Threatened Birds of Asia:
The BirdLife International Red Data Book

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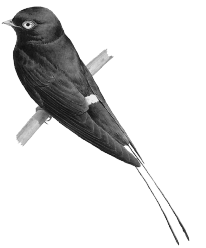
WHITE-EYED RIVER-MARTIN

Eurochelidon sirintarae



Critical ■ D1
Endangered □ —
Vulnerable □ —

This deeply enigmatic species is inferred to have a tiny population and therefore qualifies as Critical. It has not been seen for over 20 years and may already be extinct.

DISTRIBUTION The White-eyed River-martin (see Remarks 1) has only ever been found at one site in south-central Thailand at which there have been no confirmed records since 1978. Its true or original range remains a matter of almost pure speculation; the nesting grounds are possibly on one of the four major rivers (Ping, Wang, Yom and Nan) which drain northern Thailand, either in the immediate vicinity of Nakhon Sawan or further to the north, or else on one of the other major river systems of South-East Asia such as the Mekong (China, Cambodia), Salween (Myanmar) or Irrawaddy (Ayeyarwady) (Myanmar) (Round 1990b, P. D. Round *in litt*. 1998; for China see also Remarks 2). A breeding site within Thailand was considered possible by Thonglongya (1969) on the grounds that so many of the type series were immature or juvenile (see Ecology: Breeding).

■ ***THAILAND*** The species is only known from the type locality: **Bung Boraphet**. In the original description the site is first misleadingly given as "a big marsh on the Chao Praya river", but the type locality is then specified as "Bung (= Nong = Lake) Boraphet, Amphoe

The distribution of White-eyed River-martin *Eurochelidon sirintarae*: (1) Bung Boraphet.
○ Fairly recent (1950–1979)

Muang, Nakhon Sawan Province, central Thailand", and from its subsequent description as "a shallow, marshy, reed-filled lake of 25,000 hectares" (Thonglongya 1968) it is clear that this is the "big marsh" originally mentioned (a point confirmed in Thonglongya 1969; see Remarks 3). Nine specimens were collected: one each on 28 and 29 January and seven on 10 February 1968 (Thonglongya 1968). A tenth bird was caught at the lake in November 1968 (Thonglongya 1969) and brought alive to Bangkok where it was photographed in December 1968, and a further two birds from this site were held in Bangkok Zoo around 1971 (Sophasan and Dobias 1984). King and Kanwanich (1978) reported seeing six individuals flying low over Bung Boraphet towards dusk on 3 February 1978. In addition, four "probable" immature White-eyed River-martins were also observed perched in trees on an island in the lake, January 1980 (Sophasan and Dobias 1984, Round 1990b) and one was reputedly trapped by local people in 1986 (D. Ogle *per* P. D. Round *in litt*. 1998). Neither of these last two records has been confirmed (P. D. Round *in litt*. 1998), and the species has apparently vanished.

POPULATION The population of this remarkable bird seems likely to be tiny, if indeed it still survives. The original series of nine individuals in early 1968 was supposedly taken from among hordes of Barn Swallows *Hirundo rustica* in a major ringing programme which resulted in as many as 10,000 birds being captured (Thonglongya 1968). In spite of this apparent rarity, it was thought that the species might be regular at Bung Boraphet since the local bird-catchers had a name for it, *nok ta phong*, meaning "swollen-eyed bird" (Thonglongya 1968). Nevertheless, the fact that the African River-martin *Pseudochelidon eurystomina* is supposed to roost and nest in holes on sandy riverbanks and islands led to the speculation that habitat loss, flooding and disturbance was responsible for their appearance amongst reed-roosting hirundines, and that these birds might represent the last survivors of a displaced population (Round 1990b). Certainly the lack of reliable records since its discovery suggests a decline over the last few decades (P. D. Round *in litt*. 1998).

