

# THE SUNBIRD

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Volume 33 No. 1

April 2003

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## BIRDS OF DAVENPORT DOWNS STATION AND ASTREBLA DOWNS NATIONAL PARK

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### ABSTRACT

A total of 122 bird species was recorded during nine visits to Davenport Downs Station from 1987 to 1991. Birds were noted at one or more of five separate study sites. These visits pre-dated the gazettal of Astrebla Downs National Park and at the one site now included in the park a total of 89 bird species was recorded. A list is provided of all species recorded and those of high conservation status are discussed. Range extensions for four species within Queensland are documented and records of birds observed during other surveys of Davenport Downs (and the section that subsequently became Astrebla Downs National Park) are provided. Because the boundaries of Davenport Downs have changed since this fieldwork was done some revision of these lists may be necessary.

### INTRODUCTION

Davenport Downs Station straddles the Diamantina River in Queensland's Channel Country. It lies 210km NW of Windorah and 340km SW of Winton and is owned by the Stanbroke Pastoral Company. It is traversed by two public roads and is now frequently visited due to Diamantina Lakes National Park being situated immediately to the north and the ongoing Greater Bilby *Macrotis lagotis* conservation program in Astrebla Downs National Park (ADNP; see Fig. 1).

Published information about the avifauna of Davenport Downs and Astrebla Downs National Park is scarce. Bird lists are unavailable despite a bird atlassing camp being held there in August 1980 (Reynolds *et al.* 1982, Blakers *et al.* 1984, A. Silcocks pers. comm.) but the Yellow Chat *Ephthianura crocea* and the Plains-

wanderer *Pedionomus torquatus* have been recorded on Davenport Downs (C. James in Reynolds *et al.* 1982, Baker-Gabb 1990).

Some previously unpublished results from a fauna survey of the Diamantina region conducted from 1981-1985 by Atherton *et al.* (undated), together with a summary of records from the Channel Country Biogeographic Region and a survey of Davenport Downs in 1991 (McFarland 1992), are included in a list presented in this paper.

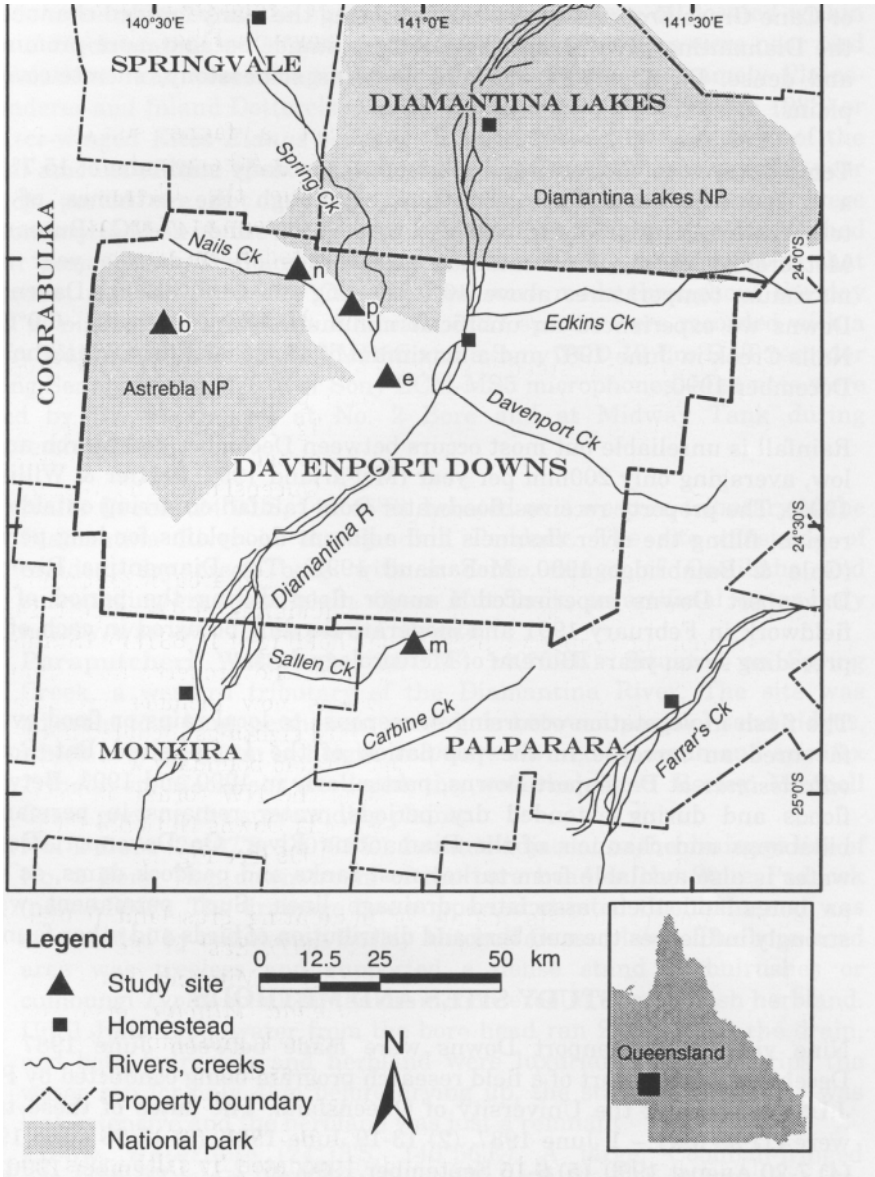
### GENERAL STUDY AREA

Davenport Downs homestead is situated at 24°09'S, 141°06'E. The property extends into three 1° blocks (with centre points at 23°30'S, 140°30'E; 24°30'S, 140°30'E; and 24°30'S, 141°30'E – Fig. 1) straddling the boundary of the Mitchell Grass Downs and the Channel Country Biogeographic Regions (Sattler & Williams 1999) in SW Queensland. The Diamantina River runs approximately N to S across it.

Observations presented here primarily refer to the area of approximately 8,500km<sup>2</sup> encompassed by the original boundaries of Davenport Downs (Fig. 1) and not the property's present day holding of 16,631km<sup>2</sup> (Stanbroke Pastoral Company 2002). The boundaries of the property have changed considerably since 1991. Davenport Downs now includes an adjacent property to the SE, Palparara, where the bird sightings included here were made from a site (Site V – see below) near the old boundary with Davenport Downs (Fig. 1). In February 1996 most of the NW corner of Davenport Downs was gazetted as the 174,000ha Astrebla Downs National Park, with a further 2000ha being added to the park in 1999 (see Fig. 1).

Davenport Downs consists mainly of undulating grassland plains with cracking clay soils (Lavery & Kirkpatrick 1997). East of the Diamantina River the vegetation is dominated by Barley Mitchell Grass *Astrebla pectinata* and Feathertop Wiregrass *Aristida latifolia* open tussock grassland; west of the river *A. pectinata* tussock grassland occurs, along with some hummock and open hummock grasslands on siliceous sand dunes (Lavery & Kirkpatrick 1997). Drainage channels lined with Coolibah *Eucalyptus coolabah* woodland or open woodland wind across the grassland plains. These are bordered by herblands dominated by saltbushes *Atriplex* spp. and sometimes large areas of daisies (Asteraceae), although the beds of the larger watercourses have open succulent shrubland, typically of Lignum *Muehlenbeckia florulenta*, Queensland Blue Bush

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**FIGURE 1. Davenport Downs Station and our field study sites (1987-1991), with current national park areas indicated.**  
Study sites shown as: n = Nails Creek; p = Paraputcheri Waterhole; b = No. 2 Bore; e = Elbow Waterhole; and m = Midway Tank.

*Chenopodium auricomum* or Cane Grass *Eragrostis australasica*. Along the many braided channels of the Diamantina River itself, the Coolibah stands become more prominent and dense. Davenport Downs also contains some stony, silcrete-covered plains.

