

Wintering Warblers in Cuba

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Introduction

From 2 to 16 January 2003, I went on vacation to the Bay of Marea del Portillo on the southeast coast of Cuba. It lies on a narrow coastal plain below the backdrop of the Sierra Maestra Mountains. The area I visited was not particularly noted as a good birding location, but within walking distance of our hotel I saw 59 species of birds, including nine that are endemic to Cuba. An interesting observation concerning the bird population was that the Cuban or tropical species seen were mainly seedeaters, nectar feeders, wetland, or sea birds. The only small insectivorous birds I saw were our own migrant North American wood-warblers.

One of the more common wood-warblers was the Prairie Warbler (*Dendroica discolor*). It was found generally on its own in dry open scrubby areas, or occasionally along the edge of mangrove swamps. Another solitary warbler that frequented the mangroves on the edge of the sea and vegetation along a riverbank was the Northern Waterthrush (*Seiurus noveboracensis*). Palm Warblers (*D. palmarum*) were also common, and I saw one defending a tall yellow spike of Agave flowers from a trespassing Cuban Emerald (*Chlorostilbon ricordii*). Every time the humming-

bird tried to feed on the flower's nectar, it was driven off by the warbler, which visited the flowers frequently to drink nectar. It was noticeable that I often saw them in the same location throughout my stay.

On the third day, I saw a new species of warbler, unfamiliar to me, a Yellow-throated Warbler (*D. dominica*), in a small patch of woodland along the edge of a rock-strewn shallow river. This warbler was in the company of a female American Redstart (*Setophaga ruticilla*), a male Black-throated Blue Warbler (*D. caerulescens*), a Black-and-white Warbler (*Mniotilta varia*), a Palm Warbler, and two or three Northern Parulas (*Parula americana*). Two days later, I visited the same woods, and to my surprise, the Yellow-throated Warbler was still in the same location, accompanied by a female American Redstart and the same group of bird species.

Winter Habitat

This aroused my interest and led me to spend many hours spaced over several days in this small patch of woodland that measured 127 m x 30 m. The vegetation in the woods consisted of only four species. Ninety-eight percent of the vegetation was a large-leaved shrub (*Cordia* sp.), with yellow flowers similar in shape to Mountain Laurel (*Kalmia latifo-*

lia), and clusters of white berries. They were about 4.5 m high, multi-stemmed, with the 1 to 6 stems being 50 to 150 mm in diameter and covered in rough bark. There were two other shrubs in the woods, a small tree-like shrub (*Nectandra* sp.) with thick, shiny, dark green leaves and clusters of white flowers, and a 1 m high shrub that was sparsely scattered along the sunny edge of the woods. This had very small, almost brown flowers and thick, stiff stems. Rising above the predominant shrub layer were five large trees with bipinnate leaves and large hanging bean pods. These were scattered and well spaced out along the edges of the woods.

Due to heavy grazing pressure by free-roaming horses, cattle, sheep, goats and pigs, there was no foliage below 2 m, and a herb layer was completely absent, with no natural regeneration occurring. The ground was 60 percent bare earth, and the remaining 40 percent was covered in a shallow layer of dry leaf litter.

Behaviour

Although this woods appeared very degraded due to over-grazing, it did have a remarkably high population of migratory warblers that consistently appeared to be grouped into three flocks. The largest occurred at the northern end and consisted of the Yellow-throated Warbler, a female American Redstart, a male Black-throated Blue Warbler, a Palm Warbler, a Black-and-white Warbler, and two or three Northern

Parulas. The flock that occupied the southern end of the woods was smaller and consisted of a male American Redstart, a male Black-throated Blue Warbler, a Palm Warbler, a Black-and-white Warbler, and one or two Northern Parulas.

As the woods was so small and the lower level free of vegetation, it was possible to observe the northern flock and dash quickly to the southern end to ensure that I was not just seeing the same birds twice. Occasionally, I would come across a third and even smaller group in the centre. These came from a similar narrow strip of woodland on the opposite side of the river. This consisted of a male American Redstart, a male Black-throated Blue Warbler, a Palm Warbler, and two Northern Parulas. On one occasion, they came into contact with the northern flock. When this happened, birds of each species challenged other members of their species. For instance, the male and female American Redstarts made short U-shaped flights toward each other, with much flashing of wing and tail bars. The Black-throated Blue Warblers and Palm Warblers gave loud call notes and chased their rivals for short distances. The smallest flock quickly gave way and moved back toward the centre of the woods. I found this territorial behaviour very interesting and assumed that the flock did not hold a collective territory but each species within the flock defended

an individual territory. All the birds forming the flock fed collectively over the area of land that was common to all their territories.