Following its discovery, trappers were reported to have caught as many as 120 and sold them to the director of the Nakhon Sawan Fisheries Station (Sophasan and Dobias 1984), who was, of course, unable to keep them alive in captivity (Round 1990b). Moreover, local markets apparently had on sale "several other specimens" in January–February of succeeding years (King and Kanwanich 1978). At least two birds ("one pair") reached but soon afterwards died in Dusit Zoo in Bangkok in early 1971 (Sophasan and Dobias 1984). Sophasan and Dobias (1984) stressed that "an absence of sightings since early 1980, despite numerous observational efforts, cast ominous doubts over the survival of the White-eyed River-martin". Moreover, the swallow population as a whole in the Bung Boraphet area has declined from "hundreds of thousands" around 1970 to maxima of 8,000 in the winter of 1980–1981, although it is not certain if this represented a real decline or a shift in site in response to high levels of persecution (Sophasan and Dobias 1984). At any rate, an estimated 100,000 Barn Swallows were present at a roost at Chotiravi, near Bung Boraphet, in August 1986 and there were 30,000 at Bung Boraphet in May 1988 (D. Ogle *per* P. D. Round *in litt*. 1998). Even so, a trapper working the large Chotiravi roost claimed never to have encountered the White-eyed River-martin (D. Ogle *per* P. D. Round *in litt*. 1998). While there might appear to be only a faint hope that this, "one of the most elusive species in the world" (Dickinson 1986), still survives, it bears the extraordinary distinction of being highly unusual in appearance yet overlooked by naturalists in a well-worked country until the late 1960s; as it is thus either extremely rare or inexplicably cryptic it is still far too soon to assume that it is now extinct (see Tobias 2000).

ECOLOGY ***Habitat*** The ecology of this bird remains almost totally unknown. By inference from the behaviour of its geographically distant relative the African River-martin (Keith *et al.* 1992; see Remarks 1), it may be supposed that *E. sirintarae* inhabits sandbars of large rivers,

probably both breeding and roosting in tunnels dug into the sand. Of course there is no direct evidence to support this conjecture, although at least one of the original birds brought in had mud or sand adhering to its claws, possibly indicating a terrestrial perching habit (P. D. Round *in litt*. 1998); equally, however, most hirundines perch occasionally on the ground, so little can be made of this observation. Perhaps more tellingly, when held in cages during the extensive ringing programme of migrant birds at Bung Boraphet, the birds did not perch on bars and flutter about noisily like other hirundines but tended to stand on the floor quietly (Thonglongya 1968). However, distinct differences in foot and toe morphology (*contra* Zusi 1978) suggest that the White-eyed River-martin might not burrow (P. C. Rasmussen in Tobias 2000).

Since the African River-martin feeds largely over both forest and open grassy country (Keith *et al.* 1992), it is possible that the White-eyed River-martin does or once did the same. It has recently been suggested that, given its unusually large eyes, the species might be nocturnal or at least crepuscular, a factor that could make it highly cryptic and thus partly explain how it remained undetected for so long (P. C. Rasmussen in Tobias 2000). While the fact that the first specimens were collected roosting at night in reedbeds among large numbers of swallows and other birds (Thonglongya 1968) might be difficult to reconcile with a supposedly nocturnal habit, it is not impossible: (a) the birds might not have been caught at the roost (see Remarks 3), (b) they might, as indicated, be *crepuscular*, and (c) they might be capable of both diurnal and nocturnal behaviour, depending on season or circumstance. At any rate, the nocturnal hypothesis, and the possibility that it is not a burrowing bird after all, suggests that initial presumptions regarding its ecology might be inaccurate; it could, for example, roost in holes in trees or in cave systems, emerging to forage in darkness or twilight far away from rivers (P. C. Rasmussen in Tobias 2000).

Food One stomach in the original series contained parts of a large beetle (Thonglongya 1968). This supports the observation that the mandibles of *sirintarae* are large and that it is thus capable of consuming large insect prey (Brooke 1972). The only confirmed observation in the wild was of birds skimming the water surface, possibly to drink in flight (King and Kanwanich 1978), as do all swallows.

Breeding The African River-martin is a colonial nester, breeding in holes dug in sandbars along rivers (Keith *et al.* 1992), and it is possible that the White-eyed River-martin does the same. However, differences in toe morphology suggest that it might not burrow and these two species could therefore have completely different breeding behaviour (P. C. Rasmussen in Tobias 2000). Five of the nine specimens collected in late January and early February 1968 were immature (Thonglongya 1968); they were called juvenile by Thonglongya (1969), who referred to some of the other material as being subadult (although this is not mentioned in the original description). This observation does not square particularly well with speculation that the species is most likely to nest between March and April (if it nests in Thailand), which is the breeding season for the majority of other insectivorous birds, while monsoon rains from May onwards would raise river levels and submerge the sandflats postulated to be the favoured nesting habitat of the species (King and Kanwanich 1978, Round 1990b, P. D. Round *in litt*. 1998). Juvenile plumage would not usually be retained for almost a year and thus a later breeding season is implied. Moreover, the capture of putatively non-breeding birds in February is rather odd considering that the breeding season of sand-bar nesting birds is normally in full swing in South-East Asia at that time: for example, the Plain Martin *Riparia paludicola* and Wire-tailed Swallow *Hirundo smithi*, two riverine swallows, begin breeding in January in the region (J. W. Duckworth *in litt*. 2000). If indeed it is a sandbar nester, the possibilities are that either (1) breeding took place near Bung Boraphet in September–December (when water levels drop again), or (2) it is a long-distance migrant from rivers with a different flow regime where it breeds in summer.