Temperatures at Windorah range from a mean daily minimum of 15.7°C to a mean daily maximum of 30.3°C, although the extremes of the temperature range so far recorded are -1.8°C and 47.1°C (Bureau of Meteorology data). Windorah has an average of 32 days a year with maximum temperatures above 40°C. During the fieldwork on Davenport Downs we experienced an unofficial minimum temperature of -6.0°C at Nails Creek in June 1987 and a maximum of 48.0°C at Elbow Waterhole in December 1990.

Rainfall is unreliable but most occurs between December and March and is low, averaging only 200mm per year (McFarland 1992, Sattler & Williams 1999). The property receives floodwater from rainfall occurring outside the region, filling the river channels and adjacent floodplains for long periods (Gale & Bainbridge 1990, McFarland 1992). The Diamantina River at Davenport Downs experienced a major flood during the period of our fieldwork in February 1991 and moderate flooding occurred in each of the preceding seven years (Bureau of Meteorology data).

The flush in vegetation occurring in response to local rains or flood events favoured an increase in the population of the Long-haired Rat *Rattus villosissimus* at Davenport Downs, particularly in 1990 and 1991. Between floods and during extended dry periods, water remains in permanent billabongs and channels of the Diamantina River. On Davenport Downs water is also available from turkey nest tanks and paddock dams, as well as bores and their associated drainage lines. Such permanent water strongly influences the numbers and distribution of birds and other fauna.

## STUDY SITES AND METHODS

Nine visits to Davenport Downs were made between June 1987 and December 1991 as part of a field research program being conducted by Prof. J.D. Pettigrew of the University of Queensland. The dates of these trips were (1) 29 May – 1 June 1987, (2) 13-19 June 1988, (3) 15-28 June 1990, (4) 7-20 August 1990, (5) 6-16 September 1990, (6) 2-17 December 1990, (7) 24 May – 9 June 1991, (8) 13 September – 6 October 1991, and (9) 9-20 December 1991.

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Birds were recorded at the study sites described below, all located within the 1° block centred on 24°30'S, 140°30'E (Fig. 1). The sites were near bird populations that were being studied by Prof. Pettigrew, namely Plains-wanderer and Inland Dotterels *Charadrius australis* (from 1987 to 1988) or Letter-winged Kites *Elanus scriptus* (from 1990 to 1991). Records of the total amount of time spent at each of the five locations over the five-year study period are not available and general bird observations were secondary to work on the study species. Camps at all sites were established near permanent water and so bird observations may favour species that frequent riparian habitats. Observations were made throughout the day and at night using spotlights. The calls of 57 species were recorded with a Sony Walkman Professional WMD6C and a Sony TCD 10 Pro DAT recorder using Sennheiser MKH816 or Sony ECM-MS5 microphones. Mist nets were used by Dr. P. Driscoll at No. 2 Bore and at Midway Tank during September 1990.

- I. **Nails Creek** (24°01'S, 140°46'E). Located on a western tributary of the Diamantina River in the Sandhill Paddock. The site consisted of braided, dry creek beds with a dense fringe of Coolibahs and surrounding grassland plain. Grass Hut Tank, an artificial water body nearby, was included as part of the site.
  - II. **Paraputcheri Waterhole** (24°05'S, 140°52'E). Situated on Spring Creek, a western tributary of the Diamantina River. The site was adjacent to a long, permanent waterhole between parallel sand ridges, which averaged 12m in height and were covered by scrub and spinifex *Triodia* sp. Coolibahs bordered the waterhole and Barley Mitchell Grass grew on the surrounding plains.
  - III. **No. 2 Bore** (24°07'S, 140°31'E). Located adjacent to the drainage line of No. 2 Bore, 7km downstream of the bore head in the Store Paddock (now ADNP). The drainage line supported stunted Coolibahs and was surrounded by undulating Barley Mitchell Grass plains. The bore head area was treeless and supported a dense stand of bulrushes or cumbungi *Typha* sp. along the drain, bordered in turn by lush herbland. Until June 1990, water from the bore head ran 23km along the drain, and both bulrushes and herbland were luxuriant. In later trips the water ran for only 4km before drying up, the stand of bulrushes was less extensive and the herbland was just a remnant.
  - IV. **Elbow Waterhole** (24°13'S, 140°56'E). A large, Coolibah-fringed waterhole on Spring Creek downstream of Paraputcheri Waterhole. It lay adjacent to a sandhill covered with scrub and spinifex and was surrounded by a Barley Mitchell Grass plain.
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V. **Midway Tank** (24°43'S, 140°59'E). An isolated, paddock tank near the Coolibah-fringed Sallen Creek, an eastern tributary of the Diamantina River, in the far NW corner of what was then the adjacent property Palparara. The levee banks of the tank supported only herbs within a small area of open succulent shrubland, surrounded by Mitchell grass plains. Sallen Creek and several of its tributaries were sparsely lined with Coolibahs but completely dry.

## RESULTS AND DISCUSSION

A total of 122 bird species was recorded from within the original boundaries of Davenport Downs and the extreme NW corner of Palparara, which is part of the present day Davenport Downs. All except one species (Square-tailed Kite *Lophoictinia isura*) were seen at one or more of the study sites. The 121 species recorded from the five study sites visited are provided in Appendix 1. At Sites I -V totals of 87, 80, 89, 72 and 64 bird species, respectively, were recorded.

### *Birds Notes from Davenport Downs, 1987-1991*

#### *(\*breeding; # rare or threatened; < range extension)*

**#Freckled Duck:** One young bird was seen dabbling along the edge of Elbow Waterhole on 5 December 1990. Single observations of Freckled Ducks have been reported previously at Davenport Downs during the Atlas camp in August 1980 (A. Silcocks pers. comm.) and in January 1983 (J. Martindale in Atherton *et al.* undated). Freckled Duck is listed as Rare in state legislation and Least Concern by Garnett & Crowley (2000).

**Hoary-headed Grebe:** Two adults and a juvenile with fading facial bars were observed on Grass Hut Tank (Site I) in June 1991.

**\*Black-shouldered Kite:** Pairs were seen irregularly at three study sites. Breeding occurred at Nails Creek in June 1991, 6km E of the nearest known breeding location of Letter-winged Kite.

**\*Letter-winged Kite:** This species bred in good numbers during the peak abundance of *Rattus villosissimus* in 1990/91. Nests were distributed along creeks. At the campsite at No. 2 Bore 11 nests were located close together, perhaps reflecting the availability of trees at this location. Approximately 200 juveniles were seen in a crèche at Midway Tank in December 1990. Adult pairs of birds were incubating eggs and feeding flying young simultaneously.

- #Square-tailed Kite:** In June 1991 one bird was soaring high overhead at Ingledoon Bore (23°58'S, 140°34'E), some 21km WNW of the Nails Creek study site and 16km NE of the No. 2 Bore head (outside ADNP). This is the first record of the species for the property. It is listed as Rare in state legislation and Least Concern by Garnett & Crowley (2000).
- \*Black Kite:** Constantly present, this species began breeding about three weeks later than the peak of Letter-winged Kite nesting. Nests were distributed in Coolibah trees along creeks.
- \*Whistling Kite:** Small numbers, at times up to 10 birds, always present around waterholes and along the tree-lined Diamantina River. Several active nests were found at waterholes.
- \*Wedge-tailed Eagle:** Up to 10 birds were seen on kangaroo or cattle carcasses in the vicinity of station tracks. Two active nests were found along the bore drain at No. 2 Bore and one on Sallen Creek, downstream of the Midway Tank campsite.
- \*Little Eagle:** Occasionally sighted. An active nest was located near Elbow Waterhole.
- \*Brown Falcon:** This species was always present, but never in numbers. Active nests were found along creeks near Midway Tank and along the bore drain below No. 2 Bore. When the Long-haired Rat population declined Brown Falcons appeared very weak and emaciated, and some carcasses were found.
- Australian Hobby:** Only one bird was seen during the entire period. It was observed swooping to capture an Inland Dotterel.
- #Grey Falcon:** A maximum of three birds was observed during any trip. Seen at three of the five study sites but mainly along the watercourses at Midway Tank. On a number of occasions birds flew low and fast over the tank just before dusk. It was probably breeding on or adjacent to Davenport Downs. The Grey Falcon is regarded as Rare under state legislation and Near Threatened by Garnett & Crowley (2000).
- \*Black Falcon:** Seen catching Australian Pratincoles and Cockatiels on a number of occasions. Regularly seen soaring over the plains or around water sources. Two active nests were found, near Midway Tank and in a Coolibah near the campsite at No. 2 Bore.
- <Buff-banded Rail:** Birds were often heard and occasionally seen in the bulrush stand near the No. 2 Bore head during winter, spring and summer visits in both 1990 and 1991. The habitat of *Typha*-lined bore drains at No. 2 Bore is similar to that approximately 250km further E at Richmond (20°44'S, 143°08'E), previously the westernmost record of
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the species (Storr 1984). Buff-banded Rail is dispersive and occurs furthest inland during favourable seasons. It has also been reported near Charleville (26°S, 146°E; Blakers *et al.* 1984), Eulo (28°10'S, 145°03'E; Palliser 1985) and 110km NW of Longreach (22°10'S, 143°33'E; Redhead 1988).

