



Kirtland's warbler

Photos by Ron Austing and US Forest Service

Jack Pine Ecosystem

US Forest Service 2013



Male Kirtland's Warbler

- Note coloring
 - Bluish-gray above
 - Yellow below
 - Black streaks on the side
 - White "broken" eye ring below and above the eye
 - Male has black mask
- Males sing
 - Hit the song button to listen to the male's Kirtland warbler sing
 - Males sing to attract a mate and to defend their territory.





Female Kirtland's Warbler

Note coloring

- Female has similar colors
- Not as bright or dark as the male

Song

- Females do not sing, but will make little "chip" noises

Habitat Specialist of the Jack Pine Ecosystem



Jack Pine Forest

- These young jack pine forests provide **habitat**
 - Food – insects and some fruit
 - Water – dew, insects
 - Shelter – trees
 - Space – large areas

The Bird's Summer Home

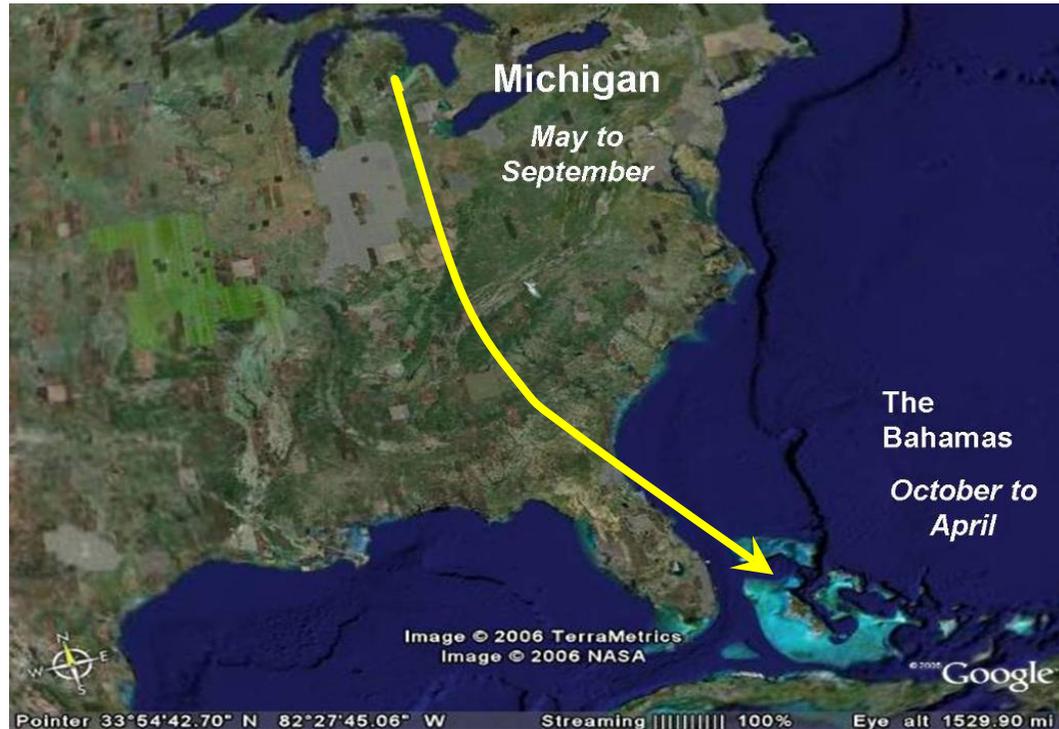


- Kirtland's warbler summer breeding habitat is mostly northern Michigan.
- Because the KW is so picky about where it lives, it is called a **habitat specialist**.

Ground Nesting of the Kirtland's Warbler in the Jack Pine Forest



- Nests are built on the ground, very well hidden by plants
- Females lay 4-5 eggs
- Young **fledge**, or leave the nest, 9 days after hatching.
- Male and female parents feed the young for a few weeks.
- Nests offer a temporary safe place to raise young.



All Kirtland's warblers migrate south to spend the winter months in the Bahamas. In the winter when Michigan's water is frozen and there are few insects, the warm habitat in the Bahamas has plenty of insects and fruit for Kirtland's warblers to eat.

Why are Kirtland's warblers endangered?

- In 1971, only 201 singing males were counted by biologists.
- Kirtland's warblers were one of the first species listed under the Endangered Species Act of 1973.
- The two biggest threats to Kirtland's warblers are **habitat loss** and brown-headed cowbird **nest parasitism**.

