

## SPECIMENS OF BLACK-THROATED BLUE WARBLER AND YELLOW-GREEN VIREO FROM WEST TEXAS

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On 22 June 1971 at 11:30, my wife and I found a dead, adult, female (ova, 1 mm and below) Black-throated Blue Warbler (*Dendroica caerulescens*) at our home in Panther Junction (elevation, 3850 ft), Big Bend National Park, Brewster County, Texas. The bird was still fresh and apparently was a window-kill as both of its mandibles were broken, and it was discovered beneath a picture window. Factors influencing the presence of this species in late June in the Chihuahuan desert in Big Bend are unknown. Probably the bird was a late, stray migrant, as it was very fat (9.6 g) and appeared to be in good health. The previous night had been very stormy. This is the first specimen for West Texas. It was preserved as a study skin (DAE 2571) and is deposited at Big Bend National Park Museum.

One previous sight record exists for Big Bend National Park. On 11 May 1969, one adult male was seen and heard singing on the Rio Grande Village Nature Trail for about 2 hr. During this time it was observed by nine birders (Roland Wauer, pers. comm.). Other sight records exist for West Texas: one was observed at El Paso on 3 and 9 November

1959 (Audubon Field Notes 14:63, 1960), and at Midland on 24 October 1963 (Audubon Field Notes 18:51, 1964) and 9 October 1970 (Audubon Field Notes 25:77, 1971). P. Espy and C. Miller found one on 7 May 1964 at the Miller Ranch, and Espy found another one in June 1970 in Limpia Canyon, Davis Mountains, Jeff Davis County (Roland Wauer, pers. comm.). Wolfe (Check-list of the birds of Texas, p. 65. Intelligencer Printing Co., Lancaster, 1956.) considered this species a rare migrant along the eastern edge of Texas, and Peterson (A field guide to the birds of Texas, p. 207. Houghton Mifflin Co., Boston, 1960.) considered it an occasional transient in the eastern half.

On 12 July 1972 at 10:30, I observed a singing Yellow-green Vireo (*Vireo flavoviridis*) near the Rio Grande at Cottonwood Campground (elevation, 2100 ft), Big Bend National Park, Brewster County, Texas. The bird was observed in small cottonwoods (*Populus palmeri*) for about 10 min. On the afternoon of the following day the bird was taken and proved to be an adult male (testes, 11 × 7 mm; 21 g). Searches revealed no other individuals of this species. This record is the first for Big Bend National Park and West Texas. The species is known in Texas as a rare summer resident in the lower Rio Grande valley (Wolfe, Checklist of the birds of Texas, p. 62. Intelligencer Printing Co., Lancaster, Pa., 1956; Peterson, A field guide to the birds of Texas, p. 199. Houghton Mifflin Co., Boston, Mass., 1960). Recently this species was reported for the first time from Arizona (Borror, Condor 74:80-86, 1972). The specimen was preserved as a study skin (DAE 2686) and is at Northwest Missouri State University.

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## STATUS OF THE WHITE-TAILED KITE IN EL SALVADOR

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The White-tailed Kite (*Elanus leucurus*) was not reported for El Salvador by van Rossem (Dickey and van Rossem, Chicago Field Mus. Natur. Hist. No. 406:1-609, 1938) after his intensive field work in that country during the years 1912 and 1925-27. Neither did Marshall (Condor 45:21-33, 1943) nor Rand and Traylor (Manual de las aves de El Salvador, Universidad de El Salvador, 1961) report the species after their field work in 1942 and 1954, respectively.

The first record we have of the White-tailed Kite in El Salvador is a specimen taken by one of us (J.F.S.) in January 1962; the specimen was not preserved. Eisenmann (Amer. Birds 25:529-536, 1971) mentions a sighting by P. Slud on 3 February 1962, and Miles (Auk 81:229, 1964) obtained a specimen on 30 April 1963.

In recent years the population of *E. leucurus* has grown rapidly. Five years ago White-tailed Kite were seen regularly but sparingly. Today they are fairly common. It is not unusual to sight eight or nine birds along a 20-km stretch of highway. The expansion of both range and population has not been confined to El Salvador but has paralleled similar developments throughout Middle America (see Eisenmann, op. cit.).

## DISTRIBUTION AND HABITAT IN EL SALVADOR

Nearly all our sightings of White-tailed Kites have been made in the western third of the Central Coastal Plain probably because we have visited it more often. Nonetheless, we have seen the species throughout the Central Coastal Plain from Isla San Sebastián at the east to Rio Huiza at the west (fig. 1). We have one sighting from the small Western Coastal Plain where Miles (op. cit.) took his specimen. We have two sightings from the east coast by the Gulf of Fonseca where Slud (Eisenmann, op. cit.) saw a bird in 1962.

