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First Nest Record of Red-throated Caracara (*Ibycter americanus*) for Middle America

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ABSTRACT.—Populations of Red-throated Caracaras (*Ibycter americanus*) have been extirpated or are in serious decline throughout Middle America. We describe the first nest outside South America and provide only the third nest description for the species. We observed four adults and one immature Red-throated Caracara provide cooperative care to a single nestling at a nest in a region dominated by pine-oak forest in departamento (dpto.) de Olancho, Honduras. The nest was a bowl-shaped structure of branches and pine needles located at the mid-canopy level of a pine tree (*Pinus oocarpa*), and is the first nest described in an ecosystem other than humid broadleaf forest. We report the first observation of adult Red-throated Caracaras using a nest as a short-term food cache, as well as the first observation of Red-throated Caracara taking fledgling birds as prey. Although Red-throated Caracaras are considered a resident of humid broadleaf forest, we suggest that pine-oak forests may be an important habitat for the species in the northern portion of its range. Received 31 October 2013. Accepted 7 December 2013.

Key words: Honduras, *Ibycter americanus*, nest, pine forest, Red-throated Caracara.

Although formerly widespread from southern Mexico to the Amazon Basin, populations of Red-throated Caracaras (*Ibycter americanus*) have plummeted over much of the species' range since the mid-20th century (Bierregaard 1994, Ferguson-Lees and Christie 2001). The species appears to have been extirpated from the northernmost portion of its range, from Chiapas and southern Veracruz,

Mexico, through the Pacific Coast of Guatemala (Land 1970, Ceballos and Marquez Valdelamar 2000). In Honduras, the species has disappeared from most of its former range along the Atlantic slope and portions of the interior (Monroe 1968, Bonta 2003). Similar declines have been reported in Costa Rica and Panama (Ridgely and Gwynne 1989, Stiles and Skutch 1989). The majority of the South American range, consisting primarily of the Amazon Basin south to Atlantic coastal Brazil, supports a robust population. However, regional extirpation has occurred on the Pacific slope of Ecuador and Colombia (Ferguson-Lees and Christie 2001, Ridgely and Greenfield 2001). Red-throated Caracaras are known to be associates of primary evergreen broadleaf forest and to a lesser extent tropical dry forest and forest edges (Monroe 1968, Bierregaard 1994, Ceballos and Marquez Valdelamar 2000). The current decline in Middle America is perplexing, because the species seems to have disappeared from large tracts of seemingly suitable, intact forest (Ridgely and Gwynne 1989).

The northern population of Red-throated Caracaras, which formerly occurred from Mexico through southern Costa Rica, has been described as a separate taxonomic unit, *I. a. guatemalensis*, because individuals have consistently longer body and wing lengths than in the southern population (Swann 1921, Wetmore et al. 1965). The taxonomic status of the northern population remains unresolved however (Bierregaard 1994), and little is known about the current size and viability of the northern population. Scattered and irregular reports from Honduras southward indicate that *I. a. guatemalensis* persists in small, geographically isolated populations (Stiles et al. 1989, Anderson et al. 2004, Narish and Jenner 2004), but breeding has never been documented in the region.

On 12 March 2013, we observed a group of five Red-throated Caracaras exhibiting courtship behavior in departamento (dpto.) de Olancho, Honduras. We recorded copulation on 20 March

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between two birds and subsequently discovered a nest on 17 April. The nest site occurred within a pine-oak ecosystem characterized by sparse forest with an overstory of pine (*Pinus oocarpa*), midstory of oak (*Quercus* spp.), and understory of grasses and shrubs. This forest type stretches across the north of dpto. de Olancho at elevations between 600–1300 m in areas with high topographic relief. These forests are subject to yearly burning, which local residents use to control shrubs and promote grass regeneration for cattle grazing. The nearest extensions of humid evergreen broadleaf forest lie 12 km to the southwest and 16 km to the north. Broadleaf forest generally occurs at elevations above 1,300 m in areas with higher levels of annual rainfall and more productive soils. Presence of a contiguous broadleaf canopy, lianas, and an herbaceous understory distinguish broadleaf forest from pine-oak forest.

