parasitized nests were located in one or the other of the 10 most frequently used types of vegetation for non-parasitized nests (*Baccharis*, sage, lupin, scotch broom, *Baccharis* and berry combination) and only three parasitized nests were located in vegetation not used for non-parasitized nests (fern, berry-grass combination, *Baccharis*-grass combination); only one of these was unique, the other two being a combination of frequently used vegetation.

It is possible that the estimates of the frequency of parasitism are low. Of 41 non-parasitized nests, 4 lost 1 egg during the course of incubation, with the remaining eggs left undisturbed. The egg could have been lost either through predation (which seems somewhat unlikely since the others were intact and the nestlings were successfully hatched in three instances), through ejection by the parent (which has not been reported to occur in this species), or through removal by a cowbird that placed its own egg in the nest and that egg was subsequently removed by the host. If this latter event did occur the frequency of parasitism found here could be as high as 15/51 (29%).

The great variability in the incidence of cowbird parasitism of *Z. l. nuttalli* over different years should lead to caution before deciding whether or not the species is a common or an uncommon cowbird host: it might be both depending on the particular breeding season under consideration and the stage of the breeding season during which observations are made.

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Status and Nesting of the Yellow-billed Cuckoo in Puerto Rico

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Knowledge of the status of the Yellow-billed Cuckoo (*Coccyzus americanus*) in the Greater Antilles has been clouded by the bird's elusive behavior and spotty distribution on the islands, and by a major movement of North American migrants through the area to and from their wintering grounds in South America. Although Bond (1956) states that they breed in the Greater Antilles, nests are known only from Cuba, St. Croix (Bond 1956), and Jamaica (Lack 1976), and Bond considered the bird rare in Puerto Rico. Other students of Puerto Rican ornithology have suggested that the species is "uncommon" (Leopold 1963), "rare" (McCandless 1958), or a regular migrant or resident species (Wetmore 1916). Although no nests have been reported, most authors suspect that it breeds, and agree that it frequents coastal areas in western or southwestern Puerto Rico, primarily from May to September (Wetmore 1916, Danforth 1936, McCandless 1958, Leopold 1963, Biaggi 1970). From 1968 to 1971 we conducted linear strip censuses along pre-selected routes throughout the island, counting all birds heard or seen (Kepler and Kepler 1970); data we obtained on the Yellow-billed Cuckoo helped clarify and amplify existing information on its distribution and status.

Yellow-billed Cuckoos are common in Guánica Commonwealth Forest, a 3,650-ha tropical dry forest ranging from sea level to 230 m on Puerto Rico's southwest coast (Kepler and Kepler 1970, 1973). The semi-deciduous hardwoods of low profile (rarely to 7 m height), low rainfall (ca. 750 mm p.a.), and coastal location are characters shared with most other areas in Puerto Rico where this species occurs. We conducted 21 1-km dawn censuses in Guánica, and saw or heard 0–6 Yellow-billed Cuckoos per km ($\bar{x}$ = 2.0) from February through November, the highest density we found in Puerto Rico. The mean number recorded showed a pronounced seasonal variation: 1.3/km in February–April (6 censuses), 3.3/km in May–July (9 censuses), and 0.5/km in October–December (6 censuses). We also found Yellow-billed Cuckoos 15 km from the south coast in Susúa Commonwealth Forest, a 1,300-ha second-growth forest with lush riparian woodlands in valleys of about 100 m elevation, and drier forests on ridges rising to 450 m. The canopy varied from 4–7 m on the ridges to over 13 m along permanent streams (Kepler and Kepler 1973). Susúa is on the southern (leeward) foothills of the Cordillera Central, and receives from 1,000 to 1,250 mm rainfall per year. Yellow-billed Cuckoo densities ranged from 0–4 per km, averaging 0.8/km for 14 dawn censuses, with 0.5/km in February (4 censuses), 1.0/km in May and July (6 censuses), and 0.5/km in October–December (4 censuses). We recorded singing individuals from 16 February through 10 December. W. Post (pers. comm.) saw a Yellow-billed Cuckoo eating caterpillars on Guayacán Island, near Parguera, on 5 January 1976, apparently the only January record for the West Indies (Bond, pers. comm.). These records suggest that at least some individuals overwinter on Puerto Rico in suitable habitat.

We found smaller numbers of Yellow-billed Cuckoos in widely scattered patches of xeric forest in southwestern Puerto Rico, west of Ponce; in smaller or more degraded stands, however, cuckoos decreased in abundance or were absent.

Yellow-billed Cuckoos have not been previously recorded from northeastern Puerto Rico. We found them there in coastal xeric associations similar to those in the southwest, most commonly on Cabo San Juan, Puerto Rico's northeastern tip, and adjacent Cabeza Chiquita. Their range extends south along the east coast at least 25 km through Roosevelt Roads Naval Station, and west 20 km along the north coast through the hills adjacent to Mameyes Swamp and Ensenada Comezón, perhaps farther. Scattered populations occur completely around the island; Yellow-billed Cuckoos have been reported from Naguabo (J. Wiley, pers. comm.), from Mayaguez, Aguadilla, and Arecibo (Wetmore 1916), and from Lago Coamo and Salinas (H. Raffaele, pers. comm.). We rarely found the species in mangrove swamps (2 of 9 surveyed), and failed to locate any in Luquillo Forest (137 1-km censuses at all elevations) or in any of the wet forests in the Cordillera Central, including 10 1-km censuses at all times of year in an overgrown coffee plantation near Aibonito. We did not find them in wet limestone forests at Río Abajo or Guajataca, where the tops of innumerable limestone knobs offer conditions similar to those in Guánica. Individuals, possibly migrants, are occasionally found inland: we saw one bird within 100 m of the Luquillo Forest boundary at Sabana, 7 km from the north coast, on 26 September 1969.

