

## A PRELIMINARY SURVEY FOR THE BENGAL FLORICAN IN CAMBODIA

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### ABSTRACT

This short paper reports on a preliminary survey for the Bengal Florican *Eupodotis bengalensis blandini*, undertaken in two provinces of eastern Cambodia during the 1996 dry season. During the survey, anecdotal reports of Bengal Floricans were received from villagers at two localities in Prey Veng Province, where they were reported to be seasonal visitors, occurring during the rainy season (June to December). The difficulty of locating grassland habitat suitable for Bengal Floricans during the survey is a reflection of the overall decline natural grasslands have recently undergone throughout Cambodia, and because some wet grasslands are seasonal and flourish only during the rainy season. Whilst there have been significant recent developments in conservation in Cambodia, natural grasslands are not yet considered a conservation priority. The conservation of this species can only be addressed with significantly improved knowledge of its status and distribution, and increased understanding of the conservation value of grasslands amongst decision makers. A simple framework for future Bengal Florican surveys is proposed.

### INTRODUCTION

The Bengal Florican *Eupodotis bengalensis* is endemic to the Indomalayan Realm and has suffered a chronic loss of its wet grassland habitat so that it now survives almost exclusively in very small fragmented populations totalling 300–400 birds in Nepal and India and is considered Endangered (COLLAR *ET AL.* 1994). A recent review of the distribution and status of the poorly known Indochinese subspecies (*E. b. blandini*), concluded that although historically known from Cambodia, *E. b. blandini* was presently known only from the vicinity of Tram Chim Nature Reserve in Dong Thap Province, Vietnam (DELACOUR, 1929a & 1929b, DELACOUR & JABOUILLE, 1931, EAMES, 1996, ENGELBACH, 1940a & 1940b, and JABOUILLE, 1929). The same review proposed that the survey of remaining grasslands in Cambodia and Vietnam should be undertaken with great urgency with a view to identifying areas suitable for protected area establishment (EAMES, 1996). This preliminary survey should be viewed as a tentative attempt to initiate that process.

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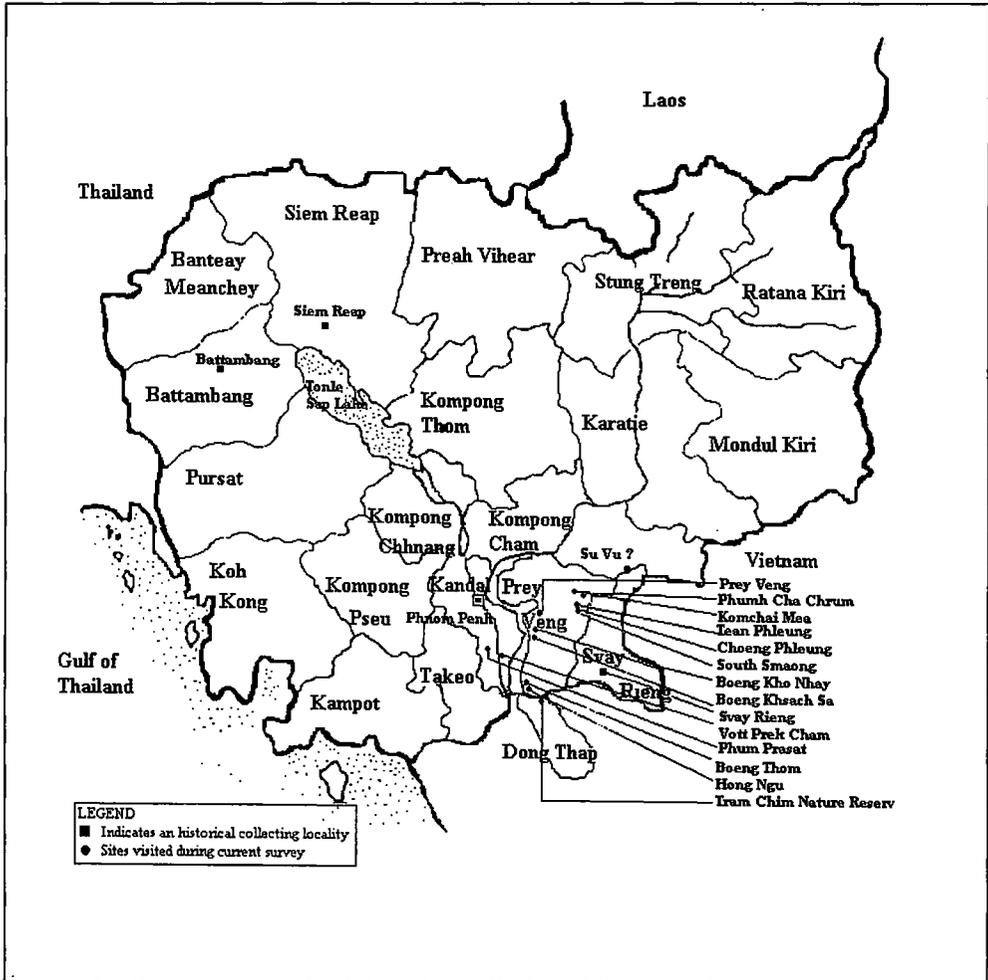


