

TYPICAL 1970 WCB SCRIPT

[At beginning: after chat with people, ask them where they're from, have they seen the warbler before, etc. Tell them what sort of luck we've been having.]

Good morning. My name is Charlie Wyman, and I'll be taking you out to the Kirtland's Warbler Management Area in a little while. Before we go, we have a slide program that I'd like to show you, and I thought you might also be interested in knowing a little of the historical background of the warbler.

If you've wondered why it's called the Kirtland's Warbler, it's named after Dr. Jared Kirtland, a physician who lived just west of Cleveland, Ohio, in the mid-1800's. One day in 1851 Kirtland's son-in-law heard a strange warbler that he didn't know, so he shot it and took it to his father-in-law. Kirtland was an expert birder of his day -- he had written the first list of the birds of Ohio just a few years before -- but he didn't know what the warbler was either. So he passed it on to a friend of his named Spencer Baird, who happened to be passing through town and who worked at the Smithsonian. Baird took it back to Washington, studied the bird and decided it was a new species, and then named it after his friend Kirtland.

Interestingly enough, the first specimen taken that we know of was taken some ten years before that, in 1841. A fellow named Cabot was travelling from Boston to Mexico to study the birds there, and near the Bahamas a strange warbler alighted on his ship. Not knowing what it was, he shot it and made a study skin of it and tucked it away in a drawer to study later. Apparently he was so overwhelmed with the birds of Mexico

and Central America that he completely forgot about the warbler skin, and didn't discover it again until 1865, some 24 years later and 14 years after it had been described as a new species. So we can wonder, if he had realized the significance of his find at the time, it might be Cabot's Warbler today instead of Hirland's.

It wasn't for another half century until the nesting grounds here in northern Michigan were discovered. In 1903 a couple of fellows from the University of Michigan in Ann Arbor were fishing on the Ausable not far west of here. They heard a strange warbler that they didn't know, shot it, and took it back with them to Ann Arbor. There they gave it to Norman Wood, the curator of birds at the Museum of Zoology. Wood realized the great significance of the find, knowing that the nesting grounds of the warbler weren't yet known, and he immediately set out to find them. He rented a rowboat in Roscommon and floated down river for a couple days until he got to a promising area. He then set off into the woods and, after some searching, eventually found the first nest.

There are some other people that have been closely associated with the warbler in this century, and I'll mention some of them when we're out in the field later today. Let me show you the slide program now.

[Slide program]

While I'm putting the slides back in order, let me play a tape of the warbler singing, and you can listen for a couple minutes longer to his song. [Several moments while song is playing:] 1) It's a very penetrating song, and under good conditions can often be heard over 1/2 mile, which helps tremendously in finding the bird, but can also make it very

deceiving -- you'll think the warbler is closer than it actually is.

2) People have tried to fit words to bird songs as a useful way to help remember them. For instance, a bird called a Rufous-sided Towhee that we may see out there seems to say "Drink your tea" when he sings. There have been several suggestions for the Kirtland's Warbler song. One person thought he says "Please let me be, let me be, will you please?" which sounds rather long to fit into that short song. Another suggestion was "Cheer, cheer, cheer, Charlie," while someone else seemed to think he sings, "Choo, choo, Chattanooga;" these seem closer, but there still seems to be a couple notes missing.

3) This is what you might call the typical song, but there are a number of common variations, and hopefully we'll hear several different ones while we're out there. In fact, each male has his own distinctive way of singing, and people who have worked in a certain area for a summer eventually can recognize each individual male by his own song.

Well, let's go on out to the Kirtland's Warbler area. It's about a 25 mile round trip, and if you'll drive your own vehicles, I'll drive a Forest Service truck and you can follow me on out. We'll make several stops -- a couple of times in good warbler habitat where we'll hopefully have luck seeing the bird, but we'll also stop at a cowbird trap and I can explain to you how that works, and we'll stop at an area where I can tell you more about the habitat management program.

