

INVESTIGATION OF SWAMP FRANCOLIN (Francolinus gularis) AND OTHER
BIRDS, KOSI TAPPU WILDLIFE RESERVE & KOSI BARRAGE by TIM DODMAN
1989

1. Background Information

The Kosi Barrage is well recognised as the most important wetland region of Nepal for birds, and is visited by large numbers of waders and wildfowl, as well as raptors. The Kosi Tappu Wildlife Reserve, granted in 1976, is situated in the Sapta-Kosi River Plain, and is bounded to the west and east by artificial embankments. The southern boundary of the reserve is about 7km north of the Barrage (though this may be extended further south). It has an area of 175km² and an altitude of approximately 100m above sea level.

The climate is typically that of the Terai, characterised by the breaking of the monsoon. The whole area has been in a state of flux over recent years due to the course of the river changing dramatically. As recently as February 1987, the river was reported as running 3-4km west of the eastern embankment (Roberts in litt. 1988), whereas during this project it ran more-or-less parallel to it about 300m away. South of the barrage the river has moved westwards, bringing much inundation. The whole area is within the earthquake zone of 1988.

The vegetation along the eastern embankment consists primarily of reed grasses with a small patch of Dalbergia sissoo woodland to the north, and intermittent Acacia catechu trees. To the west of the visible part of the river from the eastern embankment is the large island whose western side consists of sandy areas recently covered by water, riverine forest (Acacia, Bombax, Dalbergia spp.) and tall elephant and reed grass lands (eg Saccharum spontaneum, Phragmites kharta).

Around Kosi Tappu Wildlife Reserve the land is either grazed or cultivated and interspersed with wet areas. Locals are permitted to enter the reserve once a year, usually in March, to cut grass for livestock and thatch material for roofing. South of the barrage there is much grazing and shifting cultivation.

The reserve additionally contains around 1200 domestic cattle which roam freely. These animals cannot be slaughtered on religious grounds, and it would be difficult to remove them, as this would involve crossing the river. There are some introduced plants, most noticeably a Cassuarina shrub along the eastern embankment, which may threaten Swamp Francolin habitat if it becomes too well established.

The reserve was gazetted primarily to protect a relict Asiatic Wild Buffalo Bubalus bubalis population, the only ones in Nepal. It is rich in other wildlife, and the number of bird species previously recorded is 295 (Inskipp 1989). This includes several threatened species including Greater Adjutant Stork Leptoptilos dubius, Swamp Francolin and Bengal Florican Houbaropsis bengalensis.

The reasons for the incorporation of Kosi Tappu into this project were to:-

1. estimate the status of and determine threats to Swamp Francolin
2. produce bird inventories
3. look for Bengal Florican south of the barrage.

2. Methods

A total of seven days were spent at Kosi Tappu Wildlife Reserve from 5 March to 11 March 1989, and a visit made to the south of the barrage on 22 April 1989. The main area of study was along the eastern embankment of the reserve, from where notes were taken of location and numbers of francolin seen and other species recorded. Visits were also made to sandy islands and the main island of the reserve, hiring a local boatman and his dugout canoe. We stayed at Kusaha, the reserve headquarters, in the simple guest house there.

3. Results and Discussion

A total of 140 bird species were seen at Kosi, all being recorded within the reserve except two, Red-crested Pochard Netta rufina and Marsh Sandpiper Tringa stagnatilis, which were only seen in wetland close to the barrage. A further nine species were recorded which are additions to the checklist in Inskipp (1989) (Table 1).

Table 1: New Bird Records for Kosi Tappu Wildlife Reserve

Species	Date Recorded	Number Seen
Eurasian Spoonbill	5 & 10 March	5 (1 & 4)
Pallid Harrier	6 March	1 (male)
Imperial Eagle	8 March	2 (1 ad., 1 juv.)
Ruddy-breasted Crake	6 March	1
Common Coot	5-11 March	4
Eurasian Curlew	5-11 March	5
Great Black-headed Gull	9 March	1
Common Black-headed Gull	55 & 9 March	3 (1 & 2)
Orphean Warbler	9 March	1

Other records of particular note included Greater Adjutant (1 on 5 March), two species which are vulnerable in Nepal, Swamp Francolin and Brown Fish Owl Ketupa zeylonensis (1 sighting) and one, Orange-breasted Green Pigeon Treron bicincta (about 3 sightings), which is rare in Nepal. All species recorded are listed in Appendix 1.

