

FINAL DRAFT

Avian Conservation Implementation Plan
Chickamauga and Chattanooga
National Military Park

National Park Service
Southeast Region



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In cooperation with

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And Bird Conservation Partners
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Introduction

This Avian Conservation Implementation Plan (ACIP) is provided to the staff at Chickamauga and Chattanooga National Military Park (CHCH) to serve as guidance to identify, document, and undertake bird conservation activities in the park and with neighboring communities, organizations, and adjacent landowners. This plan may identify goals, strategies, partnerships, and perhaps specific projects allowing the park to participate in existing bird conservation planning and implementation efforts associated with the North American Bird Conservation Initiative (NABCI). Under the auspice of NABCI, appropriate bird and habitat conservation goals may be recommended as identified in the appropriate existing national or regional bird conservation efforts aligned with this initiative: Partners In Flight (PIF), North American Waterfowl Management Plan (NAWMP), US Shorebird Conservation Plan (USSCP), and Waterbird Conservation for the Americas (WCA). For example, parks in the Appalachians and the Cumberland Plateau, including CHCH, will have few if any high priority waterbird conservation issues at a regional landscape or greater scale. As such, little information regarding waterbird conservation will be presented in the ACIP, unless there is an identified park need for this species group, or other mandates, such as federal laws. Similarly, because most of the parks in the Appalachians are located in and are primarily upland forested landscapes, recommendations will be provided in the ACIP for landbird and habitat conservation and will be derived from the appropriate PIF bird conservation plans, PIF being largely a landbird conservation initiative. However, all high priority bird conservation issues for CHCH will be discussed and integrated as appropriate.

Information and data presented in the ACIP have been obtained from several sources: 1) interviews with CHCH staff 2) CHCH bird conservation partners 3) the PIF Southern Ridge and Valley Bird Conservation Plan, Version 1.0 (Hill et al. 2002), 4) NPS databases, and 5) personal communications with bird conservation specialists throughout North America, especially in the southeastern United States. This plan has been reviewed by CHCH resource management staff and managers, Cumberland/Piedmont Inventory and Monitoring Network (CU/P I&M) staff, and bird conservation partners and approved by CHCH management. Optimally, this plan will be incorporated into the park's Resource Management Plan (USDI NPS 1989) and other planning and management documents, updated annually to reflect completed projects, newly identified needs, and shifts in bird conservation priorities in the region.

CHCH is not obligated to undertake any of the proposed actions in this plan. The plan is provided to offer guidance to CHCH to voluntarily support important park, regional, and perhaps national and international bird conservation projects for which CHCH is a primary participant in the proposed actions.

Background

During the past thirty years, monitoring programs across North America have documented declines of certain bird species populations and their habitats, often severe (Sauer et al. 2000). The decline has caused great concern among scientists, biologists, biodiversity proponents, ecologists, land managers, etc., and the bird conservation community in general. Birds are recognized as critical components of local and global genetic, species, and population diversity, providing important and often critical ecological, social, and cultural values. Their overall decline has stimulated a worldwide focus on conservation efforts, and North American interest in bird conservation is rapidly becoming a focus of government, non-government, industry, and private interests and expenditures.

Many state, federal, and non-governmental wildlife agencies and organizations (NGO's) have recognized this alarming bird decline trend and have joined forces in several extensive partnerships to address the conservation needs of various bird groups and their habitats. The primary initiatives are:

- North American Waterfowl Management Plan
- Partners in Flight
- U.S. Shorebird Conservation Plan
- Waterbird Conservation for the Americas

While efforts associated with these plans have generated some successes, it has been increasingly recognized that the overlapping conservation interests of these initiatives can be better served through more integrated planning and delivery of bird conservation. The *North American Bird Conservation Initiative (NABCI*; <http://www.nabci-us.org/main2.html>) arose out of this realization. The vision of NABCI is simply to see ***“populations and habitats of North America’s birds protected, restored and enhanced through coordinated efforts at international, national, regional, state and local levels, guided by sound science and effective management.”*** NABCI seeks to accomplish this vision through (1) broadening bird conservation partnerships, (2) working to increase the financial resources available for bird conservation in the U.S., and (3) enhancing the effectiveness of those resources and partnerships by facilitating integrated bird conservation (U.S. NABCI Committee 2000). The four bird conservation initiatives mentioned above, as well as several other local and regional partnerships, work collectively to pursue this vision.

NABCI is guided by a set of principles that establish an operational framework within which the Initiative and its partners may conduct integrated bird conservation in the U.S. These will articulate a common understanding of the relationship among NABCI, the individual bird conservation initiatives, and all partner entities to ensure recognition of existing federal legislative and international treaty obligations, state authorities, and respect for the identity and autonomy of each initiative. The fundamental components of the conservation approach to be used by NABCI are expressed within its goal:

To deliver the full spectrum of bird conservation through regionally-based, biologically-driven, landscape-oriented partnerships.

The Southeastern Bird Conservation Initiative: National Park Service: In 1999, the Southeast Region of the National Park Service (NPS) recognized the importance of coordinating existing bird conservation goals into planning and operations of national park units in the southeast, that is, integration of NABCI. In support of this recognition, the Southeast Regional Office NPS approved and allocated eighty-eight thousand dollars, cost sharing 1:1 with the US Fish and Wildlife Service (FWS) Region 4 (Southeast) to hire a biologist to conduct this two-year project (Interagency Agreement FS028 01 0368). This project is unique in the NPS, and perhaps the nation, and represents a potential model for better coordinating regional bird conservation programs and activities within and outside the NPS. It further represents a progressive action toward institutionalizing bird conservation as a programmatic priority in the Southeast Region of NPS and potentially the nation.

As envisioned, the integration of NABCI into the Southeastern NPS involves:

- 1) Development and delivery of Avian Conservation Implementation Plans (ACIP),
- 2) Coordination with NPS Inventory and Monitoring Program,
- 3) Development of a web-based project site,
- 4) Establishment or enhancement of bird conservation partnerships,
- 5) Identification and exploration of potential funding opportunities, and
- 6) Technical guidance and assistance as needed or requested.

This ACIP fulfills one aspect of the plan outlined above and serves as a basis for future bird conservation actions in CHCH and with adjacent partners or landowners.

Concurrently, the development of a Memorandum of Understanding (MOU) between the FWS and the NPS (Appendix A) to implement Presidential Executive Order (EO) 13186, **Responsibilities of Federal Agencies To Protect Migratory Birds**, calls for integration of programs and recommendations of existing bird conservation efforts into park planning and operations. Complementing each other, the MOU and the Southeastern Bird Conservation Initiative will advance bird conservation in the Southeast Region of the NPS beyond current regional NPS efforts.

Role of NPS in Avian Conservation

The interagency agreement that facilitates this partnership supports both FWS and NPS management policies. Specifically for the NPS, the agreement supports and advances the **Strategy for Collaboration** (March 2000), a visionary document developed and signed by the Southeast Natural Resource Leaders Advisory Group (SENRLAG), a consortium of 13 land and resource management agencies in the Southeastern United States whose vision is to encourage and support cooperation in planning and managing

the region's natural resources. Furthermore, the agreement is aligned with and implements a variety of NPS Management Policies (2001) including but not limited to External Threats and Opportunities (Chapter 1.5), Environmental Leadership (Chapter 1.6), Cooperative Planning (Chapter 2.3.1.9), Land Protection (Chapter 3), and especially Natural Resource Management (Chapter 4) that details policy and management guidelines which apply to bird conservation. Important policies in this chapter include:

- Planning for Natural Resource Management (4.1.1)
- Partnerships (4.1.4)
- Restoration of Natural Systems (4.1.5)
- Studies and Collection (4.2)
- General Principles for Managing Biological Resources (4.4.1)
- Plant and Animal Population Management Principles (4.4.1.1)
- Management of Native Plants and Animals (4.4.2)
- Management of Endangered Plants and Animals (4.4.2.3)
- Management of Natural Landscapes (4.4.2.4)
- Management of Exotic Species (4.4.4)
- Pest Management (4.4.5)
- Fire Management (4.5) and
- Water Resource Management (4.6)

The NPS is the fourth largest landowner in the United States, consisting of over 380 national park units covering 83 million acres of land and water with associated biotic resources (www.nps.gov). The 64 units in the Southeast Region of the NPS represent 16% of the total number of park units in the national park system and cover approximately 5% of the total land base in the entire system. Park units in the Southeast Region include national seashores (Canaveral National Seashore, Cape Hatteras National Seashore), national parks (Great Smoky Mountains National Park, Everglades National Park), national recreation areas (Big South Fork National River and Recreation Area), national preserves (Big Cypress National Preserve), national battlefields (Cowpens National Battlefield, Fort Donelson National Battlefield), national monuments (Fort Matanzas National Monument, Ocmulgee National Monument), and others such as the Blue Ridge Parkway, Obed Wild and Scenic River, and Timicuan Ecological and Historic Preserve.

Southeast NPS units provide habitat for over 400 species of migrating, breeding, and wintering birds and include a wide range of Federal and State listed threatened and endangered species. Likewise, these units also provide nest, migration, and winter habitat for most of the eastern species identified in the national bird conservation plans in need of conservation attention.

Additionally, the NPS attracts over 280 million visitors to the parks each year, 120 million of these in the Southeast Region, affording excellent recreational bird watching and opportunities to strengthen bird conservation interpretation, outreach, and

education programs. These opportunities, the NPS mission, policies, and organization all lead to the conclusion that the NPS is an extremely valuable partner and contributor to bird conservation in the region.