**Australian Spotted Crane:** Only one record at No. 2 Bore but because this species is cryptic it was suspected to have been more regular at this site.

**Spotless Crane:** Frequently heard calling and occasionally seen in the bulrush stand below No. 2 Bore over several seasons and in consecutive years.

**Australian Bustard:** Seen regularly in areas with long grass and tree cover, particularly near waterholes and along the Diamantina River. Males were observed lekking near Davenport Downs Station homestead during December 1990. Its conservation status is Near Threatened (Garnett & Crowley 2000).

**#Plains-wanderer:** At least 20 birds were seen at Nails Creek during the 1987 visit. Prof. Pettigrew caught 10 birds in the Sandhill Paddock near Nails Creek in 1987 and a further six birds in 1988. Another two birds were recorded near No. 2 Bore in September 1990 and September 1991. The species is Vulnerable under state and national legislation and listed as Endangered by Garnett & Crowley (2000). It was previously recorded from the property by Baker-Gabb (1990).

**\*Inland Dotterel:** Several individuals were caught during Prof. Pettigrew's studies on the 1988 visit. Up to 35 birds were seen in one group and two breeding records were noted in the Nails Creek area in June 1988.

**\*Banded Lapwing:** Observed regularly. Two adult pairs with runners were seen in the vicinity of Nails Creek.

**Australian Pratincole:** Good numbers were seen on occasions at No. 2 Bore and the species was regularly observed in small numbers at other study sites.

**Flock Bronzewing:** On 5 December 1990 in a temperature of 48°C a flock estimated at 100,000 birds was seen flying and on the ground around No. 2 Bore. Flocks of 500-1,000 were seen regularly coming in to No. 2 Bore during the hot weather. Only small numbers were seen elsewhere. When spotlighting at night, birds were observed on the ground out on the Mitchell grass plains but no nests were found. Its conservation status is Near Threatened (Garnett & Crowley 2000).

**Spinifex Pigeon:** Only two records of this species were made, both on low sandhills near waterholes. There is little suitable habitat for this species at Davenport Downs.

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- Red-tailed Black-Cockatoo:** Seen several times around Coolibah-lined waterholes and once along Nails Creek.
- \*Budgerigar:** Flocks of up to 1,000 birds were recorded on occasions in the vicinity of the Coolibah-lined creeks. Many pairs were breeding along Nails Creek during the 1987 visit.
- \*Barn Owl:** During the rat plague in 1990/91 this species was often heard calling at night. Between five and ten nests were found, including one with eight chicks (the mean clutch size is four – Olsen & Marples 1993). Birds were seen roosting at ground level in hollow Coolibah trunks and in an abandoned traction engine on an open plain.
- Grass Owl:** Up to three birds seen flying over the stand of bulrushes just below the No. 2 Bore head during the 1990/91 visits. Their cricket-like calls were occasionally heard at dusk.
- <White-throated Needletail:** A few birds were observed once at Elbow Waterhole in December 1990. This record represents a westward extension of the species' range in this region of approximately 250km. The nearest published records for this species are at Richmond (20°44'S, 143°08'E; Storr 1984) and from 1° further E at the same latitude (Blakers *et al.* 1984).
- Striated Pardalote:** Only one record of this species was obtained at Midway Tank during the August 1990 visit. More were to be expected given the abundance of eucalypts at the study sites.
- <Yellow-rumped Thornbill:** A small flock was observed once in June 1988 at the Nails Creek study site, representing a minor westerly extension of range for the species. Blakers *et al.* (1984) report it from the 1° block centred at 25°30'S, 141°30'E, SE of Davenport Downs. Storr (1984) and Schodde & Mason (1999) give the distribution of the species as the greater part of Queensland, excluding the far western interior S of the Toko Range (22°55'S, 138°10'E) and W of Coopers Creek (27°40'S, 141°00'E). This apparent gap is where the present record was made.
- \*Crimson Chat:** Regularly seen on most visits, particularly when there was fresh growth on vegetation. Several nests were found in low bushes around bore drains and waterholes.
- Orange Chat:** Seen regularly in small numbers along the bore drain below the No. 2 Bore head.
- #Yellow Chat:** Recorded on every visit. An estimated maximum number of 40 birds was heard and seen in the bulrush stand and adjacent forb fields below the No. 2 Bore head until December 1991. This number declined after the bore was partially capped, preventing water from spreading out onto areas surrounding the drain. The Yellow Chat is listed as Vulnerable
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under state legislation although Garnett & Crowley (2000) list this subspecies as of Least Concern.

**<Grey Butcherbird:** Single birds were recorded occasionally in Coolibah woodland at Nails Creek during consecutive winters. This species may not be a regular resident. In SW Queensland, it is reported from the lower Coopers Creek drainage W to 27°S, 141°E and 28°S, 141°E (Blakers *et al.* 1984, Storr 1984). Nearer the latitude of Davenport Downs Blakers *et al.* (1984) record the western limit of the species' range further E in 1° blocks centred on 22°30'S, 142°30'E and 25°30'S, 142°30'E. Ford & Parker (1974) and Storr (1984) regard its western limit as 12km NE of Canterbury in the Negri Range (25°18'S, 141°59'E), W of Windorah. Ford & Parker (1974) describe this habitat as 'mulga-scrub' and also observed the species in 'gidyea' in the Carter Range, 13km E of Middleton (22°21'S, 141°41'E). The Nails Creek records extend the range 100km further W in a different habitat.

**\*Australian Raven:** Small numbers seen regularly near water. Active nests were found at Midway Tank and other waterholes.

**Little Crow:** Flocks of up to 75 birds were found along the low sandhills near Nails Creek, but otherwise small groups were seen occasionally. No nests were found.

**\*Zebra Finch:** Common and always present around tanks and bores, where nests were found occasionally in low bushes. Nests were also noted amongst the sticks of two active nests of Wedge-tailed Eagles.

**\*Fairy Martin:** Nests were found in an old, deserted traction engine and under overhanging banks at Paraputcheri Waterhole.

### ***Comparison with Other Surveys***

Other bird records from Davenport Downs (including the present Astrebla Downs National Park) were obtained during The Atlas of Australian Birds campout in August 1980 (Reynolds *et al.* 1982, Blakers *et al.* 1984, A. Silcocks pers. comm.) and a vertebrate fauna survey of the Diamantina region from May 1981 to August 1985 (Atherton *et al.* undated). A 1991 survey of vertebrate animals in the Channel Country Bioregion (McFarland 1992) and records made by Queensland Parks and Wildlife Service staff in October 1994 (P. Bourke pers. comm.) have contributed further bird sightings from the property.

These sources list an additional 25 bird species shown in Table 1 that were not recorded by us at the five study sites or elsewhere on Davenport Downs. Most of these additional species were recorded during The Atlas of Australian Birds

**TABLE 1. Additional species from Davenport Downs Station and Astrebla Downs National Park (asterisked).**

Data from: (1) A. Silcocks (pers. comm.), (2) Atherton *et al.* (undated), (3) McFarland (1992 and unpubl.) and (4) P. Bourke (pers. comm.).

