

Apparently known as yet from only five certain areas in extreme eastern Bolivia and adjacent west-central Brazil, this very local seedeater is at risk owing to the continuing conversion of its remaining areas of campo grassland.

DISTRIBUTION All five areas in which the Black-and-tawny Seedeater (see Remarks 1) has been recorded lie in the block which falls athwart the Bolivia–Brazil border at 13–19°S 56–61°W. The listing of Goiás by von Ihering and von Ihering (1907) was in error.

Bolivia Records are from three sites, all in eastern Santa Cruz department: in a small area of grassland at Flor de Oro, a ranch on the Bolivian side of the río Guaporé at the north end of the Serranía de Huanchaca, opposite the Brazilian town of Pimenteiras in Rondônia, where the species was the most numerous *Sporophila* noted in late May and June 1991 (TAP) and where two flocks of 15 and 10 were seen in late March 1992, birds having been observed there by a fish biologist since at least February (B. M. Whitney *in litt.* 1992); in the Los Fierros grasslands along the western base of the Serranía de Huanchaca, where at least two adult males were identified among large numbers of seedeaters in August 1989 (Bates *et al.* 1992); “Chiquitos”, a province at 16°S 60°W, second half of 1831, where the type-material was obtained (Hellmayr 1938, Paynter *et al.* 1975).

Brazil The species has been found with certainty in only two areas, although birds likely to be this species have been reported from three others, which are included below (the last three under Mato Grosso) with their provisional nature indicated:

Mato Grosso just outside Mato Grosso city (now called Vila Bela da Santíssima Trindade) at “an open hut” called Poruti, where eight specimens were collected in October 1826 (von Pelzeln 1868–1871; see Remarks 2), and somewhat further east on the road towards Pontes e Lacerda, where birds were seen in January 1988 (Willis and Oniki 1990; see Population); Recanto Passárgada, 15°44’S 56°05’W, 1987 or 1988, possibly; Porto Limão, 16°10’S 58°05’W, late 1980s, possibly; between Poconé and Porto Jofre, late 1980s, possibly (Willis and Oniki 1990);

Mato Grosso do Sul east of Corumbá, where a male was seen in October 1979 (Ridgely and Tudor 1989). Two juveniles collected at Corumbá in September 1893 were suspected of being this species (Salvadori 1895b).

POPULATION There are no published estimates of population size in this species, and evidence on abundance is largely as given in Distribution above. At Flor de Oro, Bolivia, in a grassland of c.20 km² there were probably several hundred individuals in late May 1991, since up to 12 singing males (and numerous probable females) were located easily during walks of c.2 km through the preferred habitat (TAP); against this, the species was outnumbered by four other *Sporophila* species in the Los Fierros savanna to the south-west in late August 1989 (TAP). On the grasslands east of Vila Bela da Santíssima Trindade 55 birds were counted over 18–19 January 1988 (Willis and Oniki 1990).

ECOLOGY At Flor de Oro, Bolivia, this species was found in late May and June 1991 in seasonally flooded grassland with scattered clumps of bushes and trees, a habitat heavily grazed by cattle, and the evenly spaced patches of woody vegetation appeared to be growing on decomposing termite mounds; territorial males sang from exposed perches atop small trees in these patches, territories being small, as up to three or four males were counter-singing within small areas of c.1–2 ha (TAP). Lesser numbers of singing Plumbeous Seedeaters *Sporophila plumbea* were observed in the same areas, and their territories appeared to overlap with those of *S. nigrorufa*; both species clung to stalks and fed on seeds of several species of grasses that were in flower (TAP). In mid-August of the same year no male *nigrorufa* was found at this locality, although male *plumbea* and numerous unidentified female-plumaged *Sporophila* were still present, suggesting that the species may be migratory or nomadic, although in August 1989 two adult male *nigrorufa* were observed in the Los Fierros savanna not far to the south-west of Flor de Oro: these birds were in large mixed flocks of up to several hundred individuals of at least four additional *Sporophila* seedeaters (Dark-throated *S. ruficollis*, Rufous-rumped *S. hypochroma*, Tawny-bellied *S. hypoxantha*, and Plumbeous in order of abundance), all feeding on grass seeds in relatively undisturbed, seasonally inundated grassland at the edge of Noel Kempff Mercado National Park (TAP; also Bates *et al.*

