

Foraging behaviour suggestive of breeding Australian Little Bittern, *Ixobrychus dubius*, at Tolderol Game Reserve, January 2017

COLIN ROGERS AND PETER KOCH

Abstract

Australian Little Bittern are thought to breed regularly in reed beds on the margins of Lakes Alexandrina and Albert, and along the Murray River but are rarely observed in the inaccessible habitat. The birds are generally crepuscular so when active daylight flights were observed at Tolderol Game Reserve on 18 and 20 January 2017, on the margin of Lake Alexandrina, that behaviour was suggestive of breeding with adults actively feeding young from a productive food supply in a channel nearby Bay 11. The pattern and frequency of flights by both sexes was recorded with most activity occurring between 24 and 30 January when the female was most active. Activity was only recorded again at the site in late February and early March and then mainly by the male.

INTRODUCTION

In their paper on the breeding record of an Australian Little Bittern, *Ixobrychus dubius*, near Renmark in March 2012, Treloar and Carpenter (2016) also note the records of Australian Little Bittern calling from the reeds at Tolderol in January 2006 and from several sites around Lakes Alexandrina and Albert on a survey in September – December 2012. The DENWR 2013 report also listed Australian Little Bittern calling from Teringie and the Currency Creek Game Reserve (O'Connor, Rogers and Pisanu 2013). Earlier records of Australian Little Bittern in South Australia are presented by Glover (1976).

As Treloar and Carpenter (2016) note, these reports suggest that Australian Little Bittern is

a regular but often undetected summer visitor breeding in the reed beds along the Murray River and Lakes Alexandrina and Albert.

In this note we report the activity of at least one pair of Australian Little Bittern suggestive of breeding behaviour from Tolderol Game Reserve in January-March 2017.

OBSERVATIONS

On 15 January 2017 while photographing terns at Tolderol Game Reserve, Colin Rogers (CR) and Peter Koch (PK) heard an Australian Little Bittern calling from the reed beds on the edge of Lake Alexandrina. On 18 January, while driving along the track through the reed beds between Bay 11 and the lake CR saw an adult male Australian Little Bittern fly across the track and into the reed beds. Then on 22 January CR again saw a female Australian Little Bittern flying across the track into the reed beds in the opposite direction from that observed on 18 January.

These sightings prompted further investigation and on 24 and 25 January prolonged monitoring near the area of the initial sightings revealed several flights back and forth across the track over a period of several hours. As Marchant and Higgins (1990, p. 1041) note, Australian Little Bittern is mainly crepuscular and usually forages alone at the fringe of or within dense cover so this frequent flight behaviour in daylight suggested that these birds were feeding young.

In view of the dearth of information on the behaviour of Australian Little Bittern recorded in Marchant and Higgins, and the lack of breeding records from Lake Alexandrina noted by Treloar and Carpenter (2016), we resolved to document the birds' behaviour and gather some indirect information on feeding frequency.

METHOD

Our method consisted of observing the flight path of the bird(s) and photographing them to determine their sex. The plumage of Australian Little Bittern is sexually dimorphic with the male showing a glossy black back and the female a brown back.

These observations were possible as the flights were confined to a relatively small area with a generally repeatable pattern. Although the origin of the flights from the lakeside of the track was variable over a range of 50 m² the destination was more tightly targeted to an area of approximately 10 m². However, a few flights, usually from Bay 11 to the lakeside reeds, were so brief that it was not always possible to identify the sex of the bird involved. This short hop from one side of the track to the other is illustrated in Figure 3.

The area under study in Bay 11 has a band of *Phragmites australis* mixed with some lignum bushes that line a deep channel running parallel to the track. A similar deep channel runs between the track and the lake. These features made it impossible to enter the areas where the birds were landing and precluded an attempt to locate a nest using the methods suggested by Jaensch (1989) without causing considerable disturbance to the birds.

Figure 1 illustrates the habitat.

Direct observation of the area was made from the back of a 4X4 vehicle to get sufficient height to follow the birds from origin to destination. Distance from the observers to the flight path varied from 80 m to 20 m. Close flights occurred when the birds approached the observers but were unseen in the reed bed.

Monitoring was not continuous but opportunistic and times and direction of flights were recorded by observers present for the dates and times listed in Table 1. Where possible the sex of the bird was noted.

Table 1. Dates, hours spent monitoring, time of day and numbers of flights and sex of the birds involved. Observers: Colin Rogers, Peter Koch, John Cox and Ian Reid. After 30 January, despite some monitoring, no flights were observed apart from those listed on 26 February and 3 March.

Dates	Hours monitoring	Time of day (h)	Flights	Sex
18/01/17	First sighted	1600	1	male
22/01/17	5.0	1630	1	female
24/01/17	3.5	1400-1730	6	male/female
25/01/17	4.5	1200-1457	10	male/female
27/01/17	5.5	1145-1548	2	female
28/01/17	14.0	0923-1340	6	male/female
29/01/17	8.0	1445	1	female
30/01/17	5.0	1325-1340	3	male/female
1-25/02/17	Despite some monitoring no observations were made			
26/02/17	2.0	1500-1700	3	male/female
27/02-02/02/17	Despite some monitoring no observations were made			
03/-3/17	4.5	1200-1630	4	male



Figure 1. Habitat frequented by the Australian Little Bittern during the period of observation with one flying low over the track into Bay 11
Image Colin Rogers



(a)



(b)



(c)



(d)

Figure 2 (a) Male lifting out of the reeds, a mixture of cumbungi and *Phragmites australis*
(b) Female flying low above the reeds
(c) Male 'landing' in the reeds, *P. australis* on the channel in Bay 11

(d) Female in fast flight 1 m above the reeds
Images Colin Rogers and Peter Koch



Figure 3. A male Australian Little Bittern about to land in the lakeside reed bed after ‘flitting’ across the track. Reeds in this area are the Common Reed, *Phragmites australis* Image Colin Rogers

RESULTS

The movements observed generally followed one of three types;

1. Long flights of approximately 80 m directly across the track in both directions to and from Bay 11.
2. Shorter diagonal flights of 40 m from near the track on the lakeside into the reeds along the channel in Bay 11.
3. A short ‘jump’ across the track.