Plumed Whistling-Duck <i>Dendrocygna eytoni</i> (1,2)	Chestnut-rumped Thornbill <i>Acanthiza uropygialis</i> (1)
Pied Cormorant <i>Phalacrocorax varius</i> (1)	Little Friarbird <i>Philemon citreogularis</i> (1)
Black-breasted Buzzard <i>Hamirostra melanostemon</i> (1)	Grey-fronted Honeyeater <i>Lichenostomus plumulus</i> (1)
* Painted Snipe <i>Rostratula benghalensis</i> (1,3)	Pied Honeyeater <i>Certhionyx variegatus</i> (1)
* Red-capped Plover <i>Charadrius ruficapillus</i> (1)	Restless Flycatcher <i>Myiagra inquieta</i> (1)
* Oriental Plover <i>Charadrius veredus</i> (4)	Ground Cuckoo-shrike <i>Coracina maxima</i> (1)
* Masked Lapwing <i>Vanellus miles</i> (1,2)	* White-breasted Woodswallow <i>Artamus leucorhynchus</i> (1,2)
Silver Gull <i>Larus novaehollandiae</i> (1)	Little Woodswallow <i>Artamus minor</i> (1)
* Gull-billed Tern <i>Sterna nilotica</i> (1,3)	Torresian Crow <i>Corvus orru</i> (1)
Red-winged Parrot <i>Aprosmictus erythropterus</i> (1)	Spotted Bowerbird <i>Chlamydera maculata</i> (1)
Pallid Cuckoo <i>Cuculus pallidus</i> (3)	House Sparrow <i>Passer domesticus</i> (1)
* Spotted Nightjar <i>Eurostopodus argus</i> (4)	Tree Martin <i>Hirundo nigricans</i> (1)
Weebill <i>Smicromis brevirostris</i> (1)	

campout when a total of 110 species was found on the property. Our records include 32 species not seen during the Atlas campout. Some of the additional bird records may require confirmation. For example we paid special attention to corvid identification and although Torresian Crow *Corvus orru* had been noted during the 1980 Atlas campout our taped calls were subsequently confirmed as belonging only to the Australian Raven *C. coronoides* and Little Crow *C. bennetti* (G. Chapman pers. comm.), supporting our observations from the property. Two other species, the Varied Triller *Lalage leucomela* and Tawny Grassbird *Megalurus timoriensis*, that are normally coastal or subcoastal in Queensland (Blakers *et al.* 1984, Storr 1984, Schodde & Mason 1999) were reported by Atherton *et al.* (undated) from the No. 2 Bore area and are not included in Table 1 due to concerns about their identification.

In Astrebla Downs National Park we recorded 89 species from No. 2 Bore (Appendix 1). The surveys referred to above recorded seven additional species for the park (see Table 1) and Atherton *et al.* (undated), McFarland (unpubl.) and A. Silcocks (pers. comm.) together add another four species (Hoary-headed Grebe, Straw-necked Ibis, Rufous Whistler and Rufous Songlark) that we also saw on Davenport Downs but not at the No. 2 Bore site. With the

exception of the two species observed by QPWS staff in October 1994 (Table 1), the total figure of 100 species for ADNP does not include birds that have been observed since the national park was gazetted, including records made during the second Atlas of Australian Birds.

Boundary changes to Davenport Downs Station that have occurred since 1991 (see Fig. 1) have made compiling complete bird lists difficult. The property has increased in area from approximately 8,500km<sup>2</sup> (when the present work was done) to its current size of 16,631km<sup>2</sup> (Stanbroke Pastoral Company 2002). Nevertheless the bird lists we have presented here provide a basis upon which others may build.

### ACKNOWLEDGEMENTS

We are most grateful to Prof. Jack Pettigrew for his invitations to participate in the fieldwork in the Channel Country and acknowledge the Vision, Touch & Hearing Research Centre of the University of Queensland for support. Stanbroke Pastoral Company and the Davenport Downs Station management and staff provided access, assistance and hospitality during the study. Prof. Jack Pettigrew, Peter Driscoll, David Stewart, Colin Anderson, Paula Duncan and Greg Rouse contributed bird sightings. Tim Ellis, Peter McRae and David McFarland provided maps, cadastral and gazettal information about Astrebla Downs National Park. Phil Bourke supplied bird sightings from the Environmental Protection Agency's 'SW Fauna Database' and Harriet Preece prepared Fig. 1. Graeme Chapman confirmed the identity of taped corvid calls, Andrew Silcocks of Birds Australia supplied data from The Atlas of Australian Birds and David McFarland provided raw data and unpublished reports from fauna assessments of the Channel Country and Diamantina region.

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**APPENDIX 1. Birds recorded at Davenport Downs Station and Astrebla Downs National Park (asterisked) on nine trips between 1987 and 1991 (see Study Sites and Methods for site details and dates corresponding to trip numbers).**

Species	Site Number				
	I	II	III	IV	V
* Emu <i>Dromaius novaehollandiae</i>	2,7	8,9	7,8,9	6,9	8,9
* Stubble Quail <i>Coturnix pectoralis</i>	1		4		
Freckled Duck <i>Stictonetta naevosa</i>				6	
* Australian Wood Duck <i>Chenonetta jubata</i>	7	9	7,9		4
* Pacific Black Duck <i>Anas superciliosa</i>	1,7	8,9	5,6,7,8,9	6,8,9	4,7
* Grey Teal <i>Anas gracilis</i>	1,2	8,9	5,6,7,8,9	6,8,9	
* Pink-eared Duck <i>Malacorhynchus membranaceus</i>	1,7	7,9	9	6	4
* Hardhead <i>Aythya australis</i>	1,7	8,9	5,7	8	
* Australasian Grebe <i>Tachybaptus novaehollandiae</i>	2	8	7	8	3,4
Hoary-headed Grebe <i>Poliiocephalus poliocephalus</i>	7				
Darter <i>Anhinga melanogaster</i>		8,9		8,9	
Little Black Cormorant <i>Phalacrocorax sulcirostris</i>		8,9		8,9	3
Great Cormorant <i>Phalacrocorax carbo</i>		9			5
Australian Pelican <i>Pelecanus conspicillatus</i>		8,9		6,8,9	
* White-faced Heron <i>Egretta novaehollandiae</i>	1	8,9	8,9	8,9	6
* White-necked Heron <i>Ardea pacifica</i>	1,7	8,9	4,5,6,8	6,8,9	4
Great Egret <i>Ardea alba</i>	2,7	8,9		6,8,9	
* Nankeen Night Heron <i>Nycticorax caledonicus</i>	1	8,9	7,8,9	9	7,8
* Glossy Ibis <i>Plegadis falcinellus</i>	1	8	8	6,8	
Australian White Ibis <i>Threskiornis molucca</i>	1	9		6	
Straw-necked Ibis <i>Threskiornis spinicollis</i>	1				
Royal Spoonbill <i>Platalea regia</i>	1	8,9		6,9	3
* Yellow-billed Spoonbill <i>Platalea flavipes</i>	1	8,9	8	6,8,9	3
* Black-shouldered Kite <i>Elanus axillaris</i>	4,7		3,4,5,7	6	3,4,5,6,7
* Letter-winged Kite <i>Elanus scriptus</i>	2,7	8,9	3,4,5,6,7,8,9		3,4,5,6,7,8,9
* Black Kite <i>Milvus migrans</i>	1,2,7	8,9	5,6,7,8,9	6,8,9	4,6,7,8,9
* Whistling Kite <i>Haliastur sphenurus</i>	1,2	8,9	4,5,6,7,8	6,8,9	6,7,8
* Spotted Harrier <i>Circus assimilis</i>	1	8,9	4,5,6,7,8	6	4,7,8,9
* Swamp Harrier <i>Circus approximans</i>			1,2,5,6,7,8,9		
* Brown Goshawk <i>Accipiter fasciatus</i>			4		7
* Wedge-tailed Eagle <i>Aquila audax</i>	2	8,9	5,6,7,8,9	8,9	4,5,7,8
Little Eagle <i>Hieraaetus morphnoides</i>	1	8,9		4,6,8,9	

