

**FINAL DRAFT**

# Avian Conservation Implementation Plan Little River Canyon National Preserve

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 Little River Canyon National Preserve (LIRI) to help identify and prioritize bird conservation opportunities, and to provide information and guidance for the successful implementation of needed conservation activities. 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 LIRI, 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 LIRI will be discussed and integrated as appropriate.

Information and data presented in the ACIP have been obtained from several sources: 1) interviews with LIRI staff, 2) LIRI bird conservation partners, 3) the PIF Southern Cumberland Plateau/Ridge and Valley Bird Conservation Plan, Version 1.0 (Hill et al. 2002), 4) NPS databases, 5) peer reviewed bird conservation and management literature, and 6) personal communications with bird conservation specialists throughout North America, especially in the southeastern United States. This plan has been reviewed by LIRI resource management staff and managers, Cumberland/Piedmont Inventory and Monitoring Network (CU/P I&M) staff, and bird conservation partners and approved by LIRI management. Optimally, this plan will be incorporated into the park's Resource Management Plan (Belue 1998) and updated annually to reflect completed projects, newly identified needs, and shifts in bird conservation priorities in the region.

**LIRI is not obligated to undertake any of the proposed actions in this plan. The plan is provided to offer guidance to LIRI to voluntarily support important park, regional, and perhaps national and international bird conservation projects for which LIRI 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, economic, 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 non-government 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

**The North American Bird Conservation Initiative:** 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,
- 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 LIRI and with adjacent partners or landowners.

Concurrently, the development of a Memorandum of Understanding (MOU) between the FWS and the NPS to implement Presidential Executive Order (EO) 13186, Responsibilities of Federal Agencies to Protect Migratory Birds (US Government 2000), 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, a visionary document developed and signed by the Southeast Natural Resource Leaders Advisory Group (SENRLAG 2000), 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, Environmental Leadership, Cooperative Planning, Land Protection, and especially Natural Resource Management that details policy and

management guidelines which apply to bird conservation. Important policies in the Natural Resource Management chapter include:

- Planning for Natural Resource Management
- Partnerships
- Restoration of Natural Systems
- Studies and Collection
- General Principles for Managing Biological Resources
- Plant and Animal Population Management Principles
- Management of Native Plants and Animals
- Management of Endangered Plants and Animals
- Management of Natural Landscapes
- Management of Exotic Species
- Pest Management
- Fire Management and
- Water Resource Management

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](http://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 (USDI 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**

This 5,543 ha (2244 acres) preserve protects the nation's longest mountaintop river, which flows for almost its entire length down the middle of Lookout Mountain in northeast Alabama. The free-flowing Little River is one of the cleanest, wildest waterways in the South and its canyons are some of the deepest (183 m) in the Southeast. Little River Canyon can be divided into four communities: oak-hickory

forests, canyon shoulders, sandstone rock outcrops, and riparian areas. Oak-hickory forests occupy deep soils above the canyon shoulders. Downslope, shortleaf and loblolly pine are common, grading into Virginia pine on the glade-like canyon shoulders. Sandstone rock outcrops are common along the canyon shoulder and harbor mainly stunted Virginia or scrub pine. The shrub layer consists of sparkleberry, fringe tree, Georgia holly, and black gum. Riparian areas usually are narrow except in broader channels where oxbows exist, with woods of mainly red maple, beech, umbrella magnolia, sycamore, and river birch (Nichols et al. 2000).

## **Avian Resources of the 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 locations 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:

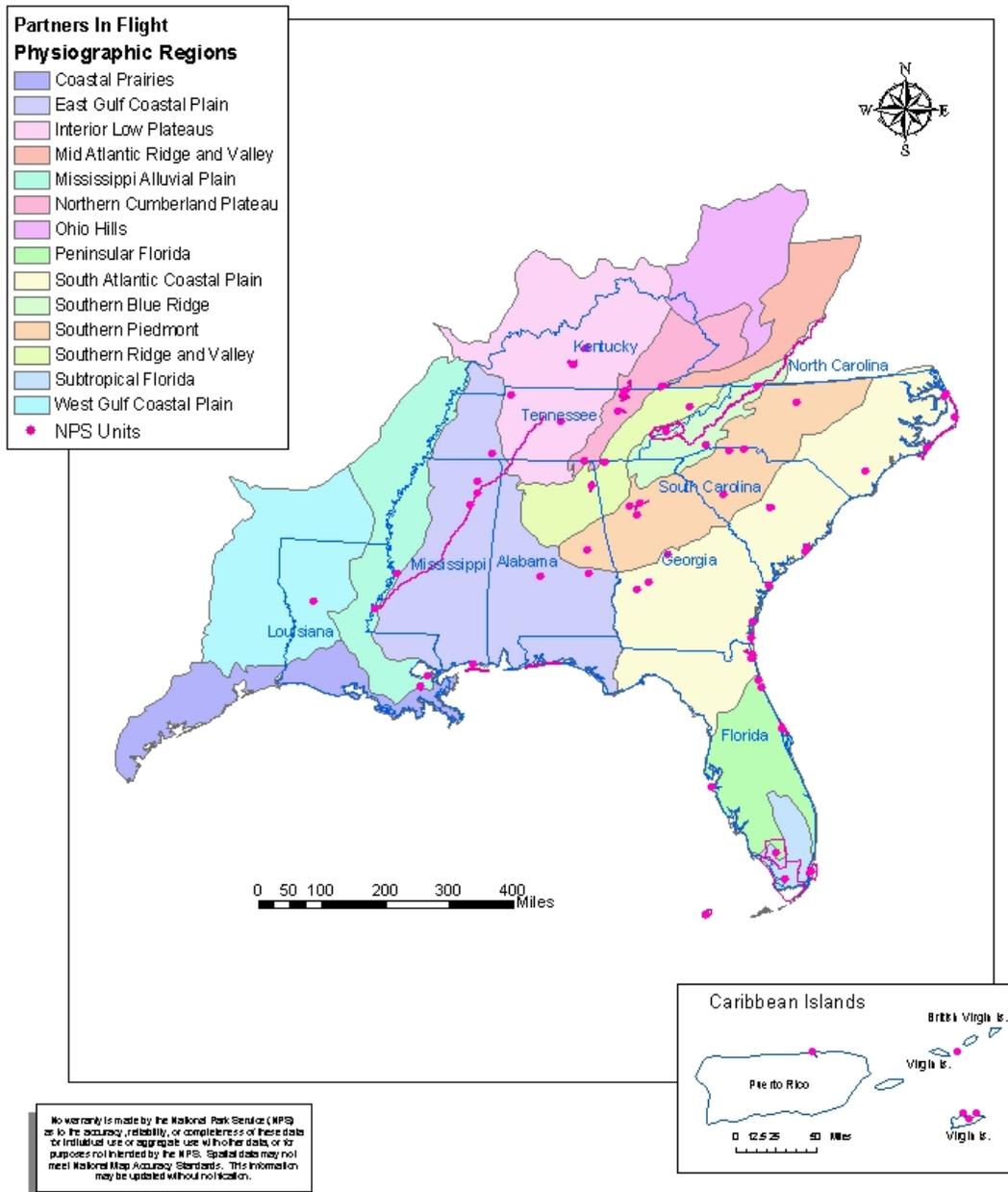
1. sustain at least 8 upland hardwood forest patches greater than 40,000 ha each,
2. increase the number of upland hardwood forest patches between 4,000 and 40,000 ha from 91 to over 100 patches,
3. manage greater than 80% of the mixed mesophytic hardwood acreage within these patches for long rotation 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 (Hill et al. 2002). 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

# Partners in Flight (PIF) Regions

Southeast Region (SER)

