

Noteworthy records of Parulidae on Cayo Coco, Cuba

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Se documentan las adiciones de la Bijirita de Canadá *Wilsonia canadensis* y la Bijirita de Nashville *Vermivora ruficapilla* para las avifaunas del Archipiélago de Sabana-Camagüey y Cayo Coco, Cuba, respectivamente. También se comentan otras observaciones de otras especies de parúlidos realizadas durante los períodos de residencia invernal del 2005–06.

Cayo Coco (22°30'N 78°27'W; 370 km²) is the fourth largest of Cuba's offshore islands and forms part of the Archipiélago de Sabana-Camagüey (ASC) off Ciego de Ávila province, northern Cuba. Historically, Cayo Coco was separated from the main island of Cuba by the Bahía Los Perros, a shallow lagoon, but, since 1988, they have been connected by a 17-km causeway. The region experiences mean annual temperatures of 25.6°C. Easterly winds (mean 16 km/h) prevail and mean annual precipitation is 1,076 mm³. The island is flat (elevation <5 m) and dominated by forests on thin soils covering limestone bedrock subject to flooding in the wet season³⁶. Major vegetation types include mangrove, semi-deciduous and evergreen microphyllic forests, and coastal xeromorphic scrub, but halophytic communities, rocky and sandy vegetation complexes, and patches of swamp forest, grassland and secondary vegetation also occur²¹.

Bond⁴ first described the avifauna of Cayo Coco. More intensive work has been conducted since the 1990s, including several multi-year censuses of forest-dwelling birds^{27,35,39}, which recorded 62 additional species²⁴. Currently, its avifauna comprises 221 species; the island is one of the best surveyed in the ASC²⁸, as well as one of the most diverse regions of Cuba in terms of avian richness^{11,36,37}. The Parulidae is one of the most numerous passerine families on Cayo Coco, being represented by 80% and 100% of all species (44) and genera (14) reported in Cuba, respectively²⁴. Most are regular migrants, but rarities such as Black-throated Grey Warbler *Dendroica nigrescens* and Kirtland's Warbler *D. kirtlandii*, reported in October 1997³⁷ and November 2004²³, respectively, have also occurred.

In three habitats (coastal scrub, semi-deciduous forest and mixed mangrove) on the island, 12 sites were chosen to examine the influence of holiday resorts on avian communities. Data were collected during two early-winter seasons and one late-winter season in 2005–06 (30 October–4 December 2005; 4 February–23 March 2006; 28 October–23 December 2006)³⁸. Mist-nets were always placed in pairs and scattered within study sites, and were opened on at least two consecutive days at each site.

Coastal scrub was defined as any non-mangrove forest habitat dominated by tree species such as *Coccoloba diversifolia*, *C. uvifera*, *Coccothrinax littoralis*, *Pseudophoenix sargentii* and *Bursera simaruba*. Mixed mangrove was dominated by four species (*Rhizophora mangle*, *Avicennia germinans*, *Conocarpus erecta* and *Langularia racemosa*) which occurred in distinct zones defined by increasing distance from the ocean. Semi-deciduous forest was inland of mixed mangrove and / or coastal scrub. We report a new species of warbler for the ASC and provide records of other rare species. We also discuss the possible reasons for the extreme diversity of this family on Cayo Coco.

Nashville Warbler *Leiothlypis ruficapilla*

A vagrant⁹ or very rare transient¹⁷ in Cuba, we trapped an adult female on 10 November 2006 in coastal scrub at the Centro de Investigaciones de Ecosistemas Costeros (CIEC; 22°32'17.00"N 78°22'2.10"W). This is the second report in the ASC, following one on Cayo Paredón Grande on 13 March 2002¹³. Other Cuban records are mainly from the western mainland (La Habana and Matanzas provinces). We agree with Kirkconnell & Kirwan¹³ that this species is a rare but regular visitor to Cuba.

Orange-crowned Warbler *Leiothlypis celata*

Vagrant to Cuba^{9,17} with six records, all of them recent. First recorded at Las Tumbas, Guanahacabibes Peninsula, on 11 November 1989¹⁴, followed by Cayo Santa María on 21 October 1994 and Cayo Coco on 29 November 1996³⁷. Other records are available from the Zapata Peninsula on 2 May 2003¹⁹, on Cayo Coco on 13 November 2003²⁰ as well as on Cayo Guillermo on 23 March 2008¹⁵. We trapped a first-year male in a narrow coastal mangrove (*Rhizophora mangle*) 2 km east of Casasa (22°29'26.66"N 78°19'14.12"W) on 14 December 2006. This is the fifth record in the ASC and the latest winter record in Cuba of this species.

