

# AVIFAUNA OF THE SHORTLAND WETLANDS

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## INTRODUCTION

The Shortland Wetlands first came under scrutiny as a wetland habitat in an assessment by Pressey (1981), who identified the area as one of the 25 wetland areas in the Lower Hunter Valley floodplain as outstanding with highest priority for conservation. Pressey gave it such a rating because of the particularly high faunal value as a known roosting and breeding area for many species, several in large numbers. Gosper (1981) recorded roosting and breeding of several species for the period 1970-1977 at Shortland.

The Shortland Wetlands are located near the Newcastle suburb of Shortland and straddle Sandgate Road (the Newcastle by-pass route) between the Shortland shopping centre and the Pacific Highway at Sandgate (see map in Figure 1). They represent a remnant of the typical Lower Hunter estuarine - fresh water wetland complex, described by Waterhouse (1981), which has been subjected to considerable interference and degradation.

On the north side of Sandgate Road, between the road and Ironbark Creek, are an open lagoon, characterised by Water Ribbon grass flora (*Triglochin procera*) and a small stand of Cumbungi (bullrush) (*Typha orientalis*), a lagoon populated mainly by stands of the Broad-leafed Paperbark (*Melaleuca quinquenervia*), a swampy area containing a few degraded mangroves (*Avicennia marina*), and a man-made, deep drainage canal with some reedy margins containing *Phragmites australis* connecting the wetland area with Ironbark Creek. This section contains the Marist Park and Tuxford Park sporting fields, reclaimed by filling, and borders the currently operating Newcastle City Council garbage dump, which filled mangrove forest and reed beds. Suburban housing features on the western boundary slope and part of the Sandgate Road northern boundary. Beyond Ironbark Creek to the north and west is Hexham Swamp.

On the south side of the road, known as the Lorna Street site, are about 8 hectares of remaining lagoons left when the Newcastle City Garbage dump ceased operating in the early 1970's. A deep body of water was produced when the Steelworks Golf Club, which forms part of the south boundary, dammed a drainage creek which flowed into the lagoons through the golf club property. The lagoons have a few stands of *Melaleuca*, some *Casuarina* and consist of open water, *Triglochin procera* beds and some reeds (mainly *Typha orientalis*). Water Hyacinth (*Eichhonia crassipes*) has infested two of the lagoons in the last two years, closing off the majority of the open water which existed in one of them prior to the infestation.

Associated with these two locations are the stands of well spaced eucalypts around the margin of the melaleuca lagoon on the Marist Park site and on the Steelworks Golf Course. Between the Great Northern Railway and the Pacific Highway, east of the lagoons, is another substantial wetland tract heavily infested with Water Hyacinth. Flowing into this area is another wetland, which occurs between the University and the Golf Club, consisting almost entirely of reed beds in shallow water which has been dammed back and silted up because of filling deposited during the development of the Lorna Street garbage dump. It is bounded on three sides by a lantana scrub with rain forest-type remnant on the steep slopes.

The Shortland wetlands came into public limelight in 1983, when the Newcastle City Council announced its plans to re-open the Lorna Street site for further garbage dumping, to fill most of the remaining lagoons. A public campaign to save the area was launched, eventuating in the Council rescinding its decision early in 1984. A proposal was put forward by the Wetlands Group of the Newcastle Flora and Fauna Society to amalgamate the Lorna Street site and Marist Park wetland to be developed as a Wetland Centre for conservation, education, research and passive recreation. The Group was eventually reconstituted as the Hunter Wetlands Trust to promote these four aims in wetland settings and to establish a fully operating centre at Shortland, which is likely to become operational during 1986.

One of the authors (Maddock) had been making almost daily visits to the Marist Park section since 1974, and after the establishment of the breeding colony of egrets there in the 1981-82 breeding season, began to record observations at each visit. In 1982-83 both Marist Park and the Lorna Street area have been under regular scrutiny by both authors and observers from the Bird Observers Club.

The results of observations compiled up to mid-1983 were reported in this journal (Maddock, 1983). This paper represents an update of the status of the wetland as an avifauna habitat based on the information gathered between 1981 and February 1985.

The picture which has emerged strongly reinforces Pressey's (1981) assessment of the Shortland Wetlands as having high conservation value. Maddock (1983) identified 49 species of water birds (15 species known to have bred) and 35 species of other birds (8 identified as breeders) as permanent residents or visitors. Since that count, 8 more species of native water birds (with a total of 21 now recorded as having bred) and 35 new species of native non-water birds (with a total of 13 breeders) have been recorded. In addition, 6 species of non-native birds (3 breeding) and two introduced domestic species have been added, to produce a total of 135 species for the area. The following account broadly describes the status of the most common and more important species. Table 1 gives the present status and the other tables summarise the known details of all species recorded up to the end of April 1985.

#### WATER BIRDS

The diversity of water bird habitat provides feeding, roosting and nesting areas for an extensive population of water birds. The species and their status are summarised in Table 2.

#### Colonial Water Birds

The drowned trees of the Steelworks Golf Club dam have supported a breeding colony of Black (*Phalacrocorax carbo*), Little Black (*P. sulcirostris*) and Little Pied (*P. melanoleucos*) Cormorants for many years. Although the cormorants have been under regular observation, few

definitive counts of the number of nests have been recorded. Forty to sixty nests of the Black have been noted, and it is estimated that at peak breeding times, more than 20 pairs of the of the other two species nest. In late 1983, when the number of Little Pied cormorant nests at the site was building up, a single nest of the Darter (*Anhinga melanogaster*) was recorded nesting with them. No Pied Cormorant nests (*Phalacrocorax varius*) have been recorded, but both authors observed two or more individual birds in the area during 1984.