Figure 1. Provinces of Cambodia and localities mentioned in the text

## METHODS

Site selection was based on a review of the literature and by reference to the Cambodian land-cover atlas (MEKONG SECRETARIAT, 1994). Those provinces maintaining both natural grassland cover from which the Bengal Florican was known historically, were considered for survey (Table 1 and Figure 1). Provinces with an uncertain security situation, generally to the west of the Mekong River in the spring of 1996, were excluded. The province of Prey Veng was finally selected for survey, for despite the absence of historical records of the species from this province, Prey Veng retains some grassland and shares a common border with both Svey Rieng Province (Cambodia) and Dong Thap Province (Vietnam) from where Bengal Floricans were historically and are currently known (EAMES, 1996). Using 1:50,000 topographic maps, grassland patches were identified as close as possible to the historical collecting locality of Su Vu in Svey Rieng and to the Vietnamese border from where Bengal Floricans were recently seen (EAMES, 1996). Kandal Province was additionally selected because it too retains some grassland, its ease of access and the good security situation. When visiting sites we attempted to locate Bengal Floricans by both interviewing local villagers and locating suitable habitat. Fieldwork was undertaken over six days between 22–27 March 1996 by a five-man team composed of staff from the Wildlife Protection Office (Ministry of Agriculture, Phnom Penh) and the BirdLife International Vietnam Programme.

## RESULTS

On 22 March we drove north-east from Prey Veng town on highway 15, branching east onto route 154 after 15 km. At the village of Tean Phleung we drove south for 1–2 km towards a small seasonal lake known as Choeng Phleung (11°32'N 105°37'E), located close to the village of South Smaong. Before reaching the lake we interviewed a villager who reported that Bengal Floricans were present during the rainy season and that he had seen the species during the rice harvest in October–November 1995. He described the flight of the species, revealing white in the wing. Using his own arms, he demonstrated the shallow, stiff wing-beats associated with the species. He said the Khmer name for the species was *sup* which meant “whisper” in English, a reference to the species’ muted and high-pitched call. Covering less than 2 ha, the lake had been pumped dry and the surrounding area consisted of shrubs and dry paddy stubble. Since the habitat appeared unsuitable for Bengal Floricans, and given the large number of people in the vicinity, no further exploration of the site was made.

For much of the rest of the day we continued north-east passing the village of Kamchay Mea before rejoining highway 15. The landscape was flat as far as the eye could see and whilst sparsely populated, was under cultivation. Paddy bunds were typically dotted with sugar-palms and patches of scrub existed along watercourses. At this season the paddyfields are dry and support only sparse rice stubble ca. 20 cm tall. Seasonal waterbodies such as Phum Cha Chrum were completely dry and lacked any wet grassland vegetation at their margins. North of Kamchay Mea, isolated deciduous dipterocarp trees dotted the landscape, suggesting the area was forested until relatively recently.