Step 1.

[The discussion at this stop was commonly broken by bird sight and song identification.]

I'll guarantee that you won't see a warbler around here, and you can probably see why -- this is far from being good warbler habitat. To tell you more about what the Forest Service has tried to do here, though, let me back up and fill in, in a little more detail than the slide program gave, what we think are the habitat requirements of the warbler. What they seem to need are young stands of Jack Pine that are old enough so that the lower branches have grown out and interlaced together with the branches of neighboring pine trees, but trees that aren't so old that the lower branches have been shaded out and lost their needles. The birds nest on the ground, generally close to the base of the pine trees, and they seem to need an almost continuous cover of pine branches just a foot or two above their heads to protect and hide the nest. This happens with Jack Pine stands around here when they're between about 8 and 22 years old.

We also think that the warblers have particular requirements for the type of ground cover they rest in -- the shrubs and herbs that grow on the

ground beneath the pine trees. We think they prefer the general group of plants found associated with the very sandy soils found in these areas, but we just don't know very much. There are a couple studies going on right now that will hopefully tell us more.

Finally, we think that the warbler needs small grassy openings interspersed among the pine trees; they seem to prefer nest sites at the edge of these openings.

How to provide that sort of optimum habitat has been more or less a matter of trial and error for the Forest Service and the Michigan Department of Natural Resources, which are the two agencies primarily concerned with providing habitat for the warbler. In front of us is an area where the Forest Service tried a couple of things that didn't work. They have since decided that the best way to provide that habitat is to first cut over an area, then burn it, and then plant it with 2- and 3-year old Jack Pine seedlings. Here they did a couple of different things instead. Rather than burning, this area was roller-chopped. A roller-chopper is a large drum with paddles that stick out from it; it's filled with water to give it weight, and then it's dragged behind a tractor. What it does is break up the slash that's left after harvesting the trees, and it also exposes some of the mineral soil. That was done here in 1971, and in 1973 this area was seeded with Jack Pine seeds. As you can see, it's come back rather poorly; there's some good growth of young Jack Pine off in the center there, but by and large it's far from being good warbler habitat, and we have yet to see a warbler in here yet. The primary reason for the failure, we think, is the seeding. Generally we've found that about 3 years out of 4 around here are just too dry for good seedling establishment

from seed, and now almost all warbler areas are planted. While planting seedlings is more expensive than seedling or natural regeneration, it is also far more reliable, and especially now when the numbers of warblers are so low, we feel that it's worth the extra expense to know that we'll have good warbler habitat in 6 to 8 years, rather than leave it up to chance. Another point of interest about this area is that it hasn't been burned within recent memory. Warblers have almost always been found in areas that have been recently burned, and we really don't know whether suitable warbler habitat can be provided without fire. This area will help provide us with an answer. The Forest Service plans to do some supplemental planting in here next spring to fill out those areas that have come back poorly, and with luck, in another 5 to 8 years or so, we'll see warblers moving in to nest.

Just up ahead we'll be entering the original Kirtland's Warbler Management Area, a total of 6½ square miles the Forest Service set aside in 1963 to provide habitat for the warbler. The State had begun their habitat program six years before, in 1957, when they established 3 areas totalling 11 square miles. The Forest Service added this square mile section in 1971, but the program has only recently become much bigger and broader in scope, as a result of the 1973 Endangered Species Act. That act led to the establishment of Recovery Teams for many of the endangered species in the United States. It is the responsibility of these teams to propose programs for federal agencies and cooperating state agencies that would encourage the populations of these endangered species to recover and grow to the point where they might no longer be considered endangered. The recovery team for the Kirtland's Warbler has set a goal of 1000 nesting

pairs of warblers -- they feel that at that point the warbler will be out of immediate danger of extinction and could be taken off the endangered species list. The program they've proposed to achieve that goal calls for about 135,000 acres of land to be managed for the Kirtland's Warbler, of which about 55,000 would be on the Huron National Forest, and the remaining 80,000 acres on state lands, mostly to the south and west. That program is just now being implemented. Most of those 55,000 acres have been identified and set aside, and the Forest Wildlife Biologist is now in the process of dividing these areas up into managing units and cutting blocks, determining rotations and cuts, and so forth. About 1500 acres will be burned this year on the Forest, and another 1000 to 1500 on state lands, and between 2500 and 3000 acres will be burned and planted each year from here on in, so that there will always be new habitat coming in as old habitat is going out.

