

- Ferguson-Lees, J. and Christie, D. A. (2001) *Raptors of the world*. New York: Houghton Mifflin.
- Holmes, D. A. (1996) Sumatra bird report. *Kukila* 8: 9–56.
- Holmes, D. and S. Nash. (1999) *Burung-burung di Sumatra dan Kalimantan*. Jakarta: LIPI and BirdLife International Indonesia Programme [In Indonesian].
- Holmes, D. A. and Noor, Y. R. (1995) Discovery of waterbird colonies in north Lampung, Sumatra. *Kukila* 7: 121–128.
- Kukila (2000) The birds of Indonesia. *Kukila* checklist no. 1: additions, corrections and notes 2. *Kukila* 11: 3–12.
- MacKinnon, J., Phillipps, K. and van Balen, B. (1998) *Burung-burung di Sumatra, Jawa, Bali dan Kalimantan*. Jakarta: Puslitbang Biologi LIPI and BirdLife International Indonesia Programme.
- Marchant, J., Prater, T. and Hayman, P. (1986) *Shorebirds: an identification guide to the waders of the world*. London: Christopher Helm.
- van Marle, J. G. and Voous, K. H. (1988) *The birds of Sumatra: an annotated check-list*. Tring, U.K.: British Ornithologists' Union (Check-list 10).
- Nash, S. V. and Nash, A. D. (1985) A checklist of the forest and forest edge birds of the Padang-Sugihan Wildlife Reserve, South Sumatra. *Kukila* 2: 51–59.
- Ollington, R. F. and Parish, D. (1989) Lesser Yellowlegs *Tringa flavipes* in Sumatra: new to S.E. Asia. *Kukila* 4: 1–2.
- Parrot, S. and Andrew, P. (1996) An annotated checklist of the birds of Way Kambas National Park, Sumatra. *Kukila* 8: 57–85.
- Robson, C. (2000) *A field guide to the birds of South-East Asia*. London: New Holland.
- Sonobe, K. and Usui, S. (1993) *A field guide to the waterbirds of Asia*. Tokyo: Wild Bird Society of Japan.
- Verheugt, W. J. M., Skov, H., Danielsen, F., Suwarman, U., Kadarisman, R. and Purwoko, A. (1993) Notes on the birds of the tidal lowlands and floodplains of South Sumatra province, Indonesia. *Kukila* 6: 53–84.

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## Nesting of Jerdon's Baza *Aviceda jerdoni* and Black Baza *A. leuphotes* in Buxa Tiger Reserve, West Bengal, India

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Jerdon's Baza *Aviceda jerdoni* and Black Baza *A. leuphotes* have similar distributions in south, east and north-east India to South-East Asia and China (Grimmett *et al.* 1998, Ferguson-Lees and Christie 2001). Their breeding biology is relatively poorly known, although some information has been published e.g. Baker (1935), Grossman *et al.* (1965), Ali and Ripley (1987), Ferguson-Lees and Christie (2001).

We studied the nesting biology of both species in Buxa Tiger Reserve, Jalpaiguri district, West Bengal, India during 1999–2000. The reserve is located at 26°30'–55'N 89°20'–55'E and covers an area of 760 km<sup>2</sup>, with a core area of 385 km<sup>2</sup> and a buffer zone 375 km<sup>2</sup>. It borders Bhutan to the north, and Assam to the east. The elevation ranges from 60 m to 1,750 m. Most of the reserve lies in the plains; the northern tracts are hilly. The main habitat is moist tropical forest dominated by sal *Shorea robusta*. There are also plantations of sal, teak *Tectona grandis*, jarul *Lagerstroemia reginae*, and mixed plantations of native trees. The temperature range is 12–32°C and the average annual rainfall is c.4,100 mm.

### METHODS

Nests of bazas were found by searching during the early part of the breeding season in the Dhamanpur, Rajabhathkawa, Buxaduar and Jainty Ranges of the reserve, following birds in aerial display or with nest materials. At the Jerdon's Baza nest, observations were made from the ground using a 20–60× telescope

during first week of nestling period. A small (1.5×1 m) platform was constructed 30 m up a tree c.30m from the nest, and this was used for observations for the rest of the nestling period. We usually attempted to enter the hide before sunrise and leave after sunset to avoid disturbance to the breeding birds. Casual observations were carried out at Black Baza nests. In addition, focal observations were carried out for 680 minutes at nest 2 during the incubation period (six, ten and fourteen days after laying), 360 minutes when the chicks were five days old at nest 2, and 315 minutes when the chicks were 21 days old at nest 3. Observations were made from ground by using a 20–60× telescope and 8×40 binoculars from a sufficient distance to avoid disturbing the birds.