In the afternoon we drove south to Boeng Khsach Sa (11°23'N 105°24'E) along highway 152 which crosses the waist of this large wetland. The margins of the lake were heavily grazed by domestic cattle and water buffalo, planted with rice, or were covered in a course shrubland, dominated by *Mimosa* which was being cut and burned in places. South of its waist, fields met the lakeshore and were heavily disturbed by people. At this site we met a road construction crew, one member of whom was evidently familiar with Bengal Floricans. With his thumbs locked together he demonstrated the mode of flight of the species with his hands and claimed it ruffled its feathers to make itself appear bigger during display. Again he used the local name *sup* and said he had seen a pair last year in grassland in the vicinity of Boeng Kho Nhay. He added that most of this grassland had now been burnt. He described how some years before he had found a nest containing two green eggs.

On 23 March we visited Boeng Kho Nhay (11°27'N 105°33'E). The lake covered ca. 100 ha and the water level had evidently retreated during the dry season exposing a considerable amount of foreshore upon which water buffaloes were grazing. The lake was embanked around its perimeter and bordered on three sides by cultivation and human settlements. On the east side there was an extensive area (ca. 200 ha) of dense shrubbery up to 2 m tall, from which people were harvesting the aromatic leaves. The lake was heavily disturbed by many fishermen. No wet grassland habitat suitable for Bengal Floricans was found at this site.

During the afternoon of 23 March and on 24 March we travelled south by boat down the east bank of the Mekong River, arriving on the Cambodia/Vietnam border between Prey Veng and Dong Thap Provinces respectively late on the afternoon of 24 March. Along the Mekong River and the stretch of water known as the Hong Ngu, only fields of rice, maize, tobacco and beans were visible. At Hong Ngu the mainly Vietnamese villagers were busily harvesting rice from their fields on the Cambodian side of the border. No habitat considered suitable for Bengal Floricans was observed in this area.

On 25 March we visited Boeng Thom (10°57'N 105°17'E) a small lake (c.5 ha) located to the north-east of the Hong Ngu at the northern edge of an extensive irrigated area. Whilst some water remained, the margins of the wetland were covered with dense *Mimosa* scrub and no suitable Bengal Florican habitat was evident. During the afternoon we travelled slowly south along the Hong Ngu intermittently scanning the surrounding areas for grassland patches, but to no avail.

On 26 March we crossed the Mekong River at Vott Prek Cham and after driving 10 km north on highway 1 turned west, driving through very degraded swamp forest to Phum Prasat (11°17'N 105°09'E) in the Basak marshes. During the afternoon and following morning we surveyed first the southern part and then the northern part of the extensive marshlands by boat. Whilst there was extensive emergent vegetation at the perimeter of the wetland, the area was too inundated for Bengal Floricans. All survey sites and historical collecting localities are illustrated in Fig. 1.

During the survey, birds were generally scarce and few species of note were recorded in the agricultural areas. These included Eastern Marsh Harrier *Circus spilonotus*, Black-shouldered Kite *Elanus caeruleus* and Oriental Pratincole *Glareola maldivarum*. Basak marshes supported a rich and diverse selection of waterbirds typically associated with freshwater swamp vegetation, rather than wet grasslands.

## DISCUSSION

The difficulties encountered in locating wet grassland habitat and the failure to observe Bengal Floricans or any other wet grassland bird species, suggests either a decline in the extent of that habitat or points to the extreme seasonality of wet grassland vegetation, or a combination of both at the sites visited. However, we did receive two reliable reports which indicate the continued presence and breeding of the species in Cambodia.