TABLE 1: BREEDING

WATER BIRDS		NON-WATER BIRDS			
KNOWN B	PROBABLE B	KNOWN B	PROBABLE B	TOTAL B	TOTAL PE
21	8	16	18	37	26
<u>TOTALS</u>					
TYPE OF BIRD	NO. SPECIES	BREEDING	POSS. BREEDING		
Native Water Birds	57	21	8		
Non-Native Water Birds	2	0	0		
Native Other	70	13	17		
Non-Native Other	6	3	1		
TOTALS	135	37	26		

Weber (1983) reported 45 pairs of Cattle Egrets (*Ardeola ibis*) in February 1979 and 84 pairs, accompanied by a single pair of Little Egrets (*Egretta garzetta*) in January 1980, breeding at the Steelworks Golf Club site. In the 1981-82 season the focus of the egret breeding shifted to the stand of Broad-leaved Paperbark trees in the lagoon at Marist Park, about 0.5 kilometres from the original site, across sandgate Road, reported in Maddock (1983). Little Pied Cormorants, Large and Plumed Egrets joined the others at the new site. Some Little Pied Cormorants continued to breed with the other two cormorant species at the golf club site.

The Marist Park colony contained 348 nests in the 1981-82 season (October-May), and has continued to increase in size since, with 381 in 1982-83, more than 560 in 1983-84, and more than 600 nests in 1984-85. All four species of egrets breed in the colony, in addition to the Little Pied Cormorant, with Cattle Egrets in the greatest numbers. In the 1984-85 season, a White-Faced Heron (*Ardea novaehollandiae*) nested in the same stand of Broad-leaved Paperbarks as the egrets and cormorants, although only as a single nest in a tree some 20 metres from the main colony area. The species distribution for each of the four seasons is given in Table 3.

TABLE 2: WATERBIRDS OF THE SHORTLAND WETLANDS

<u>GROUPINGS AND COMMON NAMES</u>	<u>SCIENTIFIC NAME</u>	<u>STATUS</u>	<u>NUMBERS</u>	<u>BREEDING</u>
<u>GREBES</u>				
Hoary-headed Grebe	<i>Poliiocephalus poliiocephalus</i>	V	*	PB
Little Grebe	<i>Tachybaptus novaehollandiae</i>	P	**	KB
<u>Pelican</u>				
Australian Pelican	<i>Pelecanus conspicillatus</i>	V	**	-
<u>CORMORANTS AND DARTER</u>				
Pied Cormorant	<i>Phalacrocorax varius</i>	V	*	-
Little Pied Cormorant	<i>Phalacrocorax melanoleucos</i>	V	***	KB
Black Cormorant	<i>Phalacrocorax carbo</i>	P	***	KB
Little Black Cormorant	<i>Phalacrocorax sulcirostris</i>	P	***	KB
Darter	<i>Anhinga melanogaster</i>	V	*	KB
<u>HERONS, EGRETS AND BITTERNS</u>				
White-necked Heron	<i>Ardea pacifica</i>	V	*	-
White-faced Heron	<i>Ardea novaehollandiae</i>	V	*	KB
Cattle Egret	<i>Ardeola ibis</i>	PR	****	KB
Large Egret	<i>Egretta alba</i>	V	****	KB
Plumed Egret	<i>Egretta intermedia</i>	V	****	KB
Little Egret	<i>Egretta garzetta</i>	V	****	KB
Nankeen Night Heron	<i>Nycticorax caledonicus</i>	V	**	PB
Brown Bittern	<i>Botaurus poiciloptilus</i>	V	*	PB
<u>STORK, IBIS AND SPOONBILLS</u>				
Jabiru	<i>Xenorhynchus asiaticus</i>	V		
Glossy Ibis	<i>Plegadis falcinellus</i>	VR	***	-
White Ibis	<i>Threskiornis aethiopica</i>	VR	****	-
Straw-necked Ibis	<i>Threskiornis spinicollis</i>	VR	****	-
Royal Spoonbill	<i>Platalea regia</i>	VR	***	-
Yellow-billed Spoonbill	<i>Platalea flavipes</i>	VR	*	-
<u>SWAN, GEESE AND DUCKS</u>				
Black Swan	<i>Cygnus atratus</i>	P	***	KB
Wandering Whistling Duck	<i>Dendrocygna arcuata</i>	V	**	-
Freckled Duck	<i>Stictonetta naevosa</i>	V	**	-
Black Duck	<i>Anas superciliosa</i>	P	****	KB
Grey Teal	<i>Anas gibberifrons</i>	P	***	KB
Chestnut Teal	<i>Anas castanea</i>	P	***	KB
Southern Shoveller	<i>Anas rhynchos</i>	V	*	-
Pink-eared Duck	<i>Melanorhynchus membranaceus</i>	V	**	-
White-eyed Duck	<i>Aythya australis</i>	V	***	KB
Maned Duck	<i>Chenonetta jubata</i>	V	*	PB

<u>GROUPINGS AND COMMON NAMES</u>	<u>SCIENTIFIC NAME</u>	<u>STATUS</u>	<u>NUMBERS</u>	<u>BREEDING</u>
Blue-billed Duck	<i>Oxyura australis</i>	V	*	-
Musk Duck	<i>Biziura lobata</i>	V	*	PB
<u>GULLS AND TERNS</u>				
Silver Gull	<i>Larus novaehollandiae</i>	V	****	-
Whiskered Tern	<i>Chlidonias hybridus</i>	V	*	-
<u>CRAKES AND RAILS</u>				
Marsh Crake	<i>Porzana pusilla</i>	V	*	PB
Spotted Crake	<i>Porzana fluminea</i>	V	***	PB
Spotless Crake	<i>Porzana takuensis</i>	V	*	PB
Buff-banded Rail	<i>Rallus philippensis</i>	V	*	KB
Dusky Moorhen	<i>Gallinula tenebrosa</i>	P	****	KB
Swamphen	<i>Porphyrio porphyrio</i>	P	****	KB
Coot	<i>Fulica atra</i>	P	****	KB
<u>JACANA</u>				
Jacana	<i>Inediparra gallinacea</i>	V	*	-
<u>PLOVERS AND DOTTERELS</u>				
Spur-winged Plover	<i>Vanellus novaehollandiae</i>	P	**	KB
Red-kneed Dotterel	<i>Erythrogonys cinctus</i>	V	**	-
Black-fronted Dotterel	<i>Charadrius melanops</i>	V	**	KB
<u>SANDPIPERS</u>				
Greenshank	<i>Tringa nebularia</i>	V	**	-
Marsh Sandpiper	<i>Tringa stagnatilis</i>	V	***	-
Pectoral Sandpiper	<i>Calidris melanotos</i>	V	*	-
Sharp-tailed Sandpiper	<i>Calidris agminata</i>	V	***	-
Curlew Sandpiper	<i>Calidris ferruginea</i>	V	*	-
Red-necked Stint	<i>Calidris ruficollis</i>	V	****	-
Bar-tailed Godwit	<i>Limosa lapponica</i>	V	*	-
Japanese Snipe	<i>Gallinago hardwickii</i>	V	****	-
Pied Stilt	<i>Himantopus himantopus</i>	V	***	-
<u>NON-NATIVES</u>				
Common Goose		P	*	-
Muscovy Duck	<i>Cairina moschata</i>	P	*	-