1992). The grasslands at both Flor de Oro and Los Fierros are surrounded by tall tropical evergreen forest; to reach the nearest similar habitat to the south or east, grassland species such as the above *Sporophila* must fly over extensive areas of such forest; similarly, the grasslands near San José de Chiquitos (if this in particular was signified by the “Chiquitos” of the type-locality) are surrounded by deciduous forests and dense cerrados (TAP). In January 1988 (summer) the Black-and-tawny Seedeater was the only bird singing in partially inundated grasslands at Campos do Encanto (Willis and Oniki 1990), but little singing was noted in birds in Noel Kempff Mercado in March 1992 (B. M. Whitney *in litt.* 1992).

THREATS The devastation wrought by farming on the grassland ecosystems of central Brazil and hence on the populations of species endemic to them is outlined in Threats under Lesser Nothura *Nothura minor*. Unfortunately, portions of the protected areas identified below are still being grazed and/or burnt almost annually, and a growing human population is placing more and more pressure on the Brazilian pantanal (TAP). The problem of conserving the Black-and-tawny Seedeater appears to be compounded by its possibly nomadic or migratory behaviour, which means that single-site protection will be inadequate.

MEASURES TAKEN Much of the known habitat of this species lies in or near the Noel Kempff Mercado National Park in Bolivia and the Pantanal Matogrossense National Park in Brazil. The authorities at Noel Kempff Mercado have decided gradually to remove cattle and to restrict burning of the grassland at Flor de Oro; they are also aware of the biological importance of the seasonally flooded grassland near Los Fierros (many vertebrates and presumably plants that do not occur elsewhere in the park occur in these two localities) and have expressed a desire to acquire it from local ranchers (TAP).

MEASURES PROPOSED It seems obvious that this species will be found in many new localities within its restricted range, and should, for example, be expected in Rondônia; but it may also be the case that its centre of abundance lies in the small area defined by 14-16°S 59-61°W, focused on the Serranía de Huanchaca and its adjacent grasslands, notably to the south-east (east of Vila Bela de Santíssima Trindade). Biological surveys of these extensive flooded grasslands and forests in the headwater region of the rio Guaporé south-east of Serra Ricardo Franco in western Mato Grosso are thus urgently needed; it is hoped that, in the absence of government action, private reserves will be established in this region and to the south in the Bolivian pantanal, where vast areas of seasonal grasslands and dry forests survive in good condition (TAP). Furthermore, cattle must eventually be removed from the drier portions of the Pantanal Matogrossense National Park and adjacent areas so that the original flora and fauna will have a chance to recover from the effects of constant grazing and over-burning, for although the belief has been expressed that cattle and wildlife can co-exist harmlessly, the long-term effects of ranching practices on most native grassland plants and animals is probably devastating. Upland grasslands in the San José de Chiquitos area of eastern Bolivia will hopefully be included in a recently proposed national park that would encompass much of the Serranía de Santiago; such a park would protect outlying populations of numerous Brazilian Shield endemics (TAP).

REMARKS (1) The taxonomic status of this and numerous other *Sporophila* species needs to be clarified through behavioural, morphological and biochemical studies. Several of the taxa currently recognized as full species may prove to be colour morphs or well-marked subspecies of other species; likewise, some isolated forms of widespread species may prove to be specifically distinct. Because the breeding ranges and habitats of many *Sporophila* species are restricted and subject to habitat destruction, such studies are urgently needed. A general taxonomic revision of the entire genus would be of great value to bird conservationists. (2) Poruti and (Vila Bela de) Mato Grosso have usually been cited as two different sites (e.g. in von Ihering and von Ihering 1907, Hellmayr 1938), and indeed Hellmayr (1938) reported skins labelled from the two places; yet it appears that the latter was intended as a geographical qualifier of the former, and certainly the two were so close together (see von Pelzeln 1868-1871, Paynter and Traylor 1991) that they count here as one place.