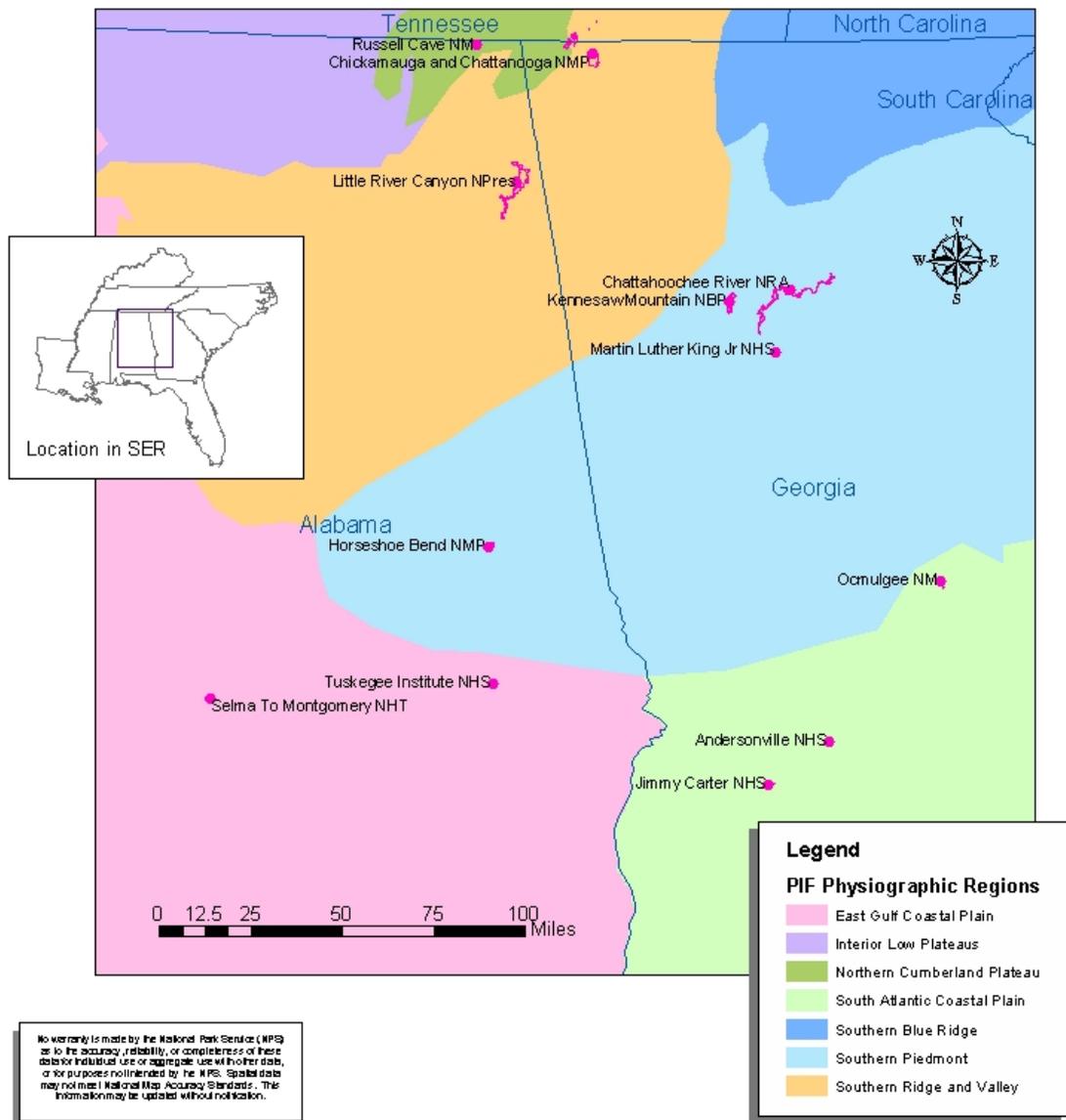
National Park Service  
U.S. Department of the Interior



# 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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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.

## **Avian Conservation in LIRI**

**Avian Biodiversity:** LIRI is in the process of conducting a presence/absence avian inventory within the framework of the NPS I&M program. Stedman and Stedman (2004) have listed data from 2004 on the website, <http://iweb.tntech.edu/sstedman/NPSBirdInventoryLittleRiver.htm> and 2004 data entry is near completion. No public checklist is available at this time. Currently, over 130 species have been documented in the park, including several high priority species for conservation in the Southern Ridge and Valley (see below).

Verified records of birds in LIRI 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.