KEY TO SYMBOLS USED

	Numbers
P = Permanent Resident	* 1 - 10
V = Visitor	** 11 - 50
Vs = Visitor, Single Observation	*** 51 - 100
VE = Visitor, Possible Escapee	**** 101+
KB = Known Breeding	
PB = Probable Breeding.	

Scientific names are those used in Blakers, Davies and Reilly (1984).

TABLE 3: SPECIES DISTRIBUTION

SHORTLAND BREEDING COLONY 1981-82 to 1984-85

	1981-2	1982-3	1983-4	1984-5
Large Egret ( <i>Egretta alba</i> )	30	40	75	84
Little Egret ( <i>E. garzetta</i> )	30	27	26	25
Plumed Egret ( <i>E. intermedia</i> )	72	39	91	116
Cattle Egret ( <i>Ardeola ibis</i> )	108	243	310	350
Little Pied Cormorant ( <i>Phalacrocorax melanoleucos</i> )	108	17	64	30
White-faced Heron ( <i>Ardea novaehollandiae</i> )	0	0	0	1
TOTAL	348	381	566	606

Between 200-400 Cattle Egrets have used the stand of Broad-leafed Paperbarks in the middle lagoon at Lorna Street as a winter roosting area. The egrets begin to arrive in late afternoon about 1600 hours and gather on the Water Hyacinth bed in the western-most of the three main lagoons to rest and drink, before moving to the roosting site just on dusk. Two wing-tagged birds, banded by Neil McKilligan as nestlings at Gatton (in Queensland) in December 1983, together with a few colour-banded birds, also probably from Queensland, were observed by Albrecht with this flock on 2 occasions during May 1984. Banded and wing-tagged birds from Queensland were again observed in April 1985 in company with birds banded at Shortland as nestlings in 1984-85. Cattle Egrets in light coloured, early stages of breeding plumage were noted arriving with the flock at the roosting area at 1700 hours early in September 1984.

There are no confirmed recordings of any Nankeen Night Heron (*Nycticorax calandonicus*), nests, but substantial numbers (up to 20 or more) adults have frequently been observed in a denser grove of Paperbarks adjacent to the colony area, and during the 1984-85 season a number of immature young were observed with the adults.

Nest records on 107 *E. alba*, 53 *E. garzetta*, 105 *E. intermedia*, 262 *Ardeola ibis*, and 37 *Phalacrocorax melanoleucos* were contributed to the Royal Australasian Ornithologists Union (RAOU) Nest Record Scheme up to the end of the 1983-1984 season. The records for the 1984-85 season are as yet incomplete as this article is being written.

Other non-breeding regular inhabitants are the White (*Thaeskioanis aethiopica*), Straw-necked (*T. spinicollis*) and Glossy (*Plegadis falcinellus*) Ibis, the White-necked Heron (*Ardea pacifica*), and the Royal (*Platalea regia*) and Yellow-billed (*P. flavipes*) Spoonbills. The White and Straw-necked Ibis roost at Marist Park in the egret colony area each evening and at peak times during early winter are numbered in thousands. The Glossy Ibis is normally an occasional visitor, but more than 100 stayed during the dry summers of 1982-83 and 1984-85, feeding on the mudflats exposed by the retreating water and roosting at Lorna Street.

Royal Spoonbills are frequent visitors and remain for months at a time. Twenty of the birds were found daily at Marist Park during winter and spring of 1984, and developed breeding plumage but did not nest. Their numbers increase markedly during dry periods, the maximum count being 65 individuals during February 1985. The Yellow-billed Spoonbill is normally an occasional visitor, but numbers increase during dry periods.

The White-necked (Pacific) Heron numbers fluctuate with the state of the season, maximum numbers (to the order of 20 or more) occurring during the dry periods, with one or two individuals being more commonly observed.

#### OTHER WATER BIRDS

##### Black Swan

The Black Swan (*Cygnus atratus*) has become firmly established as a regular breeder. Maddock (1983) reported a count of 81 swans in April 1983, after the first extensive drought breaking rains, and about 15-20 pairs have remained on a more or less permanent basis. The majority have bred in the lagoon between the causeway from Sandgate Road to the Golf Club side of the Lorna Street, but nests have been recorded from the other Lorna Street lagoons, the golf club dam and the two largest lagoons at Marist Park. Definitive counts of nests have not been made each season as it has not been possible to keep all nests under observation. Nest records for 5 nests in 1983 and 9 in 1984 were sent to the RAOU Nest Record Scheme. Nesting for the 1984 season began in March at the Lorna Street site and cygnets in down were still present in January and February 1985, the most extended season yet recorded.

