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Notes on the status of the Common African Waxbill in Amazonia.—The Common African Waxbill (*Estrilda astrild*), a species widespread south of the Sahara in its native Africa (Hall and Moreau, An Atlas of Speciation in African Passerine Birds, Br. Mus. Nat. Hist. Publ. No. 780, 1970), is the only exotic bird other than the Rock Dove (*Columba livia*) and the House Sparrow (*Passer domesticus*) (Smith, Condor 75:242–243, 1973; Condor 82:109–110, 1980), to have adapted successfully to Amazonia. *E. astrild* has also been introduced in the Cape Verde Islands, São Tome, Principe, St. Helena, Mauritius, Reunion, Rodriguez, the Seychelles, Amirantes, New Caledonia and Tahiti. Attempted introductions on Madagascar and the Comoros failed (Peters, Check-list of the Birds of the World, Vol. 14, Mus. Comparative Zoology, Cambridge, Massachusetts, 1968).

The species has been feral in Manaus at least since 1967 (Sick, Bonn. Zool. Beitr. 19:298–306, 1968) and was first sighted in Belem in December of 1977 (Novaes, pers. comm.). The Manaus population comprises between 500 and 1000 birds (Oren and Smith, Acta Amazonica 8:699–701, 1978), whereas the Belem population probably numbers no more than a few dozen individuals. This waxbill has occurred in Rio de Janeiro perhaps since the late eighteenth century (Santos, Passaros do Brasil, 2nd ed., R. Brigueit, Rio de Janeiro, Brazil, 1948). From there it appeared in São Paulo (1930) and subsequently in Vitoria (1940), Salvador (1953), Brasilia (1964), Maceio (1967), Curitiba (date unknown) and Porto Alegre (date unknown) (Pinto, Rev. Mus. Paulista 22:362, 1944; Sick 1968). The species is known to readily escape from standard-sized bird cages, and most subsequent populations probably started from escaped cage birds, although the population in Brasilia was established intentionally when over 100 individuals were released there (Sick 1968).

We have observed the waxbill in Manaus for more than a year, noting food plants, group size and relations with native species. This species disperses throughout the city and immediate environs during the day. At night birds concentrate in flocks of 50–200 individuals and roost in African elephant grass (*Pennisetum purpureum*) in a few sites in the city. During most of the year the waxbills form flocks of 2–20 to forage, feeding mostly between 06:00 and 09:00, and 16:00 and 18:00. This is the same pattern found by Skead (Ostrich, Suppl. 11:1–55, 1975) in Africa for the closely related Black-cheeked Waxbill (*E. erythronotos*). At the onset of the rainy season in late December and January, the flocks break up and the waxbills travel singly, in pairs, or sometimes in trios to forage. These months apparently encompass the peak of breeding, and flocks with many juveniles reform by mid-March.

The nest, constructed of panicles of Guinea grass (*Panicum maximum*), is in the form of a hollow ball with a short tubular entrance, as is the case in Africa (Chapin, Bull. Am. Mus. Nat. Hist. 75b:545–549, 1954). One nest was in an orange jasmin tree (*Murraya paniculata*, Rutaceae), and a second in an oiti tree (*Licania tomentosa*, Chrysobalanaceae)—both between 2.5 and 3.0 m from the ground.

Guinea grass, with seed heads available all year, was by far the most important food for *E. astrild*. Seeds of this grass are important in the diet in Africa also (Skead 1975). In fact, all grasses eaten by this waxbill in Manaus are species commonly found in Africa, and include the crabgrass *Digitaria horizontalis* (cosmopolitan in distribution), *Sporobolus indicus* (pantropical), *Echinochloa* sp. (pantropical) and *P. purpureum* (pantropical). The waxbills also feed on the amaranth *Amaranthus spinosus* (pantropical) and the sedge *Cyperus surinamensis* (Neotropical). Abundant native South American grasses, such as *Paspalum repens*, are ignored by the Common Waxbill.

The bird feeds on the seeds of *Panicum maximum* and *Pennisetum purpureum* by perching on the panicle and plucking seeds, whereas *D. horizontalis* panicles are jumped on, brought to the ground and stepped on so the waxbill can pluck the seeds. *C. surinamensis*, the only

food plant we recorded for the waxbill not found in Africa, is fed on in the same fashion as *D. horizontalis*.

Establishment of the Common Waxbill in Amazonia has been aided by the availability of introduced grasses, including *Panicum maximum* and *Pennisetum purpureum*. Some of these introduced grasses have long been established in South America (Parsons, *Tübinger geografische Studien* 34:141–153, 1970; J. Range Manage. 25:12–17, 1972) and are spreading with deforestation and other human disturbance. In addition, *Panicum maximum* is commonly planted as a pasture grass in Amazonia. The 15,000 km network of newly constructed roads in Amazonia could provide corridors along which African grasses grow and the waxbill might move to found new colonies. This, in conjunction with the waxbill's flocking behavior, could facilitate the further spread of this species in Amazonia.

Native Manaus finches, such as the Lesser Seedfinch (*Oryzoborus angolensis*), the Blue-black Grassquit (*Volatinia jacarina*), the Chestnut-bellied Seedeater (*Sporophila castaneiventris*) and the Yellow-browed Sparrow (*Ammodramus aurifrons*), frequently fed in close proximity to waxbills. These native birds eat native grass seeds in addition to the seeds of introduced plants, such that it seems unlikely that the Common Waxbill will displace any native species.—DAVID C. OREN, *Dept. Biology, Harvard Univ., Cambridge, Massachusetts 02138 and Instituto Nacional de Pesquisas da Amazonia, Caixa Postal 478, 69.000 Manaus, Amazonas, Brazil* AND NIGEL J. H. SMITH, *Instituto Nacional de Pesquisas da Amazonia, Caixa Postal 478, 69.000 Manaus, Amazonas, Brazil. Accepted 30 May 1980.*

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Distribution and reproductive success of Zone-tailed Hawks in west Texas.—The Zone-tailed Hawk (*Buteo albonotatus*) occurs throughout the pine-oak belt of Mexico, including Baja California, and throughout Central America. In South America it also occurs widely but locally from Peru to Trinidad. In the United States the Zone-tailed Hawk breeds only locally in southern and central Arizona, southwestern New Mexico and west Texas (Brown and Amadon, *Eagles, Hawks and Falcons of the World*, Vol. 2, McGraw-Hill Co., New York, New York, 1968).

There are no historical data on the status or size of any Zone-tailed Hawk population. In 1976, Rich Glinski (pers. comm.) found 25 pairs of zone-tails in Arizona, but made no estimate of population size. In Texas, the species has nested recently in Taylor and Comal counties, in Brewster County in Big Bend National Park and in the Edwards Plateau area (Oberholser and Kincaid, *The Bird Life of Texas*, Vol. 1., Univ. Texas, Austin, Texas, 1974). Oberholser and Kincaid (1974) suggested that Texas populations have declined due to destruction of nesting habitat.

From 1 June–28 July 1975 and from 19 April–15 July 1976, we conducted a behavioral study and population survey of the Zone-tailed Hawk in west Texas. We surveyed the Chisos and Glass mountains and the Boquillas and Mariscal canyons of the Rio Grande River, all in Brewster County, and the Davis Mountains in Jeff Davis County. We did not survey the