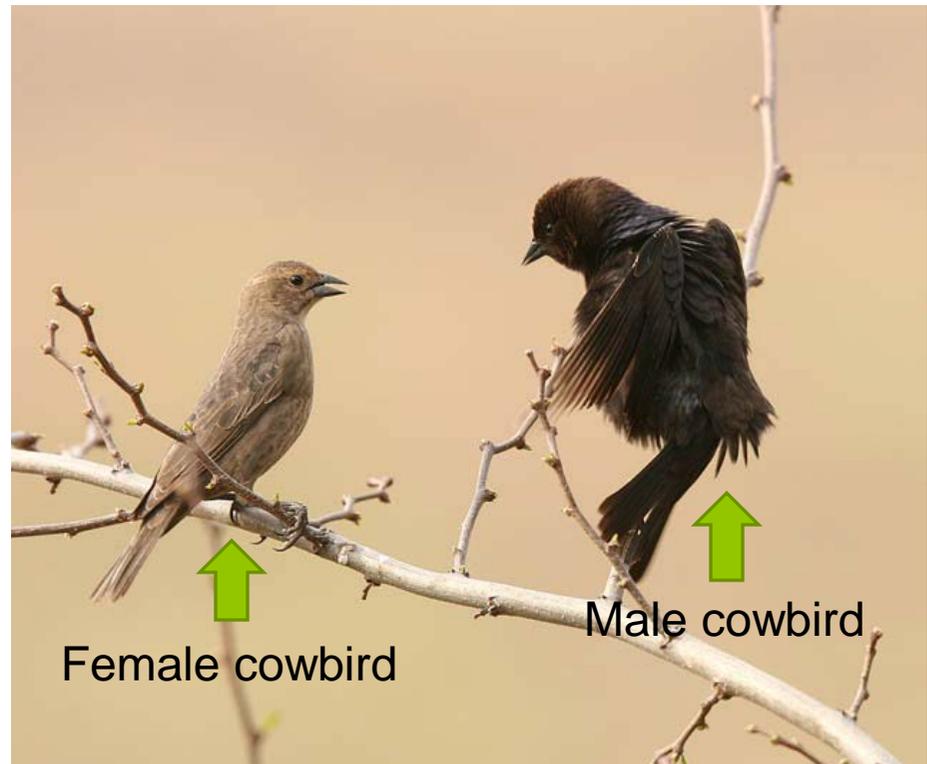
Habitat Loss in a Fire Dependent Ecosystem

- Before Europeans settled in Michigan, young jack pine habitat was created by wildfire.
- Forest fire suppression to protect homes results in less young jack pine habitat



Brown-headed cowbird

- Brown-headed cowbirds are a nest parasite, meaning they lay their eggs in other bird species' nests. The cowbird chick is bigger than the other nestlings, and competes better for food from the parents.
- The other nestlings, including Kirtland's warblers, often starve to death.