Nationally, the status of birds in national parks is largely unknown, although many parks have adequate knowledge regarding bird occurrence in the parks (<http://www.npwrc.usgs.gov/resource/othrdata/chekbird/chekbird.htm>). Parks often play a role in ongoing regional bird conservation efforts. Indeed many of these parks are often important to regional, national, or international bird conservation, and many have been designated as Important Bird Areas (IBA's) by the National Audubon Society. To date, there are approximately 64 NPS units that are designated IBA's, 35 of which are considered of global importance (<http://abcbirds.org/iba/aboutiba.htm>). In the Southeast Region, the NPS has 13 global IBA's.

The **NPS Inventory and Monitoring (I&M) Program** has been developed to provide management driven scientific information to national park managers so that resources can be adequately protected within national parks. One of the first phases of this program is to inventory vertebrates, including birds, within the 260 national park units in the program. Once completed, data from the inventories will provide an account of the occurrence and abundance of birds in all the national parks in the program. These records will be stored in the NPS I&M NPSpecies database (<http://www.nature.nps.gov/im/apps/npspp/>). Coordination with I&M network staff is important to developing long-term bird monitoring programs that fulfill both park and NABCI objectives.

Park Flight is a NPS international partnership initiative that directs funding toward a variety of NPS programs that involve conservation of neotropical migratory birds whose life history range covers a US national park and a Latin American protected area. A relatively new program, Park Flight offers parks the opportunity to partner with a Latin American national park or protected area to cooperate on developing bird conservation and education projects (NPS 2002).

Recent increases in NPS base funded programs such as inventory and monitoring, exotic species management, habitat restoration, and fire management all indicate that national park managers recognize that park lands are increasingly subject to a variety of threats and conditions that must be improved to provide the quality of national park experience articulated in the NPS Organic Act (1916). Programmatic funding in these areas will increase the ability of national parks to provide quality habitat and conditions for increased wildlife conservation, including birds. Furthermore, private interests and non-profit conservation organizations have initiated programs, including grant programs, to provide much needed funding to national parks to meet backlogs of identified yet unfunded needs.

Park Description

During the fall of 1863, Union and Confederate armies fought for control of the city of Chattanooga that was a key rail center and gateway to the heart of the Confederacy. In September, a two-day battle was fought near Chickamauga Creek that resulted in the retreat of Union forces. This was considered the last major Confederate victory in the Western theater, but General Grant and his Union forces ultimately regained control of Chattanooga two months later. The Park consists of over 3,318 ha straddling the Georgia/Tennessee border. It was established in 1890 and is the first and largest of the national military parks (Nichols et al. 2000). The park contains over 19 separate units, but and the three major units, Chickamauga Battlefield, Lookout Mountain, and the Sherman Reservation) are the focus of this plan. .

Chickamauga Battlefield, the largest unit of the Park, contains limestone cedar glades, creek bluffs, sagponds, beaver and quarry ponds, and open fields which are either cut twice a year for hay or mowed regularly. The oak-hickory forests surrounding the glades are comprised of post and northern red oak, loblolly pine, and pignut hickory. Lookout Mountain, a 1,120 ha section of the Park is comprised of a maintained lawn, sandstone cliffs, and rich limestone slopes. The slopes are dominated by white ash, northern red oak, and hickory species. Cave Spring is located near the northwest boundary of this unit and the woods along Lookout Creek contain floodplain species such as hackberry. The Sherman Reservation, a 20 ha tract, is predominantly a disturbed second-growth woodland (Nichols et al. 2000).

Avian Resources of Southern Ridge and Valley

The Southern Cumberland Plateau/Ridge and Valley area, as defined by Partners in Flight, covers nearly 6,000,000 ha across portions of Tennessee, Georgia, and Alabama (see PIF and NPS location maps below). Important bird habitats include mixed mesophytic forest, upland hardwood forest (Appalachian oak, oak-hickory forests, oak-pine-tulip poplar forests), riparian habitats, southern pine forests, including longleaf pine and loblolly-shortleaf stands, early successional habitats such as barrens and glades, and urban/suburban/agricultural areas. Birds have been systematically scored by the Partners in Flight prioritization process, and grouped by the above broad habitat types for setting habitat objectives.

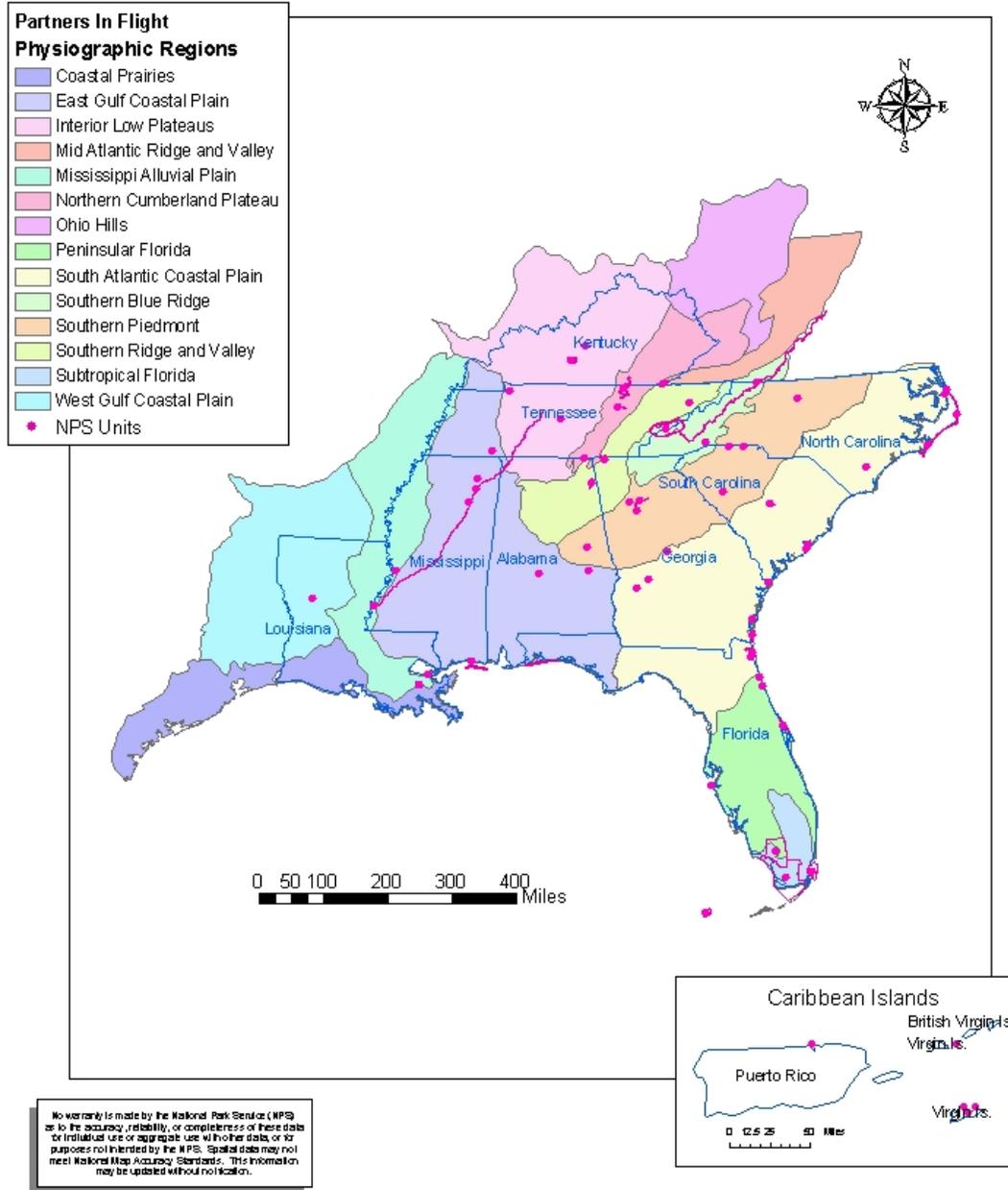
In the Southern Cumberland Plateau/Ridge and Valley physiographic area, the primary bird conservation goals are to stabilize and increase populations of high priority bird species. In order to reach these goals, habitat objectives proposed in this plan include the following items:

1. sustain at least 8 upland hardwood forest patches greater than 40,000 ha each,
2. increase the number of upland hardwood forest patches between 4,000 and 40,000 ha from 91 to over 100 patches,

Partners in Flight (PIF) Regions

Southeast Region (SER)