Swamp Francolin

Swamp Francolin occurred in vegetation along the eastern embankment of the reserve. A total of 23 sightings probably represented 17 individuals. The total area of habitat deemed as suitable for Swamp Francolin was approximately 2km² (Figure 2), giving a density of about 8/km². Only one pair was sighted outside this area.

Favoured Swamp Francolin habitat were areas of thick clumps of grasses less than 1m in height interspersed with bare dusty patches, scattered bushes and pools of water. Francolins were seen on several occasions walking along thin sandy paths within the grass. Once, one flew into and remained in a low thick bush. No francolin were seen in either wooded or very open areas. The main periods of activity were early morning and late afternoon. They called frequently at these times, or when flushed.

Threats

The most serious threat to Swamp Francolin at Kosi Tappu is the risk of inundation, in light of the dramatic changes in the course of the river in recent years. This risk would apply to all ground-nesting birds. The height of the river also depends on irrigation management and the flow of water past the Kosi Barrage. Other threats include the invasion of the eastern embankment by Cassuarina bushes, which could transform the limited marshland into bushland, and grass cutting by locals, which occurs every March with permission from the reserve warden. This latter practice may be advantageous to francolin as it curbs the growth of very tall elephant grasses, but there is still a serious risk of disturbance and over-cutting. Natural threats include predation, especially by jackals, mongeese and raptors.

Bengal Florican

No Bengal Florican were seen at Kosi, either at the reserve or south of the barrage where they have been recorded in the past (Inskipp and Inskipp 1983). Suitable florican habitat was found on the main island of the reserve, although the area south of the barrage was heavily utilised for agriculture and grazing.

4. Recommendations

The recommendations arising from this report can only really be taken into consideration with the assumption that areas surveyed are not or will not be inundated in the near future. As there is a genuine risk of this it may be necessary to translocate wildlife (eg francolins) to 'safe' areas within the reserve. However, the following points should be considered:-

1. Further (regular) studies at Kosi Tappu Wildlife Reserve and Kosi Barrage to monitor the Swamp Francolin population and look for Bengal Florican and locate areas of suitable habitat for both species, eg the western embankment?
2. More extensive surveys within the riverine forest and island grasslands.
3. Careful management of annual grass cutting.
4. Management (thinning or removal) of Cassuarina bushes and any other potentially invasive plants.
5. Possible extension of the grassland along the eastern embankment to increase the area of habitat suitable to Swamp Francolin.