Species	Site Number				
	I	II	III	IV	V
* Brown Falcon <i>Falco berigora</i>	1,2,7	8,9	4,5,6,7,8,9	6,9	3,4,5,6,7,8,9
Australian Hobby <i>Falco longipennis</i>	2				
* Grey Falcon <i>Falco hypoleucos</i>	1		6,7		3,4,7,8
* Black Falcon <i>Falco subniger</i>	1,2	7,8,9	4,5,7,8,9	8	3,4,5,6,7,8,9
* Nankeen Kestrel <i>Falco cenchroides</i>	1,2,7	8,9	4,5,6,7,8,9	6,8,9	3,4,5,6,7,8
* Brolga <i>Grus rubicunda</i>	1,2,7	8,9	4,5,6,7,8,9		
* Buff-banded Rail <i>Gallirallus philippensis</i>			4,5,6,7,8,9		
* Australian Spotted Crake <i>Porzana fluminea</i>			9		
* Spotless Crake <i>Porzana tabuensis</i>			4,5,6,7,8,9		
* Purple Swamphen <i>Porphyrio porphyrio</i>			7,8,9		
* Black-tailed Native-hen <i>Gallinula ventralis</i>		9	9		7
Eurasian Coot <i>Fulica atra</i>		9		6	
* Australian Bustard <i>Ardeotis australis</i>	1	8,9	4,5,6,9	8,9	
* Little Button-quail <i>Turnix velox</i>	1		5,7,8,9		
* Plains-wanderer <i>Pedionomus torquatus</i>	1,2		5,8		
* Common Greenshank <i>Tringa nebularia</i>	1	9	8	6	
* Common Sandpiper <i>Actitis hypoleucos</i>			9		
* Sharp-tailed Sandpiper <i>Calidris acuminata</i>			8,9		
* Black-winged Stilt <i>Himantopus himantopus</i>		9	5		
* Inland Dotterel <i>Charadrius australis</i>	1,2,7		5,6,8		
* Black-fronted Dotterel <i>Euseyonis melanops</i>	1	8,9	4,7,8,9	6,8,9	4,5,7,8
* Red-kneed Dotterel <i>Erythronomys cinctus</i>		9	9		
* Banded Lapwing <i>Vanellus tricolor</i>	1,2	9	4,7,9	6,9	4,5,6,7
* Australian Pratincole <i>Stiltia isabella</i>	1,2,7	8,9	4,5,6,7,8,9	6,8,9	4,5,6
* Caspian Tern <i>Sterna caspia</i>			7	6	
* Whiskered Tern <i>Chlidonias hybridus</i>		8,9	5	6	
Common Bronzewing <i>Phaps chalcoptera</i>		8,9			
* Flock Bronzewing <i>Phaps histrionica</i>	2		4,5,6,7,8		4,7
* Crested Pigeon <i>Ocyphaps lophotes</i>	1,2	8,9	7,8,9	6,8,9	
Spinifex Pigeon <i>Geophaps plumifera</i>		9		6	
* Diamond Dove <i>Geopelia cuneata</i>	1,2,7	8,9	4,5,6	6,8	4,5
Peaceful Dove <i>Geopelia striata</i>	1,2	8,9		9	
Red-tailed Black-Cockatoo <i>Calyptorhynchus banksii</i>	1	8,9		9	
* Galah <i>Cacatua roseicapilla</i>	1,2,7	8,9	4,5,6,7,8,9	6,8,9	3,4,5,6,7,8,9

Species	Site Number				
	I	II	III	IV	V
Little Corella <i>Cacatua sanguinea</i>	2,7	8		6,8	
* Cockatiel <i>Nymphicus hollandicus</i>	1,2	8	4,5,8	8	4,5,8
* Budgerigar <i>Melopsittacus undulatus</i>	1,2,7	8	4,5,6,7,8,9	6,8	3,4,5,6,7,8
Black-eared Cuckoo <i>Chrysococcyx osculans</i>	2				
* Horsfield's Bronze-Cuckoo <i>Chrysococcyx basalis</i>	2	8	4,5,7,8		7
* Southern Boobook <i>Ninox novaeseelandiae</i>			5		3,4,7
* Barn Owl <i>Tyto alba</i>	2	8,9	6,7,8,9	6,8	3,4,5,6,7,8
* Grass Owl <i>Tyto capensis</i>			6,7,8,9		
* Australian Owlet-nightjar <i>Aegotheles cristatus</i>	1	8	5	6	4,5,7
White-throated Needletail <i>Hirundapus caudacutus</i>				6	
* Red-backed Kingfisher <i>Todiramphus pyrrhopygia</i>	1,2		4,8	6	3,4,5,7,8
Sacred Kingfisher <i>Todiramphus sanctus</i>	1				
* Rainbow Bee-eater <i>Merops ornatus</i>		8,9	8,9	6,8,9	8
* Variegated Fairy-wren <i>Malurus lamberti</i>	1,7		6		
* White-winged Fairy-wren <i>Malurus leucopterus</i>	1,2,7	8,9	4,5,7,8,9	6	3,4,5,7,8
* Red-browed Pardalote <i>Pardalotus rubricatus</i>	2,7	8,9	5,7,8,9	6,8,9	4,5,7,8,9
Striated Pardalote <i>Pardalotus striatus</i>					4
Yellow-rumped Thornbill <i>Acanthiza chrysorrhoa</i>	2				
Spiny-cheeked Honeyeater <i>Acanthagenys rufogularis</i>		8		8	7,8
* Yellow-throated Miner <i>Manorina flavigula</i>	2,7	8,9	8	6,9	3,4,5,6,7,8
* Singing Honeyeater <i>Lichenostomus virescens</i>	2,7	9	9		4,5,7,8
* White-plumed Honeyeater <i>Lichenostomus penicillatus</i>	1,2,7	8,9	5,6,8	6,8,9	4,6,7,8,9
Black Honeyeater <i>Certhionyx niger</i>	1,2				
* Crimson Chat <i>Epthianura tricolor</i>	2	8,9	4,5,6,9	6	3,4,6,8
* Orange Chat <i>Epthianura aurifrons</i>	2	9	1,2,4,5,6,7,8	6	3,6
* Yellow Chat <i>Epthianura crocea</i>			1,2,3,4,5,6,7,8,9		
* Gibberbird <i>Ashbyia lovensis</i>	1,2,7	8,9	4,5,6,7,8,9	6	5,6,7
Jacky Winter <i>Microeca fascinans</i>	2				4
* Red-capped Robin <i>Petroica goodenovii</i>			7		8
* Hooded Robin <i>Melanodryas cucullata</i>			5		
Rufous Whistler <i>Pachycephala rufiventris</i>	2	8		6,8	
Grey Shrike-thrush <i>Colluricincla harmonica</i>	1,2	8,9		6,8,9	
* Magpie-lark <i>Grallina cyanoleuca</i>	1,2	8,9	5,6,7,8	6,8,9	4,6,7,8
* Grey Fantail <i>Rhipidura fuliginosa</i>			8		