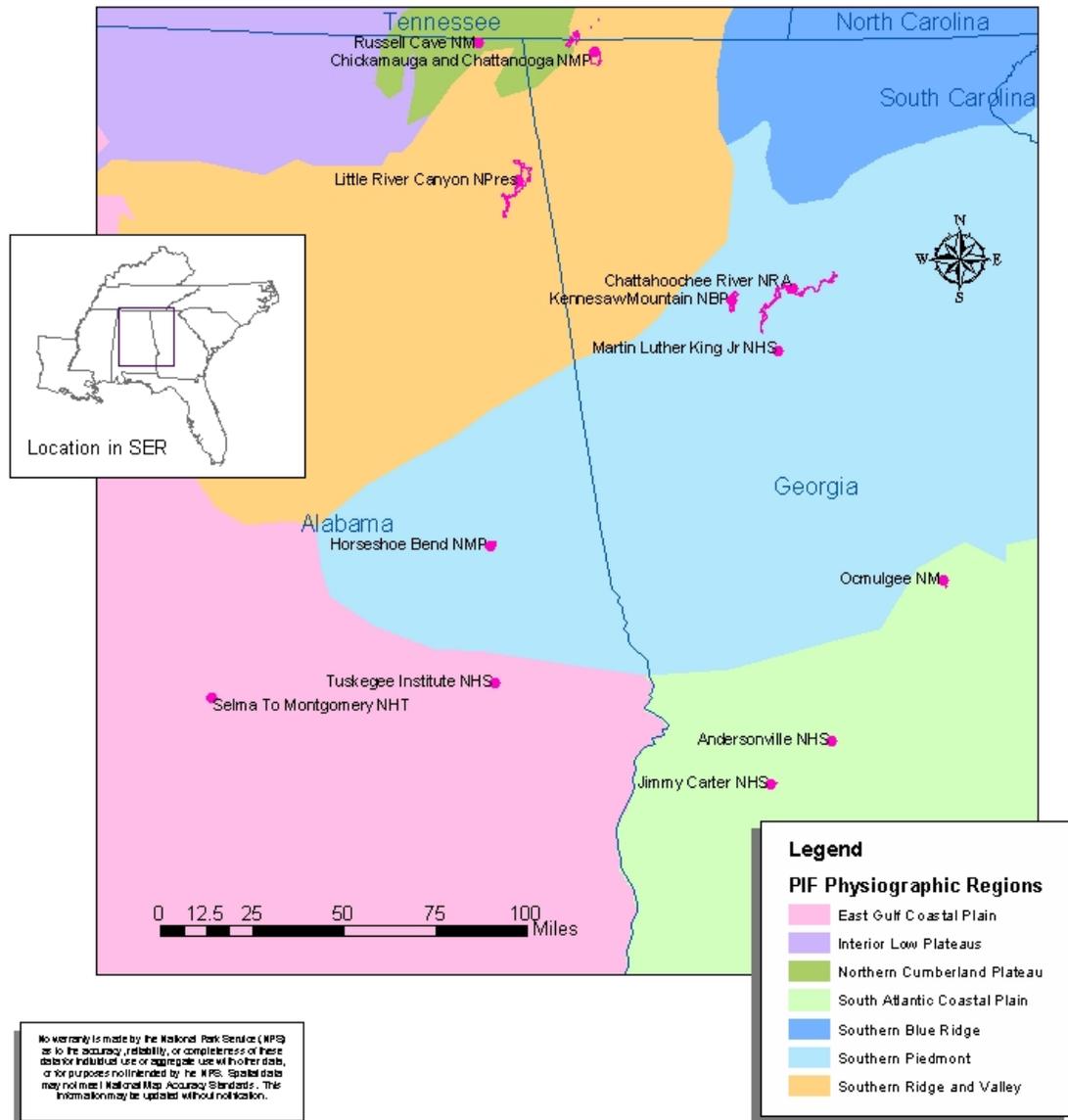
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Partners in Flight (PIF) Regions and NPS Locations

Southeast Region (SER)

National Park Service
U.S. Department of the Interior



Produced by Southeast Regional Office GIS, Atlanta, GA

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3. manage greater than 80% of the mixed mesophytic hardwood acreage within these patches for long rotation and/or old growth,
4. actively manage 100% of longleaf pine forests to maintain quality longleaf pine conditions and increase the acreage as possible, and
5. maintain current percentage of short rotation pine across the landscape.

Over 150 bird species nest in the Southern Cumberland Plateau/Ridge and Valley physiographic area. The most widely distributed species include Indigo Bunting, Mourning Dove, and Northern Cardinal. Fairly common birds also experiencing consistent population declines include Northern Bobwhite, Yellow-billed Cuckoo, Loggerhead Shrike, Black-and-white Warbler, Kentucky Warbler, Wood Thrush, and Acadian Flycatcher. Cerulean Warbler, Golden-winged Warbler, and Red-cockaded Woodpecker are among the most rapidly declining and vulnerable species in the physiographic area. Bewick's Wren has been extirpated recently from the area. These species represent a diversity of habitats (Hill et al. 2002).

Avian Conservation in CHCH

Avian Biodiversity: CHCH does not have an avian inventory; however, plans are to begin inventory work in late 2004 or early 2005. NPS has coordinated a statewide volunteer effort to document birds in Georgia national parks and that work is ongoing. Verified records of birds in CHCH have been entered into the NPS I&M program's database, NPSpecies, and may be viewed via the internet at <http://www.nature.nps.gov/im/app/npspp> with a user identification and password combination authorized by the NPS for NPS personnel and NPS cooperators. Many other avian observational data need to be verified and entered into the database.

A bird list for the Chattanooga area can be found at: <http://users.vei.net/carlchad/Status%20of%20the%20Birds%20of%20the%20Chattanooga%20Area.htm>. Additional records for the area can be obtained from the Atlas of the Breeding Birds of Tennessee (Nicholson 1997).

Park Priorities: Park staff and consultants have not identified any particular species that is a park management concern or high priority for conservation due to lack of inventory. The first priority is to complete the inventory and then develop appropriate bird conservation strategies from the inventory.

Inventory: A complete inventory has been recognized as important information for park managers and is being conducted within the framework of the NPS I&M Program. CHCH is one of several parks in the NPS Cumberland/Piedmont I&M Network for which a plan to conduct high priority inventory projects has been prepared (Nichols et al. 2000). A request for proposals to complete the inventory was released in March of 2003 and inventory effort is expected to begin in fall of 2004 or spring 2005.

Based on Calhoun's *Status of the Birds of the Chattanooga Area* (2001) and NPSpecies, several high priority PIF species for the Southern Ridge and Valley are

likely to occur in CHCH (see below and Appendixes A and B). Prominent among these species are: Chuck-wills'-widow, Golden-winged Warbler, Swainson's Warbler, Worm-eating Warbler, Louisiana Waterthrush, Kentucky Warbler, Yellow-throated Warbler, Prairie Warbler, Wood Thrush, Brown Thrasher, Acadian Flycatcher, Summer Tanager, Grasshopper Sparrow and Field Sparrow. Other high priority species present in the park in low numbers are Brown-headed Nuthatch, Cerulean Warbler, and Orchard Oriole.

Already confirmed is a breeding pair of Bewick's Wren! This outstanding documentation needs additional conservation attention.

Monitoring: Currently, no avian monitoring projects are being conducted at CHCH. However, recreational birding is an ongoing activity and efforts should be made to capture this valuable source of data.

Research: Scientific research is permitted within the park, but no active avian research other than existing avian inventory ongoing.

Threatened and Endangered Species: No Federally listed threatened or endangered bird species nest in CHCH. The Federally listed Bald Eagle is a regular visitor through the park. Extirpated from the region in the mid-1950's, the American Peregrine Falcon (now Federally de-listed) may occur within CHCH among the extensive cliff ledges at the site. However, systematic surveys have not been conducted to determine presence of nesting Peregrine Falcons.

At least two, perhaps more, **Watch-Listed in Tennessee** species occur in CHCH including American Woodcock and Pine Warbler. Additionally, Bewick's Wren (Endangered in Tennessee; Rare in Georgia) has been documented in the park and Cerulean and Swainson's Warblers, Sharp-shinned Hawk, and Golden-winged Warbler, all on the Tennessee Natural Heritage Program's **Tracked in Tennessee** may occur in the park (<http://www.state.tn.us/environment/nh/vert.htm>) (Appendix C). The conservation of these species should be coordinated with appropriate state personnel (see Contacts). Setting priorities for bird conservation presents some unique challenges because the park lies within the States of Tennessee and Georgia.

Outreach: No educational and outreach programs related to birds are undertaken in the park.

Park Identified Needs for Avian Conservation

CHCH has identified two projects necessary for advancing bird conservation at the park.

Inventory: The highest priority is to **complete the breeding bird inventory as identified in the I&M plan.**

Data Management: Verify and enter avian observational data into NPSpecies.

Coordination with Regional Conservation Initiatives

North American Bird Conservation Initiative

NABCI bird conservation planning units, referred to as Bird Conservation Regions (BCR), are often larger than other planning units associated with other plans, such as Partners In Flight. For example, CHCH is within the NABCI Appalachian BCR which extends from New York to Georgia (see BCR Map below) and encompasses several PIF physiographic areas (the planning unit for PIF)(compare to PIF and NPS location maps).

Several NABCI BCR's have coordinators whose primary responsibility is to coordinate all bird conservation planning in the BCR, across all agencies and organizations. The Appalachian Mountains BCR does have an interim designated coordinator and can provide valuable assistance to LIRI with implementation of aspects of this ACIP. Active bird conservation planning is underway in the adjacent Central Hardwoods BCR (see contacts below) and communications with these coordinators will be important to fully assess the park's role in regional and landscape scale bird conservation.

North American Waterfowl Management Plan (NAWMP)

The NAWMP (<http://northamerican.fws.gov/NAWMP/nawmphp.htm>) is completed and has been revised several times, incorporating updated goals and strategies based on new information. This plan is one of the most successful bird conservation delivery programs in the United States, being monetarily supported by the North American Wetlands Conservation Act (NAWCA).