Migration Claims that the species is clearly a non-breeding visitor to Nakhon Sawan province in Thailand (Ogle 1986) and is "clearly migratory" (Turner and Rose 1989)—while

very probably correct—should be treated with care. Although the species has only been found between December and February, there is insufficient information to rule out breeding in the Nakhon Sawan area, especially given the probable nesting seasons in the area (see Breeding). It is thus not established that the species ever makes or made any significant movements.

THREATS Species of animal or plant which have a riverine distribution are highly vulnerable to human activities since their ranges are essentially linear and vulnerable to changes in water quality or distribution caused by events many miles upstream; moreover, rivers are immensely important to human populations as sources of water, food, transport and power, and thus particularly susceptible to disturbance, disruption and degradation of an intensity which is incompatible with the survival of healthy populations of many riverine species. In Asia an example of a bird under great stress from the impact of human use of rivers is the Indian Skimmer *Rynchops albicollis*, and reference to the Threats section for that species may illuminate why the White-eyed River-martin is likely to be in extreme difficulties, if indeed it is still extant.

Information in this paragraph is all from Round (1990b) and P. D. Round (*in litt.* 1998) unless otherwise indicated. Man has drastically altered the lowlands of central and northern Thailand: huge areas have been deforested, rivers have been dammed, agriculture has intensified, pesticide use is ubiquitous and urban environments have spread extensively. In addition, all major lowland rivers and their banks suffer a high level of disturbance by fishermen, hunters, vegetable growers and sand-dredgers. Whole communities of nesting riverine birds have vanished from large segments of their ranges in South-East Asia in general (Scott 1989, Duckworth *et al*. 1998a, 1999) and Thailand in particular, owing to habitat destruction and human persecution. Local people routinely trap or shoot birds for food and for sale in local markets. Even at Bung Boraphet Non-Hunting Area the trapping of birds has continued, at some level, up to the present. If the species requires forest to any degree, its numbers could already have declined to a perilously low level at the time of its discovery because of the deforestation and development of river valleys, combined with a high level of direct human disturbance of riverine sandbars (probably including direct persecution). This decline could have been unwittingly aggravated by catching the species for zoos, museums or presentation to senior figures during the intense media attention that followed its discovery. In the early 1990s the Fisheries Department drained Bung Boraphet in a misguided attempt to eradicate water-weed and began developing some of the lake's islands and periphery, causing intense disturbance and disruption of its ecology (Parr 1992). Plans were also mooted to develop one of the main islands (where many swallows once roosted) as a fishery monitoring station or else tourist attraction (*Bangkok Bird Club Bull.* 9, 6 [1992]: 12).

The reduction in wintering swallow populations in the Bung Boraphet area is not difficult to explain. Intensive trapping activities for the purpose of selling birds (including many thousands of swallows annually) as food in local markets must have played a major role, as must the annual destruction of roosting sites caused by the burning of reeds to make way for lotus cultivation (Sophasan and Dobias 1984). Relations between conservationists and bird-trappers at Bung Boraphet were once fraught, to the extent that one reserve ranger was killed when trying to apprehend poachers at roosts in 1987; moreover, huge areas of reedbed in areas frequented by roosting swallows were being burnt in February 1986 (D. Ogle *per* P. D. Round *in litt*. 1998).

