

pothesis has not been confirmed. Wagner also stated that the species adapted to clearing of forest if some tall trees were left standing. Skutch (1967) stated that part of the population of the Costa Rican highlands is absent during the dry season, and Wolf et al. (1976) considered this species a true altitudinal migrant in Costa Rica. Evidently, birds of this species move down from high-altitude breeding sites and can cross lowland areas of unfavorable habitat to reach other montane environments, a behavior which favors colonization of new areas. It will be of considerable interest if the species establishes a breeding population in Nicaragua.

*THRYPOTHORUS LUDOVICIANUS ALBINUCHA*,  
CAROLINA WREN

I collected three males of this species at Hacienda Las Rojas, 750 m, Volcán San Cristóbal, 14 km NE Chinandega, Depto. Chinandega. Two were collected on 3 August 1984 (MZN 00008 and 00009) and one on 12 November 1985 (MZN 00245). This species was previously known from Nicaragua only from the single specimen collected at Calabasas (400 m), 8 km S of Metapa (=Ciudad Darío), Depto. Matagalpa, by Miller and Griscom and described by them (1925) as *Thryothorus albinucha subfulvus*. The type locality is in an arid thorn scrub habitat, very different from the semi-deciduous broad-leaved forest at Hacienda Las Rojas. I have not been able to compare my specimens with the unique type of *subfulvus* and thus cannot assign them definitely to the subspecies. The *albinucha* group is currently considered part of the *T. ludovicianus* complex, and Nicaragua is the southern limit of the species' range.

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HARPY EAGLE ATTEMPTS PREDATION ON ADULT HOWLER MONKEY<sup>1</sup>

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*Key words:* Harpy Eagle; predation; howler monkey.

In the past, investigators have gathered the remains of prey items found around Harpy Eagle (*Harpia harpyja*) nests (Rettig 1977, 1978; Izor 1985), monitored prey items brought to the nest or to recently fledged juveniles by adult Harpy Eagles (Fowler and Cope 1964;

Rettig 1977, 1978), and in one case even staged predation by placing a sacrificial three-toed sloth near a Harpy Eagle nest (Rettig 1978). However, to my knowledge no observer has published a report of a naturally occurring predation attempt by a Harpy Eagle.

On 22 March 1987, I observed a subadult Harpy Eagle attempt to prey on an adult female red howler monkey (*Alouatta seniculus*) at Cocha Cashu Biological Station, which is located at 11°51'S, 71°19'W in the tropical moist forest of Manu National Park in southeastern Peru. I was observing howler monkeys from a boat at the southern tip of Cocha Cashu, the oxbow lake for which the research station is named.

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At approximately 16:15 a group of howler monkeys appeared on the edge of the forest about 40 m south of the lake. The members of the group, which consisted of two adult females, one adult male, and two subadults, climbed onto a large branch that extended from the forest over the old lake bed. After a few minutes, they all lay down on that branch approximately 15 m above the ground.

At 16:30 I heard two of the monkeys begin to give alarm calls and saw a subadult Harpy Eagle swooping down toward them. The eagle, which was in its third subadult plumage (Fowler and Cope 1964), came from the forest edge 20 m south of the monkeys and glided toward one of the adult females with its talons extended. The two adult females and the two subadults jumped from the branch into the vine tangles and *Heliconia* below. From there they moved to another large tree approximately 15 m away. They climbed this tree to a height of 20 m, then clustered together on large branches near the trunk and began howling continuously. The adult male monkey remained on the branch where the group had been resting but ran along it until he was by the main trunk of the tree. Meanwhile, the Harpy Eagle landed on the branch on the spot where one of the females had been lying.

The male then began to approach the Harpy Eagle. He came to within 1.5 m of it and, crouching low against the branch, reached out with one arm and began grabbing at the eagle. The bird held up one leg and fended off the monkey's attack, using its talons both as a shield and as a weapon with which it attempted to strike the monkey's arm. After the monkey had taken three swipes at the eagle, the eagle hopped backwards away from him and then flew to a tree about 25 m away.

The male climbed down the tree that he was in, clambered through platanillos to reach a neighboring tree, climbed this second tree, and then crossed from it to the tree in which the eagle had landed. On this second sortie the monkey advanced to within 1 m of the eagle and again began reaching for it. The eagle once more reacted by displaying its talons to the monkey, but this time simultaneously began hopping backwards away from the monkey, who crept along following the eagle and making threatening swipes at it. When the eagle had succeeded in increasing the distance between itself and the monkey to about 2 m, it quickly turned and flew 40 m to another tree.

The male howler monkey again followed the eagle to its new location. The eagle stood panting rapidly with its beak open and its wings held slightly away from its body. The monkey advanced to within about 2.5 m of the eagle and again crouched low against the branch, but did not reach aggressively for the eagle as he had before. The bird took flight and disappeared from my view, flying just above the treetops.

The male monkey remained on the branch from which he had chased the eagle for about 5 min and then moved to rejoin his group, which was moving towards him. The group of monkeys then engaged in a howling bout, which lasted 30 min uninterrupted and then continued intermittently for another 20 min.

Previously reported information on Harpy Eagle behavior is contradictory and offers observations that

differ markedly from those I describe here. Reports from indigenous people suggest that Harpy Eagles soar 100 m above the canopy and drop from that height to attack their prey (Foerster 1972). In contrast, Fowler and Cope (1964) stated that Harpy Eagles never fly above the canopy and emphasize their ability to maneuver rapidly through dense forest in pursuit of prey. However, their description of the Harpy Eagle's hunting method was based on observations of captives that were being provided with food and may not have been hunting normally.

A notable feature of the predation attempt that I describe here is the structure of the habitat where the attempt occurred. The intended prey was on a forest edge, allowing the Harpy Eagle to make its approach through an open area, unhindered by the dense forest vegetation. From the eagle's aerial perspective, edges occur wherever the limits of the vegetation meet open space: at treefalls, along the borders of streams and lakes, around emergent trees, and along the uppermost layer of the canopy. Open areas also may be found within the forest in certain forest types, such as in seasonally flooded areas where the tree density is low.

Along forest edges, or in very open forest, a potential prey item is relatively exposed and as a result becomes both more detectable and more physically accessible to a large raptor. Such conditions may be particularly important for a raptor hunting monkeys, which are agile prey; with more torpid prey, such as sloths, the importance of having an open approach to the prey probably diminishes.

My observation is corroborated by Carol Mitchell (pers. comm.), who witnessed two unsuccessful Harpy Eagle attacks on mixed troops of squirrel monkeys (*Saimiri sciureus*) and brown capuchins (*Cebus apella*) at Cocha Cashu. The first attack that she observed occurred on the edge of a seasonal creek bed. The second attack, which took place 200 m from the site of the first attack, occurred about 20 m from the same creek in open forest.

These observations suggest that forest edges and patches of open forest may provide favorable hunting conditions for a large raptor such as the Harpy Eagle, and that the eagle may preferentially utilize clearings, the top of the canopy, and other open areas as hunting grounds. If so, these regions may represent areas in which the risk of being attacked by a Harpy Eagle is high for the sloths and primates that are its primary prey (Fowler and Cope 1964, Rettig 1978, Izor 1985).

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