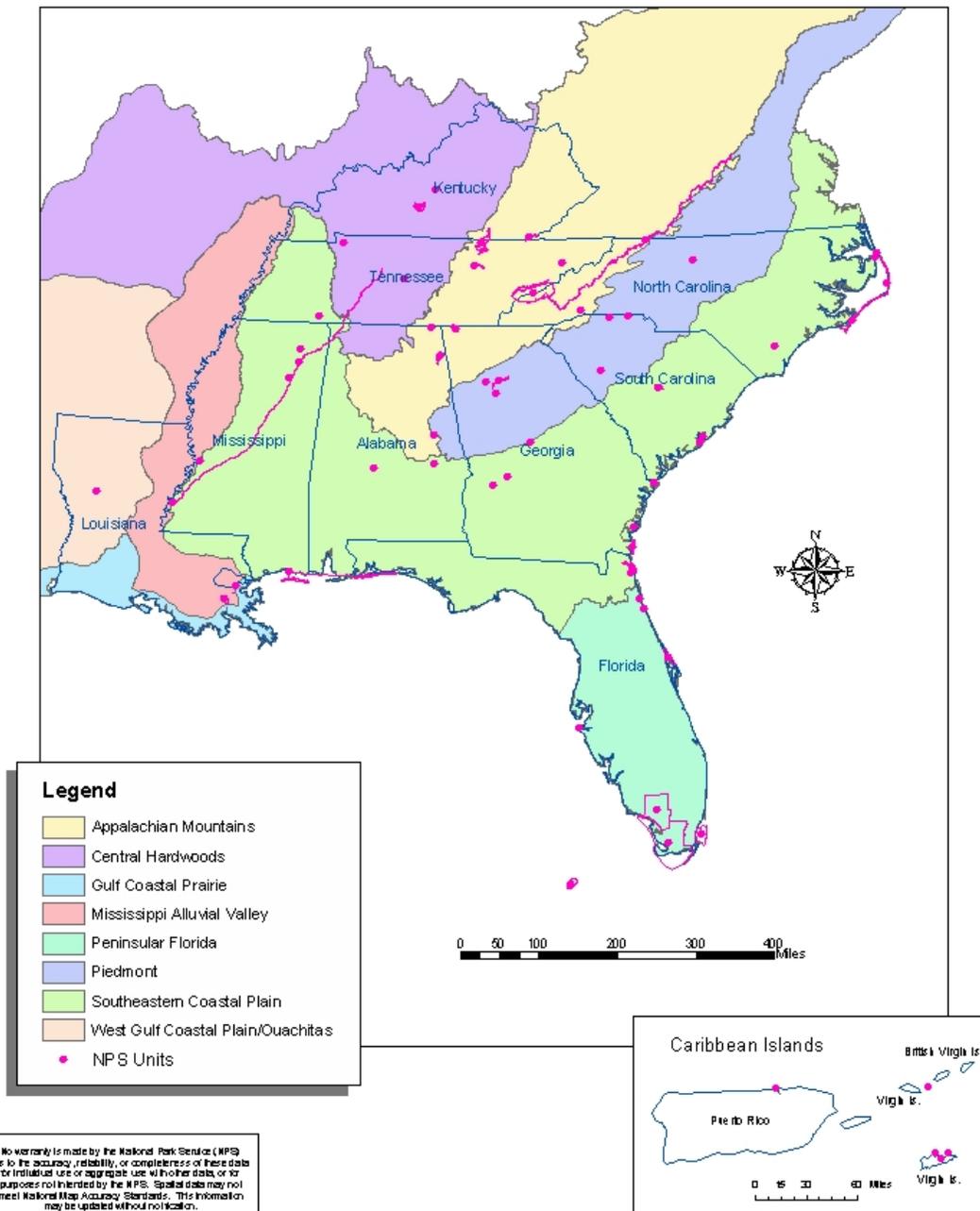
Partners In Flight

Goals and strategies for the Southern Ridge and Valley can be found in the draft bird conservation plan, previously submitted to the park. A revised version of this plan should be available in the near future and may be substantially different from the current format; however, bird and habitat conservation priorities are not likely to be significantly changed. The park will receive updates of the plan as they are completed. The current plan identifies priority bird and habitat conservation goals that must be implemented in order to achieve bird conservation success in this region. CHCH being largely a

Bird Conservation Regions

Southeast Region (SER)

National Park Service
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landbird park will utilize this plan more than any other plan to participate in NABCI implementation.

Similar to NABCI BCR's, PIF physiographic areas often do not have designated coordinators. However, state level non-game agencies with investment in PIF will establish key personnel to develop partnerships among cooperators in the physiographic area. The States of Tennessee and Georgia each have a PIF coordinator and can be instrumental in assisting CHCH to implement recommendations identified in this ACIP and projects important to bird conservation relative to Tennessee and Georgia's role in implementation of the Southern Ridge and Valley PIF plan.

United States Shorebird Conservation Plan (USSCP)

The USSCP has been completed and is available on the world wide web (<http://shorebirdplan.fws.gov/>). A regional step down plan is in preparation by FWS personnel and should be available in 2004. Since CHCH has little habitat of regional importance to shorebird conservation, recommendations for shorebird conservation are not presented.

Waterbird Conservation for the Americas (WCA)

The WCA plan has been completed and is available on the World Wide Web or can be ordered from the US Fish and Wildlife Service National Conservation Training Center (<http://www.waterbirdconservation.org/>). Few waterbird conservation priorities exist on the Southern Ridge and Valley and none are presented here for CHCH.

Integration of NABCI Goals and Objectives into Park Planning and Operations

NABCI Implementation Recommendations

To successfully achieve park established goals and actively participate in NABCI, the park could implement a variety of projects in different NPS programs. Most of these projects would require some level of participation by many existing park programs and could either be achieved through NPS funding, or more likely, through establishing or improving partnerships with agencies and organizations that already have the necessary expertise to provide guidance, funding, and execution of these programs. Programmatic areas where bird conservation actions are likely to be focused are:

- Inventory
- Monitoring
- Habitat Restoration
- Threat Management (includes exotic species, air quality, water quality, etc.)
- Research

- Compliance
- Outreach
- Partnerships

To the extent appropriate, each of these program areas will be discussed separately and within each, specific opportunities identified that, when implemented, will enable to park to meet its mandates (current and expected), as well as integrate NABCI into its planning and operations. With emphasis added; the park is not expected to implement any of these recommendations or be obligated to pursue any opportunity other than those the park is required to do by law or NPS program or policy. In other words, participation in this effort is currently voluntary. However, implementation of EO 13186, **Responsibilities of Federal Agencies to Protect Migratory Birds**, will require NPS to incorporate a wide range of bird conservation programs into planning and operations. The development of the MOU between the FWS and the NPS will establish a formal agreement to promote bird conservation within the agency by incorporating goals and strategies of existing bird conservation initiatives, plans, and goals into park planning and operations.

Should the park decide to implement any of these projects, further consultation with bird conservation contacts is encouraged to obtain updated information on the relevance of these opportunities in regional bird conservation.

High priority projects are identified in **bold** print. Priorities that the park is encouraged to seek NPS funding for are marked with an asterisk (*). These projects are those that are critical to the stabilization or improvement of a bird population in the planning region.

Inventory

The park will be conducting an avian inventory in late 2004 or early 2005. Once complete, the distribution and abundance of priority conservation species are desired to fully understand their status so that conservation actions can be implemented (Murdock letter 2002, Nichols et al. 2000). Status of high priority species as identified in the Southern Ridge and Valley bird conservation plan, the Tennessee Wildlife Resources Commission Threatened and Endangered Species list, and the Protected Birds of Georgia is needed to effectively structure park management for the continued preservation and enhancement of the park's avifauna. The park is encouraged to conduct inventory efforts:

- **for additional locations of the Bewick's Wren**
- **in areas suitable for cliff nesting species such as Peregrine Falcon**
- **in unique habitats such as beaver ponds, cedar glades, and sagponds**

- **for High Priority forest interior species, grassland, and shrub-scrub species that may not be adequately surveyed with existing or planned inventory effort**
- **along stream corridors for high priority riparian species such as Louisiana Waterthrush and Acadian Flycatcher**
- during migration for Neotropical migrants

Additionally, CHCH is encouraged to:

- **verify other avian observational data collected in the park and enter into the appropriate database (NPSpecies, Tennessee Wildlife Resources Agency (TWRA), eBird - <http://www.ebird.org/about/index.jsp>)**
- **standardize inventory and monitoring methodology to conform to NPS and/or FWS recommended standards (Fancy and Sauer 2000; Hunter 2000).**

Monitoring

Close coordination with adjacent BCR coordinators and the Tennessee and Georgia PIF coordinators is needed to identify and implement high priority projects on park lands and to ensure that park efforts contribute to park or regional bird conservation rather than undertake an action or actions that are not needed or are better conducted in other areas. Until the inventory is completed, monitoring programs cannot adequately be identified for CHCH. However, in the absence of specific data, general recommendations are to:

- **enter any monitoring data collected, including recreational birding observations, into the appropriate database (NPSpecies, TWRA, or National Point Count Database (USGS 2001- <http://www.mp2-pwrc.usgs.gov/point/>; eBird)**
- **monitor known pair of breeding Bewick's Wren**
- **focus monitoring efforts on forest interior species, grassland, shrub scrub, and cliff nesting species**
- **monitor fall raptor migration on Lookout Mountain**
- **standardize inventory and monitoring methodology to conform to NPS and/or FWS recommended standards (Fancy and Sauer 2000, Hunter 2000).**

Habitat Restoration

Historical landscape conditions in the Southeastern US have changed dramatically since early European explorers began documenting the area, its habitats, and its inhabitants. Historic landscape alteration by Native Americans for a variety of uses (Williams 2002), wildfire, bison, beaver, and elk effects, and weather, etc., (Hunter et al.) resulted in a landscape mosaic that supported a rich and diverse bird fauna in the Southeast (Barden 1997; Brawn 2001). The arrival of Europeans and the subsequent change in landscape has dramatically effected bird habitat and bird populations. Bird conservationists have recognized for a long time that habitat restoration is critical to restoration of bird populations, stabilizing or reversing bird declines, and removing birds from both State and Federal Threatened and Endangered Species lists. Recently, habitat restoration efforts have increased nationwide and on NPS lands, NPS receiving restoration emphasis and guidance in the 2001 Management Policies (NPS 2001). Habitat restoration efforts that parks may undertake are wetland restoration, grassland restoration, woodland restoration, etc. utilizing a wide range of tools to accomplish the restoration. Some of these tools may be but are not limited to forest management practices, exotic species management, public use and recreation management, infrastructure development management, and prescribed fire.