**Park Priorities:** Park staff and consultants have not identified any particular species that is a park management concern or high priority for conservation. Rather, park staff is concerned about conserving all birds and their habitats in LIRI. However, several species that occur in LIRI are high priority on the Southern Ridge and Valley and conservation efforts in the park could focus on these species or groups of species.

**Inventory:** Bird inventory data provide important information for park management, and LIRI is one of several parks in the NPS Cumberland/Piedmont Inventory and Monitoring Network for which a plan to conduct high priority inventory projects has been prepared (USDI NPS 2000). Steve and Barbara Stedman are presently conducting avian inventory throughout LIRI in conjunction with the I&M program. Following the presence/absence inventory, additional inventory will be needed on a regular basis to determine breeding bird distribution and relative abundance in 1 ha plots associated with vegetation plots established for the vegetative inventory described in the inventory plan (Murdock letter 2002, Nichols et al. 2000).

Several high priority PIF species for the Southern Ridge and Valley occur with regularity in LIRI (see below and Appendixes A-C). Prominent among these species are: Chuck-wills'-widow, Swainson's Warbler, Worm-eating Warbler, Louisiana Waterthrush, Kentucky Warbler, Yellow-throated Warbler, Prairie Warbler, Wood Thrush, Brown Thrasher, and Acadian Flycatcher, Summer Tanager, and Field Sparrow. Other high priority species present in the park in low numbers are Brown-headed Nuthatch, Cerulean Warbler, Bachman' Sparrow, and Orchard Oriole.

**Monitoring:** Currently, no avian monitoring projects are being conducted at LIRI. It is unknown if a Christmas Bird Count Circle (CBC) includes any portion of the park.

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

**Threatened and Endangered Species:** No Federally listed threatened or endangered species are known to occur in LIRI. The American Peregrine Falcon (now de-listed) may occur within LIRI among the extensive cliff ledges at the site. However, systematic surveys have not been conducted to determine presence of nesting Peregrine Falcons.

No **Alabama Protected Species** occur in LIRI (ANHP 2003).

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

## **Park Identified Needs for Avian Conservation**

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

## **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, LIRI is within the NABCI Appalachian BCR that 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).

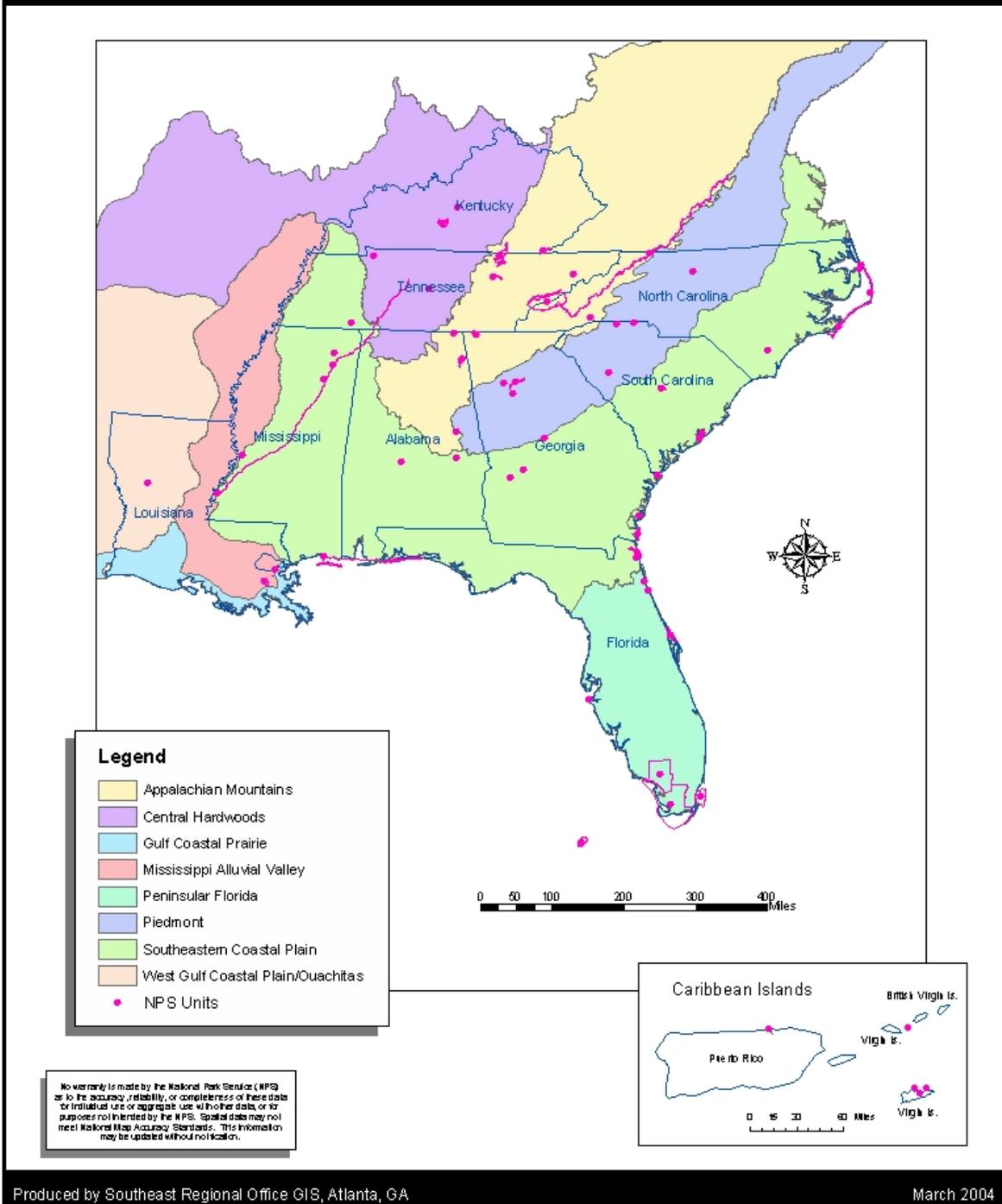
Several NABCI BCR's have coordinators whose primary responsibility is to coordinate all bird conservation planning in the BCR, across all agencies and organizations. The Appalachian Mountains BCR does have an interim designated coordinator and can provide valuable assistance to LIRI with implementation 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).

