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## First known record of Kirtland's Warbler (*Setophaga kirtlandii*) observed and captured in Jamaica

Alicia R. Brunner,<sup>1,4\*</sup> Nathan W. Cooper,<sup>2,3</sup> and Peter P. Marra<sup>2,3</sup>

**ABSTRACT**—A female Kirtland's Warbler (*Setophaga kirtlandii*) was observed and captured on 12 February 2019 at the Font Hill Nature Reserve (18°02'N, 77°57'W) on the south coast of Jamaica, hundreds of kilometers southwest of its typical nonbreeding range. This is the first report of a Kirtland's Warbler in Jamaica. The individual was resighted in the same area twice after the initial capture, spending at least 7 weeks at the study site, suggesting this bird may have been wintering in Jamaica. Overall, it is unclear if this represents the expanding range of a recently increasing Kirtland's Warbler population or simply an errant migration. Received 19 November 2019. Accepted 5 November 2020.

**Key words:** Caribbean, endangered species, migratory birds, Neotropical, nonbreeding, wintering distribution.

### Primer registro conocido de una chipe *Setophaga kirtlandii* observada y capturada en Jamaica

**RESUMEN** (Spanish)—Una hembra del chipe *Setophaga kirtlandii* fue observada y capturada el 12 de febrero de 2019 en Font Hill Nature Reserve (18°02'N, 77°57'W) en la costa sur de Jamaica, cientos de kilómetros al suroeste de su típico rango no-reproductivo. Este es el primer reporte de este chipe en Jamaica. El individuo fue reavistado en la misma área después de la captura inicial, permaneciendo al menos 7 semanas en el área de estudio, y sugiriendo que esta ave podría haber invernado en Jamaica. No está claro si esto representa la expansión del rango de una población de *S. kirtlandii* en expansión reciente o simplemente una migración errante.

**Palabras clave:** aves migratorias, Caribe, distribución invernal, especie en peligro, Neotropical, no-reproductiva.

On 12 February 2019, ARB captured a female Kirtland's Warbler (*Setophaga kirtlandii*) at the

Font Hill Nature Reserve (18°02'N, 77°57'W) on the southwest coast of Jamaica. The individual was caught in a mist net used for research on American Redstarts (*Setophaga ruticilla*) and Swainson's Warblers (*Limnothlypis swainsonii*). Prior to the capture, ARB observed this individual near the mist net, foraging mostly on the ground and occasionally moving into shrubby vegetation less than 0.5 m tall. With these brief observations, the individual was tentatively identified as a Kirtland's Warbler based on the combination of field marks (i.e., large, yellow bird with slight black streaking on flanks) and foraging behaviors (i.e., hopping on the ground with a slight tail bob). These characteristics are unlike other nonbreeding Neotropical migrants or Jamaican residents we observe in the dry scrub forest (ground-foraging migrants include Ovenbirds [*Seiurus aurocapilla*], Swainson's Warblers, and occasionally Northern Waterthrush [*Parkesia noveboracensis*]). After observing this bird through binoculars for no more than 1 min, ARB began "pishing" to bring the bird closer, and then flushed the bird into the net.

After positively identifying the bird as a female Kirtland's Warbler (based on plumage and lack of black feathers on face, confirmed by NWC and PPM; Fig. 1), ARB banded the individual with a USGS aluminum band and took various morphological measurements (mass = 12.8 g; bill length = 8.01 mm; bill depth = 3.76 mm; tarsus length = 20.61 mm; wing length = 66 mm; tail length = 54 mm), fat score (by visually assessing the amount of fat in the furculum), and pectoral muscle size with a 3D printed muscle sizer (1.57 mm; Bauchinger et al. 2011). We aged this bird as a second-year (juvenile) based on the retained juvenile primary feathers (molt limit). The individual weighed less than the mean (The Bahamas:  $n = 13$ , mean mass = 13.7 g; Jamaica = 12.8 g), but had a breast muscle score that fell within the range of the female Kirtland's Warblers captured in The Bahamas in March (Jamaica = 1.57 mm; The