Due to the protected nature of CHCH lands, and generally those in the national park system, the condition of habitats for bird use may be of higher quality than other natural, developed, agricultural, or forest lands under other management regimes. However, national park lands can be greatly improved for wildlife, and particularly bird use, by restoring processes important for habitat formation, succession, and structural development. Largely, these processes have not been managed historically in the national park system, but current policy allows for active management of species, populations, and lands to provide for long-term conservation of park resources. Protection, restoration, and enhancement of habitats in CHCH can greatly contribute to established habitat goals identified in the Southern Ridge and Valley bird conservation plan.

CHCH has a wide variety of habitats, including limestone cedar glades, creek bluffs, sagponds, beaver and quarry ponds, and open fields, and mature deciduous forest. Much of this habitat provides suitable area and vegetative cover for nesting landbirds, but could be improved through use of prescribed fire, grassland restoration, and forest management to restore the structural complexity of the forests in CHCH that are required for many of the high priority bird species that occur there. Specific recommendations are to:

- **work toward optimization of habitat structure for dense understory nesting wood warblers through prescribed fire where appropriate, and potentially other forest management practices***

- **determine habitat conditions/requirements of existing breeding Bewick's Wren and identify other similar areas in park for conservation and monitoring**
- **manage a portion of the forests toward old growth conditions, implementing appropriate management techniques to develop desired understory structure for high priority birds***
- **restore a significant portion of the cold season grasslands, including hay leases, to native warm season grasses***
- **manage the mix of deciduous forest and grassland to provide shrub scrub habitats***
- **identify and protect cliff areas where birds nest***
- **establish conservation easements along the boundary (see USDA and FWS private lands programs in Funding Opportunities)***
- **assess historic landscape cover and determine feasibility of restoring landscape within the context of the park's enabling legislation; for instance restoring historic fields currently in forested condition**
- **protect existing snag trees, where not identified as a safety hazard, as important to cavity nesting birds**
- **enhance water quality to support aquatic biota necessary to support existing riparian corridor nesting birds and birds that use the riparian corridor for foraging**

Threat Management

The extent and significance of avian threats at CHCH is uncertain. However, generally speaking several potential threats need to be considered by management for action.

- **identify any threats to existing breeding Bewick's Wren and mitigate threats**
- **work with the local community and other land conservation interests in the region to minimize habitat fragmentation and potentially restore habitats beneficial to wildlife and bird species of the region (see USDA and FWS private lands programs in Funding Opportunities)***
- **establish conservation easements along the boundary***
- **manage exotic plant specie to improve quality of native habitats**

- **work with adjacent landowners and neighbors, the local community, and public officials to curb unregulated and free roaming feral and domestic dogs and cats in the park**

Research

No research has been identified at this time, but CHCH is encouraged to:

- **determine habitat conditions necessary at CHCH for breeding Bewick's Wren**
- **list future park needs and projects on Research Permit and Reporting System web site (RPRS)**
- develop contact with Southern Appalachian Mountains Cooperative Ecosystem Studies Unit (CESU) at the University of Tennessee, Knoxville, TN.

Compliance

Park compliance with the Migratory Bird Treaty Act and the Executive Order 13186, **Responsibilities of Federal Agencies to Protect Migratory Birds**, is necessary to assure that park activities incorporate bird conservation into park planning and operations. Further, to ensure that migratory birds are considered in all phases of park planning processes, especially during the National Environmental Policy Act (NEPA) and the Director's Order #12 Compliance processes, the park should consider adding specific language in project evaluations that requires consideration and implications of park projects on migratory birds. The MOU being developed between the NPS and the FWS will likely contain specific language requiring a park to consider implications of park projects on migratory birds. Additional considerations are to encourage:

- **park staff to begin specific consideration of migratory birds during park planning processes**
- park staff to attend USFWS training on implementation of EO 13186 at the National Conservation Training Center (NCTC) (when available) or other training on migratory bird conservation in North America. NCTC has several courses and training related to conservation of migratory birds (<http://training.fws.gov/courses.html>).

The USFWS NCTC offers and reserves two tuition free slots for National Park Service employees wishing to attend NCTC courses on a first come, first served basis. Additionally, discount lodging is also available while attending a NCTC course.

Outreach

- develop the bird checklist for public availability
- participate in International Migratory Bird Day (IMBD) events with a local partner (<http://birds.fws.gov/imbd.html>) such as Chattanooga Nature Center (<http://www.chattanature.org/>) or the Chattanooga Chapter of the Tennessee Ornithological Society ((<http://www.chattanoogaos.org/>))
- nominate CHCH as an Important Bird Area (<http://www.abcbirds.org/iba/nominstr.htm>)
- encourage development of outreach and educational programs to enhance visibility of bird conservation issues, which may include organized bird walks, owl prowls, and raptor surveys with the public (which can be conducted by Audubon volunteers)
- encourage accurate documentation and reporting from these and random outings by visitors (see Cornell University's eBird monitoring program (Cornell Lab. Ornith. 2002 (<http://www.ebird.org/about/index.jsp>))
- work with adjacent landowners and neighbors, the local community, and public officials to curb unregulated and free roaming feral and domestic dogs and cats in the park
- park interpretation/education staff are encouraged to attend USFWS training on Migratory Bird Education at NCTC
- consider adding links to bird conservation information, data, etc., to the park's web site home page
- support bird conservation by serving shade-grown coffees at meetings, events, and the office buildings in the park (<http://www.americanbirding.org/programs/consbcof3.htm>)
- subscribe to **TN-Bird Net**, an electronic forum for listing bird sightings and publications in Tennessee.
- subscribe to **BIRDFOLK** messages from Dr. Stephen Stedman, an electronic forum for learning about matters of interest regarding birds of the Upper Cumberland Region. To receive BIRDFOLK, contact Dr. Stedman at sstedman@tntech.edu

- subscribe to Georgia Birder's Online (listserv.uga.edu/archives/gabo-l.html) an internet based forum for the exchange of information related to Georgia birds, birders, and birding and is open to all interested individuals.
- explore cultural affiliation of landscape to inhabitants, both historical and contemporary. Cultures are strongly tied to the landscape they inhabit and birds often play a role in a cultural tie to the landscape. When these connections are discovered and preserved, a greater appreciation for the landscape and its value to the culture can be achieved.

Partners and Partnerships

Partnerships for land conservation and protection will perhaps have the greatest positive influence on bird conservation above all other landscape scale planning. Specific recommendations are to:

- **work with Georgia Department of Natural Resources (GDNR), US Fish and Wildlife Service, and National Park personnel to provide for maximum conservation for breeding Bewick's Wren**
- **keep abreast of local county initiatives that could impact park resources**
- **contact US Fish and Wildlife Service private lands biologists to discuss private landowner initiatives applicable to the area**

Several private landowner programs could be implemented that would serve to protect areas adjacent to CHCH and potentially improve water and habitat quality in the vicinity

- **develop partnership with Tennessee Wildlife Resources Commission, GDNR – Division of Wildlife Resources**
- **contact the nearest Joint Venture office (see Funding section for explanation of Joint Ventures) or BCR coordinator to develop partnerships and funding proposals tiered to priorities established by the park, this ACIP, and the Southern Ridge and Valley bird conservation plan**
- contact and partner with the local chapter of the Tennessee Ornithological Society in Knoxville, Tennessee. This group could be active partners in CHCH's bird conservation program (<http://www.tnbirds.org/KTOS.html>)
- contact and partner with the local chapter of the Georgia Ornithological Society in Rome, Georgia. This group could be active partners in CHCH's bird conservation program (<http://www.gos.org/local-ga-orgs.html#seven>)

- conduct joint raptor surveys for cliff nesting species with Little River Canyon National Preserve, Cumberland Gap National Historic Site, Great Smoky Mountains National Park, States of Tennessee and Georgia.
- evaluate local or regional land use data and plan potential for habitat protection across organizational boundaries
- develop land use agreements with local landowners through state, FWS programs, and especially with Catoosa Wildlife Management Area to protect important habitats and landscapes.

Funding Opportunities

Internal NPS funding is often an effective source to obtain funding; however, the project will have to be a fairly high priority among the park's natural resource program to successfully compete for the limited funding available in the NPS. Therefore, partnerships and outside funding programs are often more productive for securing bird conservation funding. Within this ACIP, identified priority projects that are considered to be high park priorities as well as NABCI priorities are marked with an asterisk (*). CHCH is encouraged to enter all high priority projects into the NPS Performance Management Information System (PMIS) database. Funding for conservation projects for neotropical migrants is also available through the Park Flight program. Suggestions include:

- **increased base funding to implement basic protection and management needs for birds and their habitats (habitat-based management not only benefits the birds but other wildlife as well)**

With the exception of the North American Waterfowl Management Plan (NAWMP and its associated funding legislation, the North American Wetland Conservation Act), funding opportunities for bird conservation programs, plans, and initiatives have been lacking. Only within the last decade have other appropriate and specific sources for bird conservation funding been created and used. The NAWMP has been supported for approximately 14 years by the North American Wetlands Conservation Act (NAWCA 1989). This program has provided \$487 million in appropriated funds matched with \$1.7 billion for wetland and bird conservation projects since its inception. In 2002 alone, over \$70 million US dollars were awarded to US and Canadian agencies and organizations to enhance waterfowl populations by improving, restoring, or protecting wetland habitats. To adequately evaluate projects and distribute these funds, partnerships called Joint Ventures were established. Nationally, 14 (11 US, 3 Canada) Joint Ventures have been established, several which are funded and staffed. Internet links to Joint Ventures are:

(<http://southwest.fws.gov/gulfcoastjv/ojvcontact.html>) and
(<http://northamerican.fws.gov/NAWMP/jv.htm>).