# Bird Conservation Regions

Southeast Region (SER)

National Park Service  
U.S. Department of the Interior



Produced by Southeast Regional Office GIS, Atlanta, GA

March 2004

**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. 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. LIRI being largely a 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 State of Alabama does not have a designated PIF coordinator, but at least two persons can assist the park in state level bird conservation coordination (see contacts). Each of these persons can be instrumental in assisting LIRI to implement recommendations identified in this ACIP and projects important to bird conservation relative to Alabama'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 LIRI 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 LIRI.

## **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 the 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 (US Government 2000), 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 is in the process of conducting a basic presence/absence inventory based on forest point counts methodology. Following current inventory effort, distribution and abundance data are desired to fully understand the status of birds in the park so that conservation actions for birds can be implemented (Murdock letter 2002, Nichols et al. 2000). Information regarding the status of high priority species (as identified in the Southern Ridge and Valley bird conservation plan and the USFWS Species of Conservation Concern) is needed to effectively structure park management for the continued preservation and enhancement of the park's avifauna.

#### **Additional surveys are needed**

- **along river corridor cliff areas for cliff nesting species such as Peregrine Falcon, other raptors, and swallows**

- for High Priority forest and shrub-scrub species that may not be adequately surveyed with existing or planned inventory effort (e.g., Swainson's Warbler and Chuck-wills-widow)
- along stream corridors for high priority riparian species such as Louisiana Waterthrush and Acadian Flycatcher
- during migration for Neotropical migrants and raptors
- for owls
- at established forest point counts in winter

Additionally, LIRI is encouraged to:

- verify other avian observational data collected in the park and enter into the appropriate database (NPSpecies, National Point Count Database (USGS 2001- <http://www.mp2-pwrc.usgs.gov/point/>; eBird - <http://www.ebird.org/about/index.jsp>, etc.)
- standardize inventory methodology to conform to NPS and/or FWS recommended standards (Fancy and Sauer 2000; Hunter 2000)

