For reasons unclear, through probably related to habitat loss, this once common and widespread ground-feeding woodpecker, endemic to Cuba, has become very rare and localized, with only one relatively strong population (in the Zapata Swamp) and total numbers estimated at only 300 pairs.

DISTRIBUTION The Cuban Flicker is endemic to Cuba, where it was originally found throughout the island, but nowadays is greatly restricted in range, being reduced to a few isolated populations of which the largest is in the Zapata Swamp, Matanzas (see below). Unless otherwise stated, coordinates in the following account are taken from OG (1963a), records (west to east) being:

Pinar del Río c.5 km north-west of Viñales (22°37'N 83°43'W), March 1990 (A. Mitchell *in litt.* 1991); Laguna Media Casa (next to Punta Media Casa, 22°21'N 83°09'W), February 1991 (A. Mitchell *in litt.* 1991); San Diego de los Baños (22°39'N 83°22'W), April 1900 (specimen in USNM); Taco Taco (22°40'N 83°08'W), June 1916 (specimen in UNSM); San Cristóbal (22°43'N 83°03'W), May 1878 (specimen in MNHN); south of San Cristóbal, June 1933 (Rutten 1934); Soroa (22°48'N 83°01'W), November 1987 and February 1989 (A. Mitchell *in litt.* 1991); Loma del Taburete (c.4 km south of Loma del Mulo, 22°53'N 82°59'W), undated (O. H. Garrido *in litt.* 1991); Nortey (22°49'N 82°56'W), where nesting noted (Garrido 1985);

La Habana near "Havana" (Vigors 1827, Ridgway 1914), although Barbour (1943) never found the species in the province and was sceptical of this record;

Matanzas Bacunayagua (23°09'N 81°40'W), 1960 (García undated); Los Cristales (22°33'N 81°30'W), north of the Ciénaga Occidental de Zapata, March 1983 (García and González 1985); "Zapata Swamp", May 1991 (M. Lammertink *in litt*. 1992); "Los Lechuzos" (22°18'N 81°09'W), a nesting pair in May 1984 (coordinates and data in García and González 1985); south-east of Soplillar (22°17'N 81°09'W), currently (A. Mitchell *in litt.* 1991, J. M. Jiménez López *in litt.* 1992); Bermeja (22°38'N 80°16'W), currently; Guamá (on the south-eastern corner of Laguna del Tesoro, this at 22°21'N 81°07'W), undated (both from O. H. Garrido *in litt.* 1991); near Playa Larga (22°16'N 81°10'W), nesting in April 1986 (Jackson 1991), March 1990 (A. Mitchell *in litt.* 1991); Playa Girón (22°04'N 81°02'W), nesting in April 1986 (Jackson 1991); between Playa Girón and Cienfuegos, January 1991 (Sulley and Sulley 1992);

Cienfuegos Aguada de Pasajeros (22°23'N 80°51'W), April 1915 (specimen in MNHN); between Aguada de Pasajeros and Rodas (untraced), where more than 20 birds have been collected (Barbour 1943);

Villa Clara Santo Domingo, where reportedly common (Rutten 1934); near El Dorado (22°54'N 80°03'W), Isabela de Sagua, where nesting noted (Garrido 1985); near Santa Clara, April 1933 (Rutten 1934); near Vega Alta (22°33'S 79°49'W), undated (specimen in USNM); north-west of Vega Alta (less than 1 and 1.5 km respectively), August 1928 (two specimens in UNSM);

Sancti Spíritus Lomas de Trinidad (= Sierra de Trinidad, 21°56'N 80°00'W), undated (García undated); Trinidad, undated (Barbour 1923); pastures south of Sancti Spíritus and north of Zaza del Medio (22°00'N 79°23'W), where the species was reported to be common (Rutten 1934);

Ciego de Avila unspecified (García undated);

Camagüey Santa Rosa (21°26'N 78°00'W), March 1925 (specimen in MNHN); Sibanicu (c.4 km west of Camagüey), March 1948 (specimen in USNM); Camagüey, March 1913 (specimen in USNM); near Camagüey, April 1933 (Rutten 1934); Sierra de la Najasa (21°02'N 77°45'W, in Berovides Alvarez *et al.* 1982), undated (O. H. Garrido *in litt.* 1991); south coast of Camagüey, undated (Barbour 1923);

Holguín Gibara (21°07'N 76°08'W), undated (O. H. Garrido *in litt.* 1991);