METHODS

We monitored the nest for 18 days between 17 April–23 May when the nestling fledged. Observations were made each day from 0430–1630 CST, which covers the entire daily time span during which the Red-throated Caracaras were active. All observations were made with 8 × 42 binoculars from a blind 100 m upslope from the nest. Behavior and food deliveries were recorded with a Canon Powershot SX40 camera. The following information is based on a total of 312 hrs of observation at this nest.

OBSERVATIONS

The nest was a loose platform located 16 m above ground on the lowest branch of a 37-m tall pine tree (*P. oocarpa*) with a diameter at breast height of 56 cm. The nest structure was bowl-shaped, measuring ~1 m wide and 0.5 m deep. The bowl consisted of compacted pine needles and Spanish moss (*Tillandsia* sp.) packed around a dense cluster of pine branches measuring 1–20 cm in diameter. We were unable to discern if caracaras or another large bird had constructed the nest, or if it was a naturally occurring basin of fallen needles on a branch cluster. The nest was located in the tallest tree within a 20-m radius on a south-facing hill with a 40-degree slope at 860 masl. Pine (*P. oocarpa*) dominated the overstory of the forest, and a mixture of oak (*Quercus* spp.) and regenerating pine comprised the mid-story. The understory was devoid of herbaceous vegetation because of a

TABLE 1. Composition of food items brought to a nest of Red-throated Caracara in pine-oak forest, dpto. de Olancho, Honduras, 17 April–23 May 2013.

Food Item	Number (% of total)
Wasp brood comb	169 (80.9)
Unidentified	30 (14.3)
Order Coleoptera	6 (2.9)
Birds (fledglings or nestlings)	3 (1.4)
Spider egg sac	1 (0.5)
TOTAL	209 (100.0)

human-induced fire that burned through the area three days before the nest was discovered.

Four adults and one immature Red-throated Caracara cooperatively attended the nest. Individuals were aged using plumage characteristics (Ferguson-Lees and Christie 2001). The immature had noticeable molt limits on flight feathers and coverts, possessed a shorter tail than adults with notable wear, and had pale red facial skin. The four adults possessed dark red facial skin and basic plumage without noticeable molt. Because none of the caracaras were marked, it was not possible to assess differences in amount of care provided by individual adults. However, the immature caracara provided noticeably less care than the adults, acting as sentinel on two occasions and bringing food into the nest on three occasions.

Red-throated Caracaras became active each day between 0449–0525 and ended activity between 1753–1818. During the observation period, the sun rose between 0516–0531 and set between 1802–1812; thus the active period began ~10 mins before sunrise and ended at sunset. At night, one adult roosted in the nest while the other four individuals roosted 200–500 m away. During the day, one adult remained within 100 m of the nest, aggressively defending it against other bird species and the observer, if he was detected. We observed only two instances where the nestling was left alone, once for two hrs during a morning and once overnight. While one caracara acted as a sentinel, the other four individuals foraged and periodically returned to the nest with food items.

During the entire 18-day observation period, we documented 379 nest visits made by single caracaras ($\bar{x} = 17/\text{day}$) of which 208 involved a food delivery ($\bar{x} = 10/\text{day}$). Pieces of wasp brood comb comprised over 80% of the food items delivered (Table 1). At least three prey items were nestling or fledgling birds. We did not

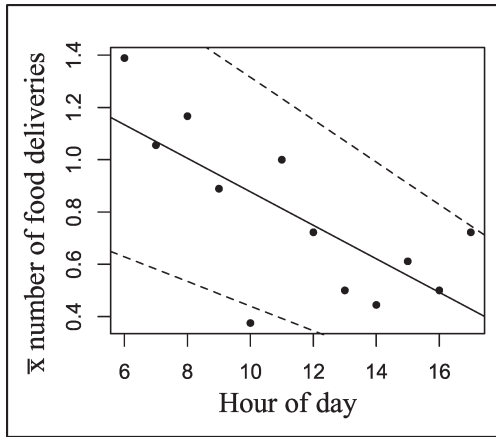


FIG. 1. Mean number of daily food deliveries per hour of day. $P = 0.008$, $r^2 = 0.48$. Dotted lines show 95% CI.

document any deliveries of fruit, which are an important food source for Red-throated Caracara in South America (Thiollay 1991, McCann et al. 2010).