Well, let's go on another mile; that will be our first stop in good Kirtland's habitat, and perhaps we'll have luck there.

Stop 2.

[First I had them listen for a few minutes, and talked about what birds we were hearing; I would explain that there was a male Kirtland's that we occasionally heard and saw in the pines by the road, and that we ought to wait and listen a few minutes to see if he would show up. In fact, that male stopped appearing in mid-June, but I kept up the fiction because the stop offered a good opportunity to talk about the area and the management program, answer questions, hear and look at other birds, and it made seeing the warbler eventually a more exciting experience. While we

waited and listened, I would usually discuss two or three things:]

1) To tell you a little bit about this area: it was burned back in 1964 as the first area treated for warbler habitat under the original management program. A total of 580 acres were burned at once, and unlike many prescribed burns since, this one went perfectly. Even though we've been burning areas for the warbler for fourteen years now, the process of prescribed burning is still a very tricky and hazardous one, and it isn't unusual in a burn of 100-200 acres to lose an extra 5 or 10.

They tried to let this area regenerate naturally, but 1965 and '66 were very dry summers and hardly any growth came back at all, so in 1968 and '69 the entire area was planted with young Jack Pine seedlings. As you can see, it has come back very well since then, and is just now reaching prime nesting condition. The warblers first started nesting in here two years ago (1976), and their numbers have been steadily increasing; this year ten pairs nested here. That number will probably climb for another year or two, then level off for about ten years before beginning to decline as the trees get too tall.

2) You'll notice quite a few oaks here -- both large trees and many stump sprouts here in front. The oaks have been something of a problem in these areas -- we've found that the warblers are not as attracted to pine stands with a large oak component, and when they do nest in these areas, their nesting success isn't as high as in areas of pure pine. We really don't know why -- one theory is that the oaks provide perches for cowbirds and cover for other predators. It's been easy enough to remove many of the large oaks; they're simply sold during the off-season, and individuals come in and cut them up and take them out, to use mostly as firewood. But

the stump sprouts have proven to be a more persistent problem. At first, the Forest Service tried using an herbicide called Tordon which would be spread on the ground around the base of the stump. Supposedly it would be leached down in by the rains and absorbed by the oak roots, killing the oak. But oak roots are deep, while pine roots are shallow, and the Tordon wound up killing the pines long before it ever hurt the oaks. So now we've gone over to mostly cutting the stump sprouts by hand. If you cut the sprouts part way through and bend them over, the sprouts continue to grow along the ground, where they're relatively harmless, and the stumps don't produce more erect sprouts.

3) As we drive along ahead, there's one point of interest you might want to notice. After we leave this section and cross the next road, watch on your right hand side. For the first half mile after the intersection, you'll notice a lot of slash on the ground, quite a few oaks, and a relatively sparse growth of Jack Pine. In the half mile after that, just before we turn, you'll notice that the slash and oaks have disappeared, and the pines are far more abundant. What happened is that back in 1966 the Forest Service meant to burn the entire square mile section, but weather only permitted burning the eastern, or further, half, and the half closer to us never was burned. Both areas were allowed to regenerate naturally, and you can see a very distinct difference in the vegetation that came back in each area. Of all the warblers we've found nesting in that section in the last three years, all but one pair have been in the burned area, which obviously tells us something about warbler habitat preferences.

Stop 3.

