

even though the additional egg was fertile in one case (Sundar and Choudhury 2005, Kathju in prep.). In Sarus Crane pairs that successfully raise two chicks, the adult birds usually forage with one chick each (personal observations) suggesting that three chicks might be difficult to raise. Observations on foraging by the three-chick families would be interesting, but were not possible during these two observations. Additionally, space-utilisation models show that clutches of 1–2 eggs appear to be optimal for cranes to incubate (see Sundar and Choudhury 2005), suggesting that three- or four-egg clutches, and hence occurrences of crane pairs raising more than two chicks, will be very rare.

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Some significant bird records from the Cardamom Mountains, Cambodia, including the first recent record of Silver Oriole *Oriolus mellianus*

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The Cardamom Mountains of south-west Cambodia have been the subject of significant international attention in recent years. The 401,000 ha Central Cardamom Protected Forest (CCPF) was declared in July 2002. The flanking 334,000 ha Phnom Samkos and 254,000 ha Phnom Aural Wildlife Sanctuaries have been proposed for the Cambodian government's list of tentative World Heritage Sites, and the combined area covers three Important Bird Areas (Seng Kim Hout *et al.* 2003). In 2004, the Forestry Administration created the 145,000 ha Southern Cardamom Protected Forest, almost connecting the CCPF to the 170,000 ha Botum Sakor National Park, to form a near-contiguous 1.3 million ha corridor.

The status and distribution of Cambodia's avifauna is better known than that of any other faunal group, and is

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now well enough understood to set conservation priorities with confidence (Seng Kim Hout *et al.* 2003, Thomas and Poole 2003). However, most biological surveys in the south-west of the country have taken place either in the heights of the Cardamom Mountains (e.g., Eames *et al.* 2002) or at low elevations to their south-east (Net Neath and Tan Setha 2001, Kong Kim Sreng and Tan Setha 2002). The southern foothills of the Cardamom Mountains have thus been poorly surveyed.

As part of an effort to fill in this knowledge gap, from 12 to 18 December 2002 a team of six field scientists, of which the two authors formed the ornithological component, conducted preliminary surveys south of the Central Cardamom Protected Forest in conjunction with the Department of Forest and Wildlife. We report here on significant bird records from these surveys.

STUDY SITE AND METHODOLOGY

Surveys concentrated within a section of a forestry concession, managed by the Silver Road company, at c.200–500 m (11°35′–44′N 103°13′–26′E). Cambodia has a tropical monsoon climate, with hottest temperatures in March and April, followed by a wet season from May to October, and coldest temperatures in December and January. Rainfall in the mountains reaches c.3,800 mm/year. Reflecting this, the native vegetation cover of the survey area is lowland broadleaf evergreen rainforest with scattered natural edaphic grasslands including, in some instances, broadleaf and needleleaf *Pinus merkusii* trees. There are also several herbaceous wetlands and poorly drained, nitrogen-deficient shrublands. However, the survey area has a history of human disturbance, including intensive logging in the early 1990s. Logging has removed a very high proportion of the large forest trees, leaving secondary, very disturbed forest, with a dense understorey of spiny lianas, bamboo and saplings. Facilitated by logging roads and trails, hunting and non-timber forest product collection occur at a low density. Further clearance and development for mixed agriculture has occurred in the northern section of the study area, along the road to Thma Bang. Future additional clearance can be expected north from the recently rebuilt Route 48 linking Koh Kong and Phnom Penh.

Ornithological surveys were designed to attempt to find any species of conservation importance during the limited time available. They thus concentrated on opportunistic diurnal searching—concentrated near dusk and dawn—in the remaining better forest along ridges and in narrow riparian bands, within a relatively accessible c.10,000 ha area of the logging concession. Playback of vocalisations and monitoring of fruiting and flowering trees were employed where necessary. About 60 hours of intensive fieldwork were conducted, along with more casual observations at night or while moving between fieldwork sites. The weather was clear, dry and calm throughout the survey period.

SIGNIFICANT RECORDS

In total, 107 bird species were recorded, including one threatened and one Near Threatened species.

GREAT HORNBILL *Buceros bicornis*

Near Threatened. This species was recorded as individuals or pairs (just a few birds each day) on 12, 14, and 17 December. This low encounter rate may reflect the paucity of large trees left after logging in this area, and high hunting levels, as it is apparently common in other parts of the Cardamom Mountains (e.g. Steinheimer *et al.* 2000, Swan and Long 2003).

SILVER ORIOLE *Oriolus mellianus*

Vulnerable. On 18 December, two or three male Silver Orioles *Oriolus mellianus* were seen in heavily logged evergreen forest at about 450 m altitude (11°37′N 103°24′E). The birds were watched from a clearing through binoculars for about five minutes. They were initially seen near the top of a partially dead tree less than 40 m away, but almost immediately flew closer and into the canopy of another tree at a distance of about 20 m.

