were found only in Lignum.

Table 2

Summary of species numbers and bird numbers recorded for each habitat type

	Habitat type					
	Open Forest	Open Woodland	Grassland	Swamp	Lagoon	Riverine Habitat
Number of species	74	87	60	8	27	25
Species per ha	0.93	0.22	0.14	0.27	2.70	1.57
Number of individuals	469	1565	2212	17	91	124
Individuals per ha	5.86	3.96	5.09	0.57	9.10	7.75

In terms of numbers of individual birds the woodland and grassland habitats yielded the greatest counts (Table 2). More meaningfully, converting these figures to birds per ha shows that again the lagoon, riverine and open forest communities had the greatest densities. The largest counts were of woodswallows. Five species were recorded during the Campout, with the Masked Woodswallow and White-browed Woodswallow being by far the most numerous. The numbers of woodswallows actually counted during the surveys are likely to be gross underestimates but Masked and White-browed Woodswallows made up at least 22% and 73% of the total counts for woodland and grassland birds respectively.

Several independent counts of mixed flocks of woodswallows gave an approximate ratio of one Masked to three White-browed Woodswallows.

A large and diverse group of honeyeaters was a major component of both the open forest and woodland. These two habitats shared nine Meliphagids, of which Noisy Miner, Yellow-throated Miner and Little Friarbird were consistently abundant. Singing Honeyeaters were confined to open woodland, while Brown-headed Honeyeaters were found primarily in the eucalypt portions of the open forest. White-plumed Honeyeaters were common in all treed areas but were especially dense in the riverine habitat.

DISCUSSION

The bird community of "Bullamon Plains" was found to be large and diverse at the time of the Campout. The main influence of the widespread drought conditions experienced during mid-1985 was to greatly reduce the area of open water and swamp of the property. Relatively few waterbirds and waders were detected as a result. However the rains received prior to the Campout provided favourable conditions for many of the dryland species which occurred in the region. The excellent conditions which existed at "Bullamon Plains" may have drawn many species to the district, especially from the much drier area to the north of Thallon. The large numbers of woodswallows were probably due to these relatively good conditions.

The majority (75%) of species recorded were birds widespread throughout eastern Australia in both coastal and inland environments. There was, however, a distinct group of species which primarily belonged to the dry inland areas. These species made up 21% of the total. Species classified as principally coastal numbered only seven (6%). Thus, the overall assemblage was dominated by species characteristic of south-eastern Australia generally but with an important component of Murray-Darling inland species.

Of the dryland habitats the open forest contained a particularly high density of bird species. This habitat was also the most diverse in terms of vegetation, containing a much greater number of tree species and having a greater structural diversity than the other habitats. This finding of abundant bird life in this relatively scarce habitat type must

have important conservation implications since open forests, especially those containing Brigalow, are among the first portions to be cleared during pastoral development. Further clearing of even small areas of open forest will therefore adversely affect a disproportionately large section of the local bird fauna. There seems an urgent need to give formal protection to the forest lands of this region.

ACKNOWLEDGEMENTS

The many enthusiastic participants in the Campout Project are thanked for their assistance. Special thanks are due to Neil McKilligan who planned and supervised much of this project, and to John Walter who maintained camp facilities. The owners of "Bullamon Plains", Bill and Sue Willis, are sincerely thanked for their hospitality and assistance.

APPENDIX A

Numbers of individual birds detected during surveys of six habitats on "Bullamon Plains". Figures are totals for all surveys combined..

SPECIES	HABITAT				
	O.F.	Wood.	Gras.	Swam.	Lago. River.
Emu <i>Dromaius novaehollandiae</i>		5	14		
Australasian Grebe <i>Tachybaptus novaehollandiae</i>					1
Australian Pelican <i>Pelecanus conspicillatus</i>					2
Pacific Heron <i>Ardea pacifica</i>			1		2
Rufous Night-heron <i>Nycticorax caledonicus</i>	1				
Straw-necked Ibis <i>Threskiornis spinicollis</i>			16		10
Yellow-billed Spoonbill <i>Platalea flavipes</i>		1	1		1
Pacific Black Duck <i>Anas superciliosa</i>			2		
Grey Teal <i>Anas gibberifrons</i>				2	2
Mand Duck <i>Chenonetta jubata</i>		21	1		
Pacific Baza <i>Aviceda suberistata</i>		1			
Square-tailed Kite <i>Lophoictinia isura</i>	1	1			

SPECIES	HABITAT			
	O.F.	Wood.	Gras.	Swam. Lago. River.
Whistling Kite <i>Haliastur sphenurus</i>				2
Brown Goshawk <i>Accipiter fasciatus</i>	1		1	
Collared Sparrowhawk <i>Accipiter cirrocephalus</i>	1			
Little Eagle <i>Hieraetus morphnoides</i>	1	1		
Australian Hobby <i>Falco longipennis</i>	1			2
Brown Falcon <i>Falco berigora</i>	2	2	3	
Australian Kestrel <i>Falco cenchroides</i>	2	3	1	1
Brolga <i>Grus rubicundus</i>			6	
Banded Lapwing <i>Vanellus tricolor</i>			34	
Black-fronted Plover <i>Charadrius melanops</i>				1
Feral Pigeon <i>Columba livia</i>		9	1	
Peaceful Dove <i>Geopelia placida</i>	1	4	1	
Diamond Dove <i>Geopelia cuneata</i>		2		
Bar-shouldered Dove <i>Geopelia humeralis</i>	1	5		