[At this stop, which almost always entailed a hike in to look for the bird, the talk would be mostly question-and-answer conversation. On the occasions that we saw a bird at Stop 2, we would stop along the road between the middle and southern interior roads of section 2 to listen; it was a good spot to hear 2 or 3 different warbler songs, and people were often interested in hearing the variations among individuals. During May, June, and early July, when we didn't see a warbler at stop 2, we went in along the north interior road of section 2. There were several warblers with territories extending across the road, and we usually had a good look at one somewhere along it. After July 10, when the warblers along this road had disappeared, we started going off the roads into the Jack Pines, generally going to the area between the middle and southern interior roads, where the last singing males seemed to be. The last week, the males were singing only sporadically, and finding them became a matter of waiting for a song, walking towards it, waiting for another, etc.

At any rate, I usually stopped several times during the walk to point out somethings along the way and to break up the journey. Some of the things I would point out if questions had not already elicited them:

- several common ground cover plants. It helps if you can note one or two interesting facts about each. I usually pointed out:

Sand Cherry (Prunus pumila) - Common on sandy soils throughout the Great Lakes states, it's berries ripen in mid-July and make a good jam.

Blueberry (Vaccinium sp.) - While normally the warbler is an insect eater, when the blueberries come ripe in mid-July, they stuff

themselves on the berries, and will eat hardly anything else while the berries are ripe. They also stuff their young full of them as well.

Sweet Fern (Myrica asplenifolia) - a common shrub on sandy, waste soils throughout North America; not a true fern, but leaves resemble a fern; leaves, when crushed, have very distinctive, pleasant odor described by some as "the smell of the Northwoods." Also makes a tea (tastes yecch) that was a favorite of the pioneers (they must have had nothing else to compare it with).

Bearberry (Arctostaphylos uva-ursi) - of some medicinal value for kidney problems; like many medicines, poisonous in larger quantities.

- the orange and blue plastic ribbons on the trees. "We've found that in areas that appear to be perfectly suitable nesting habitat, the warblers only nest in some parts and not others. We wonder whether this might be due to subtle differences in the habitat, and particularly the ground cover vegetation, that are important to the warbler but that we haven't recognized yet. As I mentioned earlier, there are a couple of studies going on right now that will hopefully tell us more in this regard, and these plastic ribbons indicate the transect lines where one of these studies is being conducted." (see John Probst's summary of his research program)

- aspects of the nesting biology of the warbler. I often described a nesting chronology, mentioning who did what when.

- mention of how providing habitat for the KW also provides habitat for many other birds and animals. This usually came up after we had just seen some other birds, deer, rabbits, or evidence of them. Some species

are attracted to the low, shrubby growth, while cavity-nesters find good nesting sites in the many old snags.

Stop 4. Cowbird Trap.

[I usually went inside to better show the visitors how the trap worked and to be able to face them more easily while speaking.]

This is a cowbird trap, and these are cowbirds; the all-brown birds are the females, while the dark ones with brown heads are the males. If you look closely, you'll see that many of the cowbirds have blue bands on their legs; the bands indicate that those birds are kept here all the time as decoys. The way the trap works is that cowbirds outside are attracted by the decoys and also by the sunflower seed here on the ground. They come and land on the trap, eventually finding their way to this basket in the center. You'll notice that the mesh on the bottom of this basket is larger than the chickenwire -- it's about $1\frac{1}{2}$ x 2 inches. The cowbirds land on this, and to get to the sunflower seed beneath, they simply tuck their wings and drop through. When they try to get out, though, their wings are spread, and they can't fit back up through the mesh.

These traps have proven very effective in catching cowbirds and controlling cowbird parasitism of warbler nests. There are a total of 38 traps spread throughout the nesting range of the warbler (four in the area we've been driving through today), and we've been catching between 3000 and 4000 cowbirds a year. As a result, the rate of nest parasitism has dropped dramatically, from 60 - 70% of all Kirtland's Warbler nests in the late 1960's, to about 5% over the last six years. Nesting success has gone up accordingly. Before the trapping program, warbler pairs were averaging

less than one fledgling per nest; that figure is now close to 3.