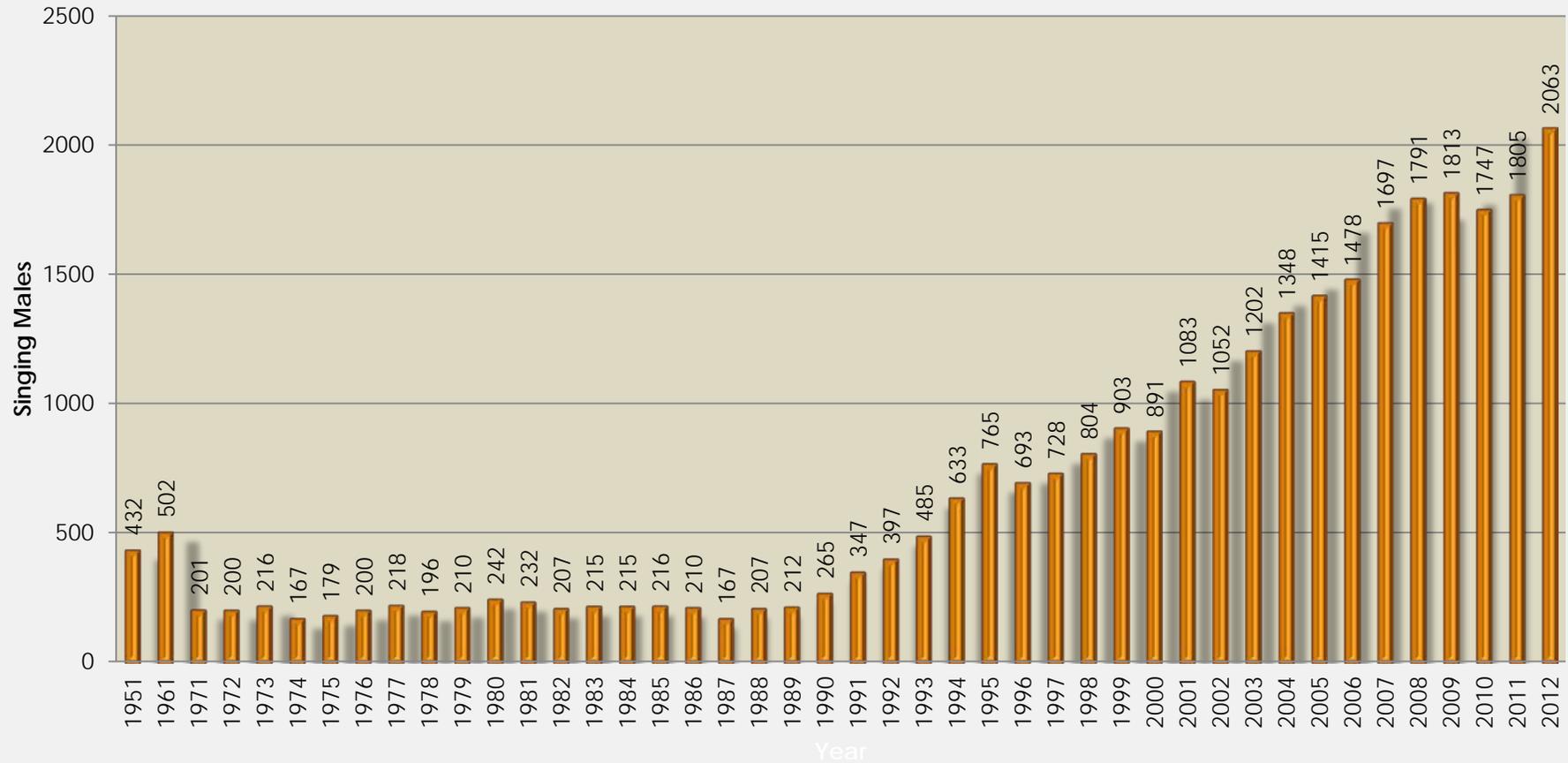
How have people made changes to help this species?

1. Management by clear-cutting and replanting large areas of jack pine has provided habitat for this species.
 2. Brown-headed cowbirds are trapped in Kirtland's warbler nesting areas.
- Biologists know these two changes have made a difference to Kirtland's warblers because they monitor the population through an annual census.

What is the census?

- The **census** is a **biological tool** used to get an annual population estimate.
- Biologists walk (carefully!) through each Kirtland's warbler area one time every year between June 6 and June 20.
- They count the number of Kirtland's warbler males that are singing.
- For every singing male, you can assume there is one female.
- Double the number of singing males to get the population estimate for each year.

Kirtland's Warbler Singing Males in Michigan



Will Kirtland's warblers always be endangered?

- Biologists set a **recovery goal** of having at least 1,000 pairs for at least 5 years in a row.
- More than 1,000 pairs have been counted for more than 10 years in a row!
- The US Fish and Wildlife Service may decide to **delist** Kirtland's warbler, or remove this species from the Endangered Species List.



Jack Pine Forests

Kirtland's warblers will always need young jack pine forests.

But young jack pine forests also provide habitat for many other wildlife species...

Wildlife of the Jack Pine Ecosystem

Nashville warbler



Wild turkey



Wildlife of the Jack Pine Ecosystem

Canada Tiger
Swallowtail



White-tailed deer



Wildlife of the Jack Pine Ecosystem

Red fox



Badger





Participate in the 2013 Kirtland's Warbler Young Artists Calendar Contest

Draw a picture of something you might find in northern Michigan's unique jack pine ecosystem.

Last year's winners:

- Got their artwork published!
- Won a free calendar!

Grade 5

T.R.U.T.H. Homeschool Group, West Branch, MI



Grade 7

St. Joseph School, West Branch, MI



Grade 4
City School, Grand Blanc, MI



Kirtland's Warbler Tours

- To see a Kirtland's warbler, take a tour!
- The US Forest Service and US Fish and Wildlife Service offer free tours to school groups (contact Kim Piccolo, 989-826-3252)

