**Showcasing the DNR: Charting a course for recovery – the Kirtland’s warbler in Michigan**

*Editor’s note: In celebration of the department’s centennial anniversary, the Showcasing the DNR feature series will highlight one story each month during 2021 that recalls various accomplishments of the department over the past century.*

**By Karen Cleveland**

**Michigan Department of Natural Resources**

Driving down M-33, through the city of Mio in northern Michigan, most visitors don’t spare a glance for the monuments and memorials decorating the lawn of the county courthouse.

But a canny observer will note something unusual.

In addition to the usual recognitions for residents who died during military service, there’s an edifice of stone and mortar that contains the effigy of a brilliant yellow and slaty gray songbird.

This isn’t a memorial but a monument to the ingenuity, tenacity, and dedication of scientists, conservationists and ordinary citizens determined to save one of Michigan’s most unique species – the Kirtland’s warbler.

**Beginnings**

We may never know the full story of Michigan’s Kirtland’s warblers. The scientific record reports precise, discrete facts: “first discovered in the United States in 1851,” “wintering grounds discovered in 1879,” and “nesting range discovered in 1903.”

But this simple narrative ignores the experiences of residents who knew these birds and passed their stories through oral traditions that may now be lost to history. It misses the messy and convoluted path of a species, both present and invisible during a time of avarice and opportunity.

What we do know is that when the American scientific community trained its eye on this tiny songbird in the 1940s. It was already in dire straits.

**Natural history**

The Kirtland’s warbler is a small songbird you could comfortably hold it in your cupped hand. Both males and females of the species are recognizable with their lemony yellow breasts and bellies, their slaty gray heads and backs and the constellation of black speckles across their bodies. They nest on the ground in thick, expansive, patchy jack pine thickets and overwinter in the Caribbean.

The species’ story might have been very ordinary but for a tragic intersection of its biology with the human history of Michigan. It only nested in the jack pine forests of the northern Lower Peninsula.

The great Midwest logging boom of the 1800s that leveled entire forests radically changed the landscape the warbler depended on. Removing the expansive forests of northern Michigan allowed the brown-headed cowbird, a grassland species, to move in.

Cowbirds are nest parasites. They don’t build their own nests, instead laying their eggs in the nests of other birds for them to raise. Research had found that when Kirtland’s warblers had to raise these interlopers as well as their own young, the young warblers didn’t get enough parental care to survive.

The logging boom also brought white settlers who strived to quash any fires that started in the forests that regrew. This kept fire from clearing old jack pines to let the young, dense stands the warblers needed grow. Fire also opened the jack pinecones, allowing seeds to drop for new growth.

The miracle is that there were any birds left to be found nesting in 1951 when an effort was launched to conduct a full census of the species.

**Countdown to recovery**

As it’s still done today, counters visited the bird’s nesting habitat and counted the number of males that were singing to advertise and defend their territories. Studies suggested there was one female for each male.

**Find out about the 2021 cooperative survey results for Michigan.**

Employing this methodology, warbler counters in 1951 arrived at a final count of 1,000 birds. This remarkably small number, coupled with research that showed nests were producing relatively few young each year, galvanized the Michigan Department of Conservation (later Michigan Department of Natural Resources) to respond.

By 1958, core conservation areas had been identified on state-managed lands in Ogemaw, Crawford and Oscoda counties, and the department had prioritized management for Kirtland’s warbler on these lands.

By 1963, the U.S. Forest Service had identified core areas on its own lands for conservation. By the end of the decade, the species would be listed as endangered by the U.S. Fish and Wildlife Service.

Keith Kintigh, the DNR’s Forest Conservation and Certification Specialist, is familiar with the challenges of conservation in northern Michigan with its patchwork of state forest, national forest and private lands.

“The coordination between the DNR, federal conservation agencies, researchers and citizen scientists to protect this species, really from the very beginning, was vital to any success we were going to see,” Kintigh said. “These partnerships formed the foundation of Kirtland’s warbler recovery efforts.”

Despite this, the 1971 warbler count found only about 400 birds. More action was needed.

**Hopeful measures**

The 1970s ushered in an era of change in Kirtland’s warbler conservation. While some efforts were made to use fire as a tool to manage the jack pine forest, this could be risky and unpredictable. Instead, young forests were created by harvesting trees that had gotten too old for the warblers to use and replanting stands with young trees.

Through careful planning, wildlife biologists and foresters were able to ensure that timber harvests were staggered in time to create a cycle that perpetually ensured the availability of the young forests the birds needed.

Steps were taken to restrict human disturbance around nesting areas. Efforts began to reduce the number of brown-headed cowbirds in the warbler’s nesting range. More northern, forested public land began to be managed to create Kirtland’s warbler habitat.

State and federal agencies partnered with conservation organizations to conduct annual counts of nesting warblers to monitor their progress.

It took years for this work to pay off – warbler numbers continued to decline into the late 1980s before things started to look up in the early 1990s. For the first time, nesting warblers were found outside their usual range, with birds being found in the Upper Peninsula.

The goal of the Kirtland’s warbler recovery team of 1,000 warbler pairs was met in 2001, twice the number of birds found on that first survey a half century earlier. In 2007, nesting warblers were also being found in Wisconsin and Ontario.

**The path forward**

The writing was on the wall: our work was done.

Or was it?

The secret to the Kirtland’s warbler’s success was tied to ongoing, long-term habitat management programs that worked to replicate the effects of large-scale fires on the landscape, while not risking lives or livelihoods the way that wildfires can.

While prescribed burns might have be used in some areas where wildfire risks are low, the need to mimic fire primarily meant large-scale timber harvest and replanting efforts to ensure an abundance of young, dense jack pine.

If the partners doing this work walked away, the warbler would soon find itself endangered once more.

“We knew this species would continue to need our help, even after its numbers rebounded,” said Dan Kennedy, the DNR Wildlife Division’s endangered species coordinator. “So, we worked with our partners to develop a conservation plan in 2015 that laid out a path forward where we continued to work together to ensure the warbler wouldn’t become endangered again.”

Today, the Kirtland’s warbler is off the endangered species list, and its population has grown to over 4,500 birds, situated across Michigan, Wisconsin and Ontario.

The Kirtland’s Warbler Conservation Team coordinates the conservation work of the various agencies and organizations that continue to perform this vital work. The newly formed Kirtland’s Warbler Alliance actively seeks funding and volunteers to ensure resources are available to keep the work going.

Bill Rapai, interim executive director of the Kirtland’s Warbler Alliance, has been a long- time advocate for this small bird.

“What we want to share with Michiganders is that continuing to work to protect Kirtland’s warbler habitat into the future does more than just protect the warblers. The forests this bird counts on provide great hunting and fishing, birdwatching, photography, kayaking, foraging, camping and hiking opportunities,” Rapai said. “The cycle of harvest and replanting of jack pine helps to provide a boost to local economies. It’s a win for the warblers, but it’s a win for so much else as well.”

Only time will tell what the future brings for the Kirtland’s warbler, but its prospects look a lot rosier today than they did a century ago.

[Find out more about Kirtland’s warblers](https://www.fws.gov/midwest/endangered/birds/Kirtland/index.html).

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