##### Duck

Eleven species of duck have been recorded at Shortland, with numbers fluctuating markedly depending on the season, and no attempt has been made to obtain definitive counts on the three common species, the Black Duck (*Anas superciliosa*), Chestnut Teal (*Anas castanea*) and Grey Teal (*Anas gibberifrons*), which have occurred in hundreds from time to time (for example, just after the opening of the first post-drought shooting season in 1984). Maddock (1983) reported the Blue-billed (*Oxyura australis*), the Southern Shoveller (*Anas rhynchos*), Freckled (*Stictonetta naevosa*), Maned (*Chenonetta jubata*), Pink-eared (*Malacorhynchus membranaceus*), and White-eyed (*Aythya australis*) Ducks. A count of 73 Freckled Duck during the February 1983 census was the highest in coastal NSW and put Shortland in the top 10 sites in Australia.

The Freckled and Blue-billed Ducks dispersed after the swamps filled at the end of the drought period in 1983, and the Blue-billed has not been recorded at Shortland since. In April 1985 3 Freckled Duck were observed at the Lorna Street site, the first observed since the end of summer 1983. Their return coincided with a period of drought in the Hunter Valley and nearby regions and further reinforces the value of Shortland as a drought refuge area. The other species of duck have remained as regular inhabitants, with the Pink-eared and White-eyed occurring in substantial numbers at various times. During the dry periods of January and February 1985 only 3 Pink-eared Shovellers have been observed at various times during the 1984-85 summer.

Both teals have bred regularly in significant numbers and one brood of White-eyed Duck was recorded and regularly observed over the period December-January 1983-84. Albrecht observed a pair of Musk Duck mating on the deep water golf course dam in November 1984, but the nest, if any, was not located, and there are no records of nesting or breeding behaviour of the Shoveller or Pink-eared.

The Wandering Whistle Duck (Northern Australian species) (*Dendrocygna arcuata*) appeared at the Lorna Street site during the winter of 1984 (9 individuals having been observed at intervals) and 20 were recorded in February 1985. This is a significant record for this species as they have rarely been observed south of latitude 30°.

## Waders

The numbers of waders in the Shortland wetlands is dependent on the presence of suitable feeding grounds. In general, wader numbers increase as water levels fall during dry spells and often reach a maximum as rains rejuvenate parched mudflats.

### (A) Endemic Waders

The Pied Stilt (*Himantopus himantopus*) is a regular visitor in small numbers during wet and 'normal' seasons. In the dry summers of 1982-83 and 1984-85, their numbers increased dramatically and peaked at over one hundred adult and immature birds in the mudflat areas of Marist Park and Lorna Street in February 1985, as the dry spell was broken by substantial rain.

The Spurwinged Plover (*Vanellus novaehollandiae*) is a permanent breeding resident of the margins and shallows of the wetlands.

Black-fronted Dotterels (*Charadrius melanops*) have also been recorded nesting at Shortland and in the 1984-85 summer adult and immature birds were among the most conspicuous of the mudflat waders. Red-kneed Dotterels (*Erythrogonys cinctus*), prior to the summer of 1984-85 were only occasional visitors, however, during January and February 1985 this wader was seen on a regular basis in numbers up to 30 individuals.

### (B) Migratory Waders

The Lorna Street wetlands have been shown to be a major wetland habitat for the Japanese or Latham's Snipe. Surveys undertaken in 1984-85 by members of the Hunter Bird Observer's Club indicate that of the eight wetlands surveyed in the region, Lorna Street sustained the maximum number of birds over the six month period of the surveys. Table 4 indicates the counts at the beginning and end of each month surveyed.

TABLE 4: SNIPE COUNT 1984-85

<u>Month</u>	<u>Day</u>	<u>Number</u>
September 1984	3	31
	7	13
October 1984	15	57
	19	132
November 1984	26	86
	30	124
January 1985	21	85
	25	86
February 1985	18	43
	22	17

Data supplied by Wilma Barden of the Hunter Bird Observer's Club.

The Shortland wetlands provide a haven for many other species of migratory waders, especially during drought and dry periods.

In the drought of 1982-83 large numbers of Marsh (*Tringa stagnatilis*), and Sharp-tailed Sandpipers (*C. acuminata*) were observed, with Red-necked Stints (*Calidris ruficollis*) also present in large numbers. Curlew (*Calidris ferruginea*) and Pectoral (*Calidris melanotos*) Sandpipers have also been seen along with the other waders. In the dry spell of 1984-85 Sharp-tailed Sandpipers were present in numbers up to 50 at one time at both Lorna Street and



Marist Park. Pectoral Sandpipers were present in smaller numbers and a single Curlew Sandpiper was seen on the mudflats.

In December 1983, three Bar-tailed Godwits (*Limosa lapponica*) were seen at Lorna Street.

#### Crakes and Rails

There is a substantial permanent population of Dusky Moorhen (*Gallinula tenebrosa*), Purple Swamphen (*Porphyrio porphyrio*) and Eurasian Coot (*Fulica atra*) with breeding records for all three species. The Moorhen is the dominant rail species with regular sightings of more than 100 birds in both the Lorna Street and Marist Park sectors. In the 1983-84 season, 29 nest records were compiled for the RAOU Nest Record Scheme, 28 from the Marist Park alone, where observations were concentrated. The Coot is very common at Lorna Street, but is seen in only small numbers of 1-5 birds at a time at Marist Park.

During the two dry summers (1982-83 and 1984-85) large numbers of spotted (*Porzana fluminea*) Crake and smaller numbers of Spotless (*P. tabuensis*) and the Marsh (*P. pusilla*) Crake have been observed feeding on the emerging mudflats in both Lorna Street and Marist Park. Buff-banded Rails (*Rallus philippensis*)(1-4 per observation) have been observed at Marist Park. There have been no records of nests having been found for these four species, but the numbers of crakes observed and their regular occurrence in the Ironbark Creek area indicate that breeding must occur in the Shortland wetlands or close by. Two immature Banded Rails were observed on a number of occasions in association with adults at Marist Park during January and February 1985.

