



National Park Service
U.S. Department of the Interior

Old-Growth Bottomland Forest Research and Education Center
Congaree National Park

Hopkins, SC

Bachman's Warbler Searches at Congaree National Park

Research Summary

An Elusive Songbird

The Bachman's ("back-mans") warbler (*Vermivora bachmani*) is a very rare summer resident of southeastern floodplain forests. These neotropical migratory birds are approximately 4.0-4.5 inches (10-11 cm) long with a yellow to drab-olive breast and face; an ashy, olive-colored back; and a short, curved black beak. Males also have a black throat patch and olive crown. Their call is described as a distinctive buzzy "zeep." These warblers nest in thicketed canopy openings dominated by river cane (*Arundinaria spp.*), dwarf palmetto (*Sabal minor*), blackberry (*Rubus cuneifolius*) and similar species. Bachman's warblers migrate in late summer to wintering grounds in Cuba and return early in the spring.

Bachman's warbler has long been considered one of North America's rarest songbirds. The bird was listed as critically endangered in 1967, and no official sightings have been reported in several decades. In 2001, however, reliable sightings were reported at Congaree National Park. Subsequent searches failed to document any Bachman's warblers, but the study provided important insights into long-term ecological trends and calls for hope in conserving other species currently in decline.

History of Bachman's warbler (BAWA)

Bachman's warbler (BAWA) was named for the Reverend John Bachman, a minister and naturalist who first described the bird in I'On Swamp near Charleston, SC in 1832. BAWA were later documented throughout swamps and floodplains as far northwest as Arkansas.

The overall BAWA population seems to have always been rather small and prone to fluctuations. Historical data suggested that BAWA populations fluctuated with the availability of thicket habitats recovering from disturbance. Mid-19th century populations likely increased in response to logging in the Mississippi River valley and other coastal plain river valleys. Between 1900

and 1940, however, the population began a precipitous and unsustainable decline.

Understanding this decline is confounded by sparse data and BAWA reliance on a widely-dispersed range of summer, winter, and migratory habitats. Several studies, however, have suggested that the decline resulted from a combination of factors including 20th century conversion of nesting habitat to agricultural use, loss of wintering habitat in Cuba, collection for public and private museum specimens, and migration mortality from hurricanes and human development.

At least a few BAWA were sighted near Charleston, SC as late as the early 1960s. After a lack of sightings through

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Above: Thicketed forest canopy openings at Congaree National Park provide ideal Bachman's warbler (*Vermivora bachmani*) habitat. Although no official sightings have been recorded in decades, reliable sightings at the park in 2001 lead to systematic searches.

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CongaReeSearch: Science to inspire and inform stewardship of floodplain forest ecosystems

Old-Growth Bottomland Forest Research and Education Center, Congaree National Park, 100 National Park Road, Hopkins, SC, 29061, (phone) 803.776.4396, www.nps.gov/cong

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the 1970s, however, researchers conducted systematic surveys for the bird in Francis Marion National Forest (FMNF). The researchers failed to document any BAWA, but noted that playbacks of BAWA calls provoked “electrifying” and “scolding” responses from nearby Swainson’s warblers (*Limnothlypis swainsonii*). This suggested that other birds recognized the aggressive, territorial nature of BAWA. Researchers also noted that many promising BAWA encounters were confused with sightings of hooded warblers (*Wilsonia citrina*) and calls of northern parulas (*Parula americana*).

BAWA at Congaree National Park?

An experienced birder reported multiple, reliable BAWA encounters at Congaree National Park in 2000 and 2001. These included hearing a male and seeing a female. In 2002, the National Park Service partnered with the U.S. Fish and Wildlife Service and the Atlantic Coast Joint Venture (a non-profit) to investigate these reports.

Researchers obtained an NPS research permit and conducted searches using protocols adapted from the earlier FMNF searches. Professional scientists and trained volunteers made morning observations on park trails during March and April. While hiking in suitable habitat they stopped every 400 feet for a five-minute observation period. During this period they played recordings of BAWA calls at 30 second intervals. They made observations of the forest, including the species, abundance, and behavior of all birds encountered.

Researchers searched over 3,900 acres of forest during 166 hours of observation. No BAWA sightings or vocalizations were confirmed. Several promising calls were heard, but on every occasion these were traced to a northern parula. Other birds did not significantly respond to the BAWA playbacks, suggesting that they did not recognize the call. The researcher’s final report flatly stated “we feel confident that Bachman’s warbler would have been detected in the areas surveyed [at Congaree National Park] if it were present.” Subsequent acoustic monitoring and bird research across the park has also failed to incidentally detect any BAWA.

Despite the apparent absence of BAWA, collateral data collected on other bird species during the 2002 study provided valuable insights into long-term bird ecology. Some of the most abundant birds included the northern parula, yellow-rumped warbler (*Dendroica coronata*), red-bellied woodpecker (*Melanerpes carolinus*), blue-gray gnatcatcher (*Poliophtila caerulea*), ruby-crowned kinglet (*Regulus calendula*), and white-eyed vireo (*Vireo griseus*). This bird community, which was characteristic

of old-growth habitats with mature, closed canopies, compared well with park data from 1978-1980. This community was markedly different, however, from the community documented after Hurricane Hugo caused significant (albeit natural) disturbance to the forest in 1989. After Hugo was there was a relative increase in bird species that favor second-growth, thicket-type habitats. Examples of these birds included the hooded warbler, Swainson’s warbler, indigo bunting (*Passerina cyanea*), Kentucky warbler (*Oporonis formosus*), and yellow-breasted chat (*Icteria virens*). While some of these latter species certainly were (and still are) present, results from the 2002 study suggested that the overall bird community had started to shift back toward species favoring more mature forests.

Perspectives on Conservation Biology

BAWA are not the first species to possibly vanish from the floodplain landscape at Congaree National Park. The Carolina parakeet (*Conuropsis carolinensis*), ivory-billed woodpecker (*Campephilus principalis*), red wolf (*Canis rufus*), and eastern cougar (*Felis concolor*) have also disappeared. While these losses are disheartening, they might also call for hope that other species shouldn’t have to suffer the same fate.

Places like Congaree National Park are much more than habitat “islands” that are indefinitely self-sufficient in isolation. As critical migratory stops, movement corridors, and components of broader genetic diversity, they must instead be viewed as part of a global ecosystem interconnected species over thousands of miles. The Swainson’s warbler and rusty blackbird (*Euphagus carolinus*), for example, are two migratory birds that are still seasonally present in the park but declining rapidly across the hemisphere. A few flowers and salamanders that are locally abundant are across the rest of the region. In each of these cases the National Park Service is partnering with conservation biologists to study these species both here and across their range to understand the reasons for decline. The goal of these scientific studies is to inform management decisions, improve conservation, and enhance recovery efforts.

For Additional Information

1. *See the full report from the Congaree BAWA searches:* http://www.acjv.org/pdf_files/Bachmans%20Survey.pdf
2. *See the BAWA appendix in the U.S. FWS Multi-Species Recovery Plan for South Florida:* www.fws.gov/verobeach/msrppdfs/bachmanswarbler.pdf
3. *See the FWS species profile at:* www.ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=B03G

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