

Bachman's Warbler
(*Vermivora bachmanii*)

5-Year Review:
Summary and Evaluation

U.S. Fish and Wildlife Service
Southeast Region
Ecological Services
Charleston, SC

5-YEAR REVIEW
Bachman's warbler (*Vermivora bachmanii*)

I. GENERAL INFORMATION

A. Methodology used to complete the review: In conducting this 5-year review, we relied on available information pertaining to historic and current distributions, life histories, and habitats of this species. Our sources include the final rule listing this species under the Act; peer reviewed scientific publications; unpublished field observations by Service, State and other experienced biologists; unpublished survey reports; and notes and communications from other qualified biologists or experts. A Federal register notice announcing the review and requesting information was published on July 26, 2005. In addition, we contacted a number of prominent ornithologists, including those who have conducted Bachman's warbler surveys in the past, and requested relevant information. No new information was received subsequent to these requests.

B. Reviewers

Lead Region - Southeast Region: Kelly Bibb, 404-679-7132.

Lead Field Office - Charleston, SC, Ecological Services, Edwin EuDaly, 843-727-4707 extension 227.

Cooperating Office(s) - None

C. Background

1. FR Notice citation announcing initiation of this review: July 26, 2005, 70 FR 43171.

2. Species status: Presumed extinct (Recovery Data Call 2002 - 2006)

3. Recovery achieved: 1 (Recovery Data Call 1999 - 2006)

4. Listing history

Original Listing

Federal Register Notice: 32 FR 4001

Date listed: March 11, 1967

Entity listed: Species

Classification (*threatened or endangered*): Endangered

5. Associated actions: There have been no associated actions since listing in 1967.

6. Review History: Recovery Data Call 1999 - 2006

7. **Species' Recovery Priority Number at start of review (48 FR 43098):**
Recovery Priority Number - 5
8. **Recovery Plan or Outline:** No recovery plan has been prepared.

II. REVIEW ANALYSIS

A. Application of the 1996 Distinct Population Segment (DPS) policy

1. **Is the species under review listed as a DPS?** No
2. **Is there relevant new information that would lead you to re-consider the classification of this species with regard to designation of DPSs?** No

B. Recovery Criteria

1. **Does the species have a final, approved recovery plan?** No

C. Updated Information and Current Species Status

1. **Biology and Habitat** – The Bachman's warbler (*Vermivora bachmanii*) was first discovered in 1832 in South Carolina, and much of the census work and research since then has been concentrated in South Carolina (Hamel and Hooper 1979). This warbler inhabited the southeastern United States in the breeding season and wintered in Cuba and the Isle of Youth (formerly Isle of Pines). The bird was one of the earliest migrants to leave its breeding grounds and one of the earliest to return to the breeding grounds (Hamel 1986).

The Bachman's warbler has been reported as one of the rarest songbirds in North America (Hamel 1986, Hooper and Hamel 1977) and has not been documented in the United States since 1962 (Hamel and Hooper 1979). After 1962, there have been several reports of the Bachman's warbler in the United States but they have not been officially accepted, documented observations (Chamberlain 2003). The Bachman's warbler was last observed in Cuba in 1981 (Ripley and Moreno 1981) and 1984 (Hamel 1988). Hamel (1986) published a comprehensive review of information available on the species.

Breeding habitat is described as palustrine forested wetlands (bottomland hardwoods) with a dense understory of palmetto (*Sabal minor*) or cane (*Arundanaria gigantea*). However, one of the most photographed and filmed Bachman's warbler was on territory in a predominantly longleaf pine (*Pinus palustris*) forest near brackish marsh just outside of Charleston, South Carolina (Chamberlain 1958). Nests were typically found low to the ground from late March through June, and average known clutch size is three to four eggs. Loss of breeding and wintering habitat is thought to be a major factor in the presumed extinction of the Bachman's warbler (Hamel 1986).

Breeding season searches were conducted during 1975-1979 in Francis Marion National Forest, South Carolina, southeastern Missouri and northeastern Arkansas and no Bachman's warblers were found (Hamel 1986). In 1989, two to three observers conducted a breeding season search for 38 field days on about 1,800 acres of Tensas National Wildlife Refuge in Louisiana. Six possible Bachman's warbler observations were made, but could not be documented sufficiently to meet acceptability criteria established for the study (Hamilton 1989). Because of a 2001 report of the warbler in Congaree National Park in South Carolina, a search of the park was conducted in March-April 2002. Approximately 166 person hours were expended in an unsuccessful search for the Bachman's warbler on an area covering approximately 3,900 acres of the park (Watson and Koches 2003).