### **The Declining Extent of Cambodian Grasslands**

In 1973/76 the total area of grasslands in Cambodia was estimated to be 7,196 km<sup>2</sup>, approximately 4% of the land area. By 1985/87 this had declined to 1,640 km<sup>2</sup> (0.9% of the land area), plus an additional 2,777 km<sup>2</sup> classified as abandoned grassland. By 1992/93 the total area of grasslands had further declined to 1,341 km<sup>2</sup> (0.7% of the land area), with an additional 1,095 km<sup>2</sup> classified as abandoned grassland (MEKONG SECRETARIAT, 1994). Over the 20 year period this represents a catastrophic 81% loss of all grassland habitats. The provincial breakdown of grassland loss can be seen by reference to Table 1, where all categories of grassland, except abandoned grassland, are combined (Source: MEKONG SECRETARIAT, 1994). Whilst accepting that by combining all grassland types the data includes possibly extensive areas of non-wet grasslands which may be unsuitable or at best sub-optimal for the Bengal Florican, it is useful in understanding the overall trend in grassland loss and the accompanying decline of Bengal Florican populations which seems likely to have occurred.

Ten provinces have now lost more than 95% of their grasslands and only three provinces retain more than 50% of the grassland area they had in 1973. In seven provinces there was a continuous decline over the period, whilst six provinces showed an increase in grassland area by 1985/87 which had declined by 1992/93 and seven other provinces apparently had increased their areas of grassland between 1985/87 and 1992/93. Two provinces (Kratie and Mondul Kiri) currently show an expansion of the area under grassland on the 1973/76 data. Forest clearance and its subsequent replacement with fire-tolerant grassland may account for this trend. Alternatively, it may reflect inconsistencies in data collection or classification in those provinces. The pattern of grassland decline further appears to have a geographical basis, since the seven provinces that showed a continuous decline in grassland area are all located south of the Ton Le Sap Lake in the southern third of the country (Figure 1). The six provinces showing an increase and then decline in extent of grassland are, with the exception of Banteay Meanchey and Phnom Penh, located in the north-east. Of the seven provinces which showed a decline and then an increase in extent of grassland, four are in the extreme south, whilst the other three are in the north-west.

During the period 1985/87 to 1992/93, despite civil unrest and instability throughout much of the country, there was considerable intensification of agriculture and expansion of the area under paddy. Data suggest that this was principally at the expense of grasslands rather than any other vegetation type. For example, in Battambang the area of paddy increased by 830 km<sup>2</sup> during this period, grasslands providing 443 km<sup>2</sup> or 53% of the total new area of land under cultivation. The next highest contributing vegetation type was

Table 1. Change in grassland area in Cambodia between 1973–1993 (MEKONG SECRETARIAT 1994)

Province	Area	1973/76	1985/87	1992/93	% loss	% area remaining
Banteay Meanchey	7,481	79	128	37	53	0.5
Battambang	12,501	204	60	142	30	1.1
Kompong Speu	6,756	39	16	6	85	0.08
Kampot	5,020	326	4	30	91	0.6
Kompong Chhnang	5,278	295	111	10	96.6	0.2
Kandal	3,663	527	102	68	32	1.85
Koh Kong	12,963	17	16	0	100	0
Kompong Cham	9,358	511	87	1	99.8	0.01
Kompong Thom	13,076	1,558	194	241	99	1.8
Kratie	12,061	27	0	78	+228	0.64
Mondul Kiri	13,702	369	606	391	+5	2.8
Preah Vihear	13,586	8	32	0	100	0
Prey Veng	4,847	1,247	14	42	97	0.9
Pursat	11,457	88	29	6	93.2	0.05
Ratana Kiri	12,561	2	29	0	100	0
Siem Reap	15,726	131	0	68	95	0.43
Sihanouk Ville	1,426	75	0	13	87	0.9
Stung Treng	11,175	14	162	0	100	0
Svay Rieng	2,850	792	11	0	100	0
Takeo	3,430	863	39	196	77.3	5.8
Phnom Penh	402	24	39	12	50	3
Tonle Sap Lake	2,216	0	0	0	0	0
Total	181,535	7,196	1,640	1,341		

abandoned shrubland which at 242 km<sup>2</sup> represented 29%. This situation was mirrored in Svey Rieng Province, where of the 378 km<sup>2</sup> of new land under paddy, grasslands provided 160 km<sup>2</sup> or 42% of the total new area under cultivation (MEKONG SECRETARIAT, 1994).