Funding through NAWCA is highly underutilized by the NPS and any park unit that has wetland, water, or bird conservation needs associated with wetland are encouraged to investigate using this funding source. Naturally, there are certain requirements to be eligible for all grants and park managers are encouraged to consult with the nearest Joint Venture, BCR, PIF Coordinator, to learn how this program might be applicable to implementation of this plan, and other park wetland issues. CHCH is not within a region which has an operational Joint Venture, but contact with the Atlantic Coast Joint Venture, Central Hardwoods BCR, and Tennessee PIF coordinators will provide opportunity to investigate use of this funding source and developing proposals.

Internal FWS funding programs may be used to support projects, but no effective method of project proposal delivery to these sources is currently in place for the NPS. Current funding in these programs may result from FWS familiarity with NPS needs, or NPS participation in one of the area FWS Ecosystem Teams, where a project has been identified and proposed to be funded through the Ecosystem Team. Staff or their representative at CHCH are encouraged to become a member of the Southern Appalachian Ecosystem Team.

One unexplored yet potentially fruitful funding source for national parks is the myriad of grants through the FWS State and Private Landowner Programs, where grants are awarded to private individuals engaged in habitat conservation projects. No funding is directly available to national parks, but identified projects with important or critical adjacent landowners can sometimes be funded through these sources. Similar programs are available if the adjacent landowner is a federally recognized American Indian tribe. One of the most prominent restoration programs is the US Department of Agriculture's Natural Resource Conservation Service (NRCS) Grassland Reserve Program (<http://www.nrcs.usda.gov/programs/GRP/>; see contacts).

Specific congressional appropriations to protect migratory birds has recently been authorized under the Neotropical Migratory Bird Conservation Act (2000) (<http://www.nfwf.org/programs/nmbcapp.htm>). Appropriations through this Act are authorized up to \$5 million per year. However, in 2000, appropriation was approximately \$3.75 million and a majority of this funding was directed toward projects in Central and South America.

Many of the identified projects are eligible for funding under various grant programs of the National Fish and Wildlife Foundation (<http://www.nfwf.org/programs/programs.htm>).

Other prominent funding sources available to NPS managers for bird conservation are listed on this projects web site at:

<http://southeast.fws.gov/birds/NPSHighlits.htm>.

Funding opportunities for migratory bird conservation are available yet most natural resource agencies are not fully aware of and/or understanding of how to use these

sources. Perhaps a consolidated migratory bird funding source catalog will become available to managers in the future; this is needed.

Contacts

Primary contacts within the region can be obtained by viewing the web site for the Southeastern Bird Conservation Initiative, National Park Service at <http://southeast.fws.gov/birds/npsbirds.htm>. This web site will provide contact information of the appropriate bird conservation coordinator in the region for park personnel. Park staff is encouraged to view the web site and obtain contact information.

Primary contacts for CHCH are:

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APPENDIX A

HIGH PRIORITY SPECIES IN THE SOUTHERN RIDGE AND VALLEY BIRD CONSERVATION REGION (Table 1 *from* Hill et al. 2002)

Table 1. Priority bird species in the Southern Cumberland Plateau/Ridge and Valley listed by total PIF concern score, and segregated by entry criteria. Other measures include area of importance and population trends scores, percent of BBS population, and local migratory status.

Priority Entry Criteria & species	Total PIF score	Concern scores		Percent BBS	Local migratory status ¹
		AI	PT		
Ia. Highest overall priority					
Bewick's Wren	35	5	5	-	D
Cerulean Warbler	29	4	5	-	A
Golden-winged Warbler	28	4	5	-	A
Red-cockaded Woodpecker	28	2	3	-	R
Ib. High overall priority					
Swainson's Warbler	27	3	3	1.8	B
Wood Thrush	25	4	5	2.0	B
Worm-eating Warbler	25	3	3	1.3	B
Kentucky Warbler	25	3	5	1.9	B
Louisiana Waterthrush	25	3	5	1.4	B
Bachman's Sparrow	25	2	3	-	B
Acadian Flycatcher	24	3	5	1.0	B
Prairie Warbler	24	4	5	2.8	B
Brown-headed Nuthatch	23	4	2	3.4	R
Blue-winged Warbler	23	3	4	1.1	B
Yellow-throated Warbler	23	3	5	-	B
Prothonotary Warbler	23	3	3	-	B
Orchard Oriole	23	5	5	2.2	B
Chuck-will's-widow	22	4	4	2.1	B
Brown Thrasher	22	5	5	-	D
Yellow-throated Vireo	22	3	5	2.3	B
Summer Tanager	22	4	5	2.6	B
Field Sparrow	22	5	5	2.6	D
IIa. Physiographic area priority: species with AI plus PT greater than 8					
Northern Bobwhite	21	4	5	-	R
Yellow-billed Cuckoo	21	4	5	-	B
Red-headed Woodpecker	21	3	5	-	D
Carolina Chickadee	21	5	5	4.3	R
Eastern Wood-Pewee	21	4	5	-	B
Yellow-breasted Chat	21	5	5	3.2	B
Loggerhead Shrike	20	3	5	-	D

Priority Entry Criteria & species	Total PIF score	Concern scores		Percent BBS	Local migratory status ¹
		AI	PT		
Black-and-white Warbler	20	3	5	-	B
Blue Grosbeak	20	5	5	2.8	B
Broad-winged Hawk	19	5	5	2.9	B
Purple Martin	19	5	4	2.8	B
Eastern Towhee	19	4	5	3.5	D
Indigo Bunting	19	5	5	2.7	B

IIb. Physiographic area priority: species with a high percentage of the global population

NONE

III. Additional species: global priority

Dickcissel	20	2	3	-	B
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IV. Additional species

NONE

V. Local concern species

NONE

¹ – Migratory status is adapted from Texas Partners in Flight. In this category, B refers to birds that breed in the area and winter exclusively in the tropics, D refers to birds that breed and winter in the region but may involve different populations, E refers to species that are reaching distributional limits in the area, and R refers to resident, non-migratory birds.

APPENDIX B

SOUTHERN RIDGE AND VALLEY BIRD ASSEMBLAGES AND HABITAT CONSERVATION PRIORITIES (Table 2 from Hill et al. 2002)

Table 2. Bird species assemblages designated for broad habitat type within the physiographic area, and listed by total Partners in Flight score. The sum of Area Importance, Population Trend, and Threats to Breeding are included as the Habitat Score, and provides as an indication of the importance of the habitat in the area. The overall score indicates management criteria, see below. Habitat suitability is derived from Hamel (1995).

Habitat	Species	Total PIF score	Overall score
Early succession			
Prairie, old field			
Scrub shrub	Bewick's Wren	35	I, V
	Golden-winged Warbler	28	III, V
	Prairie Warbler	24	III
	Blue-winged Warbler	23	IV
	Orchard Oriole	23	IV
	Field Sparrow	22	VI
	Northern Bobwhite	21	III
	Yellow-breasted Chat	21	VI
	Loggerhead Shrike	20	II
	Blue Grosbeak	20	VI
	Purple Martin	19	VI
	Eastern Towhee	19	VI
	Indigo Bunting	18	VI
	Dickcissel	20	VI
Mixed Mesophytic (Cove) hardwood			
	Swainson's Warbler	27	II, V
	Cerulean Warbler	25	II, V
	Wood Thrush	25	III
	Worm-eating Warbler	25	III
	Kentucky Warbler	25	III
	Yellow-throated Warbler	23	IV
	Yellow-billed Cuckoo	21	III
	Carolina Chickadee	21	VI
	Summer Tanager	22	VI
	Eastern Wood Pewee	21	VI
	Black-and-white Warbler	20	VI
	Broad-winged Hawk	19	VI
Appalachian Oaks			
	Wood Thrush	25	III
	Worm-eating Warbler	25	III
	Kentucky Warbler	25	III
	Yellow-billed Cuckoo	21	III
	Carolina Chickadee	21	VI
	Chuck-will's-widow	22	III
	Brown Thrasher	22	IV
	Yellow-throated Vireo	22	IV
	Summer Tanager	22	VI

Habitat	Species	Total PIF score	Overall score
Red-headed Woodpecker	21	VI	
	Eastern Wood Pewee	21	VI
	Black-and-white Warbler	20	VI
	Broad-winged Hawk	19	VI
Oak-Hickory-Pine			
	Wood Thrush	25	III
	Worm-eating Warbler	25	III
	Kentucky Warbler	25	III
	Yellow-billed Cuckoo	21	III
	Carolina Chickadee	21	VI
	Chuck-will's-widow	22	III
	Brown Thrasher	22	VI
	Yellow-throated Vireo	22	VI
	Summer Tanager	22	VI
	Red-headed Woodpecker	21	VI
	Eastern Wood Pewee	21	VI
	Black-and-white Warbler	20	VI, V
	Broad-winged Hawk	19	VI
Southern Pine			
	Red-cockaded Woodpecker	28	I
	Bachman's Sparrow	25	I
	Brown-headed Nuthatch	23	III
	Wood Thrush	25	III
	Yellow-billed Cuckoo	21	III
	Yellow-throated Warbler	23	IV
	Carolina Chickadee	21	VI
	Chuck-will's-widow	22	VI
	Brown Thrasher	22	VI
	Yellow-throated Vireo	22	VI
	Summer Tanager	22	VI
	Red-headed Woodpecker	21	VI
	Eastern Wood Pewee	21	VI
Lowland Riparian			
Woodlots	Swainson's Warbler	27	III
	Louisiana Waterthrush	25	III
	Acadian Flycatcher	24	III
	Prothonotary Warbler	23	III
	Wood Thrush	25	III
	Kentucky Warbler	25	III
	Yellow-billed Cuckoo	21	III
	Carolina Chickadee	21	VI
	Brown Thrasher	22	VI
	Yellow-throated Vireo	22	VI
	Summer Tanager	22	VI
	Eastern Wood Pewee	21	VI
	Black-and-white Warbler	20	III

1 – Overall scores refer to the following: I – Crisis recovery necessary, II – Immediate management and/or policy action necessary range-wide, III – Active, integrated management is needed to reverse, stabilize, or increase populations, IV – Long-term planning and habitat responsibility are needed, in association with monitoring, V – Research is necessary to further clarify population status or level of threat to species or habitat, VI – Monitor population trends and develop habitat management only as population levels dictate.

