

**PROBABLE BREEDING OF CERULEAN WARBLER
(*DENDROICA CERULEA*) IN MONTE SANO STATE PARK,
HUNTSVILLE, ALABAMA**

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INTRODUCTION

The Cerulean Warbler (*Dendroica cerulea*) is a canopy-dwelling wood warbler that breeds in mature hardwood forests in the eastern United States and Canada and winters along the eastern base of the Andes from Venezuela to Bolivia (Hamel 2000). Cerulean Warbler is capable of colonizing second growth, and is expanding its range in parts of the northeastern United States (Hamel 2000), yet the species is sharply declining overall (Sauer et al. 2008). Cerulean Warbler is the fastest declining of the North American warblers and is currently listed as globally Vulnerable (Carpenter 2007; BirdLife International 2006, 2009), meaning it is facing a high risk of extinction in the wild, although it is still glaringly absent from the US endangered species list (USFWS 2007, 2009).

Cerulean Warbler was formerly a locally common breeder across northern Alabama, north of the Fall Line (Howell 1928, Imhof 1976), but the species has declined dramatically in Alabama over the last few decades. Currently there are only a handful of confirmed Alabama breeding localities near the Walls of Jericho and Larkin Fork in Jackson County and in Bankhead National Forest in Lawrence County (Carpenter et al. 2005, Carpenter 2007, Haggerty 2009). Monte Sano mountain is an eroded remnant of the Cumberland Plateau that was extensively logged in the 1920s.

Monte Sano State Park was established in 1938, and mature oak-hickory (*Quercus* spp., *Carya* spp.) plateau and cove forest now covers the majority of the park. Howell (1928) found Cerulean Warblers on Monte Sano during “the breeding season” but he did not find evidence of breeding. The first confirmed breeding record for Monte Sano was of a pair with young in the nest, found by James C. Robinson on 18 Jun 1960 (G. D. Jackson, pers. comm.). Incidentally this record was the first Cerulean Warbler nest for Alabama (G. D. Jackson, pers. comm.). The species has not been recorded as a breeder on the mountain with certainty since 1960.

FIELD OBSERVATIONS

At 0700 hours on 26 June 2009 we, along with John Ehinger and Bill McAlister,

heard a singing Cerulean Warbler on the edge of the plateau near the state park tourist cabins (34° 44' 45''N, 86° 30' 33''W). The cabins are located along the plateau rim, and the surrounding forest has an open understory with several large remnant canopy trees. The slope immediately below the cabins was cleared about five years ago to maintain an open view of the valley below. The cleared area is rapidly undergoing succession and is now a thicket of black locust (*Robinia pseudoacacia*) and blackberry (*Rubus* sp.), among others. The clearing extends approximately 300 feet (90 m) below the cabins and is bordered by mature cove forest. We played a short bout of recorded song to attract the singing bird. The bird approached the speaker and flew into a tall (c. 60 ft, 18 m) chestnut oak (*Q. prinus*) on the plateau rim. We could not get a binocular view of the bird before it flew into the cleared area on the slope below. About 30 min later we heard two singing Cerulean Warblers and got close views of an adult male with a complete breast band. The birds were singing from a shrubby forest patch on the plateau rim in between two of the cabins.

We returned to the site at 0700 hours on 2 July to search for any evidence of breeding. We heard two males singing and focused on the male near where we made our observations on 26 June. It appeared to be the same bird, an adult male in breeding plumage with a complete breast band. JBCH walked down into the middle of the cleared area on the slope below the cabins, where it was possible to view the tall trees on the plateau rim as well as trees below and in the clearing. JBCH watched the male forage, preen, and sing frequently in the tall hickory (from 26 June) for approximately 45 minutes. Then the male flew into a 6 m (20 ft) tall black locust in the clearing and sang quietly. A female was noticed in the tree shortly after the male began to sing, and the two birds foraged in close proximity to one another. The locust was approximately five meters away from the observer and allowed very clear views, although the tree was moderately backlit. The female showed the following field marks: prominent pale wing bars, blurry streaks on side of breast, pale supercilium, gray-green upperparts, off-white underparts, and an undertail pattern similar to the male. The female foraged for approximately 15 minutes in the locust, left for five minutes, and then returned with another individual that may have been a juvenile. The male frequently sang from the area of the same hidden tree in the clearing while the other two individuals were observed. The second individual showed the following field marks: off-white underparts (obviously duller than the shining white of adult male), prominent pale superciliary and white wing bars, and no breast streaks. The possible juvenile was very dull overall and plainer than the adult female. The adult female and the possible juvenile foraged closely together, and the second bird once approached

the female and bobbed its tail several times, but did not do any obvious begging. They foraged together for approximately 10 minutes and flew off. When we left at 0900 hours the singing had decreased substantially but the male still occasionally sang from the clearing.

At 0700 hours on 10 July, JMH returned to the area and heard occasional singing from the same trees. It is likely that the song came from the same male.

DISCUSSION

Our observations suggest that breeding Cerulean Warblers have returned to Monte Sano State Park. It is unlikely that migrating birds would display the behavior we observed. We heard what was likely to be the same male singing from the same few trees over a span of 15 days in late June and early July. Imhof et al. (1976) gave the following reference dates for Cerulean Warblers in Alabama based on five reproductive events: nest building, April 28 to May 6; eggs, May 6; young in nest, May 27 to June 24; dependent young out of nest, July 9. Accordingly, the Alabama Breeding Bird Atlas “safe dates” (the dates between which the last migrants of a species have passed through Alabama and the first fall migrants are yet to arrive) are 15 May to 10 July (Haggerty 2009). Lastly, at their study site in Jackson County, Yong Wang and colleagues (pers. comm.) observed a radio-tagged breeding male that remained in its territory until at least 2 July. Our observations fit within these bounds of the Alabama breeding season. Furthermore, our observations of a probable pair and perhaps a fledged juvenile provide more evidence of probable breeding.

It is encouraging that Cerulean Warblers appear to be re-colonizing former breeding sites in Alabama. The forests of Monte Sano State Park have re-grown to considerable stature since the clear-cuts of the 1920s and now may provide favorable habitat for the warblers. Similar colonization of second growth has been noted for the species in the northeastern U.S. (Oliarnyk 1996 in Hamel 2000), and the species’ ability to colonize regrowth may provide some mitigation to its steep decline. Little is known of the dynamics of second growth re-colonization by Cerulean Warblers and this question warrants further investigation.

Carpenter et al. (2005) and Carpenter (2007) found breeding Cerulean Warblers to be strongly associated with bottomland habitats near streams. In contrast, our observations come from the Cumberland Plateau rim. If breeding is confirmed from the area, it will be the only present day site from upland forest in Alabama, while the species is known to breed in upland habitats in Tennessee (Yong Wang, pers. comm.).

We found probable breeding Cerulean Warblers in a state park that is regularly visited by bird watchers near one of the Alabama's largest population centers. We speculate that there are probably other unknown breeding populations of the species in Alabama. The Breeding Bird Survey does a poor job of sampling Cerulean Warblers in Alabama (Carpenter et al. 2005; Carpenter 2007) because the survey's roadside survey methods incompletely sample habitats such as mature hardwood forests that tend to occur away from roads (Harris and Haskell 2007). We encourage Alabama bird watchers to get out and look for Cerulean Warblers, especially in areas away from roads. This species is one of our most spectacular and threatened breeders.

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