Two of the four provinces from which the Bengal Florican was known historically, namely Svey Rieng/Kampong Cham (at a locality given as, Su Vu, 80 km north of Soay Rieng, which could lie in either Province), have now lost 100% and 99.8% of their grasslands respectively. Of the other two provinces, Battambang retains 142 km<sup>2</sup> and Kampot 30 km<sup>2</sup>. Only four provinces (Battambang, Kompong Thom, Mondul Kiri and Takeo) each maintain more than 100 km<sup>2</sup> of grassland (MEKONG SECRETARIAT, 1994).

### **Environmental Factors Determining Bengal Florican Distribution**

The difficulty in locating either suitable habitat or bird species indicative of wet grasslands at the two sites from which anecdotal reports of Bengal Floricans were received, suggests that wet grassland growth is seasonal and that Bengal Floricans could be migrants to parts of Cambodia. This claim is supported by the sparse historical information (EAMES 1996). Eames (1996) speculated that Bengal Florican movements may be dependent on rainfall and the arrival of the south-west monsoon.

Since soil type may influence drainage patterns it may also effect the grassland type and hence the distribution of the Bengal Florican. The soils in Dong Thap Province, Vietnam, upon which Bengal Floricans are known to occur, are acid sulphate soils, conforming to classification 3 and 4 of Moormann (1961). Such soils, also termed alumisols, are confined the border areas of Prey Veng Province. In general, the soils of Prey Veng Province are composed of plinthite podzols, alluvial soils and brown alluvial soils (CROCKER, 1962). In Battambang Province, from which the Bengal Florican was known historically, the predominant soil types are grey and brown hydromorphics, and regurs. Centuries of cultivation make it impossible to associate particular soil types, other than acid sulphate soils, with grassland vegetation but it is evident that Bengal Floricans occur on a wide range of soil types. However, it is noteworthy that this survey visited localities on plinthite podzols and brown alluvial soils and did not survey areas lying on acid sulphate soils (alumisols).

### **Future Action**

The four provinces maintaining significant areas of remaining grasslands (Battambang, Kompong Thom, Mondul Kiri and Takeo) should be priorities for future survey. Surveys should not be undertaken during the dry season but during the rainy season, either at the onset of the rains (from June onwards) when historical movements were recorded, or during the rice harvest (October/November) as indicated by a villager, or at the end of the rainy season (January/February), which coincides with observed Bengal Florican display in Dong Thap Province (EAMES, 1996). In Vietnam further efforts should be made to locate suitable habitat on acid sulphate soils of Dong Thap, Long An and Tay Ninh Provinces.

At the policy level, Cambodia recently published its first state of the environment report (MINISTRY OF ENVIRONMENT, 1994). It is interesting to note however, that grasslands

are mentioned neither as a major biome nor habitat, and that the Bengal Florican is not listed as a species of particular conservation significance, whilst a number of more common and widespread species are included. It is believed that grasslands were not considered in the recent review and expansion of the protected areas system (MINISTRY OF ENVIRONMENT, 1994). This is despite the fact that wet-grassland supports a community of plants including wild rice *Oryza rufipogon*, the genetic precursor for the crop upon which the survival of the Cambodian people, and indeed much of humanity, currently depends. Without a realisation of the biological importance of grassland areas amongst government, supra-government organisations and non-governmental organisations, there seems little prospect for the conservation of this dwindling habitat and the Bengal Florican.

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