SPECIES	HABITAT			
	O.F.	Wood.	Gras.	Swam. Lago. River.
Common Bronzewing <i>Phaps chalcoptera</i>	9	1	1	
Crested Pigeon <i>Ocyphaps lophotes</i>	2	30	14	3
Red-tailed Black-cockatoo <i>Calyptorhynchus magnificus</i>		5		
Yellow-tailed Black-cockatoo <i>Calyptorhynchus funereus</i>				24
Galah <i>Cacatua roseicapilla</i>	11	32	164	1
Sulphur-crested Cockatoo <i>Cacatua galerita</i>	2	8	39	2
Scaly-breasted Lorikeet <i>Trichoglossus chlorolepidotus</i>	1			
Red-winged Parrot <i>Aprosmictus erythropterus</i>	2	2		
Cockatiel <i>Nymphicus hollandicus</i>	20	43	43	4
Pale-headed Rosella <i>Platycercus adscitus</i>	6	18		2
Mallee Ringneck <i>Barnardius barnardi</i>	19	24	1	1 4
Red-rumped Parrot <i>Psephotus haematonotus</i>	6	8	2	6
Blue Bonnett <i>Northiella haematogaster</i>	2	17	7	
Pallid Cuckoo <i>Cuculus pallidus</i>	5	13	6	3

SPECIES	HABITAT				
	O.F.	Wood.	Gras.	Swam.	Lago. River.
Horsefield's Bronze-cuckoo <i>Chrysococcyx basalis</i>	1	5	1		
Shining Bronze-cuckoo <i>Chrysococcyx lucidus</i>	1				
Tawny Frogmouth <i>Podargus strigoides</i>	1			2	
Australian Owlet-nightjar <i>Aegotheles cristatus</i>		1			
Laughing Kookaburra <i>Dacelo novaeguinae</i>	2	2		1	
Sacred Kingfisher <i>Halcyon sancta</i>	6	7	3		3
Rainbow Bee-eater <i>Merops ornatus</i>	8	23	1		1
Dollarbird <i>Eurystomus orientalis</i>	2	2			
Welcome Swallow <i>Hirundo neoxena</i>	1	4			
Tree Martin <i>Cecropis nigricans</i>	2	30	18		6
Fairy Martin <i>Cecropis ariel</i>		25	4		26
Richard's Pipit <i>Anthus novaeseelandiae</i>		2	6		
Ground Cuckoo-shrike <i>Coracina maxima</i>			8		
Black-faced Cuckoo-shrike <i>Coracina novaehollandiae</i>		6	7		1

SPECIES	HABITAT				
	O.F.	Wood.	Gras.	Swam.	Lago. River.
White-bellied Cuckoo-shrike <i>Coracina papuensis</i>					1
White-winged Triller <i>Lalage sueurii</i>	16	40	22		1
Red-capped Robin <i>Petroica goodenovii</i>	3				
Hooded Robin <i>Melanodryas cucullata</i>		11	2		
Jacky Winter <i>Microeca leucophaea</i>	12	18	1		
Rufous Whistler <i>Pachycephala rufiventris</i>	9	20			2
Grey Shrike-thrush <i>Colluricincla harmonica</i>		3	23		1
Crested Bellbird <i>Oreocia gutturalis</i>			4		
Leaden Flycatcher <i>Myiagra rubecula</i>			2		
Restless Flycatcher <i>Myiagra inquieta</i>		2	1		2
Grey Fantail <i>Rhipidura fuliginosa</i>	3	1			
Willie Wagtail <i>Rhipidura leucophrys</i>	12	30	5		2 2
Grey-crowned Babbler <i>Pomatostomus temporalis</i>	17	43			
Clamorous Reed-warbler <i>Acrocephalus stentoreus</i>					1

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SPECIES	HABITAT				
	O.F.	Wood.	Gras.	Swam.	Lago. River.
Rufous Songlark <i>Cincoerhamphus mathewsi</i>	6	43	17		4
Brown Songlark <i>Cincoerhamphus cruralis</i>	2	10	15		2
Superb Fairy-wren <i>Malurus cyaneus</i>	2	5		1	5
Splendid Fairy-wren <i>Malurus splendens</i>		2			
Variegated Fairy-wren <i>Malurus lamberti</i>			2	4	
White-winged Fairy-wren <i>Malurus leucopterus</i>			2		
Weebill <i>Microornis brevirostris</i>	31	45	3		
Western Gerygone <i>Gerygone fusca</i>	7	15	8		
White-throated Gerygone <i>Gerygone olivacea</i>	1	6			
Chestnut-rumped Thornbill <i>Acanthiza uropygialis</i>	8	18			
Yellow-rumped Thornbill <i>Acanthiza chrysorrhoa</i>	5	22	2		
Yellow Thornbill <i>Acanthiza nana</i>	11	26	2		
Southern Whiteface <i>Aphelocephala leucopsis</i>		2			
Varied Sitella <i>Daphoenositta chrysoptera</i>	1				