Species	Site Number				
	I	II	III	IV	V
* Willie Wagtail <i>Rhipidura leucophrys</i>	1,2,7	8,9	4,5,6,7,8	6,8,9	3,4,5,7,8
Black-faced Cuckoo-shrike <i>Coracina novaehollandiae</i>	1,2	8,9		6,8,9	3,4,5,7,8
* White-winged Triller <i>Lalage sueurii</i>	2	8	4,5,6,8		4,5
* Masked Woodswallow <i>Artamus personatus</i>	1,2	8	4,5,9	6	5,7,8
* White-browed Woodswallow <i>Artamus superciliosus</i>	1,2		4		
* Black-faced Woodswallow <i>Artamus cinereus</i>	1,2,7	8,9	5,6,7,8,9	6,8,9	3,4,5,6,7,8,9
Grey Butcherbird <i>Cracticus torquatus</i>	1,2				
* Australian Magpie <i>Gymnorhina tibicen</i>	1,2,7	8,9	4,5,6,7,8,9	6,8,9	3,4,5,6,7,8,9
* Australian Raven <i>Corvus coronoides</i>	1,2,7	8,9	4,5,6,7,8,9	6,8,9	3,4,5,6,7,8,9
* Little Crow <i>Corvus bennetti</i>	1,2	8,9	4,5,6,7,8,9	6,8	
* Singing Bushlark <i>Mirafrja javanica</i>	1,2		4,5,6,7,8,9		3,4,5,8
* Richard's Pipit <i>Anthus novaeseelandiae</i>	1,2,7	8,9	4,5,6,7,8,9	6,8	3,4,5,6,7,8
* Zebra Finch <i>Taeniopygia guttata</i>	1,2,7	8,9	4,5,6,7,8,9	6,8,9	3,4,5,6,7,8,9
* Mistletoebird <i>Dicaeum hirundinaceum</i>	1,2	8,9	4,7		3,4
White-backed Swallow <i>Cheramoeca leucosternus</i>		7			
* Welcome Swallow <i>Hirundo neoxena</i>	1	8	7	8	
* Fairy Martin <i>Hirundo ariel</i>	1	7,8,9	4,5,6,7,8	6,8	6,8
* Clamorous Reed-Warbler <i>Acrocephalus stentoreus</i>			2,4,5,6,7,8,9		
* Little Grassbird <i>Megalurus gramineus</i>			1,2,4,5,6,7,8,9		
Rufous Songlark <i>Cinclorhamphus mathewsi</i>	1,2				
* Brown Songlark <i>Cinclorhamphus cruralis</i>	1,2,7	8	4,5,6,7,8,9	6	3,4,5,8
<b>Total no. species per site</b>	<b>87</b>	<b>80</b>	<b>89</b>	<b>72</b>	<b>64</b>

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## THE BIRDS OF TWO ISLES NORTH QUEENSLAND

J. A. MCLEAN

### ABSTRACT

Thirty-five species of birds were recorded from Two Isles National Park and its surrounding reef and intertidal areas during four visits between 1986 and 1999. An annotated list of species that includes breeding records for seven species is given for the two adjoining vegetated islands that are located approximately 52km N of Cooktown. A breeding colony of Roseate Tern *Sterna dougallii* containing 50 pairs of birds, the largest recorded for this species in the region is reported.

### STUDY AREA AND METHODS

Two Isles National Park (15° 02' S, 145° 26' E) is located offshore approximately 10km SE of Cape Flattery and 52km N of Cooktown within the Great Barrier Reef Marine Park (GBRMP) and the Great Barrier Reef World Heritage Area. It consists of two islands separated by a shallow lagoon that are joined together at low tide by a shingle causeway that is negotiable on foot. The total area of both islands is 14ha and the surrounding reef and intertidal zone are zoned as Habitat Protection for wildlife (Lynch 1998). McLean (1993) gives brief details of climate.

The larger and most westerly of the two islands is located towards the northwestern edge of the reef. It is a forested sand cay with a well-developed area of beach rock. Trees present include *Manilkara*, *Terminalia*, *Diospyros*, *Pandanus* and *Casuarina spp.* and the understorey includes shrubs of *Guetarda*, *Tournefortia*, *Vitex*, *Scaevola* and *Pemphis spp.* and some partly grassed areas. The smaller island on the southeastern edge of the reef is a shingle cay mainly dominated by mangroves but large areas of the fleshy succulent *Sesuvium sp.* also occur, particularly on the northern side.

Four visits to the park were made on 17 May 1986, 11-12 December 1997, 18 December 1998 and 15-16 December 1999. On each visit both islands were circumnavigated on foot and the interior of the larger island was partly traversed. In December 1998 an evening count of Pied Imperial-Pigeons returning from the mainland was made from the western shoreline of the larger island.

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## RESULTS AND DISCUSSION

Thirty-five species of birds were recorded during the four visits to the Two Isles. Seven of these species were recorded as breeding at the islands, if not regularly, at least intermittently. Notes made on all the species observed from all visits are contained in Appendix 1.

Table 1 compares the overall results with those of other bird surveys done on islands in the Cooktown region from Eagle Island to Hope Islands (approximately 120km of coastline) where a total of 19 island breeding bird species have been recorded. Two Isles, like the other islands in the region, provides feeding and resting areas for migratory wading birds and breeding sites for the regularly breeding resident or migratory species and occasional breeding sites for opportunistic species. Nine species of non-breeding migratory waders were recorded wintering at Two Isles over the four visits.

Wedge-tailed Shearwaters are among the regular breeding species in the region but only one bird was seen despite the regular presence of 800-900 pairs (Lowry 1998) breeding at Rocky Islets (approx. 17km N of Two Isles) during summer.

King (1990) estimated the population of Pied Imperial-Pigeon at approximately 3,000 pairs of birds. In Dec 1998 I estimated that at least 2,940 birds returned from the mainland by counting an average rate of 49 birds per minute passing overhead between 1800h and 1900h EST.

**Table 1. Results of bird surveys on islands near Cooktown.**

Island Group	Visits	Species		Source
		Total	Breeding	
<b>Two Isles</b>	4	35	7	This paper
<b>Low Wooded Island</b>	6	39	7	McLean (1997)
<b>Eagle Island</b>		52	11	Smith (1987)
<b>Three Isles</b>		57	9	McLean (1993)

During the period from 1986 to 1999 four species of terns bred opportunistically at Two Isles (and other island groups in Table 1) mainly in 1997 and 1998. Table 2 summarises the numbers of nests or pairs of birds counted in the colonies.

**Table 2. Sizes of nesting colonies of four tern species at Two Isles from 1986 – 1999.**

Species	Colony Size		
	1997	1998	1999
<b>Lesser Crested Tern</b>	84 nests	Absent	Absent
<b>Roseate Tern</b>	7 nests	50 nests	Absent
<b>Black-napped Tern</b>	32 nests	35 nests	Absent
<b>Bridled Tern</b>	2000 pairs	2000 pairs	100 pairs

In Queensland the breeding range of the Roseate Tern extends from the Gulf of Carpentaria to Lady Musgrave Island (King 1993) and the largest recorded colonies (up to 5,000-3,000 nests) have been found in lower latitudes north of the Cooktown region (Milton 1996).

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- J.A.McLEAN, BOX 1717, INNISFAIL, Q 4860.*

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**APPENDIX 1: SPECIES NOTES**

(\* Indicates breeding record)