At first the U.S. Fish and Wildlife Service, which runs the trapping program, tried taking the cowbirds 50 - 60 miles away and releasing them, but they'd be back in a day or two. So we've found that the only effective way to safeguard the warbler population is to destroy the cowbirds, and they're asphyxiated with carbon monoxide, which does it fairly quickly and quietly.

We catch other birds in these traps as well; almost anything attracted by sunflower seed finds its way in here eventually. Mostly we catch blue jays and red-winged blackbirds, but we've also caught a variety of sparrows, cardinals, grosbeaks and what-have-you. Even some insect-eaters, like bluebirds and flycatchers, are apparently attracted by the other birds in the trap and find their way in. Once even a sharp-shinned hawk somehow squeezed through the mesh, and had eaten a couple of the decoys by the time the trapper arrived.

The blue jays can also be a problem for the warbler, since they are nest robbers and will take eggs and young nestlings out of the warblers' nests. We've found, though, that most of the blue jays here during the summer tend to be late stragglers on migration, rather than summer residents. So by putting them in a holding cage and taking them a hundred miles north to Cheboygan and releasing them there, that seems to give them an extra push on their way in migration, and they don't come back. We don't advertise this around Cheboygan.

The other birds caught in here are simply banded and released immediately. Some of them become what we call "trap happy." They learn that there is sunflower seed in here all the time, a free meal just waiting for

them, and all that happens is that every day they get handled a bit and released. Several years ago, there was a red-winged blackbird that was caught 23 days in a row in one of these traps.

We don't think that the cowbird originally occurred here in northern Michigan; it was almost certainly a bird of the Great Plains to the south and west, and only extended it's range up here once the great forests east of the Mississippi were cut. We think the cowbird arrived in this region about a hundred years ago, shortly after the lumbermen went through.

Many of the other birds in the cowbird's original range have evolved various sorts of defenses to deal with the cowbird. Many of them are able to recognize cowbird eggs, and will either toss them out of their nest, or build a new nest on top, or abandon their nest completely and move to another part of their territory and nest again. However, we think that the Kirtland's originally nested only here in northern Michigan and perhaps neighboring parts of Wisconsin and Ontario, and so was never exposed to the cowbird until the last hundred years, and hasn't had a chance to evolve those sorts of defenses. So the Kirtland's is a particularly obliging host. They don't recognize cowbird eggs as being any different from their own, and go right ahead and incubate and raise the cowbird young, though it almost always results in a high mortality of their own young.

Other things to talk about:

- show how birds are removed from the trap;
- talk about the evolution of nest parasitism among cowbirds (see short summary elsewhere in this folder);
- talk about nest parasitism in other groups of birds, especially pointing out some of the fascinating adaptations to this mode of

reproduction (see excerpt from Welty's Life of Birds):

- talk about the history of attitudes of researchers to the cowbird-warbler relationship (Leopold's early warning; Van Tyne's and others' unwillingness to disturb the balance of nature; the slow realization of the danger the cowbird presented; Culbert's development of the trapping program.)

This is the last stop on the tour; thank you for coming. If you're following me back in to Mio, there are a couple points of interest you might notice on the way. Shortly after we turn right onto 33, on the left hand side of the road, you'll see a large clearcut that reaches to the road in several places. This is an area that will be managed for the warbler; it was cut just this spring, and will be burned either this fall or next spring and planted shortly after that. You'll see that it's rather hilly. We've almost always found warblers nesting on level ground, and we don't know how well they'll adapt to slopes -- it will be an interesting area to follow. Then as we drive into Mio, on the right in front of the courthouse in a stone and glass case, is Mio's monument to the Kirtland's -- a four foot high statue of the warbler, rather badly in need of a new coat of paint.