#### Grebes

The Little Grebe (*Tachybaptus novaehollandiae*) is common, in fluctuating numbers, at both Lorna Street and Marist Park and is a regular breeder. Eleven nest records were compiled for the RAOU scheme from the two lagoons at Marist Park during the 1983-84 season, and nests have been noted, but not kept under regular observations at Lorna Street each season. The Hoary-headed Grebe (*Poliocephalus poliocephalus*) has been frequently noted, usually in small numbers of 1-3 individuals at a time at Lorna Street, but there is only one confirmed record of its presence at Marist Park. No nests have been reported, but as Lorna Street has been under less regular scrutiny than Marist Park, it is possible that it does breed in that area.

#### Pelican

The Australian Pelican (*Pelecanus conspicillatus*) visits the Shortland wetlands at irregular intervals, and it is not unusual to see them flying above the area, particularly in the region of the drainage canal to Ironbark Creek. A small group (3-5) spent several weeks at Lorna street during the drought summer of 1982-83, and prior to this in 1974 or 1975 (the date was not recorded) 34 Pelicans were counted in the lagoon below the Steelworks Golf Club Dam wall.

#### Gulls and Terns

A large permanent population of Silver Gulls (*Larus novaehollandiae*) frequents the nearby municipal garbage dump at Sandgate and frequently spends time in the lagoons of the Shortland wetlands. They make use of the fields at Marist Park for feeding when rain follows a dry spell, and after the first 1985 rains in February, a flock of several hundreds took up residence in the open lagoon for several days.

A small group of Whiskered Terns (*Chlidonias hybrida*) spent a number of weeks in the area during the dry 1982-83 summer, particularly frequenting the channel of deep water which remained in the open lagoon at Marist Park after the rest of the swamps had dried up.

#### Bittern

There is a single recording of the Brown Bittern (*Botaurus poiciloptilus*), which was observed at Marist Park at the peak of the dry period in February 1985 and there is one record at Lorna Street. It is suspected that this bittern is a regular inhabitant of the denser reed beds around the periphery of the Shortland wetland area where the stands are much more extensive than in Marist Park and Lorna Street proper.

#### Jacana

A single Jacana (*Irediparra gallinacea*) was observed on several occasions over a period of a number of days at Lorna Street in November, 1984. This observation coincided with a bloom of a floating red-coloured water plant (*Azolla* sp.) which provided ideal rafts for the bird's feeding requirements. It disappeared after heavy rain raised the level of water and dispersed the vegetation rafts.

#### Jabiru

A rare, but important visitor is Australia's only stork, the Jabiru (*Xenorhynchus asiaticus*). It appeared for a very brief visit to Marist Park after the rains in the autumn of 1983 where it was observed feeding in the open lagoon near the rugby club building, and again in the autumn of 1984, after the long wet summer. On the second occasion, after spending part of one day in the open lagoon, it was observed flying off in the general direction of Hexham Swamp, across Ironbark creek.

#### OTHER SPECIES

With considerable diversity of habitat types both encompassed by and adjacent to the wetland areas of Shortland, it is not surprising that a rich variety of bird life can be found exploiting the non-water environment.

Some species use the area as a transit zone to more favoured habitats. However, at least 13 natives and 3 non-native species breed at Shortland, with another 18 species possibly breeding there.

There is considerable competition among species that favour hollows in trees as nest sites. It is a matter of concern that the introduced species such as the Common Starling (*Sturnus vulgaris*) and the Common or Indian Mynah (*Acridotheres tristis*) are beginning to invade the majority of suitable nesting hollows.

Species identified and the status of their occurrence are listed in Table 5.

#### Diurnal Birds of Prey

Thirteen species of raptors have been recorded, four of them being regarded as permanent residents. The recordings include irregular visits by the Wedge-tailed Eagle (*Aquila audax*) and the White-breasted Sea Eagle (*Haliaeetus leucogaster*), permanent residence and known breeding of the Whistling Kite (*Haliastur sphenurus*) and regular observations of the smaller birds of prey such as the Nankeen Kestrel (*Falco cenchrroides*) and Black-shouldered Kite (*Elanus notatus*). The Whistling Kite is a permanent resident, and a pair has nested in a tall eucalypt on the golf course close to the Lorna Street area for a number of years. During

the egret breeding season, Whistling Kites have been observed in the colony area on a number of occasions.

The Sea Eagle is the most regular visitor and particularly during the 1984-85 season an immature bird, with the white breast beginning to become more obvious, made regular sorties into the egret colony, creating considerable disturbance to the breeding birds and provoking aggression from the ravens and magpies which also frequent Marist Park in the vicinity of the egret-breeding area. The Brown Goshawk (*Accipiter fasciatus*) has also been observed in the colony a number of times. A Marsh Harrier (*Circus aeruginosus*) was observed causing disturbance in the colony in March 1984.

Of the small raptors, the Nankeen Kestrel, the Peregrine Falcon (*Falco peregrinus*) and the Black-shouldered Kite can be regarded as permanent residents. One or more Black-shouldered Kites have been observed hunting over the Marist Park sports fields, and the nearby degraded grassy areas, almost daily during the summer of 1984-85.

The Little Falcon (*Falco longinennis*) has been observed regularly, frequently attacking the Common Starling, while the Brown Falcon (*Falco berigona*) has also been observed hunting and occasionally roosting around the margins of the Lorna Street site.

#### Owls

A pair of Barn Owls (*Tyto alba*) was observed on one occasion in 1984 in a eucalypt, close to the egret area at Marist Park. The tree has a substantial hollow in it high up and hopes were held that they might breed there, but the birds have not been observed since. The Boobook Owl (*Ninox novaeseelandiae*) has also been recorded.

#### Kingfishers

Three species of kingfisher have been recorded as frequenting the area. The Sacred Kingfisher (*Halcyon sancta*) has been a regular summer visitor in small numbers and has been observed carrying out breeding behaviour in regularly visiting holes in Paperbark trees in the swamp at Marist Park where the egrets breed. In October 1983 a nest with eggs was identified in one of the trees in which the egrets regularly breed.

A single observation has been recorded in February 1985 of the presence of the Azure Kingfisher (*Ceyx azurea*), which was seen at Marist Park sitting on a branch in the company of two Sacred Kingfishers.