Foraging Method

It was noticeable that each species, while occasionally feeding together in the leaf canopy, fed generally in a definite ecological zone. The Palm Warblers fed on the ground among the leaf litter or within the low shrubs along the woods edge. The Black-and-white Warblers fed, like a treecreeper (*Certhia* sp.), on insects they found on the thickest stems and branches. The American Redstarts gathered insects from the mid-section of the shrubs, among the thicker stems and branches, and often chased and caught the flying insects they disturbed. The Black-throated Blue Warblers and the Yellow-throated Warblers fed in the same zone, just under the leaf canopy, but not together, often picking and jumping to remove insects from the underside of the leaves. The Northern Parulas did not seem to hold a territory; normally there were between two and four together. On one occasion, when birding in the mountains, I saw 15 of them feeding together in a small tree covered in Spanish moss (*Usnea* sp.), accompanied by a female American Redstart and a male Black-throated Blue Warbler. The Northern Parulas tended to hunt insects in the top edge of the canopy, often hovering to pick insects from the tip of the thinnest

twigs or by removing insects from within curled dead leaves.

Occasionally, there were other birds in the woods, but these did not form part of the flock. The most frequent was a Greater Antillean Flycatcher (*Contopus latirostris*), a phoebe-like flycatcher that hunted flying insects in the shade. On two occasions, the woods was visited by a Loggerhead Kingbird (*Tyrannus caudifasciatus*) that did not hunt in the woods, but chased and caught large insects along the sunny edges. Also, Green Herons (*Butorides virescens*) and White-winged Doves (*Zenaida asiatica*) frequently rested in the woods during the hottest part of the day, and once the woods was visited by a male Yellow-bellied Sapsucker (*Sphyrapicus varius*).

Discussion

There is a growing body of research findings concerning migratory songbirds on their Neotropical wintering grounds, including the following information relevant to my warbler observations in Cuba.

During winter, many wood-warblers occupy a variety of relatively open, often disturbed, areas (Garrett and Dunning 2001). "Warblers that are strictly territorial on their breeding grounds ... may join a mixed-species foraging flock in their wintering areas" (Berger 2000). Many warblers that are insect-eaters on the breeding range eat fruit and drink nectar on the wintering grounds, and will drive off competitors such as humming-

birds at prized food sources (Berger 2000). Research has shown that American Redstarts and Black-throated Blue Warblers tend to return to the same Neotropical wintering areas in subsequent years (Holmes and Sherry 1992), with fidelity to wintering sites being even higher than for northern breeding areas, in both species.

At least 12 warbler species, including American Redstart, Black-throated Blue Warbler and Northern Parula, segregate by sex into different habitats during winter (Berger 2000, Garrett and Dunning 2001). "In the American Redstart, that sexual habitat segregation is a result of behavioral dominance of older males", with "the least suitable habitat being occupied predominantly by females" (Marra and Holmes 2001). "Because most female redstarts are forced to overwinter in these kinds of habitats, they may often be in poor physiological condition prior to departing on spring migration for the breeding grounds" (Marra and Holmes 2001). The later arrival in spring and poorer condition of these female redstarts may then have adverse effects on reproductive success (Marra et al. 1998).

Rubenstein et al. (2002) "used the natural abundance of stable isotopes (carbon and hydrogen) in the feathers" of Black-throated Blue Warblers "to determine where birds from particular breeding areas spend the winter and the extent to which breeding populations mix in winter

quarters". Their results indicated that a majority of the Black-throated Blue Warblers that winter in Cuba are from the northern portion of the breeding range, including Ontario.

Conclusion

Such a large concentration of northern wood-warblers (19 birds) in such a small area surprised me, particularly when considering how ecologically poor and over-grazed the woods and its surrounds (mainly open scrubby pasture) appeared to be when compared to Canadian woods where these species breed at considerably lower densities. I was told that over the last 100 years, Cuba has lost over 85 percent of its woodland cover, and is trying to increase the remaining 15 percent to 25 percent through tree planting and reforestation projects. It will be difficult for them to achieve this aim owing to the heavy grazing within the existing woodlands. This is gradually denuding the tree cover and preventing regeneration, particularly in this location on the south-facing slopes of the Sierra Maestra Mountains. These slopes are rapidly being stripped of woody vegetation and becoming grass-covered, which provides no habitat for northern migratory wood-warblers, but better pasture for livestock.

This land use pattern is occurring not only in Cuba, but also in other countries in the Caribbean and Central America. If we do not wish our wood-warbler populations to decline further, we must remem-

ber that they spend seven months of the year in the tropics, in these diminishing wooded areas. Consequently, as naturalists, we should consider investing some of our conservation funds in Central America and the Caribbean, and particularly in poor countries like Cuba that have such a high winter population of our warblers. These countries desperately need money to finance nature reserves, to extend reforestation projects, and to compensate poor farmers for their loss of grazing lands. It is

pointless to concentrate on preserving their Canadian breeding habitats while ignoring their fast degenerating wintering grounds. It is, therefore, vital to educate their citizens and ours on the ecological importance of protecting their remaining woodlands.

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