2. Five Factor Analysis (threats, conservation measures and regulatory mechanisms)

a. Present or threatened destruction, modification or curtailment of its habitat or range: On breeding grounds, the loss of habitat from clearing of large tracts of palustrine forested wetland beginning in the 1800's was a major factor in the decline of the Bachman's warbler. From the 1780's to the 1980's, during the period of drastic Bachman's warbler population declines, wetland losses ranged from 23% in Georgia to 87% in Missouri (Dahl 1990). The predominant wetland type in the southeastern U.S., including the Mississippi Valley, is palustrine forested wetland (Fretwell et al 1996).

Most of the palustrine forested habitat in the Mississippi Valley was converted to agriculture. Often the higher, drier portions of land that the Bachman's Warbler required for breeding were the first to be cleared because they were more accessible and least prone to flooding (Hamel 1995). An increase in logging of remaining southeastern old-growth forests occurred during the period 1880-1910 when the Federal government sold large tracts of land confiscated after the Civil War. During World Wars I and II, many of the remaining large tracts of old-growth bottomland forest were cut and the timber was used to support the war effort (Jackson 2002).

In many areas of the southeast, palustrine forested wetlands that were logged have become reestablished and matured. As these forests mature, many of them on private land are again being logged, often by clear cutting. Fortunately some representative bottomland forests are protected and managed on National Wildlife Refuges, National Parks and National Forests as well as on lands owned by states and non-governmental conservation organizations.

On the wintering grounds of Cuba, there was extensive loss of primary forest wintering habitat due to the clearing of large areas of the lowlands for sugarcane production (Hamel 1986).

- b. **Overutilization for commercial, recreational, scientific, or educational purposes:** Collection of adults and eggs for museum specimens occurred in the late 19th and early 20th century (Hamel 1986). These collections reduced the population of the bird that was already rare even at that time. There is not enough historical information to determine the significance of this factor.
- c. **Disease or predation:** There is no information on these factors.
- d. **Inadequacy of existing regulatory mechanisms:** Bachman's warbler has been protected under the Endangered Species Act of 1973 since passage of the Act. Additional legal protection was provided under international migratory bird treaties and state laws. None of these laws were particularly effective in protecting Bachman's warbler because most of the habitat loss that impacted the species occurred long before these protections were in place.
- e. **Other natural or manmade factors affecting its continued existence:** Frequent hurricanes on the Cuban wintering grounds, particularly during the 1930's, have been suggested as a factor in the decline of the species. However, the amount of mortality caused by these storms is unknown (Hamel 1986). Any mortality on the wintering grounds would have exacerbated the impacts of loss of breeding and wintering habitat.

D. Synthesis - Since it was listed in 1973, the most formal extensive and intensive searches for Bachman's warbler were conducted in 1975 to 1979. Other searches have focused on narrow geographic areas, such as parts of Tensas National Wildlife Refuge and Congaree National Park. However, this species is of high interest to birders and there is little doubt that substantial informal effort has been expended searching for the bird. In spite of these efforts, Bachman's warbler has not been confirmed in the United States since 1962 and was last observed in Cuba in 1984. The gap of 22 years between documented reports in the U.S. breeding grounds and the Cuban wintering grounds indicates that small numbers of Bachman's warbler may have been present in the U.S. but went undetected during this period.

Since 1984 there have been occasional reports of possible Bachman's warblers from breeding and wintering grounds but none have been authenticated. We considered recommending delisting Bachman's warbler; however, because Bachman's warbler is difficult to detect and identify (Chamberlain 2003) and the lack of formal extensive search efforts over the last 27 years, considerable uncertainty remains as to its status.

The rediscovery of the ivory-billed woodpecker generated a renewed interest in rare bird documentation in the professional and amateur ornithological community (Rosenburg 2003, BirdForum 2005, eBlogger 2006) and stimulated

increased search effort by qualified ornithologists for ivory-billed woodpecker (Cornell Lab of Ornithology 2006). Although much of the search period for ivory-billed woodpecker is during the winter, the searches usually continue until the end of April when Bachman's warbler would be expected in the breeding range. Therefore, because Bachman's warbler habitat overlaps ivory-billed woodpecker habitat, the probability that Bachman's warbler will be detected, if present, has been recently increased.

III. RESULTS

A. Recommended Classification:

X **No, no change is needed**

IV. RECOMMENDATIONS FOR FUTURE ACTIONS – Funding should be appropriate for surveys for the Bachman's warbler throughout its range. Areas once closed to researchers are no available for surveys. Developing partnerships with ornithologists from Cuba should be a priority. All reports of Bachman's warbler should continue to be thoroughly investigation and recording in the species' file.