SPECIES	HABITAT				
	O.F.	Wood.	Gras.	Swam.	Lago. River.
Brown Treecreeper <i>Climacteris picumnus</i>	8	21	2		2 3
Spiny-cheeked Honeyeater <i>Acanthagenys rufogularis</i>	5	27	1		
Striped Honeyeater <i>Plectrohyncha lanceolata</i>	8	6	4		
Noisy Friarbird <i>Philemon corniculatus</i>	8	23			1
Little Friarbird <i>Philemon citreogularis</i>	22	56			3 4
Blue-faced Honeyeater <i>Entomyzon cyanotis</i>	11	3			
Noisy Miner <i>Manorina melanocephala</i>	22	69			1
Yellow-throated Miner <i>Manorina flavigula</i>	21	45	11		1
Singing Honeyeater <i>Lichenostomus virescens</i>			4		
White-plumed Honeyeater <i>Lichenostomus penicillatus</i>	10	45			12 22
Black-chinned Honeyeater <i>Melithreptus gularis</i>	1	2			
Brown-headed Honeyeater <i>Melithreptus brevirostris</i>	7				
Black Honeyeater <i>Certhionyx niger</i>				2	
Mistletoebird <i>Dicaeum hirundinaceum</i>	6	9	1		

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SPECIES	HABITAT				
	O.F.	Wood.	Gras.	Swamp.	Lago. River.
Striated Pardalote <i>Pardalotus striatus</i>	6	24	2		2
Silveryeye <i>Zosterops lateralis</i>		4			
Diamond Firetail <i>Emblema guttata</i>	2				
Zebra Finch <i>Peophila guttata</i>		14	26		
Double-barred Finch <i>Poephila bichenovii</i>	2	7			
Common Starling <i>Sturnus vulgaris</i>		1			10
Olive-backed Oriole <i>Oriolus sagittatus</i>	1				
Spotted Bowerbird <i>Chlamydera maculata</i>	2	4	1		
White-winged Chough <i>Corcorax melanorhamphos</i>		10			
Apostlebird <i>Struthidea cinerea</i>	14	63	1		
Australian Magpie-lark <i>Grallina cyanoleuca</i>	8	19	38	3	5

SPECIES	HABITAT					
	O.F.	Wood.	Gras.	Swam.	Lago.	River.
White-breasted Woodswallow <i>Artamus leucorhynchus</i>	100					
Masked Woodswallow <i>Artamus personatus</i>	73	516			1	
White-browed Woodswallow <i>Artamus superciliosus</i>	34	172	1113			4
Little Woodswallow <i>Artamus minor</i>		8				
Grey Butcherbird <i>Cracticus torquatus</i>	6	3	1			1
Pied Butcherbird <i>Cracticus nigrogularis</i>	3	5	3			
Australian Magpie <i>Gymnorhina tibicen</i>	5	5	7			5
Pied Currawong <i>Strepera graculina</i>				2		
Australian Raven <i>Corvus coronoides</i>	1	4				
Total Number	486	1557	2241	18	91	117

APPENDIX B

Species detected at "Bullamon Plains" at times outside
Campout Project Surveys.

Darter *Anhinga melanogaster*
Great Cormorant *Phalacrocorax carbo*
Pied Cormorant *Phalacrocorax varius*
Little Pied Cormorant *Phalacrocorax melanoleucos*
White-faced Heron *Ardea novaehollandiae*
Great Egret *Egretta alba*
Rufous Night-heron *Nycticorax caledonicus*
Glossy Ibis *Plegadis falcinellus*
Sacred Ibis *Threskiornis aethiopicus*
Royal Spoonbill *Platalea regia*
Hardhead *Aythya australis*
Wedge-tailed Eagle *Aquila audax*
Stubble Quail *Coturnix novaeseelandiae*
Painted Button-quail *Turnix varia*
Little Button-quail *Turnix velox*
Red-chested Button-quail *Turnix pyrrhotorax*
Black-tailed Native-hen *Gallinula ventralis*
Eurasian Coot *Fulica atra*
Red-kneed Dotterel *Erythrogonys cinctus*
Latham's Snipe *Gallinago hardwickii*
Black-eared Cuckoo *Chrysocolaptes ocellatus*
Southern Boobook *Ninox novaeseelandiae*
Singing Bushlark *Mirafra javanica*
Eastern Yellow Robin *Eopsaltria australis*
Golden Whistler *Pachycephala pectoralis*
Little Grassbird *Megalurus gramineus*
Inland Thornbill *Acanthiza apicalis*
Buff-rumped thornbill *Acanthiza reguloides*
Brown Honeyeater *Lichmera indistincta*
Red-browed Pardalote *Pardalotus rubricatus*
Black-faced Woodswallow *Artamus cinereus*
Torresian Crow *Corvus orru*