### **Monitoring**

The park does not have an active bird monitoring program because inventories are incomplete. Following inventory completion, the park may elect to monitor certain components of the avifauna. Close coordination with adjacent BCR coordinators and the Alabama avian conservation coordinators are 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. The park is encouraged to consider establishing permanent monitoring stations in main habitat types to systematically collect data on the distribution and relative abundances of priority species. This information will be useful for documented potential changes in park avifauna resulting from habitat change or management activities. Links to literature detailing inventory and monitoring methodologies for various avian groups (e.g. songbirds, shorebirds, raptors, etc.) can be found at: <http://biology.dbs.umt.edu/landbird/mhcp/groups.htm>. Specifically, it is recommended that the park:

- establish monitoring programs for high priority species and habitats following completion of inventory\*

- **strive to obtain as much recreational birding information as possible, verify the data, and enter data into the appropriate database (NPSpecies, National Point Count Database, eBird)**
- **develop monitoring program for game species**
- **establish a migration monitoring program for Neotropical migrants and raptors**
- **work with local Audubon Chapters to establish a Christmas Bird Count (CBC) circle that encompasses the park**
- **partner with DeSoto State Park to collaborate on joint monitoring programs**
- **establish monitoring program to detect changes in avifauna following prescribed wildfire**
- **standardize monitoring methodology to conform to NPS and/or FWS recommended standards (Fancy and Sauer 2000, Hunter 2000).**

**Habitat Restoration:** Landscape conditions in the Southeastern US have changed dramatically since early European explorers began documenting the area, its habitats, and its inhabitants. Historic landscapes were influenced by Native American burning, wildfire, bison, beaver, and elk, as well as by insect outbreaks and weather events (Hunter et al. 2001, Williams 2002), thus resulting in a landscape mosaic that supported a rich and diverse bird fauna in the Southeast (Barden 1997; Brawn et al. 2001). The arrival of Europeans and the subsequent change in landscape has dramatically effected bird habitat and bird populations. Bird conservationists have long recognized 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 on NPS lands due to the increased restoration emphasis of the Management Policies (USDI NPS 2001). Parks may use a wide range of management tools to restore wetland, grassland, woodland, and other habitats. Restoration tools include, but are not limited to, forest management practices (e.g. silviculture), prescribed fire, exotic species management, and public use and recreation management. In addition, parks can coordinate infrastructure development (e.g. roads and buildings) with restoration activities to mitigate potential adverse impacts.

Due to the protected nature of LIRI 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 LIRI can greatly contribute to established habitat goals identified in the Southern Ridge and Valley bird conservation plan.

The park is largely an upland oak-hickory with pine increasing downslope from the canyon. Much of this habitat provides suitable area and vegetative cover for nesting landbirds, but could be improved through use of prescribed fire and other forest management practices to restore the structural complexity of the forests in LIRI 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 ground and understory nesting high priority species such as (Swainson's Warbler, Worm-eating Warbler, Kentucky Warbler) through prescribed fire where appropriate, and potentially other forest management practices\***
- **manage forests toward old growth conditions, implementing appropriate management techniques to develop desired understory structure for high priority birds\***
- **continue to work toward restoration of upland bogs and wetlands**
- **assess feasibility to restore Longleaf Pine to the park**
- **identify and protect cliff areas where birds nest**
- **protect existing snag trees, where not identified as a safety hazard, as important to cavity nesting birds**
- **document all major habitat management activities, including the location (e.g. UTM coordinates) and a description of methods and of pre- and post-management habitat conditions. This information, when coupled with bird distribution and abundance data, is useful for assessing and replicating conservation actions**
- **enhance water quality to support aquatic biota necessary to support existing riparian corridor nesting birds and birds that use the riparian corridor for foraging**
- **assess historic landscape cover and determine feasibility of restoring landscape within the context of the park's enabling legislation**

**Threat Management:** Currently, few threats seem to be significant at LIRI to be a major management issue for bird conservation at LIRI. However, several actions could be implemented that could alleviate potential threats. The park is encouraged to:

- **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**
- **monitor and manage rock climbing activities to protect cliff nesting species**
- **consult with ADWFF to monitor and manage game species hunts**
- **work with local hunter groups and citizens to curb free-roaming dogs in the park**
- **eliminate existing towers in the park and prohibit future installation of towers**
- **monitor and manage exotic vegetation**