We have one record of White-tailed Kites outside the coastal lowlands. Between 18 February and 12 March 1964, a pair was seen regularly in the capital city, San Salvador. This city has an altitude of 700 m and is located on a dissected plateau of volcanic ash, distinctly different from the level coastal plains.

The preferred habitat of the White-tailed Kite in El Salvador is open country, usually pastures, dom-

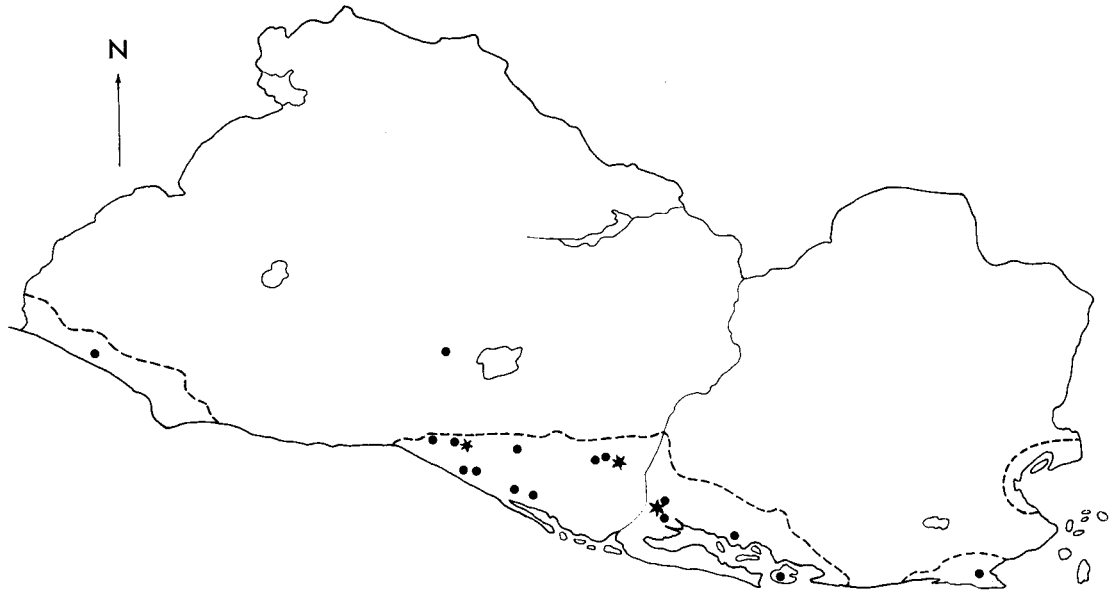


FIGURE 1. Map of El Salvador showing localities where White-tailed Kites have been observed. Solid dots: one or more sightings; stars: nests; dotted lines: 100-m contour which approximately delimits the coastal plains.

inated by occasional tall trees such as ceibas (*Ceiba pentandra*) (fig. 2). These areas were originally lowland forest. During clearing, occasional giant trees were left, probably because they were difficult to remove. The fields were planted to forage species which are kept low by grazing. Kites use the tall trees for perching and nesting; they find their food in the grass and forbs below. The edges of large treeless fields sometimes serve as supplementary hunting grounds. Kites are often seen hunting along rows of mature cotton plants 2 m high; apparently spacing between the rows is sufficient for observation and diving on the prey. We have even seen kites sitting on the tops of cotton plants, watching for prey beneath. We have not seen the kites in the scrub-covered foothills, although these abound with rodents.

#### RESIDENCE STATUS

Until recently, it has been assumed that Central American records of White-tailed Kites represented migrants although there is no evidence that this is a migratory species. However, there has been a growing suspicion that the species might be a permanent resident and possibly a breeder. During the past year, we have made a special effort to determine its status in El Salvador. We now have sighting records for each month; indeed, we have never visited the coastal plains without seeing at least one kite. There is no evidence that the local population is swelled by migration; our maximum counts per day were made in February, March, May, July, and September.

We also made a search for nests. The first indication of possible nesting activity was observed 5 December 1970. A solitary kite plucked dead twigs from the top of a tall tree, held each a few moments, and dropped them. The first nest was discovered 20 February 1971, on the Hacienda Los Pinos ( $13^{\circ}20' N$ ;  $83^{\circ}40' W$ ), 7 km S of Tierra Blanca in the department of Usulután (fig. 3). This nest was in the top of a leafless cenicero tree (*Pithecalabium saman*).