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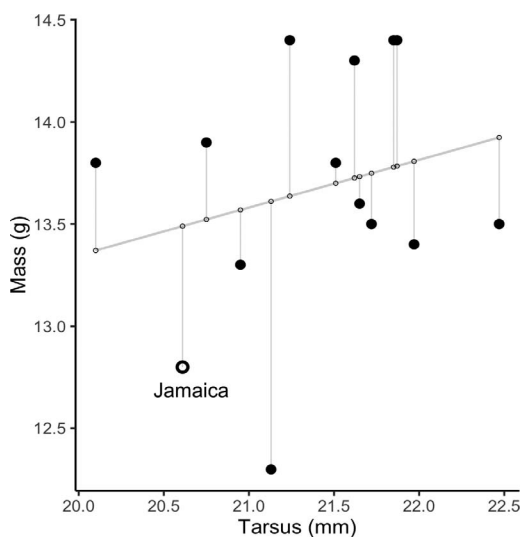
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**Figure 1.** Female Kirtland's Warbler captured at Font Hill Nature Reserve, Jamaica, on 12 February 2019.

Bahamas range = 1.20–2.63 mm; larger values represent smaller breast muscle size). In addition, when accounting for body size (tarsus length), she weighed less than predicted (mass ~ tarsus length; Fig. 2), however not outside of what is observed in the females from The Bahamas. Based on the size-corrected mass (Fig. 2) and her healthy breast muscle size, she appeared to have been in good condition and likely survived the winter. In addition, we know the bird spent at least 7 weeks on our study site as the bird was resighted twice after she was released, once on 27 February by ARB about 150 m southeast of the capture site and again on 2 April by ARB and PPM only 25 m east of the original location. During both resight events the individual was using the same habitat type, which consisted of mostly logwood (*Haematoxylum campechianum*), with burnwood (*Metopium brownii*) interspersed. Although she was observed foraging on the ground during the first sighting, she was foraging near the canopy in both of the other 2 sightings.

Kirtland's Warblers typically winter in disturbed, short-statured scrubland (Wunderle et al.