The Mangrove Cuckoo (*C. minor*) is broadly sympatric with *C. americanus* in Puerto Rico, as in Jamaica (Lack 1976), and was more common than its congener in censuses in both Guánica ($\bar{x}$ = 4.7/km) and Susúa ($\bar{x}$ = 1.1/km) forests. The Mangrove Cuckoo was also common on Cabo San Juan, Roosevelt Roads, and other northeastern locations where *C. americanus* was found. The nature of the ecological segregation between these two closely related species is unknown.

During a survey on 10 May 1969 at Cabo San Juan, we found an incubating Yellow-billed Cuckoo on a nest containing five eggs in a cotorro tree, *Adelia ricinella* (Euphorbiaceae), an uncommon but characteristic small deciduous tree occurring in dry coastal forests. Since incubation is only 10–11 days (Hamilton and Hamilton 1965), laying probably began the first week in May. Wiley (pers. comm.) reported a nest containing two eggs in a 4-m high black mangrove, *Avicennia germinans*, Verbenaceae (formerly *A. nitida*; see Little et al. 1974: 990), on 6 July 1976 at Roosevelt Roads Naval Station. Wiley constructed a blind on 15 July, when two chicks were present, and photographed (16 mm movie) an adult in attendance. H. Raffaele (pers. comm.) saw copulating adults on 12 June 1971 near Cartagena Lagoon in southwestern Puerto Rico, and again on 24 June 1971 at Punta Picúa, near Mameyes Swamp in the northeast. One member of the latter pair carried a twig in its bill. Wetmore (1916) found a flying juvenile near Cabo Rojo in August 1912, and assumed it had either flown to Puerto Rico recently or was from a nest on the island. The latter seems likely, and together with our data suggests that the breeding season lasts at least from May through July.

In summary, we found Yellow-billed Cuckoos present and singing through 11 months of the year in Puerto Rico, and observed greatest numbers from May to July, when nests were found. They are locally common in forested arid lowlands on the southwest and northeast coast, normally less than 3 km from the sea. However, one population occurs 15 km inland at Susúa, inhabiting lush riparian valleys and scrubby ridges up to 450 m. Although birds from North America probably migrate through the island, a small breeding population may be resident throughout the year.

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One Deleterious Effect of Mobbing in the Southern Lapwing (*Vanellus chilensis*)

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Through their behavior, mobbing birds make themselves more conspicuous to predators. Whether they also increase their risk is not always clear: fully motile adults mobbing in a group might appear relatively immune to predation in many mobbing situations. The relationship between conspicuousness and risk must depend both upon the mobbers' abilities and the strategies used by the predator.

Few data systematically address the costs of mobbing. I offer the following observation to show that on occasion the risks can indeed be great, even to flying adults mobbing in a group. While single examples in which a mobber was killed do not provide an estimate of the normal risks incurred by mobbers, by accumulating a list of similar cases (e.g. Smith 1969, Ibis 111: 241–243) we render a generalization of no or minimal risk less acceptable.

Southern Lapwings (*Vanellus chilensis*) breed abundantly on the Argentine pampas. They respond aggressively to predators near their nests or young, and chase predatory birds in flight. One frequent subject for their attentions is the Crested Caracara (*Polyborus plancus*), a known predator of lapwings (Hudson 1920, Birds of La Plata, Vol. 2, E. P. Dutton & Co.). During two breeding seasons' fieldwork in the pampas near Mar del Plata, Buenos Aires Province (1973–4), I commonly observed lapwings chasing caracaras, with lapwings from neighboring territories flying up to join as the mob passed over their area. On 26 December 1973, as I watched from a blind, a caracara flew over, approximately 50 m off the ground. Six lapwings pursued it; although their identities were not certain to me, the lapwings came from the local area in which at least three broods were being tended. As the predator and its mob passed over the area I was observing, the caracara suddenly changed behavior: rather than a direct flight, it began wheeling in circles, following, it seemed, one lapwing in particular. The rest of the group also began wheeling, remaining over an area less than 100 m in radius, and they were soon joined by another caracara. The lapwings called continuously and raucously; they also dove at the flying caracaras, approaching within a few meters with each pass. Less than a minute after the second caracara appeared, one of the pair grabbed a lapwing as it dove past: the caracara simply stuck out its talons when the lapwing veered too closely below. The two predators then landed in a grassy area beneath the site of capture, and after a brief series of head-bobbings, one began to tear out the lapwing's feathers while the other walked around nearby; meanwhile, lapwings continued to dive. Within 15 min, the caracaras flew off, carrying what remained of the shorebird with them.