It was watched at intervals for 5 days; the adults seemed to be feeding young. The nest was revisited on 4 March 1971; the heads of three young could be seen over the rim of the nest. A second nest was found 28 February 1971, about 5 km S of San Luis Talpa ( $13^{\circ}25' N$ ;  $89^{\circ}05' W$ ) in the department of La Paz. This nest was near the top of a fully-leaved ceiba and contained five young. Hunting was good; the parents ranged no more than 700–800 m from the tree and usually obtained prey within 5 min. On 16 April, all the young were out of the nest but not yet hunting for themselves. A third nest was found in the top of another ceiba near the river Bolsa ( $13^{\circ}26' N$ ;  $88^{\circ}44' W$ ) in the department of San Vicente on 7 March 1971. We did not have time to follow developments in this nest.

#### PRESENT POPULATION IN EL SALVADOR

To make an estimate of White-tailed Kite numbers, we chose our sighting records between 23 January and 7 March 1971. This interval fell late in the nesting season when adults would be hunting most actively and yet least likely to wander. Moreover, the young would not yet have left the nests. Most of our investigations had been carried out in the western third of the Central Coastal Plain. To obtain data for the remainder of this region, one of us searched along its highways for 3 days. Such a hurried census has severe limitations because White-tailed Kites in El Salvador often retire to the interior of trees during the hot part of the day and are active only in early morning and late afternoon. During the period selected we had over 60 sightings of White-tailed Kites. Some of these were undoubtedly repeats. To eliminate the repeats as much as possible, we divided the sightings according to localities at least 2 km apart. The maximum number of kites seen at any one time in one locality was assumed to be the resident population. This procedure gave 14 localities with a total population of 37 birds. There were in



FIGURE 2. Typical White-tailed Kite habitat in El Salvador. Kites have been seen regularly in this locality since 1968. Three kites were present at the time when this photo was taken, 2 February 1971, Kilometer 20 S of Puente Jiboa, department of La Paz.

addition at least eight nestlings. In case some individual birds were sighted in two localities, we arbitrarily reduced the number to the conservative figure of 30 birds seen.

The areas investigated, mostly along highways, represent but a fraction of possible White-tailed Kite habitat in El Salvador. The area of the Central Coastal Plain is roughly 1650 km<sup>2</sup>. To this could be added another 300 km<sup>2</sup> of the Western Coastal Plain and a few square kilometers along the east coast, but because these were not investigated during the period of the study, we do not include them in the calculations. Not all of the Central Coastal Plain is suitable habitat for these kites. There are mangrove swamps, remnants of lowland forests, and extensive cotton fields. Without recent aerial photos, it is difficult to estimate accurately the amount of suitable habitat but by inspection from highways it seems likely that 1000 km<sup>2</sup> can be so classed.

In all, we searched along 180 km of highways. Assuming that the search covered 0.5 km along each side, the total search covered 180 km<sup>2</sup>. This gives a density of one kite for each 6 km<sup>2</sup>. Extrapolation to 1000 km<sup>2</sup> suggests a population of 160 White-tailed Kites in the Central Coastal Plain. This figure is probably very conservative. Using only our data for the western half of the Central Coastal Plain, which we studied more thoroughly, we obtain a density that is more than double that given above. Consequently, a population of more than 300 birds is likely. Extrapolating the ratio of nests to adults—3 for 30 birds seen—gives a figure of 16–30 nests containing 50–100 young.

#### FACTORS AFFECTING POPULATION GROWTH

Eisenmann (op. cit.) attributes much of the increase of this species in Central America to the building of the Panamerican Highway and tributary roads. Undoubtedly this has been a factor in El Salvador, but there are other factors that were equally if not



FIGURE 3. The first nest of the White-tailed Kite found in El Salvador. Hacienda Los Pinos, 7 km S of Tierra Blanca, department of Usulután, 20 February 1971.

more important. One was the introduction of cattle adapted to the hot lowlands. Another was the mechanization of agriculture. A third was the temporary control of malaria. All of these made profitable the clearing and drainage of the coastal plains. Rodents multiplied in this new habitat and White-tailed Kites moved into a niche unoccupied by other predators. With their high reproductive potential, up to five young per brood and possibly two broods per year, a true population explosion occurred.

In all probability, the carrying capacity of the coastal plains in El Salvador has not yet been reached. There are many sections of seemingly suitable habitat which do not contain nests and are vacant or but sparsely occupied. Rodents abound and there are lizards and migrant songbirds which could supplement the diet. On the other hand, population growth may soon be checked by loss of habitat. Each year sees a transfer of pasture lands to cotton fields, with a removal of the remaining large trees and the hedgerows in which new trees might grow. And each year sees in the pastures a loss of the large trees through cutting and death. Should the coastal plains follow the present trend and become largely treeless flats, the White-tailed Kite population will probably decrease and even collapse.

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