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BIRDS FROM BOOBY ISLAND

G.J. INGRAM, N.W. LONGMORE AND D.P. VERNON

On the 23rd August, 1770, Captain James Cook and Joseph Banks went ashore on Booby Island, a rocky outcrop in Torres Strait that Banks described as "... white with the Dung of Birds" (Beaglehole, 1962). According to Cook (Beaglehole, 1955), he and Banks "... landed upon it and found it to be mostly a barren rock frequented by birds such as Boobies, a few of which we Shott and occasioned my giving it the Name of Booby Island." The first series of birds collected at Booby Island was by a party from H.M.S. "Beagle" in 1841. Stokes (1846), the Commander of the "Beagle", when referring to the game book of the vessel, told of the specimens: "Booby Island (June and August) 145 quails, 18 pigeons, 12 rails, of two kinds, 3 doves ..." In 1874, a party from the H.M.S. "Challenger" collected 10 specimens of seven species (Forbes 1878). Of these birds and the island, the collector, Moseley (1892), wrote: "A small cleft runs up into Booby Island, and nearly across it, and affording shade and shelter, allows of the growth of a small thicket of a shrub-like species of fig ... Amongst the branches of the figs, lives a most beautiful Fruit-Pigeon (*Ptilinopus superbus*), with head of a brilliant purple, the body green, and shoulders red. A Painted Quail (*Turnix melanotus*) was found amongst the grass. The other birds which I saw or shot were a Landrail, a Mound-bird (*Megapodius tumulus*), a Bee-eater (*Merops ornatus*), a Zosterops (*Z. luteus*), ... a Pachycephala, a Kingfisher (*Halycon sancta*), and a thrushlike bird ..."

Booby Island (Figs. 1 and 2a) is situated at 10°36'S, 141°55'E, and is about 33 km west of Thursday Island and about 47 km north-west of the Jardine River mouth on Cape York Peninsula (Fig. 2b). According to Willmott and Powell (1977), Booby Island has an area of 6.07 hectares and "... consists of highly altered acid volcanic rock of carboniferous age." The boobies do not nest there any more (Anon, 1976) but the island is of interest because it is situated on the migrant flyway between southern New Guinea and the finger-like tip of Cape York Peninsula.



Fig. 1 Aerial photograph of Booby Island (J. Malone)

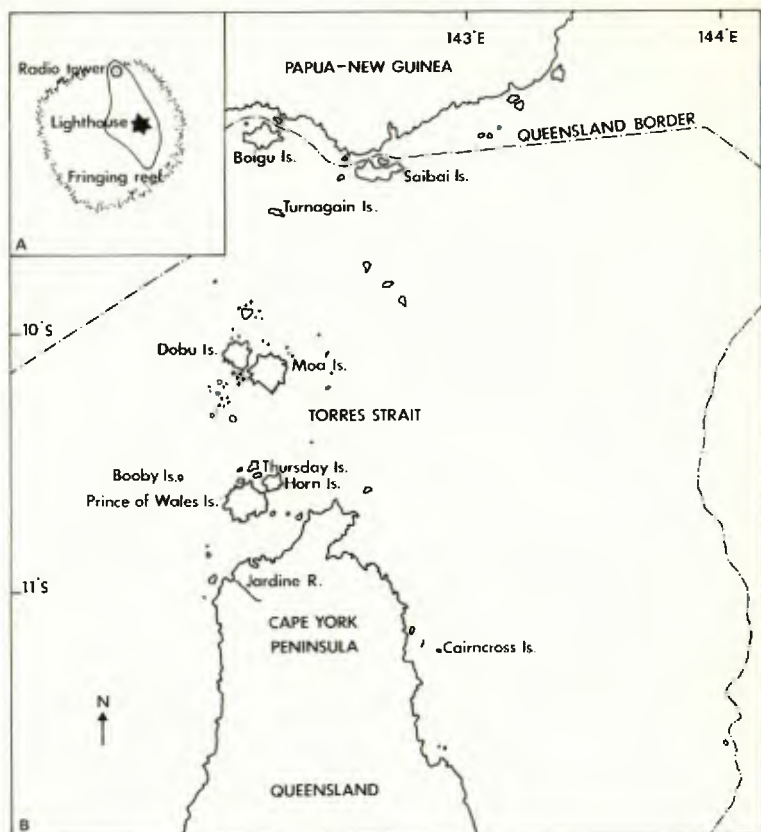


Fig. 2 A. Booby Island B. Torres Strait

Vernon (1977), Stokes (1983), Draffan *et al.* (1983), Ey (1984), and Garnett (1985) have recently written on the birds of Booby Island. We are particularly concerned by the records of Stokes (*loc. cit.*) as some of these are inaccurate. Many of the specimens on which these records are based are in the bird collection of the Queensland Museum allowing us to check their identities. This paper reports on 235 birds of 70 species (Appendix 1) that have died, either from exhaustion or from collision with the light-house, on Booby Island.