Guantánamo Guantánamo, 1884-1919 (six specimens in USNM); Boca de Jaibo (20°02'N 75°14'W), July 1917 and May 1919 (three specimens in USNM); Guantánamo Bay (see ICGC 1978), March 1913 (two specimens in ROM); San Carlos (20°09'N 75°09'W), May 1911 (specimen in USNM); Santa Rita (untraced), Los Caños (20°03'N 75°09'W), January 1911, March 1914 and a large series (see Population) between 1918 and 1919 (specimens in USNM); Manatí (20°05'N 75°06'W), near Los Caños, October 1910 and February 1913 (two specimens in MNHN and USNM); río Seco, San Carlos (20°12'N 75°04'W), April 1912, May 1913 and February 1917 (three specimens in MNHN and USNM); Laguna del Guiral (untraced), October 1911 (specimen in USNM); El Uveral (untraced), December 1918 (specimen in USNM).

POPULATION The sparse nineteenth- and early twentieth-century literature suggests that the species

was never very common but locally numerous. Its current status is poorly known but it appears to have suffered a considerable decline, having disappeared from large areas where it was formerly found.

D'Orbigny (1839) and Malherbe (1862) judged it quite rare. Gundlach (1871-1875) found it locally common (also in Cabanis 1856), while Barbour (1923) regarded it as "very rare" yet "locally abundant"; in his later publication (Barbour 1943) the text for the species remains identical except for the deletion of "very rare". Rutten (1934) continued to consider it "locally common", for example in the savannas north of Santa Clara and west of Santo Domingo, and in the pastures south of Sancti Spíritus and north of Zaza del Medio. Bond (1956b) agreed that it was "locally common", adding that it was "numerous" in open country in the provinces of Las Villas and Camagüey. Bond (1971) stated that it is not an "endangered species" as indicated in Vincent (1966-1971). However, Garrido and García Montaña (1977) regarded it as fairly rare, an opinion mantained by García (undated) and again by Garrido (1985), although the latter believed its population to be stable in the limited areas where it occurs, noting that it is commoner in the centre of Cuba than in the western and eastern sections. Nevertheless, M. Lammertink *(in litt.* 1991), conveying the most recent opinion of O. H. Garrido and A. Kirkconnell, reported that the species is known only from three separate areas, two of which hold very small populations while the third and largest persists in the Zapata Swamp (Matanzas province): the total population is perhaps no more than 300 pairs and is believed to be rapidly declining.

It is worth noting that a large series of birds (39 specimens in MNHN, ROM and USNM) was collected in the area of Guantánamo and Guantánamo Bay during the 1910s (20 birds between 1917 and 1919), but that no records have been indicated for the province since 1919. Indeed, apart from Matanzas, the only province where populations are known to survive is Pinar del Río.

ECOLOGY The Cuban Flicker has been reported from different environments in lowlands and at middle elevations, these ranging from savannas, pastures, swamps, palm groves, scrubby semi-arid woodland, forest edge and thick woodland (Gundlach 1871-1875, Rutten 1934, Short 1982, Bond 1985, Garrido 1985, D. Willis *in litt.* 1991). The species has often been observed feeding on the ground, where it uses its bill to find prey (insects, including ants) in the soil or under leaves (Gundlach 1876, Rutten 1934, García undated, Garrido 1985). According to Gundlach (1876), the species starts the excavation of the nest in March, laying four to five eggs, and Short (1982) indicated that the breeding season extends from March to June, although García (undated) reported nest excavation as early as January; a juvenile was taken from the nest in May 1913 (specimen in USNM). The nest-hole is a metre or so above ground, usually in a dead palm (Garrido 1985); in May 1984, García and González (1985) found a pair nesting in a "palma cana" *Sabal parviflora*. Nests can be used from year to year (García undated). Birds have been reported nesting in loose colonies, e.g. up to seven active nests in c.2-3 ha near Playa Girón (Jackson 1991).

THREATS The causes of the species's decline are not well documented; Short (1982) indicated that land-use practices may threaten the species, but Garrido (1985) thought its rarity was not due to human disturbance but possibly to habitat specialization. M. Lammertink (*in litt.* 1991) observed the species in the "Zapata Swamp" at a spot where logging was taking place in order to obtain firewood. Overall, there can be little doubt that habitat conversion over the years will have affected the species adversely, particularly if it has some unidentified specialization.

MEASURES TAKEN None is known except for the populations which may be benefiting from some of Cuba's protected areas (e.g. Ciénaga de Zapata National Park, Taco Taco and Viñales Nature Reserves and Sierra del Rosario Biosphere Reserve).

MEASURES PROPOSED More studies on the ecological requirements and distribution of the species are essential and urgent in order to develop a conservation strategy. The extant populations should be afforded protection, and periodical censuses conducted in order to monitor population trends as well as to estimate overall numbers.