Jack Pine Transcript
Shot 28-29 June 2018, Length 6:01

Theme: Jack pine trees and jack pine forest types are common on the poorer sandy soils of the Lake States. Few other trees and forests can successfully occupy these sites. Jack pine is especially known for serotinous cones, fire-adaptations, natural monocultural characteristics, and habitat for the Kirtland’s Warbler.

Major Points
- Jack pine is a common Michigan species, but is declining.
- Wildfire used to be the main regeneration force.
- Adaptations, serotinous cones.
- Clearcutting mimics wildfire.
- Kirtland’s warbler.
- Fire-dependent species idea (also RPIN, PBIR, et al.)

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<td>[TEASE]</td>
<td>B: Ah, here we are, up in the northwoods, in a jack pine stand. [whiff] Can you smell that? That’s wonderful. I love the northwoods. But, you know what? Take a look at these trees. They’re getting old. What do you think’s gonna happen in the next ten or twenty years to these jack pines? Well, jack pine is one of Michigan’s most fascinating forest types. It’s got a real good story to tell. So, stay tuned . . .</td>
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<td>OPEN (canned) BeLeaf It or Not! panel</td>
<td>G: Jack pine may not be the most common tree in Michigan, but in some sandy areas of northern Michigan, you’ll find it everywhere. B: Yeah, and it’s not exactly the most beautiful tree. In fact, it’s kinda the ugly cousin among conifers. G: It puts the “ugh” in ugly. B: Yeah, it kinda does, but you know on these sandy soils up north, it’s about the only tree that’s going to grow well. But even though it’s not very pretty, jack pine’s got some really cool ecology associated with it. One of the most fascinating forest trees and forest types in Michigan, having to with fire and strange cones and sandy soils and . . . we’ll talk all those. Whaddya say? G: OK. B: OK. Let’s do it.</td>
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<td>G: These are jack pine. And here we have jack pine cones. But this is where the story gets a little weird. B: Did you know that most jack pine cones are glued shut? G: Glued shut? B: Yeah, well let me show you.</td>
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B: Glued shut! Whaddya mean glued shut? How does that work? Well, jack pine cones keep their seeds protected, because they know they live in a place where there’s lots of fire. So, they glue these cones shut to keep the seeds safe, and scientists call that “serotiny”. And jack pine have serotinous cones. And, if we look at this jack pine, we’ve got last year’s cones, that’s glued shut. We have this year’s cones, it’s green, it’s glued shut. We also have a cone that’s open! Aha! They do both of these things. Glued shut and open up. And then, if you look at these little brown appendages, those are the male parts of the tree that produce the pollen, which we see in the spring all over cars and pond surfaces. And some sneeze and get runny nose. But, how do the seeds get out of these glued-shut cones?

G: The answer is “heat”. It takes about 120 degrees, for at least a few minutes, to melt the glue. Fire will do this. Within a few days after a fire, the cones will open up and seeds fall out.

B: Not only does that wildfire open-up the cones, but the seeds drop down onto the ground that has been prepared just for jack pine. The fire’s burnt away the competing vegetation, and all the pine needles and debris that might have been on the ground. The seeds germinate and that’s a perfect set of conditions for our baby jack pine trees.

G: And why to jack pines like it here? Because they can’t take the shade. If they have too much shade, they cannot survive. They cannot grow and become adult, grown-up trees. Keep ‘em open.

G: OK, but wait Bill. If these cones are glued shut, how do we get them open without wildfire?

B: Well, the answer to that still involves heat. Those kinds of temperatures can be found without a wildfire in clearcut areas, like this one here. On warm, sunny days, the just above these sandy soils can reach temperatures that actually exceed 120 degrees. Scientists called jack pine forests “fire dependent”. Actually, it’s more like heat, or high heat, dependent. But historically, this happens mostly in connection with wildfires.

G: In order for forest managers to mimic the outcome of a wildfire, they leave all those tops near or on the ground, with all of those cones, and so those serotinous cones, come unglued, with all of that heat, release their seeds, and grow like mad.

B: Jack pine forests are one of Michigan’s most fascinating forest types. Even though they’re not particularly attractive, they do have some interesting ecologies to them. And one of them is habitat for the rare Kirtland’s Warbler. Now, this small tweety-bird may have gone extinct were it not for the combined efforts of many forester managers and wildlife biologists.

G: Yeah, this is a real success story. Management has been so successful that the Kirtland’s Warbler is scheduled to be taken off the endangered species list.

B: And, that’s a great wildlife story.

G: You bet! These Kirtland’s Warblers need young jack pine stands, with particular spacing requirements, in order to successfully rear their young. Most of the world’s Kirtland’s Warbler breeding habitat is in Michigan’s northern Lower Peninsula. But the birds have come back and are doing so well, that they’ve even expanded their breeding to places in the Upper Peninsula and in Wisconsin.
We had talked about finding KW video footage. Also, a map graphic showing the flight from Michigan to the Bahamas?

| B: And, like a lot of Michiganders, the little Kirtland’s Warbler flies all the way to the Bahamas to spend its time in the winter. |
| G: Not a bad gig for such a little bird. |
| B: Not at all. Michigan forests are just filled with interesting and amazing stories. |

↩ Hannah’s red ants!

OUTRO

Special Thanks To . . .
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