Food-deliveries were short in duration; 74% lasted <1 min, and deliveries decreased in frequency throughout the day (Fig. 1). In contrast, 73% of nest visits that did not involve a food delivery lasted >1 min, with adults spending a cumulative 42 min/day (SD = 8 min) in the nest with the nestling. On three of these occasions, we observed the sentinel adult enter the nest without food and feed the chick larvae that it removed from previously deposited wasp brood combs. These observations suggest that foraging adults

cache food in the nest, particularly in the morning when they deposit the majority of food items, and that the sentinel bird feeds the nestling from the cached food.

Because of the bowl-like structure of the nest, we were unable to observe the nestling's development until 1 May, when it had ~7.5-cm long primary feathers and was capable of flapping and walking. By this date, the chick was well beyond the developmental stage of a 22-day old nestling as documented by McCann et al. (2010). On 25 May, we observed a nestling caracara flying 1.5 km from the nest site, and presume successful fledging from the nest. We can assume that the nestling period was at least 47 days, similar to the 57-day period proposed by McCann et al. (2010).

DISCUSSION

The breeding biology of Red-throated Caracaras remains poorly known. Although our observations confirm communal nest guarding and brood care of a single young, as has been documented previously (Thiollay 1991, Whittaker 1995, McCann et al. 2010), our observations expand the current knowledge of this species' biology in several regards. Unlike McCann et al. (2010), we did not observe any fruit or millipedes delivered to the nest. We report the first observation of avian prey in the diet of Red-throated Caracaras, which along with a single report of lizards recovered from a Mexican bird (Lowery and Dalquest 1951) are the only vertebrate prey reported for this species. Our

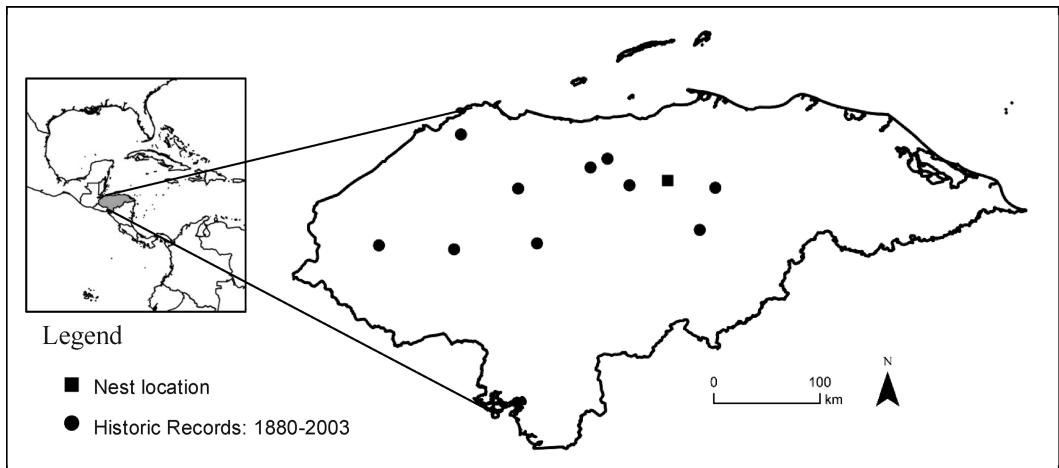


FIG. 2. Map of nest site and historic records of Red-throated Caracaras in Honduras. Historic records were compiled from Monroe (1968), Narish and Jenner (2004), and Moore Laboratory of Ornithology (2013).

observations of food caching expand our understanding of cooperative nestling care.

Knowledgeable local informants have reported a steep decline in the Red-throated Caracara population across dpto. de Olancho since 1980 (Bonta 2003). Given the absence of verified reports from other parts of Honduras where the species occurred formerly, it is unlikely that the species persists in the country outside of the pine-oak ecosystem centered in the northern dpto. de Olancho. The discovery of a nest in pine-oak forest challenges the assumption in Monroe (1968) that Red-throated Caracaras are restricted to humid broadleaf forest. In fact, all known museum specimens from Honduras were collected from the interior of the country, from dpto. de Lempira in the west to dpto. de Olancho in the east, where pine-oak forest dominates the mid-elevation landscape (Fig. 2). Our discovery of a cooperative group of five individuals caring for a nest in a pine-oak forest provides new evidence of the importance of conserving this ecosystem, which is highly threatened by logging, mining, road-building, and uncontrolled human-set fires.

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