- Wedge-tailed Shearwater** *Puffinus pacificus*. Only one flying bird seen on 1999 visit.
- Brown Booby** *Sula leucogaster*. One juvenile seen diving in the lagoon in 1999.
- Australian Pelican** *Pelecanus conspicillatus*. From 2-16 birds were regularly seen feeding in the lagoon or resting on shingle.
- Great Frigatebird** *Fregata minor*. One female was seen flying with the following species in 1999.
- Lesser Frigatebird** *Fregata ariel*. Two females were seen gliding and circling overhead. 1999.
- \*Eastern Reef Egret** *Egretta sacra*. Seen regularly feeding on exposed reef; from 6-10 birds. A nest with three eggs was found in a bushy *Pemphis* shrub on the small island in 1986.
- \*Osprey** *Pandion haliaetus*. Only one bird was seen on each visit except during 1997. Nests were found on the ground and only at the small island. On 18 May 1986 only one nest was found and it contained a chick and an egg. A further three nests were found during subsequent summer visits and only one appeared to be still in use during 1999.
- White-bellied Sea-Eagle** *Haliaeetus leucogaster*. Seen only at the small island; a juvenile in 1998, and an adult in 1999.
- Bar-tailed Godwit** *Limosa lapponica*. 2-5 birds were seen regularly at both islands.
- Whimbrel** *Numenius phaeopus*. One bird was seen flying in 1998 and another seen near the small island in 1999.
- Grey-tailed Tattler** *Heteroscelus brevipes*. Regularly seen on intertidal areas; 3-20 birds.
- Ruddy Turnstone** *Arenaria interpres*. Small flocks of 10-39 birds were seen feeding chiefly on mid to outer reef areas. In 1997 39 birds were seen feeding amongst flooded *Sesuvium* at the smaller island in the company of 3 Bar-tailed Godwits and a Red-necked Stint.
- Red Knot** *Calidris canutus*. 11-40 birds were occasionally seen roosting on the causeway at low tide.
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- Red-necked Stint** *Calidris ruficollis*. One bird was seen feeding amongst a mixed flock of Turnstones and Godwits at the small island in 1997.
- Pied Oystercatcher** *Haematopus longirostris*. Occasionally seen at either island but less often than the following species.
- Sooty Oystercatcher** *Haematopus fuliginosus*. 1-3 birds were seen regularly.
- Pacific Golden Plover** *Pluvialis fulva*. One and 3 birds seen on two summer visits, respectively.
- Lesser Sand Plover** *Charadrius mongolus*. Seen in small flocks of 2-40 birds.
- Greater Sand Plover** *Charadrius leschnaultii*. Usually single birds seen with the preceding species.
- Silver Gull** *Larus novaehollandiae*. 5-15 birds, usually seen with flocks of Crested Terns.
- \*Lesser Crested Tern** *Sterna bengalensis*. Seen only during 1997 when breeding and in 1999 (two birds). At least 90 birds were counted at a colony containing 84 single egg nests as slight depressions on shingle on the north-eastern side of the small island. Egg shape, size and colour varied noticeably.
- Crested Tern** *Sterna bergii*. Up to 50 birds were counted at each visit. They fed in the lagoon and on outer reefs.
- \*Roseate Tern** *Sterna dougallii*. Seen only during two visits in 1997 and 1998 when breeding. Clutches were comprised of both one and two eggs. Found nesting communally amongst a colony of 32 nests of Black-naped Terns on the northern side of the small island on a carpet of succulent *Sesuvium* (seven nests) in 1997. In 1998 50 nests were found on sand on the southern side of the larger island with no other breeding species present at the site.
- \*Black-naped Tern** *Sterna sumatrana*. Seen only during two visits in 1997 (see record under previous species) and in 1998 when breeding. In 1998 two adjacent colonies containing 30 and 5 nests respectively were found on shingle and sand on the larger island.
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- \*Bridled Tern** *Sterna anaethetus*. Approximately 2000 birds were seen breeding during summer visits to the islands in 1997 and 1998 and approximately 200 in 1999. Nests were placed usually under low shrubs and amongst grass.
- Bar-shouldered Dove** *Geopelia humeralis*. A resident; 2-5 birds were seen regularly.
- Rose-crowned Fruit-Dove** *Ptilinopus regina*. A single bird was seen in thick foliage on the larger island in 1999.
- \*Pied Imperial-Pigeon** *Ducula bicolor*. A common summer visitor that was found breeding on both islands. Many eggs and young were easily observed. The population in Dec 1998 was estimated by counting at least 2,940 birds returning to the island in the evening.
- Large-tailed Nightjar** *Caprimulgus macrurus*. A single bird was heard calling from the larger island in 1997.
- Fork-tailed Swift** *Apus pacificus*. A solitary bird was seen flying over the larger island in 1999.
- ? Kingfisher** *Todiramphus sp.* A single bird was glimpsed briefly on the larger island in 1999.
- Dollarbird** *Eurystomus orientalis*. A single bird was seen on the larger island in 1997.
- Varied Honeyeater** *Lichenostomus versicolor*. Small noisy parties of up to 10 birds were seen at both islands on all visits. Usually the first species to call at dawn.
- Magpie-lark** *Grallina cyneleuca*. A single bird was seen on the larger island only in May 1986.
- White-breasted Woodswallow** *Artamus leucorhynchus*. Always present in parties of up to 17 birds and occurs on both islands. Mainly seen hawking and resting at stands of *Casuarina* on the larger island.
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**BREEDING BY FRECKLED DUCK *STICTONETTA*  
*NAEVOSA* IN THE DIAMANTINA CHANNEL COUNTRY**

ROGER JAENSCH

**ABSTRACT**

An abandoned nest of the Freckled Duck *Stictonetta naevosa* is reported from flooded shrub swamp within the Diamantina River floodplain in Queensland. The evidence suggests that breeding had been thwarted by egg predation. There are few published records of this rare species breeding in the Diamantina Channel Country in Queensland.

**INTRODUCTION**

The range of the Freckled Duck *Stictonetta naevosa* is discontinuous across the Australian continent. It breeds when conditions are favourable in wetlands in remote inland, western and northern catchments (Blakers *et al.* 1984, Marchant & Higgins 1990, Barrett *et al.* 2002, Jaensch in press). Its occurrence in the Channel Country biogeographic region (Environment Australia 2002) is well documented (Garnett & Crowley 2000, Barrett *et al.* 2002).

In the Queensland part of this region large numbers of birds have been recorded at times in the Eyre Creek-Mulligan River system but there are relatively few records from the Diamantina River or Cooper Creek systems (Garnett & Crowley 2000, Kingsford *et al.* 2000, McFarland 1992, J. Reid & R. Jaensch unpublished data). South-western Queensland is considered to be an important breeding area for Freckled Duck (Marchant & Higgins 1990) but there are few published breeding records from the Diamantina River system. Under state legislation the species is listed as Rare (*Nature Conservation Act 1992*)

**OBSERVATIONS**

During 18-20 May 2000 I surveyed waterbirds at an extensive swamp (25° 16.5' S, 140° 42.2' E) on the south-eastern side of the Diamantina River floodplain in its middle reaches in Queensland. The swamp was situated at the northern end of a dune field that had trapped flood water from both the Diamantina River and Farrars Creek systems. It supported approximately 100 ha of dense lignum *Muehlenbeckia florulenta* and belalie *Acacia stenophylla*

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surrounded by swamp canegrass *Eragrostis australasica*. Arms of a prominent waterhole, fringed by coolibahs *Eucalyptus coolabah*, penetrated the northern end of the swamp. Water in the swamp completely filled the inter-dune swale reaching a depth of up to 1.0 m near the waterhole. Substantial floods had occurred during the preceding five months in both the Diamantina River (twice) and Farrars Creek.

At approximately 1100 h on 18 May, I saw a male Freckled Duck swimming slowly away from a cluster of large lignum shrubs at the northern end of the swamp near a sand dune. The base of the bird's bill was bright red. This colouration sometimes indicates that breeding is under way (Marchant & Higgins 1990). A brief but thorough search revealed no nest.

In the late evening of 19 May, I discovered an abandoned nest of Freckled Duck several hundred metres to the south-east, in the central part of the lignum-belalie swamp. It was located adjacent to a large colony of breeding ibises, spoonbills, egrets, night herons and cormorants. The nest was built inside a small, partly flattened lignum shrub, 30 m from the outer edge of the lignum-belalie vegetation. There were broad clear swim-ways between shrubs.

The nest was constructed of lignum stems, had a well-defined rim and was 0.80 m from the outer edge of the shrub. Water below it was approximately 0.25 m deep. The inside base of the nest bowl was 0.25 m above the water and the rim was 0.30 m below the top of the shrub.

Greyish-white down was scattered around the bowl and throughout the nest. Among the down feathers I found ten breast feathers bearing the diagnostic markings of Freckled Duck (dark grey base with several white or buff, oblong-shaped marks). The nest contained large pieces of eggshell from several eggs, some showing signs of breakage from external impact. The pieces of eggshell were of an appropriate size (large for a duck), colour (creamy white) and texture (smooth, glossy) for this species.

## CONCLUSIONS

From my previous experiences of examining approximately 15 Freckled Duck nests, the breast feathers, grey-white down, well defined rim and egg characteristics of the Diamantina nest were typical of the species. The discovery of this nest in May 2000 confirms that a recent breeding effort by Freckled Duck had occurred in the Diamantina River system.

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The fate of the May 2000 clutch is unknown but the signs of breakage suggest that egg predation may have occurred. Many thousands of Nankeen Night Herons *Nycticorax caledonicus* were breeding in the colony. This species predated cormorant, ibis and spoonbill eggs (Marchant & Higgins 1990, p. 1033) and may have raided the Freckled Duck nest.