Figure 4. Female preparing to land in the reed bed on Bay 11 Colin Rogers

The reed beds on the lakeside consisted of mixed cumbungi, *Typha* spp, and *Phragmites australis* and on these flights the birds lifted from 0.5 to 1.5 m above the reeds and were relatively easy to see and sometimes photograph. Some of this flight behaviour is illustrated in the photographs in Figure 2. As illustrated in 2 (b) and (d) when making these flights the bird flew with its neck extended.

In addition, in an area where the reeds were at least 3 m high, birds occasionally ‘jumped’ or ‘flitted’ from the reeds on one side of the track to the other. In this situation wings were raised and feet dangling in preparation for landing into the reeds.

This behaviour is illustrated in Figure 3 which shows a male Australian Little Bittern about to disappear into the reeds on the lakeside of the track after launching itself from reeds on the opposite side of the track. It is also shown by the female bird in Figure 4.

DISCUSSION

Marchant and Higgins (1990) note that the incubation period of Australian Little Bittern is about 21 days and the young clamber about the reeds away from the nest after 9 to 14 days.



(a) **Figure 4. Food items available in Bay 11: (a) Dragonfly larva, *Hemianax papuensis***
 (b) **Tadpole, *Limnodynastes* sp.**

Images Colin Rogers

The time from hatching to first flight is not known but may be 25-30 days. The young are fed by both parents usually at intervals of 1 to 1.5 hours and food is said to be mainly aquatic invertebrates.

The data in Table 1 indicate that the birds were most active between the dates 24-28 January. This frenetic activity suggests that between those dates the pair were actively feeding young and sometimes at a more rapid rate than once every 1 to 1.5 hours. Detailed examination of the data from 25 January suggests that the female was the more active of the pair - 7 flights to 2. Furthermore, the level of activity observed on 25 January may have involved more than one pair but this conjecture could not be definitively established.¹

By 1 February this flight activity had apparently ceased. After this date observation became intermittent in response to the lack of detectable activity by the birds and no further activity at

the site was recorded until Sunday 26 February when Ian Reid recorded both a male and a female flying across the track into Bay 11. Observation on 3 March by John Cox and Colin Rogers also recorded the flights presented in Table 1. There was no obvious reason for this change in observed activity but it confirms that the birds were still present in the area until early March.

The reason for the drop-off in activity in early February is not known but may be the result of the young moving away from the nest site or the fall off in the food supply in Bay 11. In the case of the latter, Whiskered Terns, *Chlidonias hybrida*, were observed feeding on aquatic invertebrates and tadpoles in the channel in Bay 11 very close to the area where the Australian Little Bittern were landing. Two examples are illustrated in Figure 5. Although at no time did we see Little Bittern carrying food items it seems reasonable to conclude that they were feeding on the same food items as the terns. The lack of observations of the birds carrying food items is probably explained by the fact that most herons and bitterns usually regurgitate items when feeding young.

¹ Australian Little Bittern may breed in loose colonies, Marchant and Higgins (1990) and Jaensch (1989) provide examples from Bool Lagoon in the 1980s.

Feeding activity by the terns decreased markedly after 28 January and flight activity by the Little Bitterns also tapered off at the end of January suggesting that the food items had decreased in abundance. Faced with a decline in tadpoles and an increase in frogs the Australian Little Bitterns may have simply changed their feeding behaviour.

CONCLUDING REMARKS

The observations of Australian Little Bittern at Tolderol are consistent with previous reports of birds calling from the reed beds so should not come as a complete surprise. The observations also support the conjecture by Treloar and Carpenter (2016) that Australian Little Bittern may breed widely adjacent to Lakes Alexandrina and Albert wherever extensive dense reed beds occur.

We therefore suggest that it would be worth conducting a systematic survey of Tolderol and other accessible sites for Australian Little Bittern using the methods perfected in WA and reported by Pickering (2013).

Colin Rogers
6 Flavel Avenue
Woodforde, South Australia 5072
colin.rogers@adelaide.edu.au

Peter Koch
102 Mitchell Avenue
Murray Bridge, South Australia 5253

REFERENCES

- Glover, B. 1976. The Little Bittern in South Australia, *South Australian Ornithologist* 27: 100-101.
- Jaensch, R. P. 1989. Little Bittern *Ixobrychus minutus* breeding at Bool Lagoon, 1984-1986, *South Australian Ornithologist* 30: 205-209.
- Marchant, S. and Higgins, P.J. (eds). 1990. *Handbook of Australian, New Zealand and Antarctic Birds. Volume 1B, Australian Pelican to Ducks.* Oxford University Press, Melbourne.
- O'Connor, J. A., Rogers, D. and Pisanu, P. 2013. *Cryptic and colonial-nesting waterbirds in the Coorong, Lower Lakes and Murray Mouth: distribution, abundance and habitat associations.* South Australian Department for Environment, Water and Natural Resources, Adelaide.
- Pickering, R. 2013. *Australian Bittern in Southwest Australia,* Department of the Environment, Government of WA.
- Treloar, K. and Carpenter, G. 2016. Breeding of Australian Little Bittern, *Ixobrychus dubius*, on the River Murray. *South Australian Ornithologist* 41: 73-75.