

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

entire Trans-Pecos, but checked the most likely breeding habitat for Zone-tailed Hawks: high mountains and lowland riparian cliffs. We surveyed 230 km<sup>2</sup> of the Davis Mountains, 195 km<sup>2</sup> of the Chisos Mountains, 5 km<sup>2</sup> of the Glass Mountains and 30 km of the Mariscal and Boquillas canyons.

The Davis Mountains reach an elevation of 2515 m, and zone-tail pairs nested on steep north-facing slopes among open stands of ponderosa pine (*Pinus ponderosa*). Nests were found between 1750 and 1900 m. The Chisos Mountains reach elevations of 2350 m; 1 zone-tail pair nested at 2000 m on a north-facing slope among a dense canopy of Emory oak (*Quercus emoryi*), grey oak (*Q. grisea*) and juniper (*Juniperus* spp.).

Both mountain ranges receive abundant rainfall during July, August and September. Annual rainfall is 46 cm (maximum) in the Davis Mountains (Ohlendorf, Wilson Bull. 86:357-373, 1974) and 64 cm (maximum) in the Chisos Mountains (Wauer, Southwestern Nat. 16:1-29, 1971).

Vegetation and weather conditions in Boquillas and Mariscal canyons contrast sharply with the high montane habitats. Desert shrubs predominated where zone-tail pairs nested in Boquillas Canyon on the upper-third of north-facing cliffs (averaging 65 m in height). Here, vegetation consisted mainly of creosote bush (*Larrea tridentata*), honey mesquite (*Prosopis glandulosa*), ocotillo (*Fouquieria splendens*) and lechuguilla (*Agave lechuguilla*). Average annual rainfall in the river canyons is ca. 25 cm. Temperatures for 5 months each year reach or exceed mean daily maximums of 38°C (Ohlendorf 1974).

All nesting territories used in 1975 were reused in 1976. We located 7 breeding pairs of Zone-tailed Hawks in 1975 and 9 in 1976 as follows: 1975—Davis (5) and Chisos (1) mountains, Boquillas Canyon (1); 1976—same as 1975 except 1 new nest each in the Davis Mountains and Boquillas Canyon.

In 1976, 5 Davis Mountain nests were within 1 m of the tops of 20-40 m ponderosa pines. The sixth nest was ca. 6 m from the top of a 40 m ponderosa pine. The Chisos Mountain nest was near the top of a 10 m Emory oak at the base of a 60 m cliff. All montane nests occurred near igneous rock faces 9-90 m high.

The Boquillas Canyon nests were on south-facing cliffs. We found 1 nest 5 m below the top of a 70 m cliff on a ledge about 3 m long and 1 m wide. We found another nest about 15 m below the top of a 60 m cliff in a hole in the cliff wall.

Although we never encountered Zone-tailed Hawks elsewhere, Deborah Davis (pers. comm.) observed a pair frequenting canyon cliffs south of the Davis Mountains at ca. 1500 m. We doubt that more than 15 pairs nested in the Trans-Pecos. In Arizona and New Mexico, however, these hawks apparently range widely over the desert slopes and up into the coniferous zone (Brown and Amadon 1968). Glinski (pers. comm.) indicates that in Arizona the Zone-tailed Hawk breeds in a wide range of habitats. In New Mexico, John Hubbard (in Porter and White, pp. 39-57 in Rept. Proc. World Conf. Birds of Prey, Vienna, Austria, R. D. Chancellor, ed., Int. Council Bird Preserv., 1975) found zone-tails nesting in pine forests, pine-oak, conifer and riparian woodlands.

In 1976, 4 of 9 nests fledged young compared to 6 of 7 nests in 1975 (Table 1). The 7 mountain pairs raised an average of 1.0 young in 1976, compared to 1.2 for the preceding season. Neither of the pairs at the Boquillas Canyon sites fledged any young in 1976, but 1 young fledged in 1975 from the single nest there.

During the second week of July 1977, Riley monitored the fledging success of the Chisos Mountain pair and 4 pairs in the Davis Mountains occupying the same sites as in 1976. At a nest approximately 100 m north of 2 previous nests, 2 young were near fledging on 8 July. Two other pairs, one at a new nest 200 m east of a nest-site on Sawtooth Mountain and one at the nest on Emory Peak, failed to hatch young. Nests at 2 sites near Timber Mountain in the Davis Mountains had apparently been abandoned.

TABLE 1  
1975-1976 REPRODUCTIVE SUCCESS OF ZONE-TAILED HAWKS IN WEST TEXAS

	Nests	Eggs	Eggs hatched	Percent hatching success <sup>a</sup>	Young fledged	Percent nest success <sup>b</sup>
1975	7	14 (2) <sup>c</sup>	12 (1.7) <sup>d</sup>	86	8 (1.14) <sup>e</sup>	67
1976	9	18 (2) <sup>c</sup>	7 (0.7) <sup>d</sup>	39	7 (0.78) <sup>e</sup>	100

<sup>a</sup> Hatching success = no. of eggs hatched/no. of eggs laid.

<sup>b</sup> Nest success = no. of young fledged/no. of eggs hatched.

<sup>c</sup> Mean = no. of eggs/no. of nests.

<sup>d</sup> Mean = no. of eggs hatched/no. of nests.

<sup>e</sup> Mean = no. of young fledged/no. of nests.

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**Three Crested Eagle records for Guatemala.**—The Crested Eagle (*Morphnus guianensis*) has not previously been reported for Guatemala (Brown and Amadon, *Eagles, Hawks and Falcons of the World*, McGraw-Hill Book Co., New York, New York, 1968:631). Russell (Ornithol. Monogr. 1, 1964) included no records for Belize, and Monroe (Ornithol. Monogr. 7, 1963:83) stated that the 2 Honduran records "are the northernmost records for the species." Peterson and Chalif (*A Field Guide to Mexican Birds*, Houghton Mifflin Co., Boston, Massachusetts, 1973) omitted this species from their field guide for Mexico, Guatemala, Belize and El Salvador. Herein we report a visual record (with photographic support) and 2 specimen records for Guatemala.

On the evening of 7 February 1978, while camped in a recently cleared area in the Petén area of east-central Guatemala, a medium-sized eagle passed directly over (25-35 m overhead) our camp and perched ca. 100 m away on a tall snag in the burned-over swamp. The bird remained ca. 5 min while we carefully observed it through 20X spotting scopes and photographed it with 300 and 350 mm lenses on 35 mm cameras. Thereafter, the eagle flew to another snag (ca. 150 m distant), remained ca. 2 min, then flew into the dense forest on a nearby mountain slope. After several minutes an eagle of the same species was again observed flying along the mountain slope, then into a tunnel-like opening in the dense forest canopy.

This observation took place near the southwest corner of Belize, less than 2 km west of the Petén highway (gravel) at a point ca. 48 km northwest of the Río Dulce crossing of Lago Izabal and 38 km south-southeast of the village of Poptún.

The following field characters were clearly noted, separating this bird from the somewhat similar Harpy Eagle (*Harpia harpyja*). The broadly barred primaries, secondaries and rectrices distinguished it from immature birds of both species. The bird did not have the blackish