The Laughing Kookaburra (*Dacelo novaeguineae*) sometimes visits the eucalypts which fringe the Marist Park lagoon and around the edges of Lorna Street.

#### Parrots and Cockatoos

The Red-rumped (*Psephotus haematonotus*) is rarely seen at Marist Park, but the Lorna Street Golf Course habitats seem to be much to its liking. Small flocks of up to 30 are frequently flushed from feeding on grass seeds on the fairway areas bordering the lagoons and the dam. One pair was seen exploring a hollow in a Paperbark at Marist Park in spring 1984, but nesting was not confirmed.

The Eastern Rosella (*Platycercus eximius*) is seen on both sides of Sandgate Road and although it has not actually been recorded breeding, it has been observed competing with Mynahs, Galahs and Chestnut Teal for nesting hollows.

Similarly the Galah (*Cacatua roseicapilla*) has been observed taking green twigs into large nesting hollows, but the authors have yet to record a pair engaged in serious nesting.

TABLE 5: NON-WATER BIRDS OF THE SHORTLAND WETLANDS

<u>GROUPINGS AND COMMON NAMES</u>	<u>SCIENTIFIC NAME</u>	<u>STATUS</u>	<u>NUMBERS</u>	<u>BREEDING</u>
<u>DIURNAL BIRDS OF PREY</u>				
Black-shouldered Kite	<i>Elanus notatus</i>	P	*	PB
Whistling Kite	<i>Haliastur sphenurus</i>	P	*	KB
Brown Goshawk	<i>Accipiter fasciatus</i>	V	*	-
White-breasted Sea-Eagle	<i>Haliaeetus leucogaster</i>	V	*	-
Wedge-tailed Eagle	<i>Aquila audax</i>	V	*	-
Little Eagle	<i>Hieraetus morphnoides</i>	V	*	-
Marsh Harrier	<i>Circus aeruginosus</i>	V	*	-
Peregrine Falcon	<i>Falco peregrinus</i>	P	*	-
Little Falcon	<i>Falco longipennis</i>	V	*	-
Brown Falcon	<i>Falco berigora</i>	V	*	-
Nankeen Kestrel	<i>Falco cenchroides</i>	P	*	-
<u>NOCTURNAL BIRDS OF PREY</u>				
Barn Owl	<i>Tyto alba</i>	V	*	-
Boobook Owl	<i>Ninox novaeseelandiae</i>	V	*	-
<u>QUAIL</u>				
Brown Quail	<i>Coturnix australis</i>	P	*	-
<u>DOVES AND PIGEONS</u>				
Domestic Pigeon	<i>Columba livia</i>	P	**	-
Spotted Turtle-Dove	<i>Streptopelia chinensis</i>	P	**	KB
Crested Pigeon	<i>Ocyphaps lophotes</i>	P	*	PB
<u>PARROTS AND COCKATOOS</u>				
Galah	<i>Cacatua roseicapilla</i>	P	**	PB
Little Corella	<i>Cacatua sanguinea</i>	VE	*	-
Sulphur-crested Cockatoo	<i>Cacatua galerita</i>	P	**	PB
Rainbow Lorikeet	<i>Trichoglossus haematodus</i>	V	*	-
Scaly-breasted Lorikeet	<i>Trichoglossus chlorolepidotus</i>	V	**	-
Eastern Rosella	<i>Platycercus eximius</i>	P	*	PB
Red-rumped Parrot	<i>Psephotus haematonotus</i>	P	**	KB
<u>CUCKOO</u>				
Fan-tailed Cuckoo	<i>Cuculus pyrrhophanus</i>	Vs		-
Horsfield's Bronze-Cuckoo	<i>Chrysococcyx basalis</i>	V	*	-
<u>SWIFTS AND SWALLOWS</u>				
Spine-tailed Swift	<i>Hirundapus caudacutus</i>	V	****	-
Welcome Swallow	<i>Hirundo neoxena</i>	V	***	-
Fairy Martin	<i>Cecropis ariel</i>	V	****	-
Tree Martin	<i>Cecropis nigricans</i>	V	****	-
<u>KINGFISHERS</u>				
Azure Kingfisher	<i>Ceyx azurea</i>	Vs		-
Sacred Kingfisher	<i>Halcyon sancta</i>	V	*	KB
Laughing Kookaburra	<i>Dacelo novaeguineae</i>	V	*	-

GROUPINGS AND COMMON NAMES	SCIENTIFIC NAME	STATUS	NUMBERS	BREEDING
<u>FANTAILS AND FLYCATCHERS</u>				
Restless Flycatcher	<i>Myiagra inquieta</i>	V	*	-
Leaden Flycatcher	<i>Myiagra rubecula</i>	Vs		-
Grey Fantail	<i>Rhipidura fuliginosa</i>	V	*	-
Willie Wagtail	<i>Rhipidura leucophrys</i>	P	*	KB
<u>OLD WORLD WARBLERS</u>				
Clamorous Reed-Warbler	<i>Acrocephalus stentoreus</i>	P	**	PB
Tawny Grassbird	<i>Megalurus timoriensis</i>	P	**	PB
Little Grassbird	<i>Megalurus gramineus</i>	P	*	KB
Golden-headed Cisticola	<i>Cisticola exilis</i>	P	**	KB
<u>WRENS AND SCRUBWRENS</u>				
Superb Fairy-Wren	<i>Malurus cyaneus</i>	P	**	KB
White-browed Scrubwren	<i>Sericornis frontalis</i>	P	*	PB
White-throated Warbler	<i>Gerygone olivacea</i>	V	*	-
<u>THORNBILLS</u>				
Brown Thornbill	<i>Acanthiza pusilla</i>	V	*	-
Yellow-rumped Thornbill	<i>Acanthiza chrysorrhoa</i>	V	*	-
Yellow Thornbill	<i>Acanthiza nana</i>	P	*	PB
<u>HONEYEATERS</u>				
Noisy Friarbird	<i>Philemon corniculatus</i>	V	*	-
Little Friarbird	<i>Philemon citreogularis</i>	V	*	-
Yellow-faced Honeyeater	<i>Lichenostomus chrysops</i>	V	**	-
Brown Honeyeater	<i>Lichmera indistincta</i>	V	*	-
Scarlet Honeyeater	<i>Myzomela sanguinolenta</i>	V	*	-
Noisy Miner	<i>Manorina melanocephala</i>	V	*	-
<u>BUTCHERBIRDS</u>				
Grey Butcherbird	<i>Cracticus torquatus</i>	V	*	PB
Pied Butcherbird	<i>Cracticus nigrogularis</i>	V	*	KB
<u>MISCELLANEOUS</u>				
Rufous Whistler	<i>Pachycephala rufiventris</i>	P	*	PB
Rainbow Bee-eater	<i>Merops ornatus</i>	Vs		
Dollarbird	<i>Eunystomus orientalis</i>	V	*	KB
Grey Shrike-thrush	<i>Colluricincla harmonica</i>	V	*	-
White-fronted Chat	<i>Epthianura albilrons</i>	V	*	PB
Striated Pardalote	<i>Pandalotus striatus</i>	P	*	KB
Mistletoe Bird	<i>Dicaeum hirundinaceum</i>	V	*	-
Silvereye	<i>Zosterops lateralis</i>	P	*	PB
Black-faced Cuckoo-shrike	<i>Coracina novaehollandiae</i>	V	*	PB
White-winged Triller	<i>Lalage sueurii</i>	V	*	-
White-breasted Woodswallow	<i>Artamus leucorhynchus</i>	P	*	PB
Australian Magpie-lark	<i>Gallina cyanoleuca</i>	P	**	KB
Australian Magpie	<i>Gymnorhina tibicen</i>	P	*	KB