The birds were actively moving about in the tree-tops and were obscured much of the time. However, good views and confirmation of their identity were obtained when individuals perched on exposed branches at the top of the nearer tree. The birds again flew, apparently not far, but this time out of sight. Both authors are familiar with the other orioles of the region and the two birds that were seen well were almost immediately identified as Silver Orioles. They had maroonish-coloured tails with black head and wings, contrasting strongly with the pale, off-white mantle, rump and underparts. A third bird was most likely of this species but was not seen well enough to confirm its identity. Female Maroon Oriole *O. traillii* could potentially be confused with female *O. mellianus*, but has a darker, maroon-brown mantle to rump, and darker, more uniform undertail-coverts. Male *O. mellianus* is essentially unmistakable.

This sighting represents the second documented record of Silver Oriole in Cambodia following a female collected from Bokor on 12 December 1927 (Delacour 1929a,b). Bokor National Park recently provided the third Cambodian record, in the form of a male accompanied by Swinhoe's Minivets *Pericrocotus cantonensis* at c.650 m (F. Rheindt *in litt.* 2005). This species breeds in southern China and winters in southern Thailand and Cambodia, but is poorly known across its range, particularly on its wintering grounds (BirdLife International 2001). It is classified as Vulnerable because it has a small, declining population as a result of loss and fragmentation of forest in its breeding and wintering grounds (BirdLife International 2004). In its non-breeding range, the species is known to occur at 300–1,300 m (Smith 1934, P. Round *in litt.* 2006) but lower elevations such as those studied here have been less surveyed.

All other records outside of the breeding grounds, except a couple from southern China, have been from Thailand, but these are few and scattered (BirdLife International 2001). The first Thai records were from the south-east, adjacent to the Cardamoms, and so a further Cambodian record from this region is not unexpected. Crosby (1991) and Bird Conservation Society of Thailand (2004) suggested that Silver Orioles occur regularly at Khao Yai National Park, but this no longer appears to be the case as three years of intensive bird surveys in the headquarters area have failed to produce a single sighting (Round *et al.* 2004, AJP personal observations). The only recent record from Khao Yai that we are aware of is a probable sighting in October 2000 (P. Benstead *in litt.* 2005). Likewise, previously annual records from Kaeng Krachan in Thailand reduced from the mid- to late 1990s (P. Round *in litt.* 2006). The only other records we have been able to trace subsequent to those compiled for BirdLife International (2001) are from Thailand's main remaining forests in the far north and west (Robson 2003, Bird Conservation Society of Thailand 2004, 2006a,b; one otherwise undocumented and unverifiable internet posting of three birds at Doi Ankang (=Doi Ang Khang) on 17 February 2003).

Since this species appears to be locally common on its breeding grounds in China (BirdLife International 2004), the scarcity of recent wintering records may simply reflect observer effort. Few winter surveys have taken place in low-altitude moist forest in south-west Cambodia or southern Myanmar, so it is quite possible that we are only now discovering the main non-breeding grounds. Despite

limited data, and possible observer bias (since males are more striking), it is interesting to note that 10 of 11 sexed wintering records refer to males (BirdLife International 2001, Bird Conservation Society of Thailand 2004, this paper). This offers some possibility that females may even winter to the north of the majority of records from relatively well-watched southern Thailand. However, lowland forest both in the south-east Asian wintering grounds and around the Chinese breeding grounds has been reduced and fragmented over the last 50 years (FAO 2005) and we should not be too complacent about the prospects for this species. It is hoped that further surveys identify the main wintering grounds of this species and thus facilitate ongoing assessment of its conservation status.

YELLOW-BELLIED WARBLER *Abroscopus superciliaris*

Two records on 18 December, of two birds and one bird respectively, were characteristically in small thickets of bamboo. These comprise only the second locality record for Cambodia, and the first for the south-west (Davidson 2000, Goes and Davidson 2002). The species has, however, been recorded from Khao Soi Dao in the south-east of Thailand.

MOUNTAIN FULVETTA *Alcippe peracensis grotei*

This species was heard and tape-recorded in some of the higher-quality forest found during this survey on 15, 16 and 18 December, and observed on 15 December. Birds were typically seen in small single species flocks of c.3–6 individuals. The subspecies observed, Black-browed Fulvetta *A. p. grotei*, is accorded specific status by Robson (2000). This is the first record of this taxon for Cambodia, although *A. p. grotei* is known from neighbouring south-east Thailand and *A. p. peracensis* is likely, though unconfirmed, to occur in north-east Cambodia (P. Davidson *in litt.* 2003).

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