MEASURES TAKEN Bung Boraphet was declared as a Non-Hunting Area in 1979 (Sophasan and Dobias 1984). Several searches have been made for the species around this site. Eleven amateur birding groups searched the lake unsuccessfully during 1979, with further searches carried out between December 1980 and March 1981 by a team from the Association for the

Conservation of Wildlife; although these included netting of roosting Barn Swallows in reedbeds, they failed to locate the river-martin (Anon. 1981b, Sophasan and Dobias 1984). In 1988 another concerted effort to relocate the species was undertaken, but this ended in failure as the swallow roosts were highly disturbed and mobile (D. Ogle *per* P. D. Round *in litt*. 1998). A survey of the Nan, Yom and Wang rivers in northern Thailand (in search of the nesting grounds of the species) was carried out in May 1969; this was not comprehensive and relied chiefly on interviewing villagers, none of whom seemed to know the bird (Thonglongya 1969). Rivers near the Chinese border of Laos were searched in April 1996, and local people were interviewed with illustrations of the species, but without success (W. G. Robichaud verbally 1997).

MEASURES PROPOSED Until the species is rediscovered, proposals for conservation action to save it are rather meaningless. The most important measure is therefore to maintain vigilance for the species (including at Bung Boraphet) throughout South-East Asia. It should be borne in mind that its riverine nesting habits are only an assumption based on the species's taxonomic affinities, and that it might conceivably utilise some entirely different habitat, or be semi-nocturnal (see Ecology). Searches in its putative breeding range (Thailand, Myanmar, Laos, southern China) should therefore be resumed with a broader outlook (Tobias 2000)—and it needs to be considered that its occurrence at Bung Boraphet is or was exceptional, reflecting straying birds (or groups of birds) whose normal range is quite separate. King and Kanwanich (1978) saw the major netting activities at Bung Boraphet (of migrant swallows and buntings) as a potential threat and called for measures to curb this exploitation, followed by the establishment of the lake as a nature reserve. The lake is, however, an artificial waterbody created to provide fish, so that full protection would appear to be unacceptable (P. D. Round *in litt*. 1998); the hunting of hirundines without a licence has been illegal since 1972, but this legislation has never been enforced (Sophasan and Dobias 1984).

REMARKS (1) The discovery of this species was fairly sensational at least biogeographically, since it involved a bird whose only close relative is an inhabitant of the Congo river and some tributaries in equatorial Africa (Thonglongya 1968; see Keith *et al.* 1992), and thus in many ways as remarkable as the discovery in the Congo basin some 30 years earlier of a peacock (Congo Peacock *Afropavo congensis*: see Collar and Stuart 1985). Differences between this species and the African River-martin *Pseudochelidon eurystomina* are related to the size of the bill and the eyes, suggesting that "they have very different feeding ecologies, *sirintarae* probably being able to take much larger prey and perhaps in different microhabitats", and these features are sufficiently pronounced to permit the allocation of the White-eyed River-martin to its own genus, *Eurochelidon* (Brooke 1972). However, Zusi (1978) supported the retention of both species in *Pseudochelidon*, arguing that differences between the two are insufficient for separation and mirror patterns in other congeneric swallows. Whether congeneric or not (and the further evidence concerning foot development—see Ecology—is here taken to indicate not), the syringeal structure of the two species of river-martin differs enough from that of the Hirundininae to suggest at least subfamily distinction from the true swallows (Mayr and Amadon 1951, Thonglongya 1968). (2) Evidence that the species breeds or has ever occurred in China is scant. A painting by a Chinese artist held in the Sun Fung Art House of Hong Kong was thought to depict the species (Dickinson 1986), but another interpretation is that it portrays an Oriental Pratincole *Glareola maldivarum* (Parkes 1987). (3) The ascription of the type locality to Bung Boraphet is queried by P. D. Round (*in litt*. 1998), who has suggested that the precise site where the species was collected was unknown, based on the fact that K. Thonglongya and his team were not in the field when the river-martins were caught. Thonglongya's (1968) account stated that the birds were trapped by throwing a fishing net over the reeds, and subsequent authors (e.g. Sophasan and Dobias

1984, Turner and Rose 1989, Round 1990b) repeated this information. However, according to a technician working with the original field team (and interviewed many years later), the birds were never seen in the field or trapped by any of the team members, but rather were brought in to the field team's hotel in Nakhon Sawan by villagers, following a broadcast appeal to local people for live wild birds for ringing purposes (P. D. Round *in litt*. 1998). While this suggests that the precise site of collection is impossible to identify, Sophasan and Dobias (1984) actually referred to rediscovery efforts at Bung Boraphet in 1980–1981 being concentrated "on an island where all of Kitti's river martins had been captured", which suggests that, at one time, confidence was very high that a very precise origin was known. Whatever the circumstances, it seems justifiable to accept Bung Boraphet and/or *its immediate vicinity* as the source of the type series and presumably all specimens of this species.