GROUPINGS AND COMMON NAMES	SCIENTIFIC NAME	STATUS	NUMBERS	BREEDING
Australian Raven	<i>Corvus coronoides</i>	P	**	KB
Olive-backed Oriole	<i>Oriolus sagittatus</i>	Vs		
<u>FINCHES</u>				
European Goldfinch	<i>Carduelis carduelis</i>	V	*	PE
Chestnut-breasted Mannikin	<i>Lonchura castaneothorax</i>	V	*	PB
Red-browed Firetail	<i>Emblema temoralis</i>	V	*	-
<u>OTHER INTRODUCED BIRDS</u>				
House Sparrow	<i>Passer domesticus</i>	P	****	
Indian Mynah	<i>Acridotheres tristis</i>	P	**	KB
Common Starling	<i>Sturnus vulgaris</i>	P	****	KB

Scientific names are those used in Blakers, Davies and Reilly (1984).

KEY TO SYMBOLS USED .

	NUMBERS
P = Permanent Resident	* 1 - 10
V = Visitor	** 11 - 50
Vs = Visitor, Single Observation	*** 51 - 100
VE = Visitor, Possible Escapee	**** 101+
KB = Known Breeding	
PB = Probable Breeding	

It is possible though that the Galah and the Sulphur-crested Cockatoo (*Cacatua galerita*) breed on a regular basis in the hollows that exist in the very large trees left on the Steelworks Golf Course.

The Little Corella (*Cacatua sanguinea*) has been seen in small numbers in the area and it is likely that these sightings are of aviary escapees. The RAOU *Atlas of Australian Birds* does not record the presence of the Little Corella in the wild anywhere near the Hunter Region.

Rainbow Bee-eater

One dead specimen of the Rainbow Bee-eater (*Merops ornatus*) was found at the verge of Sandgate Road, opposite the Lorna Street wetlands during 1984, but no live birds have been recorded.

Dollarbird

The competition for nesting hollows was illustrated during the 1983-84 breeding season by a battle between a pair of Dollarbirds (*Eurystomus orientalis*) and a pair of Indian Mynahs for a favoured nesting hollow at Marist Park. Through sheer aggressiveness and persistence, the Dollarbirds defeated the Mynahs and successfully occupied the hollow to raise young. Several pairs of Dollarbird breed in the hollows in the golfcourse trees.

### Old World Warblers

The Little Grassbird (*Megalurus gramineus*), the Golden-headed Cisticola (*Cisticola exilis*), and the Clamorous Reed-Warbler (*Acrocephalus stentoreus*) have been recorded at Shortland as breeding. However, the numbers of birds and the suitability of habitat make it extremely likely that the Tawny Grassbird (*Megalurus timoriensis*) also breeds.

The Shortland wetlands are a very good location to observe these often shy and elusive birds, as the lack of dense cover and accessibility make it possible to observe them at close quarters.

### Thornbills

The Yellow Thornbill (*Acanthiza nana*) appears to be a permanent resident of the Marist Park Paperbark stand. It is often seen in the company of the Silvereye (*Zosterops lateralis*), the Grey Fantail (*Rhipidura fuliginosa*) and the Superb Fairy-wren (*Malurus cyaneus*). Brown Thornbill (*Acanthiza pusilla*) and Yellow-rumped Thornbill (*Acanthiza chrysorrhoa*) are frequently seen moving through the Paperbarks at Marist Park. It is likely that both these species move in from the Ironbark Creek, Hexham Swamp area as part of their feeding-range.

For the thornbills, species of flycatcher and other insect eating birds, this link to the mangroves of Ironbark Creek is important. It also explains in part the richness of birdlife in the Shortland wetlands generally.

### Honeyeaters

Two friarbirds, the Noisy (*Philemon corniculatus*) and the Little (*Philemon citreogularis*) are rarely seen except when blossom is abundant. This applies to the Scarlet Honeyeater (*Myzomela sanguinolenta*) as it has only been seen during the flowering of Paperbarks at Marist Park.

The Brown Honeyeater (*Lichmera indistincta*) is at the southern-most extension of its range on the east coast of Australia. It has however, been observed in the remnant mangroves on Marist Park and in Paperbarks at Lorna Street.

The Yellow-faced Honeyeater (*Lichenostomus chrysops*) has been seen in large numbers passing through the Shortland area during its autumn migration.