### RESULTS AND DISCUSSION

#### Jerdon's Baza

One nest was found on 20 May 2000 at a height of 30 m in a 35 m tall sal tree (160 cm girth at breast height). The nest tree was in the middle of a small (150×50 m) sal plantation at 26°33'53"N 89°32'07"E and was one of the largest trees in the plantation. The nest was found during incubation, but the eggs were not checked to avoid disturbance.

Three nestlings hatched on 1 June. During 121 hours of observations through the nestling period, 116 prey items were delivered: 62 insects (mainly larvae), 13 frogs, 25 reptiles (23 common garden lizards *Calotes*

**Table 1.** Details of Black Baza *Aviceda leuphotes* nests found in Buxa Tiger Reserve during 1999 (nest 1) and 2000 (nests 2–6).

No.	Tree species	Tree height (m)	Nest height (m)	Coordinates	No. trees within 40 m radius & species with ≥5 individuals	Outcome
1	Sal	30	28	26°37'39"N 89°32'00"E	Not known: sal	Deserted after 10 days incubation
2	Sal	32	30	26°37'39"N 89°32'00"E	88: sal	2 chicks fledged 29 days after hatching
3	<i>Michelia champaca</i>	33	31	26°37'52"N 89°32'17"E	95: <i>Michelia champaca</i> (87), sal (5)	Deserted before laying commenced
4	<i>Schima wallichii</i>	22	19	26°33'41"N 89°35'26"E	46: sal (24), <i>Schima wallichii</i> (9), <i>Lagerstroemia reginae</i> (9)	Deserted after 20 days incubation
5	<i>Ficus</i> sp.	20	15	26°33'48"N 89°32'09"E	1: <i>Ficus</i> spp.	2 chicks died 18 days after hatching
6	Sal	35	32	26°41'55"N 89°35'38"E	57: <i>Schima wallichii</i> (20), sal (22), <i>Amoora wallichi</i> (5)	2 chicks died 15 days after hatching

*versicolor* and two common cat snakes *Boiga trigonata*) and 16 unidentified small items. The insect larvae may have been *Phalera raya*, as we observed the adults feeding on this species. These observations fit previously published accounts of the species diet (Ali and Ripley 1987, del Hoyo *et al.* 1994, Grimmett *et al.* 1998), although adults are also known to feed on birds' eggs (Grossman *et al.* 1965). Both adults fed the nestlings, tearing prey into pieces for the first week, after which chicks swallowed prey items whole. Considerably fewer prey items were brought after the chick was four weeks old, presumably to encourage fledging (Brown 1955).

Nestlings spent less time sleeping or resting as they got older: 56% of time at 12 days old, 17.5% at 16 days and 3.2% at 20 days. They were brooded during the day only during the first week, and also for 59 minutes during a heavy rain at 23 days. The chicks became alert when Crested Serpent Eagle *Spilornis cheela*, Asian Barred Owlet *Glaucidium cuculoides* and Large Cuckoo Shrike *Coracina macei* were heard, and they crouched down when Crested Serpent Eagles soared overhead. The adults also chased Large-billed Crows *Corvus macrorhynchos* when they were in the vicinity of nest site.

Two nestlings were found dead in the nest 24 days after hatching. There were no signs of injury, so they may have died as a result of heavy rain and reduced food supply that occurred when they were 21–22 days old, rather than from direct attacks by the third chick (which is common in raptors: e.g. Reese 1972, Meyberg 1974, Newton 1986). There was no attempt to eat or remove the carcasses by the adults or the other nestling during five hours of observations, so we removed them. The surviving nestling was first seen to flap its wings at 27 days old, and more vigorously with jumping from 29 days. It left the nest at 42 days old, and was seen within 150 m of the nest tree for a further five days.

### Black Baza

Six nests were found (Table 1). Nest 2 (found in 2000) was c. 30m from nest 1 (found in 1999) and

presumably shows approximate nest site fidelity within the same pair. The composition of three nests was checked after the breeding season: all were composed almost entirely of *Lagerstroemia reginae* sticks, with a few sal sticks. Both sexes participated in nest-building, incubation, brooding and feeding the chicks. Nest building commenced during April and laying began, or was estimated to have begun, during May. Nest 3 was commenced late in the breeding season, when other pairs were feeding nestlings. The nest tree was the only tall tree in that area, which made the nest more conspicuous. Large-billed Crows *Corvus macrorhynchos* were observed disturbing the breeding pair frequently and the nest was deserted apparently before laying commenced. The pair may have been inexperienced or the nest may have been a second attempt that season.