They were gathered for the Queensland Museum between 1958 and 1984. Many were gathered by Mrs. Ann Hersom, with permission from the Queensland National Parks and Wildlife Service. Mrs. Hersom, a keen birdwatcher, was wife of former light-house keeper, Mr. Mervyn Hersom. Others who have gathered specimens while at the light-house were S. West, J. Walker, K. Edington, A. Davies, T. Johnston, R. Hindmarsh, A. Edwards and T. Ward. The majority of the specimens are preserved in alcohol, a few are skins, and some are dried spirit-preserved specimens stored with the skin collection.

Roche (1985) has given a dramatic account of the distressing spectacle he called a "bird night" on Booby Island: "Lured by the 4-second flash of the lighthouse, the birds head for its eight powerful beams of light that rotate like the arms of an octopus. Soon they find themselves mesmerised and begin chasing the revolving beams round and round the light tower, all circling about 20 m from the lantern room. The whole migratory flock becomes stuck on this macabre merry-go-round, screeching and honking in confusion. Already exhausted from their flight from New Guinea, they soon begin crashing into the tower, lantern room, and cottages, or simply plummet to the ground in a state of collapse. By morning, the weak are dead or dying on the ground or on the lighthouse balcony ..."

DISCUSSION

Stokes (1983) reported on the records of bird casualties during 1975-6 noted by Ann Hersom at Booby Island. He wrote up the records she submitted to the Australian National Parks and Wildlife Service as part of a survey of the effects of lights from light-houses on bird populations. As noted in the preceding, most of the specimens of Hersom's are in the Queensland Museum. Stokes expressed confidence that the Hersom's knew their birds well. Unfortunately, this is not the case. Five of the records are incorrect. These are: Australasian Bittern (*Botaurus plicifloptilus*), Australian Crake (*Porzana fluminea*), Sanderling (*Calidris alba*), White-rumped Swiftlet (*Collocalia spodiopygia*) and Trumpet Manucode (*Manucodia keradrenid*). The Australasian Bittern was mentioned by Hersom in correspondence (in litt. 4.6.75). The bird was 016340, a Rufous Night Heron. In the same letter she also noted "Grey Swiftlet". These were 016459, 16464 - Fork-tailed Swifts. The Sanderlings noted by Stokes were Red-

necked Stints (016344-5), and the Trumpet Manucode was a Metallic Starling (016350). Stokes does not list Baillon's Crake and it appears Hersom misidentified this species, in part, as Australian Crake. Certainly a specimen of the former (016352) was picked up in May 1975. What the identity was of the specimen of Hersom's for January 1975, we cannot be sure. She, however, gathered a specimen of Spotless Crake (016452) in that month, which is not listed by Stokes.

Draffan *et al.* (1983) accepted Stokes' records except for the Australasian Bittern. With the five preceding species removed from the Booby Island bird list, the number of species recorded from the island stands at 113: 108 by Draffan *et al.*; Swinhoe's Snipe by Ey (1984); and, in this paper, Grey-tailed Tattler, Common Sandpiper, Red-necked Stint, and Fork-tailed Swift.

Stokes (*loc. cit.*) contained other errors of identification. The egret received by the Museum, which was picked up in May 1975, was a Little Egret (016351), not a Great Egret (*Egretta alba*); the Horsfield's Bronze-Cuckoo (*Chrysococcyx basalis*) for April 1975 was a Shining Bronze-Cuckoo (016482). We have also identified some of the birds listed in "Incomplete/Inaccurate Names". "Yellow Egret" was in fact 016451, a Little Bittern; "Black-faced Honeyeater" was Black-faced Monarch (016453-4); and the "Spoonbill" was a Royal Spoonbill (016477). These errors in identification of the species listed by Stokes cast doubt on the veracity of other records for which there are no specimens.

Figure 3 illustrates the number of species killed each month. The graphs are constructed from the data in the systematic list. Migratory birds seem to move through the island in two periods - September, and April to May. Non-migratory water-birds have two peaks in their movements, in January and in May - the beginning and the end of the wet season. Lavery (1966) has noted a prominent movement path of water-birds between western Cape York Peninsula and southern New Guinea via the western Torres Strait Islands.

Care has to be taken in drawing conclusions from the data presented. Because the facilities for preservation were limited, not all specimens were retained by the light-house keepers. Also bird kills are more common during inclement weather (Anon 1976, Avise and Crawford 1981, Roche 1985).