### Pardalote

The Striated Pardalote (*Pardalotus striatus*) has been found nesting in hollows in the Broad-leafed Paperbark at Marist Park, favouring trees that are in water. In the summer of 1984 three nest entrances were found in height from 2 metres to 6 metres above the water level of the swamp.

### Woodswallow

The White-breasted Woodswallow (*Artamus leucorhynchus*) is regularly seen at Lorna Street and occasionally visits the Marist Park wetlands. As it has been seen feeding fledglings at Lorna Street it is probable that it actually breeds there.

### Butcherbirds

The Pied Butcherbird (*Cracticus nigrogularis*) has been recorded as breeding at Shortland while the Grey Butcherbird (*Cracticus torquatus*) has been seen with immature birds in company. Again, it is likely that the latter species breeds in the area and future observations around the Lorna Street area and golf course vegetation will, we hope, confirm this suspicion.

## CONCLUSION

Regular observations on the avifauna of the Shortland wetlands carried out since 1981 have added considerable strength to Pressey's (1981) conclusion that the area was one of high conservation value. The public campaign to save the lagoons on City-owned land at Lorna Street and to establish a wetland reserve on the site has been successful, but the future of the Marist Park site is still in the balance as negotiations continue between the Newcastle City administration, the Hunter Wetlands Trust and the owners.

The fact that such a wide variety of bird species continue to sustain viable populations, some of them breeding in substantial numbers, despite inhabiting an area so close to a large city with consequent urban residential and industrial pressures, makes it an important one to be conserved. The Hunter Wetlands Trust has the opportunity to undertake a careful rehabilitation programme for the degraded sections of the area, with the potential of developing a habitat which will support an even greater diversity of avifauna, both water-birds and other species.

Its proximity to the University and easy access also enhances its potential as a research centre for studies in wetlands ecology and management and in bird biology. Considerable research data has been collected in the area since 1982. Well over 1000 nest records will have been contributed to the RAOU Nest Research Scheme on various species by the end of the 1985 breeding season, and significant work on breeding success and biology has been accomplished on egret breeding biology. This is in the process of preparation for publication.

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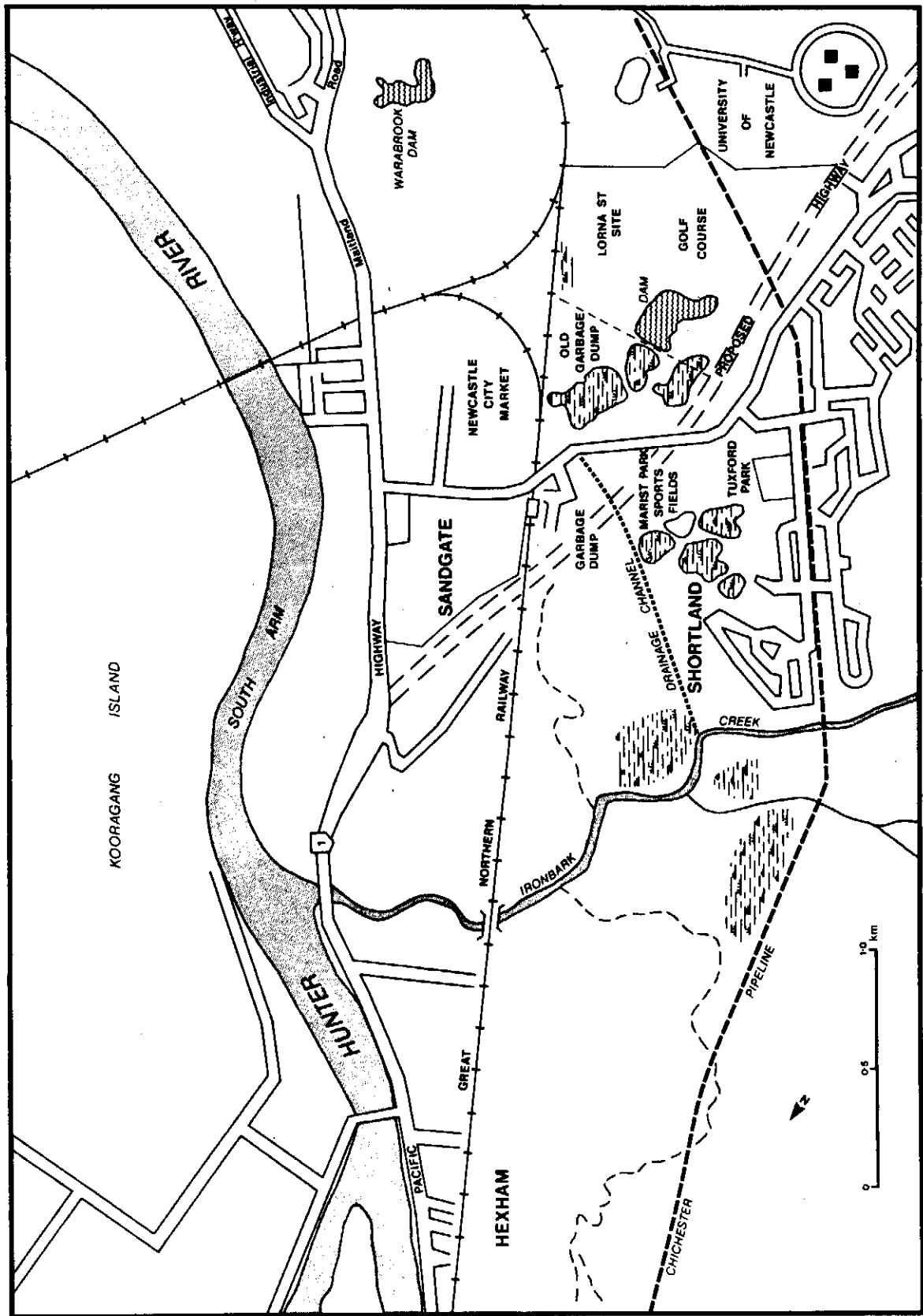


FIGURE 1. Shortland Wetlands Area