The incubation period at two nests was 26–27 days. Out of 680 minutes of observation made during incubation, the female incubated for 248 minutes, and the male for 232 minutes. During 360 minutes observations at nest 2 when the chicks were five days old, the female brooded them 40% of the time, the male brooded 19% of the time, they were fed for 1%, and left unattended for 40%. No brooding was observed during 315 minutes observation at nest 3 when the chicks were 21 days old. The mean interval between delivery of prey items was 25 minutes when the chicks were five days old, and 17 minutes when they were 21 days old. In total, 28 prey items were seen being brought to nests 2 and 3: 13 unidentified green insect larvae (resembling *Phalera raya*) and 15 unidentified small items. The preponderance of insect prey is notable: previously published accounts of the species' diet mention lizards, frogs, and occasionally bats, small ground mammals and small birds in addition to insects (Ali and Ripley 1987, Ferguson-Lees and Christie 2001). However, during our observations almost 50% of the prey items delivered to the chicks consisted of insect larvae.

At 21 days old the chicks were frequently seen preening, hopping to nearby branches and flapping their wings. Only one nest fledged any chicks, and only two out of six chicks in total survived to fledging.

## CONSERVATION

At Buxa Tiger Reserve, Jerdon's and Black Bazas are not directly targeted for hunting or persecution. Both species are listed on Schedule I of the Indian Wildlife (Protection) Act 1972.

A wide range of pesticides are used in the tea gardens surrounding the reserve where bazas feed, and this may have detrimental consequences for them. Monitoring pesticide use and residues in birds would be desirable. Illegal woodcutting was noted throughout the reserve. Selective removal of mature tall trees may reduce the availability of nest sites for bazas. Prevention of such activities is needed immediately.

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## REFERENCES

- Ali, S. and Ripley, S. D. (1987) *Compact handbook of the birds of India and Pakistan*. New Delhi: Oxford University Press.
- Baker, E. C. S. (1935) *The nidification of the birds of the Indian Empire*. London: Taylor and Francis.
- Brown, L. H. (1955) Supplementary notes on the biology of the large birds of prey of Enbu District, Kenya Colony. *Ibis* 97: 38–64, 183–221.
- Ferguson-Lees, J. and Christie, D. A. (2001) *Raptors of the world*. London: A. & C. Black.
- Grossman, M. L., Grossman, S. and Hamlet, J. (1965) *Birds of prey of the world*. London: Cassell & Co.
- Grimmett, R., Inskipp, C. and Inskipp, T. (1998) *Birds of the Indian subcontinent*. Delhi: Oxford University Press.
- del Hoyo, J., Elliott, A. and Sargatal, J., eds. (1994) *Handbook of the birds of the world*. Vol. 2. Barcelona, Spain: Lynx Edicions.
- Meyberg, B.-U. (1974) Sibling aggression and mortality among nestling eagles. *Ibis* 116: 224–228.
- Newton, I. (1986) *The Sparrowhawk*. Calton, U.K.: T and A. D. Poyser.
- Reese, J. G. (1972) A Chesapeake Barn Owl population. *Auk* 89: 106–114.

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# Franklin's Gull *Larus pipixcan* at Tanggu, Tianjin: first record for China

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In recent years, a large coastal reclamation project south of the mouth of the Hai river, Tanggu, Tianjin, China, has provided excellent opportunities to study a variety of shorebirds and gulls at close quarters. In September and early October 2004, I spent about three weeks birding this area. On 18 September at 09h30, I found an adult winter-plumaged Franklin's Gull *Larus pipixcan* with a handful of other gulls at the high tide roost (38°58'N 117°44'E). The bird was watched for about five minutes at c.120 m range in good light with the sun at almost 90° to my left, using a 30× eyepiece on a tripod-mounted telescope. Unfortunately I did not see the bird leave: it presumably took flight while I was changing the lens on my telescope, but several digital photographs (Plate 1) and some brief field notes were taken. These field notes were later supplemented by additional notes based on study of my photos.

## DESCRIPTION

The bird was very distinctive, and I was able to rapidly and confidently identify it based on previous experience with the species. Clearly a small gull, it was

noticeably smaller and more compact than an adjacent Black-headed Gull *Larus ridibundus*. At rest it also appeared to have relatively longer legs, plumper body, rounder head, and it was both shorter- and deeper-billed than that species. Its stance was more horizontal, the wings were not drooped and this probably contributed to its compact, portly jizz. Structurally it resembled (but was larger than) Little Gull *L. minutus* (one of which was present on the same tank later that day), while its plumage was radically different to any Asian gull and most closely resembled that of the extralimital Laughing Gull *L. atricilla*—a species with which I was also familiar.

The bird's dark grey mantle was immediately eye-catching, and was similar in shade to that of mature west European Lesser Black-backed Gull *L. fuscus graellsii*, Heuglin's Gull *L. heuglini taimyrensis* (neither of which was present for direct comparison) or a mature Black-tailed Gull *L. crassirostris*, many of which were present on the impound not very far from the Franklin's Gull. The bird's prominent white tertial- and, to a lesser degree, scapular-crescents contrasted well with the dark upperparts. It also had the distinctive partially hooded head-pattern typical of a