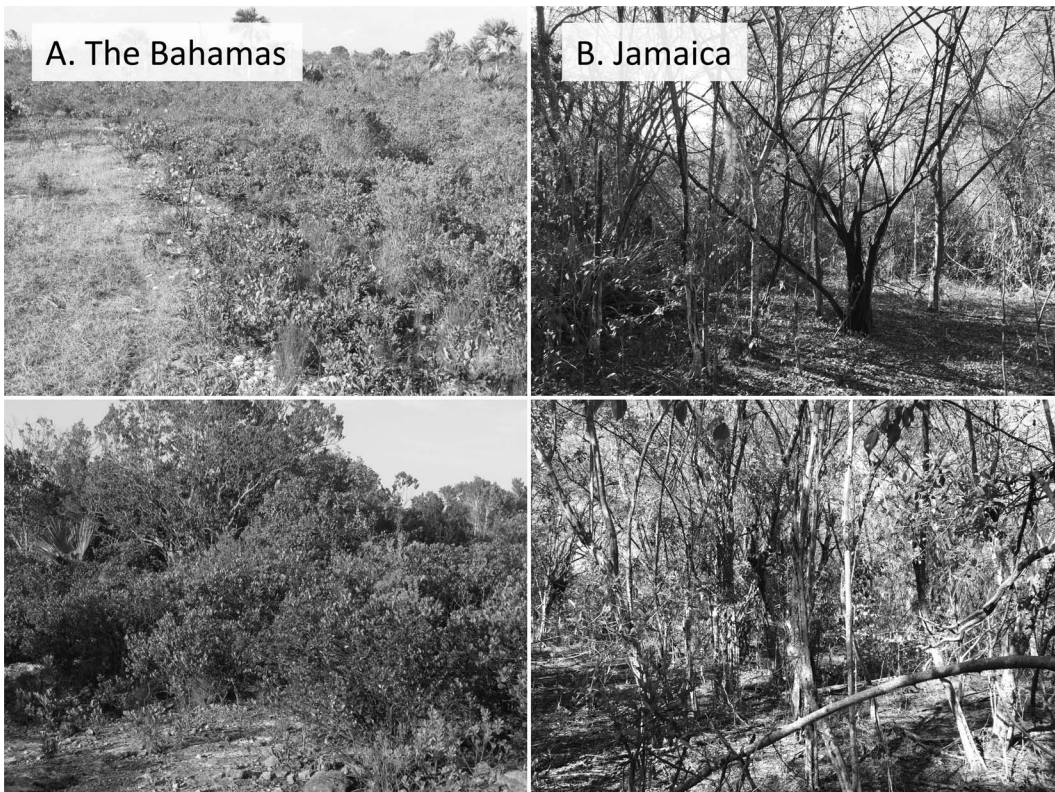


**Figure 2.** Linear regression of tarsus length (millimeters) and mass (grams) of female Kirtland's Warblers wintering in The Bahamas ( $n = 13$ , solid points) compared to that of the female captured in Jamaica (open point), plotted with both the actual and predicted (gray line) values. The individuals above the mean response/predicted values (gray line) are heavier than expected based on their body size, and those below are lighter than expected. This size-corrected mass serves as a coarse metric for body condition.

2010). In comparison, the second-growth scrub forest the bird was captured in at Font Hill has an average canopy height of ~8 m, much taller than the 1–3 m scrubland that Kirtland's Warblers typically use (Wunderle et al. 2010). The understory at Font Hill is also fairly open and primarily composed of vines and thorny logwood saplings. This contrasts strongly with the dense low vegetation of typical Kirtland's Warbler wintering habitat (Fig. 3).

Kirtland's Warblers winter widely throughout The Bahamian Archipelago (The Bahamas and Turks and Caicos; Cooper et al. 2019), but Cooper et al. (2019) recently used light-level geolocator tracking data, playback surveys, and observations submitted to eBird (Sullivan et al. 2009) to demonstrate that Kirtland's Warblers are most common in the scrubland of the central Bahamas.

Winter sightings outside The Bahamian Archipelago are exceedingly rare, with only a few sightings reported in the Dominican Republic ( $n = 1$ ; Faanes and Haney 1989), coastal Mexico ( $n = 1$ ; Lane 1975), Bermuda ( $n = 1$ ; Anonymous 2005), and coastal Florida ( $n = 1$ ; Cooper et al. 2017).



**Figure 3.** (A) Two examples of the typical dense scrubland habitat used by Kirtland's Warblers wintering in The Bahamas. (B) Two examples of the second-growth scrub habitat in which the female at Font Hill, Jamaica, was captured and resighted in February 2019.

Further, after searching for Kirtland's Warbler specimens in VertNet, it appears there have been no known specimens collected outside of The Bahamas during the nonbreeding period. However, Kirtland's Warblers have been observed on 3 separate occasions on the northern coast of Cuba (B. Maybank pers. comm., S. Musgrave pers. comm.; Isada 2006) and Cooper et al. (2017) used tracking data to show that one male wintered in Cuba in 2014–2015, ~480 km north of Font Hill Nature Preserve in Jamaica. Given the number of observations, Cuba is likely a wintering location of the Kirtland's Warbler, but it remains unclear whether any of the other locations are regularly used or simply represent errant migrations by single individuals. We strongly believe a Kirtland's Warbler has never been observed in Jamaica, even with the 30 years of intensive bird research conducted during the winter months (Jan–Mar) at Font Hill. Kirtland's Warblers have increased from

a breeding population of 167 males in 1987 to more than 2,300 males in 2015. If the population continues to grow, it is likely the nonbreeding range will expand accordingly.

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