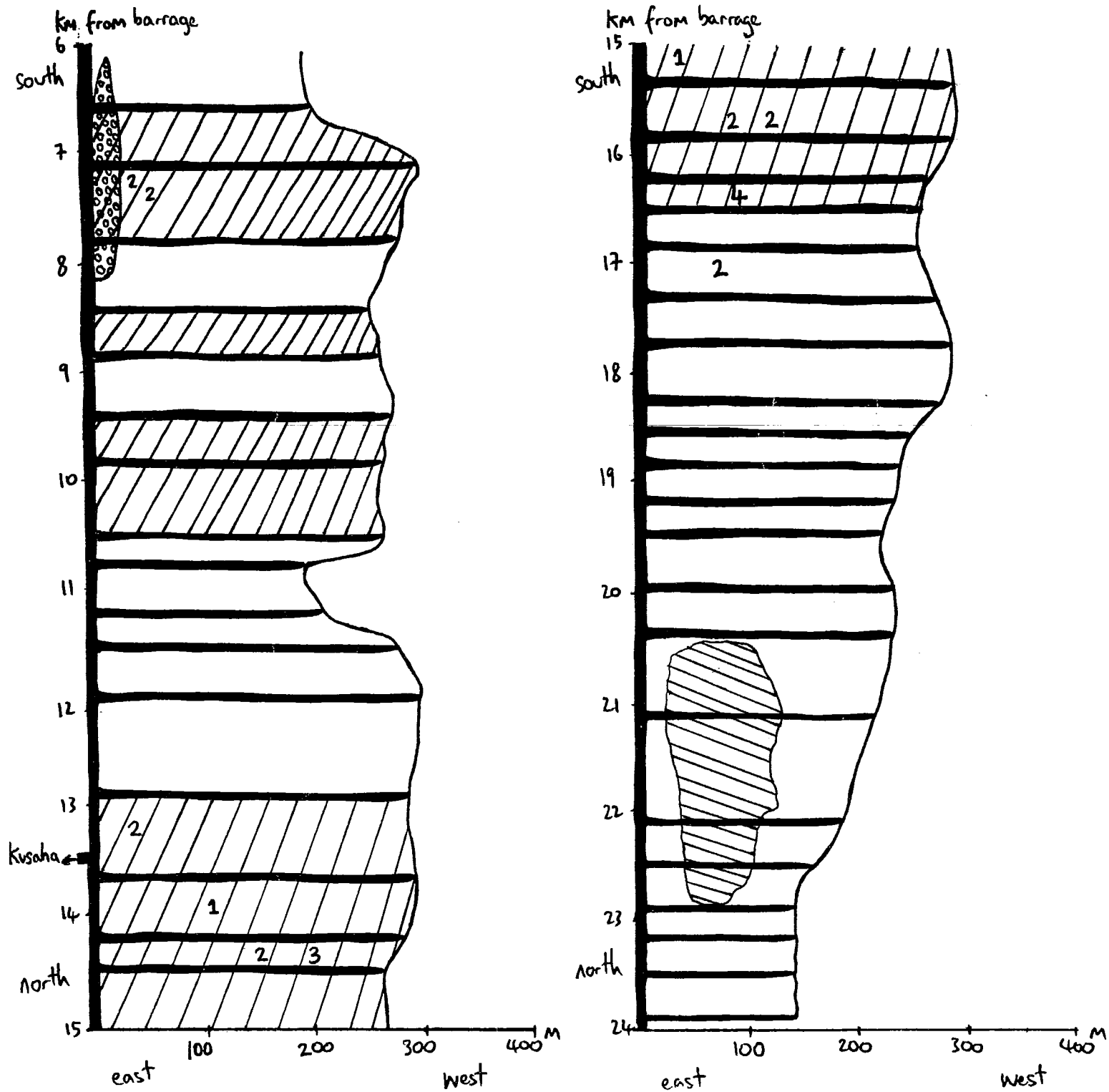
The eastern embankment was (and hopefully still is) an ideal place to study Swamp Francolin, as the birds may be viewed from elevated bunds which offer excellent viewing. The island should be surveyed extensively, especially for suitable florican habitat, as it could make a possible site for reintroduction of this endangered bird.




Most of the survey and management work could be carried out with little extra resources by Nepalis either employed directly by the Department of National Parks and Nature Conservation or a voluntary body such as the King Mahendra Trust for Nature Conservation or the World Pheasant Association.

Draft extract from:-

Dodman, T. H. and Guinan, Y. N. 1991. Report on the Status, Threats and Conservation of Birds in East Nepal, 1989.

Figure 2: The eastern embankment of Kosi Tappu Wildlife Reserve showing sightings of and suitable habitat of Swamp Francolin (all sightings between 5 and 11 March 1989)



-  : Dalbergia sissoo woodland
-  : Acacia catechu woodland
-  : Preferred/Suitable Swamp Francolin habitat

Cassuarina bushes occur between 14.5 and 19.5km north of the barrage. The dark lines represent the eastern embankment and its bunds. Note the scale differences between horizontal and vertical axes.