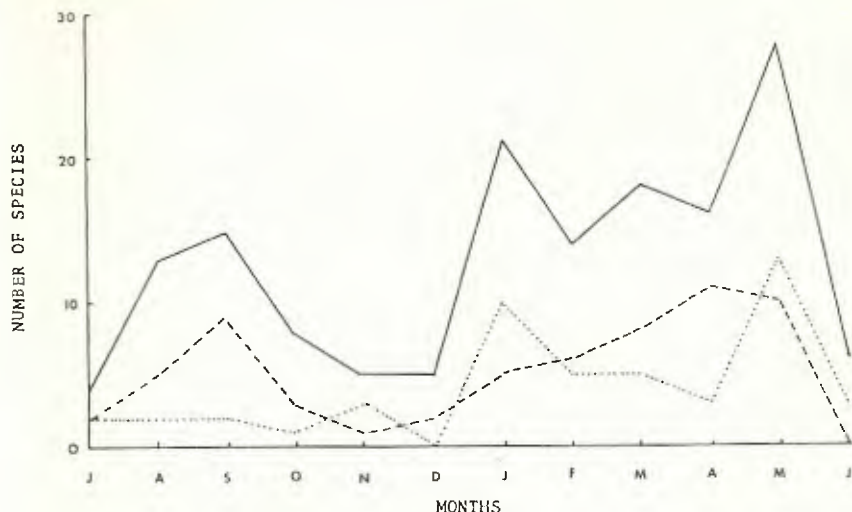


Fig. 3 Number of species of birds killed at the light-house per month from 1958 to 1984: — all species, - - - migratory species; non-migratory water-birds.

Furthermore, some birds (for example Dollar Bird, and Black-faced Cuckoo-Shrike) fly high during periods of movement (Draffan *et al.* 1983) and are more likely to avoid colliding with the light-house.

Warham (1962) suggested that Booby Island would be an ideal site for bird study. We concur. From discussions that the authors have had with the Officers of the Department of Transport it would seem that within the next decade the present manned light-house will be changed to an automated station. Booby Island would make an excellent base for studies of migration: not only because of its location, but because it has several buildings for accommodation and the island is only 33 km west from Thursday Island, which is serviced by air from main centres to the south and to the north.

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APPENDIX 1

SYSTEMATIC LIST OF BIRDS COLLECTED ON
BOOBY ISLAND

Each specimen's Queensland Museum number and date of collection are given. '*' denotes a new record for Booby Island.

- Australian Grebe** *Tachybaptus novaehollandiae*. 06511, 20.2.59; 016353, 15.8.75; 016358, 18.5.75; 017645, 5.1.79; 017644, 1.4.79; 017646, 26.5.79.
- Hutton's Shearwater** *Puffinus huttoni*. 016479, 3.4.76; 017124, 5.5.76; 017652, 1.4.79; 018803, 11.4.81; 018924, 2.7.81.
- Brown Booby** *Sula leucogaster*. 016471, 21.1.76.
- White-faced Heron** *Ardea novaehollandiae*. 017896, 19.8.80.
- Pied Heron** *Ardea picata*. 06093, 14.5.58; 016335, --.75; 018923, --.81.
- Little Egret** *Egretta garzetta*. 016351, 15.5.75.
- Intermediate Egret** *Egretta intermedia*. 016360, 17.11.75.
- Eastern Reef Egret** *Egretta sacra*. 06495, 20.2.59.
- Rufous Night Heron** *Nycticorax caledonicus*. 016447, 11.4.75; 016340, 8.5.75; 016359, 10.9.75; 017621, 20.5.79; 017897, 25.9.80.

- Little Bittern *Ixobrychus minutus*. 016451, 11.2.75.
- Black Bittern *Ixobrychus flavicollis*. 06094, 14.5.58; 016361, 31.11.75; 016470, 11.3.75.
- Royal Spoonbill *Platalea regia*. 016477, 9.1.76.
- Magpie Goose *Anseranas semipalmata*. 016362, 11.10.75.
- Wandering Whistling-Duck *Dendrocygna arcuata*. 015911, 22.11.74; 016448, 11.2.75; 018935, 3.7.81.
- Pacific Black Duck *Anas superciliosa*. 016468, 11.1.75; 017088, 16.5.77.
- Grey Teal *Anas gibberifrons*. 016337, 15.5.75.
- Green Pygmy-Goose *Nettapus pulchellus*. 016462, 10.1.75; 017074, 28.6.77; 017274, 2.9.78; 017624, 5.1.79; 017625, 5.1.79.
- Australian Hobby *Falco longipennis*. 017073, 15.6.77.
- Orange-footed Scrubfowl *Megapodius reinwardt*. 018927, -. -.81.
- Red-backed Button-quail *Turnix maculosa*. 016346, 16.8.75; 016347, 4.7.75; 016348, 6.9.75; 016349, 10.9.75; 016456, 10.1.75; 016489, 3.12.75; 017277, 17.5.78; 017890, 16.6.80; 018930, 7.1.81; 018931, 8.1.81; 018932, 7.1.81; 018933, 7.1.81; 018934, 22.6.81.
- Buff-banded Rail *Rallus philippensis*. 05928, 15.1.58; 016460, 10.1.75; 017090, 16.5.77; 017275, 12.3.78; 017622, 3.5.79; 018920, 2.7.81; 018921, 6.1.81; 018922, 7.1.81.
- Red-necked Crake *Rallina tricolor*. 05927, 15.1.58; 015900, 23.11.74.
- Baillon's Crake *Porzana pusilla*. 016352, 14.5.75; 017122, 28.5.76; 017123, 29.5.76; 017642, 18.6.79.
- Spotless Crake *Porzana tabuensis*. 016452, 10.1.75; 017077, 15.5.77; 017639, 4.5.79; 017640, 4.5.79; 017643, 20.5.79; 017889, 17.2.80.