V. REFERENCES

- Birdforum. 2005. <http://www.birdforum.net/showthread.php?t=33826>, and <http://www.birdforum.net/showthread.php?t=43401>.
- Chamberlain, D. 2003. Additional notes on Bachman's warbler. *Chat* 67: 5-10.
- Chamberlain, E.B. 1958. Bachman's warbler in South Carolina. *Chat* 22: 73-77.
- Cornell Lab of Ornithology. 2006. <http://www.birds.cornell.edu/ivory/>
- Dahl, T.E. 1990. Wetlands losses in the United States 1780's to 1980's. U.S. Department of the Interior, Fish and Wildlife Service, Washington, D.C. 21 pp.
- eBlogger. 2006. <http://dendroica.blogspot.com/2006/08/bachmans-warbler-in-cuba.html>
- Fretwell, J.D., J.S. Williams and P.J. Redman. 1996. National water summary on wetland resources. U.S. Geological Survey, Water-Supply Paper 2425, Washington, D.C. 431 pp.
- Hamel, P.B. 1977. Status of Bachman's Warbler, and the Ecological, Evolutionary, and Historical Factors Responsible for its Decline. Progress Report. Clemson University, Clemson, South Carolina. 24pp.

- Hamel, P. B. 1986. Bachman's Warbler: A Species in Peril. Smithsonian Institute Press, Washington, D.C. 109 pp.
- Hamel, P.B. 1988. Bachman's Warbler. In W.J. Cadler, ed., Audubon Wildlife Report 1988/1999. National Audubon Society and Academic Press. pp. 624-635.
- Hamel, P. B. 1995. Bachman's Warbler (*Vermivora bachmanii*). In The Birds of North America, No. 150 (A. Poole and F. Gill, eds.). The Academy of Natural Sciences, Philadelphia, PA, and The American Ornithologists' Union, Washington, D.C.
- Hamel, P. B. and R. G. Hooper. 1979. Bachman's Warbler-The Most Critically Endangered. Proc. S. C. Endangered Species Symp. 1976: 164-168.
- Hamel, P.B., R.G. Hooper, D.F. Urbston, and A. McDonald. 1977. Bachman's warbler Breeding Habitat – A Hypothesis. 95th Meeting of American Ornithologists' Union, Berkeley, CA, 25 August 1977.
- Hamilton, R. 1989. Systematic survey of the avifauna of the Tensas River National Wildlife Refuge with special emphasis on the Bachman's warbler. Report TRNWR 89 (43690-6).
- Hooper R. G. and P. B. Hamel. 1974. A Cooperative Study to Determine the Status of Bachman's warbler on the Francis Marion National Forest in South Carolina. Study Plan, FS-SE-1951-1, November 26, 1974.
- Hooper, R.G. and P.B. Hamel. 1977. Nesting Habitat of Bachman's warbler – A Review. Wilson Bulletin 89:373-379.
- Jackson, J. A. 2002. Ivory-billed Woodpecker (*Campephilus principalis*). The Birds of North America Online (A. Poole, Ed.). Ithaca: Cornell Laboratory of Ornithology; Retrieved from The Birds of North American Online database:
http://bna.birds.cornell.edu/BNA/account/Ivory-billed_Woodpecker/
- Ripley, S.D., and A. Moreno. 1981. A Recent Sighting of Bachman's warbler in Cuba. Birding 12:211-212.
- Rosenburg, Ken. 2003. *Video of Mystery Warbler from Cuba*.
<http://www.birds.cornell.edu/bachman/mysterywarbler.html>
- Watson, C. and J. Koches. 2003. A survey for Bachman's warbler (*Vermivora bachmanii*) in the Congaree Swamp National Monument, South Carolina April/March 2002. U.S. Fish and Wildlife Service, Charleston, SC.

U.S. FISH AND WILDLIFE SERVICE
5-YEAR REVIEW of Bachman's Warbler (*Vermivora bachmanii*)

Current Classification: Endangered

Recommendation resulting from the 5-Year Review:

- Downlist to Threatened
- Uplist to Endangered
- Delist
- No change needed

Review Conducted By: 2007 – Edwin Eudaly, South Carolina Ecological Services Field Office
2015 – Paula Sisson, South Carolina Ecological Services Field Office

FIELD OFFICE APPROVAL:

Lead Field Supervisor, Fish and Wildlife Service

Approve *Thomas A. Hall* Date *12/8/06*

REGIONAL OFFICE APPROVAL:

Lead Regional Director, Fish and Wildlife Service

Approve *Franklin Wood III* Date *2/9/2007*
Acting ARD-ES

FY 2015 APPROVAL*

Lead Field Supervisor, Fish and Wildlife Service

Approve *Thomas D. McCoy* Date *05/06/2015*

* In 2014, Southeast Region Field Supervisors have been delegated authority to approve 5-year reviews that do not recommend a status change.

Field Supervisor signature on this document reflects:

1. We have no new information, received no new public comments, and the original five factor analysis remains an accurate reflection of the species current status (i.e. no change in status).
2. We have obtained a small amount of new information that we have summarized in Appendix B, received no new public comments, and the original five factor analysis remains an accurate reflection of the species current status.