



**Common Name:** KIRTLAND'S WARBLER

**Scientific Name:** *Dendroica kirtlandii* Baird

**Other Commonly Used Names:** Jack Pine Warbler, jack pine bird

**Previously Used Names:** *Sylvicola kirtlandii*

**Family:** Parulidae

**Rarity Ranks:** G1/SNRN

**State Legal Status:** Endangered

**Federal Legal Status:** Endangered

**Federal Wetland Status:** N/A

**Description:** This small songbird is about 14.5-15.0 cm (5.75-6.00 in) in length. Males have dark bluish gray upperparts while females have somewhat lighter gray upperparts, both have dark streaking on their backs. The throat, chest, and abdomen of both sexes are yellow with dark streaking or spotting on the flanks and both have a white vent, white wingbars, and broken white eye-rings.

**Similar Species:** The Canada warbler (*Wilsonia canadensis*) resembles the Kirtland's warbler, but has yellow on the lores (area of face at base of upper bill), a complete eye-ring, no wingbars, and no streaking on its back. Additionally, the Canada warbler has a "necklace" of dark streaking across its upper chest. The streaking of the male's necklace is black while the female's is gray. There is no streaking along the flank of the lower chest and abdomen of the Canada warbler like there is on the Kirtland's warbler. Adult yellow-rumped warblers (*Dendroica coronata*) in breeding plumage differ from the Kirtland's in having white underparts with heavy dark streaking, a whitish throat, dark mask with white superciliary stripe, and yellow rump. The male yellow-rump also has a yellow crown in breeding plumage and both sexes have yellow patches on the flanks under the base of the wings. Another warbler similar in appearance is the magnolia warbler (*Dendroica magnolia*), which in breeding plumage has a yellow throat, breast, abdomen, vent, and rump with black streaking on the upper chest and along the flanks. It has white wing bars, a narrow white line over the eye, and a dark mask on the face. The male's mask is black while the female's is dark gray. There is also a wide white lateral band across the upper surface of the tail about midway between the base and the tip. One behavioral cue that sets the Kirtland's warbler apart from these other gray-backed warblers is a tendency to bob or wag its tail.

**Habitat:** The Kirtland's warbler nests in large stands (normally 500 acres or more) of young jack pine (6-15 years old; about 1.5-7 m; 5-20 ft. tall) that is surrounded by extensive areas of pine forest. In winter it uses dense (Caribbean) island scrub and the understory vegetation of pine forests.

**Diet:** Centipedes, caterpillars, sawfly adults and larvae, grasshopper nymphs, flying moths, deerflies, horseflies, crickets, blueberries, and pine sap in summer; berries and insects in winter.

**Life History:** The female constructs the nest on the ground from sedges, pine needles, and small twigs, and lines it with rootlets, deer hair, moss, and grassy fibers. Three to five eggs are laid within 5-6 days. Incubation takes 13-15 days and is done by the female, with the male carrying food to her on the nest. Fledging occurs about 9-10 days after hatching, and independence from the parents usually occurs in about a month. Foraging consists of gleaning insects and other invertebrates from pine needles, leaves of deciduous trees, and ground vegetation, and occasionally these birds will hover to catch flying insects or snatch insects from the ends of pine branches. Feeding is concentrated near the ground and midlevel of small pines. Migration occurs between late April and mid-May in spring, and during late August through early October in fall. Migration flights between breeding and wintering sites are probably done in a single hop and this coupled with this bird's rarity may explain why so few have been seen anywhere outside of the breeding and wintering grounds. Only 12 records of this bird exist for Georgia and only 6 of these records have been during the last 50 years. This species is almost always solitary on the wintering grounds.

**Survey Recommendations:** There appears to be no way to effectively survey this species in Georgia during migration with present technologies. Thoroughly documenting the locations, dates, and conditions of any new occurrences in the state would be useful.

**Range:** The breeding range of the Kirtland's warbler is restricted to the northern portion of Michigan's Lower Peninsula with a few peripheral nests located in central Wisconsin and in southern Ontario during the last few years. This species winters in the Bahamas, and to a lesser extent the Turks and Caicos islands, and may occasionally travel through northeast and coastal Georgia during migration.

**Threats:** Habitat loss on the breeding and wintering grounds and brown-headed cowbird (*Molothrus ater*) parasitism are the greatest threats to the Kirtland's warbler. Until very recently modern fire control had led to a reduction in the amount of forest burned each year, thereby reducing the amount of fire-dependent jack pine breeding habitat that regenerated. Currently the wintering habitat in the Bahamas seems to be secure, but future development could have a substantial negative impact on the scrub and pine forests used by this species. Natural disasters such as hurricanes or tropical storms could significantly reduce wintering habitat through direct destruction and through the impacts of saltwater intrusion. Brown-headed cowbirds are thought to have been a major factor in the decline of the Kirtland's warbler during the 20th century, particularly in the 1970s and 1980s. The cowbird, a brood parasite, lays one or more of its eggs in the warbler's nest, leaving the egg and offspring to be reared by the warbler. The warbler is incapable of distinguishing the cowbird eggs or chick(s) from its own young, and the young cowbirds are larger and able to out-compete the young warblers when they hatch. Young warblers often die of starvation or are forced out of the nest by the young cowbirds.

**Georgia Conservation Status:** There are no sites where this species has occurred regularly in recent decades. Most records are from the immediate coast including four sightings on Cumberland Island, and one sighting each at St. Simons Island, Jekyll Island, Savannah, and St. Marys.

**Conservation and Management Recommendations:** Surveys of singing males showed significant declines in numbers from 1961 when there were 502, to 1974 when only 167 were found. Yearly surveys throughout the 1970s and 1980s recorded from 167 to 232 singing males. By the early 1990s numbers abruptly increased, a trend that has continued to the present with the number of singing males exceeding 1,700-1,800 the last few years. Much of this increase can be attributed to increases in habitat management activities for this species such as planting of jack pine and prescribed burning, and continued trapping of brown-headed cowbirds at breeding sites. Better knowledge of the migratory pathway, critical stopover areas (if there are any), and winter habitats will help long-term conservation of this species.

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