APPENDIX C

Tennessee Natural Heritage Program Rare Vertebrates List January 2001 Watch-Listed in Tennessee

Scientific Name	Common Name	Physiographic Province	Federal Status	State Status	State Rank	Global Rank	State Endemic?
BIRDS							
AMMODRAMUS LECONTEII	LE CONTE'S SPARROW				S1N	G4	
CALIDRIS ALPINA	DUNLIN				S3N	G5	
CAMPEPHILUS PRINCIPALIS	IVORY-BILLED WOODPECKER		LE		SX	G4	
CIRCUS CYANEUS	NORTHERN HARRIER			D	S4N	G5	
CISTOTHORUS PLATENSIS	SHORT-BILLED MARSH WREN				S3NSPB	G5	
DENDROICA PINUS	PINE WARBLER				S5	G5	
DOLICHONYX ORYZIVORUS	BOBOLINK				SHBS4 N	G5	
ELANOIDES FORFICATUS	SWALLOW-TAILED KITE				SAN	G5	
LIMNODROMUS	LONG-BILLED DOWITCHER				S2N	G5	
SCOLOPACEUS							
MYCTERIA AMERICANA	WOOD STORK		(PS:LE)		S3N	G4	
PELECANUS	WHITE PELICAN				S3N	G3	
ERYTHRORHYNCHOS							
PICOIDES BOREALIS	RED-COCKADED WOODPECKER	CU CM BR WU CP	LE		SX	G3	
SCOLOPAX MINOR	AMERICAN WOODCOCK				S4B	G5	
VERMIVORA BACHMANII	BACHMAN'S WARBLER		LE		SX	G4	
VERMIVORA PINUS	BLUE-WINGED WARBLER				S4	G5	

Tracked in Tennessee

Scientific Name	Common Name	Physiographic Province	Federal Status	State Status	State Rank	Global Rank	State Endemic?
BIRDS							
ACCIPITER GENTILIS	GOSHAWK				SPBS2N	G5	
ACCIPITER STRIATUS	SHARP-SHINNED HAWK	CU CM WR BR RV ER CP	(PS)	D	S3B	G5	
ACTITIS MACULARIA	SPOTTED SANDPIPER	CB			S2B	G5	
AEGOLIUS ACADICUS	NORTHERN SAW-WHET OWL	RV BR	MC	T	S1	G5	
AIMOPHILA AESTIVALIS	BACHMAN'S SPARROW	WR CU WU ER RV CP CB WF	MC	E	S2	G3	
AMMODRAMUS	HENSLOW'S SPARROW	ER WR	MC	D	S1B	G4	
HENSLOWII							
ANAS DISCORS	BLUE-WINGED TEAL				S2B	G5	
ANHINGA ANHINGA	ANHINGA	MF WR WU		D	S1B	G5	
AQUILA CHRYSAETOS	GOLDEN EAGLE	WR CB CU BR		T	S1	G5	
ARDEA ALBA	GREAT EGRET	WR MF RV BR CP		D	S2BS3N	G5	
BOTAURUS LENTIGINOSUS	AMERICAN BITTERN	ER WR			S1	G4	
BUBULCUS IBIS	CATTLE EGRET				S2BS3N	G5	

Scientific Name	Common Name	Physiographic Province	Federal Status	State Status	State Rank	Global Rank	State Endemic?
BUTEO LINEATUS	RED-SHOULDERED HAWK	MF CP WR WU RV CU ER CB			S4B	G5	
CAPRIMULGUS CAROLINENSIS	CHUCK-WILL'S WIDOW				S3S4	G5	
CAPRIMULGUS VOCIFERUS	WHIP-POOR-WILL				S3S4	G5	
CERTHIA AMERICANA	BROWN CREEPER				S2B54N	G5	
CHONDESTES GRAMMACUS	LARK SPARROW	CP WR WU CB MF		T	S1B	G5	
COCCYZUS	BLACK-BILLED CUCKOO				S2B	G5	
ERYTHROPTALMUS							
CONTOPUS COOPERI	OLIVE-SIDED FLYCATCHER	BR		D	S1	G5	
CORVUS CORAX	COMMON RAVEN	BR RV		T	S2	G5	
CORVUS OSSIFRAGUS	FISH CROW	MF			S3	G5	
DENDROICA CERULEA	CERULEAN WARBLER	RV BR WR WU CM		D	S3B	G4	
DENDROICA FUSCA	BLACKBURNIAN WARBLER				S3B54N	G5	
DENDROICA MAGNOLIA	MAGNOLIA WARBLER				S1B54N	G5	
EGRETTA CAERULEA	LITTLE BLUE HERON	CP WR MF WU		D	S2B53N	G5	
EGRETTA THULA	SNOWY EGRET			D	S2B53N	G5	
EGRETTA TRICOLOR	LOUISIANA HERON				SPB	G5	
EMPIDONAX ALNORUM	ALDER FLYCATCHER	BR			S1	G5	
EMPIDONAX MINIMUS	LEAST FLYCATCHER				S3	G5	
EMPIDONAX TRAILLII	WILLOW FLYCATCHER		(PS)		S2S3	G5	
EREMOPHILA ALPESTRIS	HORNED LARK				S4	G5	
FALCO PEREGRINUS	PEREGRINE FALCON	BR CU RV CB MF		E	S1N	G4	
FULICA AMERICANA	AMERICAN COOT				S2B	G5	
GALLINULA CHLOROPUS	COMMON MOORHEN	RV MF	(PS)	D	S1B	G5	
HALIAEETUS	BALD EAGLE	WR MF CP ER	T	D	S3	G4	
LEUCOCEPHALUS		RV CB WU CU					
ICTINIA	MISSISSIPPI KITE	MF CP		D	S2S3	G5	
MISSISSIPPIENSIS							
IXOBRYCHUS EXILIS	LEAST BITTERN	RV MF ER CP CU CB		D	S2B	G5	
LANIUS LUDOVICIANUS	LOGGERHEAD SHRIKE		MC	D	S3	G5	
LATERALLUS JAMAICENSIS	BLACK RAIL	RV			S1	G4	
LIMNOTHLYPIS SWAINSONII	SWAINSON'S WARBLER	CP BR WR MF RV CU CM WU	MC	D	S3	G4	
LOXIA CURVIROSTRA	RED CROSSBILL				S1B52N	G5	
NYCTANASSA VIOLACEA	YELLOW-CROWNED NIGHT-HERON	RV CP MF CB			S3	G5	
NYCTICORAX NYCTICORAX	BLACK-CROWNED NIGHT-HERON	CB RV MF CP			S2S3B	G5	
PASSERCULUS SANDWICHENSIS	SAVANNAH SPARROW	RV WR			S1B54N	G5	
PASSERINA CIRIS	PAINTED BUNTING				S2	G5	
PODILYMBUS PODICEPS	PIED-BILLED GREBE	WR			S2	G5	
POECILE ATRICAPILLUS	BLACK-CAPPED CHICKADEE		MC	D	S2B	G5	
POECETES GRAMINEUS	VESPER SPARROW	BR WR		D	S1B54N	G5	
PORPHYRULA MARTINICA	PURPLE GALLINULE	ER MF			S1B	G5	
RALLUS ELEGANS	KING RAIL	ER RV WR		D	S2	G4G5	
RALLUS LIMICOLA	VIRGINIA RAIL	RV			S1B53N	G5	
REGULUS SATRAPA	GOLDEN-CROWNED KINGLET	BR			S3B54N	G5	
RIPARIA RIPARIA	BANK SWALLOW	MF RV CB			S3	G5	
SITTA CANADENSIS	RED-BREASTED NUTHATCH				S2B54N	G5	
SITTA PUSILLA	BROWN-HEADED NUTHATCH				S2B	G5	

Scientific Name	Common Name	Physiographic Province	Federal Status	State Status	State Rank	Global Rank	State Endemic?
SPHYRAPICUS VARIUS	YELLOW-BELLIED SAPSUCKER	BR CP	MC	D	S1B54N	G5	
STERNA ANTILLARUM	INTERIOR LEAST TERN	MF	LE	E	S2S3B	G4T2Q	
ATHALASSOS							
THRYOMANES BEWICKII	BEWICK'S WREN	WR CP BR CB CM CU WU ER MF	MC	E	S1	G5	
TROGLODYTES	WINTER WREN				S3B54N	G5	
TROGLODYTES							
TYRANNUS FORFICATUS	SCISSOR-TAILED FLYCATCHER				S1BSAN	G5	
TYTO ALBA	COMMON BARN-OWL	CP MF RV CB BR WR ER		D	S3	G5	
VERMIVORA CHRYSOPTERA	GOLDEN-WINGED WARBLER		MC	D	S3B	G4	
VIREO BELLII	BELL'S VIREO	CP	(PS)		SPB	G5	

Physiographic Provinces

Physiographic province information provides a broad concept of a species' distribution in Tennessee and can be indicative of a particular geologic development or age in Tennessee.

