



Common Name: CERULEAN WARBLER

Scientific Name: *Dendroica cerulea* Wilson

Other Commonly Used Names: Blue warbler, azure warbler

Previously Used Names: *Sylvia cerulea*

Family: Parulidae

Rarity Ranks: G4/S1

State Legal Status: Rare

Federal Legal Status: Not Listed

Federal Wetland Status: N/A

Description: A small songbird about 11.5-12.0 cm (4.5-4.75 in) long. Males have sky blue upperparts, white throat and underparts, white wingbars, and a dark bluish-gray breast band and streaking on the flanks. Females have bluish-green upperparts, light grayish-white throat and underparts, a whitish-gray eyebrow (superciliary) stripe above the eye, no neck band, and yellowish-gray flanks with faint grayish streaking. Immature females are similar in appearance to adult females, but have a more creamy-yellow hue to the throat and flanks, only very faint streaking on the flanks, and a creamy-yellow eyebrow stripe.

Similar Species: The male black-throated blue warbler (*Dendroica caerulescens*) is somewhat similar in appearance, but has deeper blue upperparts, a black face and upper throat, and black flanks. It has a white patch on its wing, but no wingbars. Adult male blackpoll warblers (*Dendroica striata*) that are migrating through the state in fall can look similar to female cerulean warblers, but have gray streaking on the back, darker gray and more olive green hues on the back, face, throat, and flanks, and a thin gray lateral throat stripe. First year female blackpolls can also look similar to female cerulean warblers, but tend to have olive green upperparts rather than the blue-green of the cerulean. The female blackpoll also has faint streaking on the shoulder and upper back, grayish color on the neck, and the superciliary is very thin. The first year female blackburnian warbler (*Dendroica fusca*) may also look similar to the female cerulean, but it has a gray tone to its upperparts, gray cheek and cap, and light colored streaking on its back.

Habitat: Typical breeding habitat across this bird's range includes mature broad-leaved forest, particularly old-growth bottomland forest; however, it will at times use second growth forest. It appears that this species prefers larger forest tracts with at least some very large trees and a canopy with horizontal heterogeneity. In Georgia the cerulean warbler typically inhabits rich oak-hickory or cove forests, often near a ridge top where storms have damaged the canopy. Storm damage at these sites often creates small canopy gaps 0.1-4.0 ha (0.25–10.0 acres) in size. Males usually focus their territories on these gaps, but each territory also includes adjacent areas of extensive forest with a complex, multilayered canopy. These sites generally have 0.4-1.6 large trees per hectare (1-4 trees per acre) and a dense understory of young trees.

Diet: Insects, particularly homopterans (e.g., cicadas, leafhoppers, aphids) and lepidopterans (e.g., butterflies and moths, especially larvae) during the breeding season. May take some plant material during migration or on wintering grounds.

Life History: The breeding season in Georgia begins in mid-April. Males arrive first at the breeding site with females arriving as much as a week or more later. Pair formation occurs soon after females arrive and nest building usually commences by late April or early May. The nest is constructed by the female and is normally placed in one of the largest trees in the territory. Construction takes about 3-8 days after which the female lays 3-4 eggs that she incubates for 11–12 days before they hatch; young fledge 10–11 days later. Usually only one brood is raised per year, although it is possible that two broods could be raised in the southern portion of its range, but this has not been observed. During spring and fall migration this nocturnal migrant traverses the Gulf of Mexico between southern Central America and the U. S. Gulf Coast. Spring migrants

arrive along the U. S. Gulf Coast from late March through mid-May. In fall they depart breeding sites as early as late July and most depart the U. S. Gulf Coast for Central America from late August through early October. Kennesaw Mountain just west of Atlanta has been recognized as a significant stopover site for this species in both spring and fall. Cerulean warblers winter in humid subtropical and montane forests of the northern Andes from October through March. Most sites are at elevations between 500-1800 m. Here they often associate with canopy flocks of tanagers and other insectivorous birds.

Survey Recommendations: Point counts along transects in late April and May in appropriate breeding habitats in the Blue Ridge Mountains. Since this species is notoriously difficult to detect sites should be revisited multiple times over several years. Call playbacks can be used to increase the likelihood of detection.

Range: In Georgia, the cerulean warbler is found only in the southern Appalachians during the breeding season. Breeding populations occur along Ivylog and Gumlog ridges in the Chattahoochee National Forest in Union County and at Woody Gap (Lumpkin County). A few individuals have also been seen in other areas in Fannin, Lumpkin, Murray, Towns, and Union counties in recent years. During the Breeding Bird Atlas project this species was found in the Jacks Gap, Neels Gap, Wilscot, and Blairsville 7.5 minute topographic quadrangles. In Georgia, this bird is an uncommon migrant in the western part of the state and a very rare migrant in the east. Sizable numbers occur at Kennesaw Mountain during both spring and fall migration. Winter range includes forest at elevations between 500-1800 m in the northern Andes Mountains of Venezuela, Colombia, Ecuador, Peru, and Bolivia.

Threats: Clearing of mature deciduous forest breeding habitats, particularly in bottomlands and along stream corridors. Habitat fragmentation and isolation of forest tracts, shorter harvest rotations, even-aged forestry practices, and loss of key tree species such as oaks and elms to pervasive exotic diseases also may impact breeding populations. Conversion of primary forest to farmland and pastures results in direct loss of wintering habitat and habitat fragmentation and isolation of remaining suitable tracts likely have negative impacts as well. The effects of collisions with communications towers and other structures are not fully known, but a significant numbers of cerulean warblers were killed at a northwest Florida communications tower during a long-term study.

Georgia Conservation Status: Chattahoochee National Forest, particularly Ivylog and Gumlog ridges and also Woody Gap (breeding). Kennesaw Mountain National Battlefield Park (migration).

Conservation and Management Recommendations: Breeding Bird Survey data indicate that cerulean warbler populations experienced annual declines of 5.0 percent in the Southeast and 4.1 percent surveywide from 1966 to 2007. Population declines were particularly sharp from 1966-1979 when numbers decreased by 7.6 percent per year in the Southeast and by 5.2 percent per year surveywide. While declining trends were not as strong from 1980-2007, they were still very significant. The Southeast saw a 2.0 percent annual decline while surveywide populations declined annually by 2.9 percent. Vast areas of what appears to be suitable habitat occur throughout the southern Appalachians in Georgia, Tennessee, and North Carolina, yet little of

this habitat is occupied. Loss of breeding habitat, forest fragmentation, depressed rates of natural canopy disturbance resulting from historic logging, and habitat loss at stopover sites and on the wintering grounds may all be factors limiting populations in the Southeast. Management for this species in the southern Appalachians will need to focus on improving habitat, possibly by creating suitable canopy structure—including canopy gaps and well-developed mid and understory layers—in areas where regional forest cover will remain high, such as large blocks of national forest. This warbler is also very susceptible to habitat loss and fragmentation on its wintering grounds in the mature, humid evergreen forests of the Andean foothills. Logging and agriculture have had severe impacts on its wintering habitat during the past few decades, and most of the suitable habitat that remains is restricted to a few parks.

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N. Klaus, 2010: Breeding Bird Atlas species account

T. Schneider, July 2010: modified and edited text

K. Owers, July 2010: updated status and ranks, added picture

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