Freckled Duck commonly build their nests in lignum shrubs (Braithwaite 1976, Marchant & Higgins 1990). In Channel Country wetlands alternative nest sites are also available just above water in the spreading multiple trunks of belalie or coolibah trees. In south-western Australia (R. Jaensch pers. obs.) similar nest sites in paperbark *Melaleuca* spp. trees are used by Freckled Ducks.

There is extensive lignum swamp habitat in the middle reaches of the Diamantina system. It is possible that substantial numbers of Freckled Duck could breed at low density in swamp habitat in the Diamantina system. More systematic searching after flooding could provide further evidence of breeding by this species in the system. Breeding will not occur every year because major floods are needed in order to fill the swamps where water will persist until young are free-flying. The land is under pastoral lease and used for grazing and permission should be obtained to gain access.

In 2000, the main flood peak in the Diamantina occurred in early-mid March (R. Jaensch pers. obs.). This suggests that the Freckled Duck eggs probably were laid at earliest soon after the peak, in mid-late March. A laying date in March or April is further supported by the observation that the nest bowl was well moulded, as would result from extended incubation. Although there were no other surveys of the site, a laying date as late as May seemed unlikely because water levels had already fallen substantially.

There are few published records of Freckled Duck clutches laid in autumn. Marchant & Higgins (1990) note an observation of clutches in April at Lake Bullawarra in the eastern Channel Country. As the present record has shown, summer-autumn laying dates are to be expected in the Diamantina swamps of south-western Queensland due to the usual summer-autumn timing of major floods.

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Garnett & Crowley (2000) note that, although the Freckled Duck is scarce at times, its population size fluctuates widely and the principal threat to the survival of the species is extraction of water from inland rivers. For optimal breeding of Freckled Duck on the Diamantina, all floods should be permitted to occur without water harvest or diversion reducing the volume or frequency of inundation. Small early floods are important because they saturate the soil and stimulate plant growth, ensuring wider and greater flooding during subsequent flows in the same season.

Management of the burning of lignum swamps by pastoral grazing enterprises should include the goal of maintaining wetland biodiversity within the Channel Country floodplains.

### ACKNOWLEDGMENTS

The fieldwork was supported by Wetlands International and the Queensland Environmental Protection Agency. Phil Bourke (QEPA) provided valuable assistance in the field. Craig Lasker and Greg Campbell provided information and granted access to pastoral leases. Greg Campbell, Julian Reid and David Rounsevell commented on drafts of this article.

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**BLACK-CHINNED HONEYEATERS  
(*MELITHREPTUS GULARIS*) STEALING KOALA  
(*PHASCOLARCTOS CINEREUS*) FUR TO BUILD A NEST**

TARA G. MARTIN, LIANA N. JOSEPH  
and HUGH P. POSSINGHAM

Could the koala (*Phascolarctos cinereus*) be a keystone resource for a declining woodland bird? Imagine a nest woven of soft, fine, white koala fur. This is just what a group of Black-chinned Honeyeaters (*Melithreptus gularis*) had in mind when constructing their nest in grassy eucalypt woodland near Crows Nest, at 425 m ASL, in southeast Queensland (27° 05' S, 152° 04' E).

On July 16<sup>th</sup> 2002 from 0900-0930 hours we observed three Black-chinned Honeyeaters plucking fur from a female koala (Figure 1). The Koala, with a young cub on her front, sat on an outer branch of a Narrow-leaved Ironbark (*Eucalyptus crebra*) approximately 16m from the ground. Both appeared unperturbed by the vigorous plucking, one bird at a time, from the fine white fur around the seat of the female. With their beaks full of fur, the birds flew 92m to a 20m tall Gum-top Box (*Eucalyptus moluccana*). They were observed constructing a well-concealed nest slung in an outer ball of foliage approximately 17m from the ground. Two birds did most of the fur gathering during the period of our observations, while the third foraged amongst the foliage of ironbarks and gum-top box. Single fur gathering events lasted for up to three minutes. While barely visible in the foliage, the nest appeared to be predominantly made of the white koala fur woven together among the *E. moluccana* leaves. A similar observation of a single Black-chinned Honeyeater plucking white fur from the seat of a koala was made near Marburg, southeast Queensland several years ago (Harry Hines, pers. comm.).

Earlier observations made in New South Wales and South Australia describe Black-chinned Honeyeaters building a small conspicuously hairy, cup-shaped nest of fibrous bark and soft hair, wool or fur (Gilbert 1919). The nest is usually well concealed in the “pendulous, tufty twigs of the uppermost lateral branches of the box-tree” (*Eucalyptus* sp.; Gilbert 1919, p.31, Elsworth 1997). It is common that one of the small group, does the majority of nest building, while the other birds assist in collecting material and chasing small birds away (Gilbert 1919, Elsworth 1997). Black-chinned Honeyeaters have been observed collecting

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hair or fur to build nests from interesting sources including cattle (White 1914, Gilbert 1919, Morgan 1922), a cat (White 1914), a pony (Edwards 1920), and a sheepskin rug hanging on a clothesline (Elsworth 1997). They have also been seen collecting hair already shed by cattle (Gilbert 1919) and dog (Elsworth 1997). Interestingly, the hair collected is always white. They have been observed carefully looting from the white patches of partially light-coloured cattle (White 1914, Morgan 1922) and completely avoiding bay and brown horses in preference for a cream-coloured pony (Edwards 1920). We observed that the birds always picked the soft white fur from the koala's seat, avoiding grey fur elsewhere on the Koala's body.



**Figure 1. Black-chinned Honeyeater plucking fur from the seat of an adult female koala with young (Photo by L. N. Joseph)**

The Black-chinned Honeyeater is not the only bird recorded collecting hair for nesting material from a koala. In southeast Queensland Cody (1991) observed a Yellow-faced Honeyeater *Lichnostomus chrysops* plucking fur from the head, neck and shoulders of a koala, with particular attention to the long hairs protruding from its ears.

Black-chinned Honeyeaters are among a group of species that have declined from woodlands in eastern Australia (Reid 1999, Traill & Duncan 2000). Much of their habitat has been cleared for agriculture with significant portions of the remainder in a fragmented state. The species occurs naturally in low densities and appears to be unable to persist in remnants smaller than 100-200 ha (Traill & Duncan 2000). The conservation status of the species is Near Threatened under the IUCN criteria (Garnett & Crowley 2000) and under Queensland legislation it is listed as Rare (Anon. 2001).

This sighting occurred in a grassy eucalypt woodland dominated by Silver-leaved Ironbark (*E. melanophloia*), Narrow-leaved Ironbark and Gum-top Box and Grey Box (*E. microcarpa*) associations with an understorey of native grasses dominated by large tussocks of *Bothriochloa decipiens/macra*, *Heteropogon contortus*, *Cymbopogon refractus*, *Themeda triandra*, and *Aristida* spp. (Martin et al. 2000). The property is used commercially for selective grazing of beef cattle. Native grassland and scattered trees cover approximately 65% of the land and woodland/forest make up the remainder (Martin et al. 2000). The surrounding landscape is a matrix of cleared and uncleared land where native vegetation comprises 60-90% of the total area. The native vegetation is modified by grazing and other disturbances and intensive land uses such as cropping and sown pasture are limited (McIntyre and Hobbs 1999).

### ACKNOWLEDGEMENTS

These observations form part of a larger study. We are grateful to the Copely, McConnel and Tickle families and B. Wright and S. Serensen for their cooperation, interest in this project and access to their properties and to B. Wright and S. Serensen for providing accommodation for the duration of this study. We thank CSIRO Sustainable Ecosystems for financial and logistical support, Queensland Ornithological Society for a generous research award to TM and Birds Australia's Stuart Leslie Research Award to both LJ and TM. Thank you to Harry Hines for his account of a Black-chinned Honeyeater and Koala fur gathering event and Nicci Thompson for refereeing this manuscript.

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