BR Blue Ridge

CB Central Basin

CM Cumberland Mountains

CP Coastal Plain

CU Cumberland Plateau

ER Eastern Highland Rim

MF Mississippi Floodplain

RV Ridge and Valley

SV Sequatchie Valley

WR Western Highland Rim

WU Western Uplands

Federal Status

Federally listed animals are protected by the Endangered Species Act of 1973 (as amended), and the list is maintained by the U.S. Fish and Wildlife Service. In Tennessee, listing and recovery responsibilities are divided between two USFWS offices, in Cookeville, TN, and Asheville, NC. Please visit <http://southeast.fws.gov/> for additional information about USFWS activities in Tennessee.

The USFWS simplified the assignment of various "candidate species" designations in 1997, and those changes are reflected here. Applicable federal statuses are defined as follows, based on nomenclature adopted by The Nature Conservancy and the Tennessee Wildlife Resources Agency:

LE	Listed Endangered	Taxon is threatened by extinction throughout all or a significant portion of its range
E/SA	Endangered by Similarity of Appearance	Taxon is treated as an endangered species because it may not be easily distinguished from a listed species
LT	Listed Threatened	Taxon is likely to become an endangered species in

		the foreseeable future
T/SA	Threatened by Similarity of Appearance	Taxon is treated as a threatened species because it may not be easily distinguished from a listed species
PE	Proposed Endangered	Taxon proposed for listing as endangered
PT	Proposed Threatened	Taxon proposed for listing as threatened
C	Candidate species***	Taxon for which the USFWS has sufficient information to support proposals to list the species as threatened or endangered, and for which the Service anticipates a listing proposal
MC	Management Concern	Unofficial federal status for potential future candidate species
(PS)	Partial Status (based on taxonomy)	Taxon which is listed in part of its range, but for which Tennessee subspecies are NOT included in the Federal designation
(PS:status)	Partial Status (based on political boundaries)	Taxon which is listed in part of its range, but for which Tennessee populations are NOT included in the Federal designation e.g. (PS:LE)
(status, XN)	Non-essential experimental population in portion of range	Taxon which has been introduced or re-introduced in an area from which it has been extirpated, and for which certain provisions of the Act may not apply

(Modified from Federal Register, 50 CFR Part 17.11 {31 December 1999})

*** Taxa listed as candidate species may be added to the list of Endangered and Threatened species, and as such, consideration should be given to them in environmental planning. Taxa listed as LE, LT, PE, and PT must be given consideration in environmental planning involving federal funds, lands, or permits, and should be given consideration in all non-federal activities.

State Status

In Tennessee, vertebrates, mollusks and crustaceans may be formally listed by the TWRA as Endangered, Threatened, or "Deemed in Need of Management" (T.C.A. 70-8-104, 70-8-105, 70-8-107). No insects or arachnids can be listed by the TWRA, but may be listed by the USFWS.

E	Endangered	Any species or subspecies of wildlife whose prospects of survival or recruitment within the state are in jeopardy or are likely to become so within the foreseeable future.
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T	Threatened	Any species or subspecies of wildlife that is likely to become an endangered species within the foreseeable future.
D	"Deemed in Need of Management"	Any species or subspecies of nongame wildlife which the executive director of the TWRA believes should be investigated in order to develop information relating to populations, distribution, habitat needs, limiting factors, and other biological and ecological data to determine management measures necessary for their continued ability to sustain themselves successfully. This category is analogous to "Special Concern".
PE	Proposed Endangered	Proposed as Endangered by the TWRA for consideration by the Tennessee Wildlife Resources Commission
PT	Proposed Threatened	Proposed as Threatened by the TWRA for consideration by the Tennessee Wildlife Resources Commission
PD	Proposed "Deemed"	Proposed as Deemed in Need of Management by the TWRA for consideration by the Tennessee Wildlife Resources Commission

Note: Many species presented in this list may have neither a state nor federal designation, however are considered rare by the DNH and should be evaluated during the environmental review process. Information is collected on these species in order to minimize the necessity of listing these taxa as Endangered or Threatened.

GRANK and SRANK

As a guide in setting conservation priorities, TNC developed a ranking system for estimating the abundance of plants and animals tracked by Heritage programs. The Global Rank (GRANK) is assigned by TNC Central Zoology staff based on the best range wide (global) abundance information for each taxon. A five-tier system (G1-G5) is used to describe rarity, from G1 (extremely rare) to G5 (widespread). The same system is applied by DNH to assign the State Rank (SRANK), which describes the species' abundance within our state borders.

SRANK and GRANK are based primarily upon the number of occurrences of the element (species) within the state and range wide, respectively. For obscure or under-studied species, ranks are based on the best available information, and consideration may be given to other factors influencing the rarity of each taxon.

SRANKs used in this list are defined below. GRANKs are similarly defined, except that ranking criteria apply range wide (e.g. an S1 species is "extremely rare" in the state, and a G1 species is "extremely rare" range wide).

S1	Extremely rare and critically imperiled in the state with five or fewer occurrences, or very few remaining individuals, or because of some special condition where the species is particularly vulnerable to extinction.
S2	Very rare and imperiled within the state, six to twenty occurrences, or few remaining individuals, or because of some factor(s) making it vulnerable to extinction.

S3	Rare and uncommon in the state, from 21-100 occurrences.
S4	Widespread, abundant, and apparently secure within the state, but with cause for long-term concern.
S5	Demonstrably widespread and secure in the state
SH	Of historical occurrence in Tennessee, e.g. formally part of the established biota, with the expectation that it may be rediscovered.
SU	Can not be ranked using available information.
SX	Believed to be extirpated from the state.
S#S#	Denotes a "range rank" because the rarity of the species is uncertain (e.g. S1S3).
S?	Unranked at this time
SE	Exotic species established in the state
SE#	Exotic numeric (e.g. European starling would be SE5)
SP	Potentially occurring in Tennessee, but not yet documented by DNH
_N	Occurs in Tennessee in a non-breeding status (several birds)
_B	Breeds in Tennessee
SA	Accidental or casual in the state (several birds)
SR	Reported from the state, but insufficient data to assign rank
SRF	Reported falsely from the state
HYB	Hybrid within its range in Tennessee
SSYN	Synonym for another species
_Q	Questionable taxonomy (GRANKS only)
_T#	Subspecific taxon rank (GRANKS only)
<p><i>Numerous bird species are ranked for breeding and non-breeding status in Tennessee, e.g. RED-BREASTED NUTHATCH (S2BS4N), is more common as a wintering or migratory species than as a breeding species.</i></p>	

Note: Those species having an SRANK of S1 to S3, state endemics, and species with limited distribution in Tennessee should be given special consideration in environmental planning. For further information contact DNH at (615) 532-9695.

State Endemic

If a species is endemic to Tennessee (occurs nowhere else), it may be categorized as follows:

Y, Yes	Endemic to Tennessee
P, Probable	Probably endemic to Tennessee
B, Breeding	Endemic to the state as a breeder only

APPENDIX D

Protected Bird Species in Georgia

Date of information - 6/11/2003

Find details for the birds on this list at NatureServe.

15 birds on this list

Scientific Name	Common Name	State Status (what's this?)	Federal Status (what's this?)
<i>Aimophila aestivalis</i>	Bachman's Sparrow	R	
<i>Campephilus principalis</i>	Ivory-billed Woodpecker	E	LE
<i>Charadrius melodus</i>	Piping Plover	T	(LE,LT)
<i>Charadrius wilsonia</i>	Wilson's Plover	R	
<i>Corvus corax</i>	Common Raven	R	
<i>Dendroica kirtlandii</i>	Kirtland's Warbler	E	LE
<i>Elanoides forficatus</i>	Swallow-tailed Kite	R	
<i>Falco peregrinus</i>	Peregrine Falcon	E	(PS:LE)
<i>Haematopus palliatus</i>	American Oystercatcher	R	
<i>Haliaeetus leucocephalus</i>	Bald Eagle	E	(PS:LT,PDL)
<i>Mycteria americana</i>	Wood Stork	E	(PS:LE)
<i>Picoides borealis</i>	Red-cockaded Woodpecker	E	LE
<i>Sterna antillarum</i>	Least Tern	R	(PS:LE)
<i>Sterna nilotica</i>	Gull-billed Tern	T	
<i>Thryomanes bewickii</i>	Bewick's Wren	R	
<i>Vermivora bachmanii</i>	Bachman's Warbler	E	LE

NOTE: This is a working list and is constantly revised ([see element occurrence data disclaimer](#)). For the latest changes, acknowledgment of numerous sources, interpretation of data, or other information connected with this list, please contact:

APPENDIX E

USFWS Species of Conservation Concern (2002) in the Appalachian Mountains (BCR 28)

Peregrine Falcon
Upland Sandpiper
Buff-breasted Sandpiper
Black-billed Cuckoo
Short-eared Owl
Northern Saw-whet Owl (breeding populations only)
Chuck-will's-widow
Whip-poor-will
Red-headed Woodpecker
Yellow-bellied Sapsucker (breeding populations only)
Olive-sided Flycatcher
Acadian Flycatcher
Black-capped Chickadee (southern Blue Ridge populations only)
Bewick's Wren
Sedge Wren
Wood Thrush
Golden-winged Warbler
Prairie Warbler
Cerulean Warbler
Prothonotary Warbler
Worm-eating Warbler
Swainson's Warbler
Louisiana Waterthrush
Kentucky Warbler
Bachman's Sparrow
Henslow's Sparrow
Red Crossbill (southern Appalachian populations only)