- White-browed Crake** *Poliolimnas cinereus*. 06095, 14.5.58;
016463, 10.1.75; 017078, 15.5.77; 017079, 26.5.77;
017273, 2.2.78; 017641, 1.4.79; 017637, 5.1.79; 017638,
5.1.79; 017887, 12.2.80; 018801, 11.4.81; 018919,
7.1.81; 023520, 9.3.84; 023521, 9.3.84.
- Bush-hen** *Gallinula olivacea*. 016336, 15.5.75; 016458,
10.1.75; 017080, 27.5.77; 017268, 13.3.78.
- Purple Swamphen** *Porphyrio porphyrio*. 016469, 14.1.75;
017086, 16.5.77; 017272, 13.3.78; 017891, 11.6.80.
- Masked Lapwing** *Vanellus miles*. 05926, 15.1.58.
- Mongolian Plover** *Charadrius mongolus*. 017888, 23.9.79.
- Ruddy Turnstone** *Arenaria interpres*. 016338, 13.9.75.
- Grey-tailed Tattler** *Tringa brevipes*. * 016467, 11.2.75;
017075, 9.9.77.
- Common Sandpiper** *Tringa hypoleucos*. * 016354, 8.9.75.
- Terek Sandpiper** *Tringa terek*. 017279, 28.8.78.
- Swinhoe's Snipe** *Gallinago megala*. 016465, 11.1.75; 016473,
4.8.74.
- Sharp-tailed Sandpiper** *Calidris acuminata*. 017172, 15.3.78;
017280, 28.8.78; 017281, 28.8.78.
- Red-necked Stint** *Calidris ruficollis*. * 016344, 10.8.75; 016345,
5.9.75.
- Roseate Tern** *Sterna dougallii*. 016485, 17.11.75; 016488,
17.3.76; 017121, 15.6.76; 017648, 25.2.79; 017649,
13.1.79.
- Black-naped Tern** *Sterna sumatrana*. 016486, 29.9.75; 016487,
3.12.75; 017076, ---.77; 018929, 27.9.80.
- Sooty Tern** *Sterna fuscata*. 016357, 1.10.75.
- Bridled Tern** *Sterna anaethetus*. 016014, 21.1.75; 016363,
3.10.75; 016478, 22.1.76; 017628, 14.1.79; 017629, 14.1.79;
017630, 14.1.79; 017631, 13.1.79.

- Crested Tern** *Sterna bergii*. 05924, 15.1.58; 06261, 15.5.58; 06497, 20.2.59; 016461, 24.12.75.
- Lesser Crested Tern** *Sterna bengalensis*. 016475, 10.1.76.
- Black Noddy** *Anous minutus*. 016343, 10.8.75; 017072, --.77.
- Superb Fruit-Dove** *Ptilinopus superbus*. 05925, 15.1.58, 06490, 20.2.59; 06491, 20.2.59; 06492, 20.2.59; 015883, 19.9.74; 015884, 20.10.74; 015886, 18.10.74; 015887, 13.10.74; 017082, 10.9.77; 017083, 18.8.77; 017084, 11.9.77; 017085, 9.8.77; 017264, 14.3.78; 017265, 14.3.78; 017892, 11.6.80; 017893, --.80; 017894, 17.9.80; 017895, 17.9.80; 018925, 1.4.81.
- Rose-crowned Fruit-Dove** *Ptilinopus regina*. 015885, 23.10.74; 017081, 16.5.77.
- Torresian Imperial-Pigeon** *Ducula spilorrhoa*. 017087, 9.9.77.
- Oriental Cuckoo** *Cuculus saturatus*. 016366, 1.12.75; 016367, 1.12.75; 016450, 7.12.74; 016455, 10.1.75; 016457, 14.12.74; 016472, 3.4.76; 017266, 12.3.78.
- Shining Bronze-Cuckoo** *Chrysococcyx lucidus*. 016482, 3.4.75; 017647, 2.5.79.
- Common Koel** *Eudynamis scolopacea*. 06097, 14.5.58; 06502, --.2.59; 016446, 26.3.75; 017623, 1.4.79; 018928, 7.4.81.
- White-throated Nightjar** *Caprimulgus mystacalis*. 06498, 20.2.59; 016342, 16.9.75; 017089, 20.9.77.
- White-throated Needletail** *Hirundapus caudacutus*. 016476, 20.3.75; 017276, 18.4.79.
- Fork-tailed Swift** *Apus pacificus*. * 016459, 20.3.75; 016464, 11.2.75.
- Forest Kingfisher** *Halcyon macleayii*. 017070, 17.5.77; 017633, 1.4.79; 017634, 1.4.79.
- Sacred Kingfisher** *Halcyon sancta*. 016445, 11.3.75; 017069, 17.9.77; 017632, 2.5.79.

