The most elusive bird in The Bahamas?

Getting to grips with wintering Kirtland's Warblers

Think of The Bahamas and you might conjure up an image of long, sun-drenched beaches, crystal-clear seas and blue skies. The reality for anyone trying to study its wintering and resident bird species, however, consists of impenetrable thickets swarming with mosquitoes and filled with prickly plant species that even the most committed field biologist would think twice before entering.

Picture the scene: deep among the stems and shadows you can make out small, tantalising movements that promise much, but reveal little. Suddenly, for a fleeting moment, the yellow breast and throat, grey head and back, distinctive split white eye-ring, and bobbing tail appear. The bird gives several distinctive chips then disappears. Blink and you have missed the very rare chance of seeing a Kirtland's Warbler *Dendroica kirtlandii* on its wintering grounds in The Bahamas.

Kirtland's Warbler is one of North America's most threatened songbirds (it is currently classified as Vulnerable). It breeds almost exclusively in the state of Michigan in the USA where it has very specific requirements, only nesting on the ground in 2–7 m tall stands of Jack Pine *Pinus banksiana* interspersed with openings containing grasses, sedges, blueberry and sweet fern.

The fall, then subsequent rise, of the Kirtland's Warbler is one of the most successful bird recovery/conservation programmes ever in the USA. A decline in Kirtland's Warblers was first noted in the 1950s, and their population reached a low of around 167 pairs in the 1970s.[1] In response, the US Fish and Wildlife Service, the US Forest Service and the Michigan Department of Natural Resources joined forces to save the species. Intensive research revealed that the main reasons for the decline were a lack of suitable habitat and extensive brood parasitism by Brown-headed Cowbirds *Molothrus ater*. A recovery team was established, and is one of the few in the USA to include a foreign national, appropriately enough a Bahamian, Eric Carey. The team's efforts have focused on management of the fire-dependent Jack Pine to ensure that adequate breeding habitat is available for the birds. Around 60,000 ha of forest are designated as Kirtland's Warbler Management Areas. Each year about 1,200 ha are felled and replanted with Jack Pine and numbers of cowbirds are also controlled. These actions have been very successful and currently there are around 1,200 breeding pairs of Kirtland's Warblers. Currently, ongoing conservation management is required to maintain the population.

Although the Kirtland's Warbler breeds

Above left: Male Kirtland's Warbler *Dendroica kirtlandii* captured on Eleuthera, The Bahamas, just prior to spring migration
(Photo: J Wunderle)

Above: Broadleaf scrub habitat on Eleuthera, The Bahamas, typical of many Kirtland's Warbler over-wintering sites
(Photo: J Wunderle)

Top: A Bahamian endemic, the Bahama Yellowthroat *Geothlypis rostrata coryi* (male), another focal bird species of the research project
(Photo: Dave Currie)

Bottom: The charismatic Great Lizard-Cuckoo *Saurothera merlini bahamensis*. Both the yellowthroat and the cuckoo are frequently found in the same habitats as Kirtland's Warblers on Eleuthera, The Bahamas
(Photo: Dave Currie)

in the USA, it spends most of the year in The Bahamas and, along with many other North American migrants, makes the archipelago (which comprises 35 major islands and 700 small cays spread over 259,000 km^2) an important wintering ground. These visitors comprise up to half of the Bahamian avifauna from November to March. However, in contrast to the extensive research on its breeding grounds, little is known about the warbler's wintering requirements.

Historically, Kirtland's Warbler has been recorded from both the northern islands in the Bahamas archipelago, which are dominated by Caribbean Pine *Pinus caribea*, and the central and southern islands, which are dominated by broad-leaved trees. It is still unclear which is the warbler's preferred habitat.[2,3,4] This is in part owing to the difficulty of observing this enigmatic skulker, which does not sing in winter but gives infrequent distinctive chips and favours low dense vegetation (sometimes understorey beneath taller trees). Only around 200 individuals have been recorded in The Bahamas since the species was first described in 1851. James Bond (the famous Caribbean ornithologist, whose name was borrowed by Ian Fleming for his fictional spy, 007) only found one Kirtland's Warbler in 100 days of searching in the 1930s. In the 1970s and 1980s, extensive island-wide searches in The Bahamas, using playback of conspecific calls and mist-netting, detected very few individuals.[2,3,4,5] However, these searches took place when the breeding population was at an all time low.