Tennessee Warbler *Leiothlypis peregrina*

An uncommon transient¹⁷ in Cuba and on the Isle of Pines. In the ASC, it was previously reported on Caiman del Faro⁷, Guajaba¹ and Cayo Coco, the

latter based on singles trapped on 28 October 1992 and 18 April 1993²⁷. We trapped an adult female at CIEC on 3 November 2005 and a first-year (sex unknown) in a mixed mangrove abutting the westernmost tip of Ensenada de Bautista (22°31'29.50"N 78°21'28.00"W) on 12 November 2005. We consider it a rare transient in the northern cays of Ciego de Ávila.

Chestnut-sided Warbler *Dendroica pensylvanica*

Uncommon transient^{9,17} in Cuba. ASC reports are available from Cayo Paredón (one trapped, 12–15 October 1991)³¹, one seen on Cayo Santa María³⁰ and another on Cayo Coco on 20 January 2001¹⁶. We observed an adult male on 22 September 2006, foraging with a group of Palm Warblers *D. palmarum* beside the road connecting the Cuatro Caminos and Los Almácigos roundabouts on Cayo Coco.

Canada Warbler *Wilsonia canadensis*

Very rare transient^{9,17} in Cuba. On 14 September 2005, an adult male was observed in coastal scrub at the CIEC. This is the first sight record on any of Cuba's offshore islands and the earliest autumn migration date in the country.

Yellow-breasted Chat *Icteria virens*

Very rare transient in Cuba^{9,17}. In the northern cays of Ciego de Ávila, it was reported on Cayo Coco on 5 May 1974 (two)⁸ and an immature female was trapped and photographed on 22 November 1995³⁷. On Cayo Paredón Grande one was seen on 8–11 October 1991³¹. We trapped an adult of unknown sex in sandy coastal scrub with abundant palmetto *Coccothrinax litoralis* at Playa Prohibida (22°33'09.00"N 78°23'58.01"W) on 4 March 2006.

These observations raise the number of species of Parulidae to 36, and along with recent additions from Cayo Paredón Grande (A Parada *et al.* unpubl.) the species totals on the northern cays of Ciego de Ávila (Cayos Coco, Guillermo and Paredón Grande) to 232, or 63% of the Cuban avifauna. Many factors contribute to the high number of warbler species found on Cayo Coco including its geographical location, the landscape and ecosystem composition, and the island's terrestrial habitat heterogeneity. In general, warblers represent the majority of North American passerine migrant species to Cuba^{2,5,9}.

Five of the six species reported above were in either mangrove or coastal scrub, which two habitats are well represented on Cayo Coco²⁷. Since the 1990s, tourism development has been stated to pose threats to coastal scrub and its avian biodiversity³⁷ and it may be contributing to processes such as habitat reduction and fragmentation, and the introduction of exotic species (ornamentals).

Thus, the protection of coastal habitats appears to be particularly important for both migrant and resident bird communities.

In general, warblers are fairly well represented in disturbed habitats of Cayo Coco (near resorts). Research into dietary composition and microhabitat usage in such habitats during winter may be important for this family, as Parulidae are known to utilise a wide variety of food items including fruits by *D. pensylvanica*¹¹, *I. virens*¹², *O. celata*^{25,29,33} and *O. peregrina*^{10,18}. Although the grounds of coastal resorts often harbour many flowering ornamental plants, which presumably offer a food source (nectar)^{6,22,26,32,34}, we did not study movements between forest and such areas. Nonetheless, our field data suggest that a large number of birds used both habitats. Targeted observations on the foraging behaviour of these species should assist our understanding of the particular food resources utilised, and, through more intensive trapping, the limiting factors.

Re-sighting rates within the same study season were very low (<8%)³⁸ despite mist-netting for several months at the same locations. Therefore, although a diverse assemblage of warblers uses Cayo Coco, usage may be ephemeral and birds caught in autumn may be moving to either mainland Cuba or even South America to spend the bulk of the winter.

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