- Buff-breasted Paradise-Kingfisher** *Tanysiptera sylvia*. 05929, 15.1.58; 016365, 30.10.75; 017626, 1.4.79.
- Rainbow Bee-eater** *Merops ornatus*. 015903, 5.9.74; 015904, 29.9.74; 016341, 29.5.75; 017071, 25.9.77; 017270, 9.9.78.
- Dollarbird** *Eurystomus orientalis*. 015888, 23.10.74; 017269, 15.3.78.
- Red-bellied Pitta** *Pitta erythrogaster*. 016480, 3.12.75.
- Tree Martin** *Cecropis nigricans*. 017283, 28.8.78.
- Black-faced Cuckoo-shrike** *Coracina novaehollandiae*. 016355, --.75.
- Cicadabird** *Coracina tenuirostris*. 016356, 15.5.75; 016481, 4.4.75.
- Black-faced Monarch** *Monarcha melanopsis*. 016364, 30.5.75; 016453, 7.2.75; 016454, 10.2.75; 016474, 4.4.76; 017651, 27.5.79.
- Black-winged Monarch** *Monarcha frater*. 017650, 1.4.79.
- Leaden Flycatcher** *Myiagra rubecula*. 015905, 23.10.74; 015906, 23.10.74; 015907, 23.10.74; 015908, 23.10.74; 016466, 11.5.75; 017096, 6.10.77; 017097, 16.10.77.
- Satin Flycatcher** *Myiagra cyanoleuca*. 017282, 15.3.78; 017635, 23.3.79; 017636, 1.4.79.
- Rufous Fantail** *Rhipidura rufifrons*. 015909, 23.10.74; 015910, 23.10.74; 017905, 8.10.77; 017627, 3.5.79.
- Clamorous Reed-Warbler** *Acrocephalus stentoreus*. 016483, 20.3.75; 016484, 20.3.75; 017278, 15.3.78.
- Metallic Starling** *Aplonis metallica*. 06096, 14.5.58; 09122, 20.2.59; 015902, 23.10.74; 016350, 10.8.75; 017091, 7.9.77; 017092, 7.9.77; 017093, --.77; 017267, 14.3.78; 018917, 7.9.81; 018918, 1.4.81.
- Spangled Drongo** *Dicrurus hottentottus*. 06503, 20.2.59; 017094, 18.5.77.

White-breasted Woodswallow *Artamus leucorhynchus*. 017271,
1.8.78.

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BROWN FALCON AS AN AERIAL PIRATE

At 1030 hours approx. on 23rd November, 1985, in company with five other members of the McIntyre Naturalists Club, all using binoculars. I was watching birds at Malgarai Lagoon 15 km south of Boggabilla, New South Wales (28°43'S, 150°25'E). A Little Falcon *Falco longipennis* chased and then caught a bird which appeared to be a Little Friarbird *Philemon citreogularis* about 300 m from us.

The falcon flew back across the lagoon towards us, carrying its prey at just above treetop height, and flying quite slowly with its heavy load. When it was 100 m distant a Brown Falcon *Falco berigora* launched itself from a tree below and flew strongly in pursuit. It appeared to be closing the gap between it and the Little Falcon quite quickly when the latter, to my surprise, dropped its prey while the pursuer was still some distance below, and made off at high speed and disappeared. The Brown Falcon, with a very obvious effort, succeeded in catching the dead prey some distance above the ground. It carried this to a nearby tree, where it alighted and commenced at once to pluck its prize.

I approached, and eventually stood right beneath the tree while the Falcon was thus preoccupied. With its bill it was stripping feathers from the prey's head and upper part. The tail and legs were in plain sight, and appeared consistent with the earlier identification. When it noticed me it flushed and flew out of sight, taking its meal with it.

I have witnessed the Brown Falcon taking nestlings of the Magpie-Lark *Grallina cyanoleuca* and Magpie *Gymnorhina tibicen*. It also catches quail and other small birds, which sometimes squat on the ground as though paralysed until pounced on. I have also seen a pair of Brown Falcons, hunting together, catch an airborne adult Magpie-Lark. This is the first time I have known the Brown Falcon to rob another raptor, however.

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- FLEAY, D.H. 1937. Nesting habits of the brush turkey. *Emu* 36: 153-163.
- FRITH, J.H. 1976. Mallee fowl. In *Complete Book of Australian Birds* (H.J. Frith consul. ed.) pp 136-137. Sydney: Reader's Digest.
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- SLATER, P. 1970. *A Field Guide to Australian Birds. Non-Passerines*. Adelaide: Rigby.

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