In October 2001, *The Kirtland's Warbler Training and Research Project* was established with the support of The Bahamas Government (Department of Agriculture, Section of Conservation) and The Bahamas National Trust (BirdLife in The Bahamas), funded by the US Forest Service, and facilitated by The Nature Conservancy and the International Institute of Tropical Forestry. Its aim was to study the winter requirements of the warbler and resident bird species, while providing training opportunities for students from the College of the Bahamas. The warbler research is co-ordinated with The Kirtland's Warbler Recovery Team in Michigan.

The project began on Andros (a pine island), part of which has recently been designated a national park. The project was primarily designed to provide students with field experience in bird identification, ringing and survey techniques, integrated into studies of resident and other migrant bird species, with incorporation of research on Kirtland's Warblers as and when individuals were found. Not surprisingly, very few were seen and these were not re-sighted.

However, in March 2002, at least eight Kirtland's Warblers were found by the Ornithology Group of The Bahamas National Trust in a small area on the island of Eleuthera, a broad-leaved tree island (see *World Birdwatch 24(3): 3*).[6] This remarkable discovery (the majority of records on the wintering grounds are of solitary birds) resulted in six birds subsequently being colour ringed during March–April 2002 in the same area. This discovery presented the best opportunity ever for studying the warbler's winter requirements and the project was moved from Andros to Eleuthera in October 2002. Amazingly, five of the six colour ringed birds were observed the following winter close to where they had originally been ringed. Initial studies were very promising, and revealed new data on the species's wintering biology. For example, it was found that birds occurred at a much higher density than previously thought, with up to 10 individuals regularly seen in an area of only 500 x 200 m. However, access to the site could not be secured, so instead researchers used their existing and new-found knowledge to try to locate suitable sites elsewhere on Eleuthera. Despite initial pessimism, no fewer than 12 such sites were discovered containing at least 30 Kirtland's Warblers between 1 December 2002 and 8 March 2003 (see *World Birdwatch 25(2): 5*). To put this in context, during the previous 150 years there were only 28 records of Kirtland's Warblers from Eleuthera, 10 of them in 2002, and winter counts of this size had not been recorded in the entire Bahamas archipelago since the late 1800s.

Significantly, the majority of the new localities contained birds throughout the winter, not just migrants, some held several individuals, and a few held birds at a density comparable with the 'hotspot' discovered in March 2002.

At one site an individual was found that had been colour ringed on the breeding grounds in Michigan and was at least seven years old. The round trip from Michigan to the Bahamas is about 4,800 km so this bird must have travelled at least 34,000 km in its lifetime. In addition, three birds, out of the 19 ringed by the project on Eleuthera in 2002–2003, were re-sighted on the Michigan breeding grounds during the 2003 census.

It is probable that birds will return to some of these newly discovered sites this winter. Therefore, despite the secretive nature of this bird, the opportunity now exists to study and understand better its winter habitat requirements and conservation needs. Through providing field experience and training for Bahamian students, the project will also build local capacity to monitor, manage, and protect terrestrial ecosystems to conserve threatened and endangered bird species. In addition, through increased links with the local community the project also has the potential to assist in developing nature-based ecotourism on Eleuthera.

Despite last winter's significant findings, the training of Bahamians is the most important component of the project and to date three Bahamian students have been involved; Jasmine Turner, Ancilleno 'Leno' Davis and Zeko McKenzie. Through contacts made on the project, Jasmine subsequently went on to business school, while both Leno (in 2002) and Zeko (in 2003) have obtained additional field training at the Kirtland's Warbler breeding grounds in Michigan. After two winters on the

project, Leno has recently enrolled in the University of Maryland, sponsorship for which was provided by the university and The Nature Conservancy, and sourced by the project, while Zeko will be involved in another winter of research, accompanied by a new student, Ingeria Miller. The project is unique in The Bahamas in the opportunities it affords to aspiring Bahamian biologists and is scheduled to run until at least 2006. It will be some of these Bahamian students that will pass their knowledge onto others, well after the warbler project has finished, and already several have given talks to local school groups highlighting the research, conservation issues, and opportunities for Bahamians in conservation. These trained and enthusiastic young people are ultimately the future of Bahamian conservation.

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UPDATE: At the time of going to press, colour-ringed birds had returned to the important 'hotspots' discovered last winter and research and training activities have already been initiated at these sites. Among these returning individuals is the Michigan-ringed bird, who is now at least 8 years old and whose frequent fliers points now total in excess of 38,000 km.

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