**Research:** At this time, no avian research needs have been identified for LIRI. However, following inventory, research needs are expected to be identified. However, the park is encouraged to:

- **list identified 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.**

## **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 Tennessee Ornithological Society (<http://www.chattanooga.org/>) or Alabama Ornithological Society ([www.bham.net/aos/](http://www.bham.net/aos/))\***
- **nominate LIRI 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\***

- **encourage accurate documentation and reporting from these and random outings by visitors through Cornell's Birds In Forested Landscapes Program)\***
- **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>)
- work with adjacent landowners and neighbors, the local community, and public officials to curb unregulated and free roaming feral and domestic dogs 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
- subscribe to ALBIRDS (<http://www.bham.net/aos/resources/albirds.htm>) an electronic forum devoted to the discussion of wild birds and birdwatching in Alabama and surrounding states
- establish relationship with Chattanooga Chapter of the Tennessee Ornithological Society (<http://www.chattanoogaos.org/>) and Alabama Ornithological Society ([www.bham.net/aos/](http://www.bham.net/aos/))\*
- 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.

**Compliance:** Park compliance with the Migratory Bird Treaty Act and the Executive Order 13186 (US Government 2000) 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 (US Government 2000) at the National Conservation Training Center (NCTC) (when available) or other training on migratory bird conservation in North America (<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.

**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:

- **keep abreast of local county initiatives that could impact park resources**
- **continue to develop and strengthen relationship with Ms. Barbara and Dr. Stephen Stedman to coordinate and conduct park bird conservation projects**

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

- **contact US Fish and Wildlife Service private lands biologists to discuss private landowner initiatives applicable to the area**
- **cooperate with DeSoto State Park on implementation of this plan**
- **cooperate with Alabama Division of Wildlife and Freshwater Fisheries (ADWFF) to collaborate on implementation of various aspects of this plan**
- **cooperate with Alabama Division of Wildlife and Freshwater Fisheries (ADWFF) to monitor and manage harvest of games species in the park**
- conduct joint raptor surveys for cliff nesting species with Big South Fork National River and Recreation Area, Cumberland Gap National Historic Site, Great Smoky Mountains National Park, and ADWFF.
- **contact and partner with the local chapter of the Alabama Ornithological Society ([www.bham.net/aos/](http://www.bham.net/aos/))**
- **contact and partner with the Chattanooga chapter of the Tennessee Ornithological Society**
- **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**

- 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. Funding for conservation projects for Neotropical migrants is also available through the Park Flight program. LIRI is encouraged to enter all high priority projects into the NPS Performance Management Information System (PMIS) database. Recommendations 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, or PIF Coordinator to learn how this program might be applicable to implementation of this plan, and other park wetland issues. LIRI is not within a region which has an operational Joint Venture, but contact with the Appalachian Mountains BCR, Central Hardwoods BCR, and Alabama nongame wildlife 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. LIRI is:

- **encouraged to become a member of the USFWS Southern Appalachian Ecosystem Team\***

One unexplored yet potentially fruitful funding source for national parks is the myriad of grants through the FWS State 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.

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 LIRI are:

### US Fish and Wildlife Service

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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 <sup>1</sup>
		AI	PT		
<b>Ia. Highest overall priority</b>					
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
<b>Ib. High overall priority</b>					
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
<b>IIa. Physiographic area priority: species with AI plus PT greater than 8</b>					
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

Priority Entry Criteria & species	Total PIF score	Concern scores		Percent BBS	Local migratory status <sup>1</sup>
		AI	PT		
Loggerhead Shrike	20	3	5	-	D
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

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<sup>1</sup> – 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

Habitat	Species	Total PIF score	Overall score
	Brown Thrasher	22	IV
	Yellow-throated Vireo	22	IV
	Summer Tanager	22	VI
	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

Habitat	Species	Total PIF score	Overall score
	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

### ALABAMA PROTECTED SPECIES

Common Name	Scientific Name
Crane, Mississippi Sandhill	<i>Grus canadensis pulla</i>
Dove, Common Ground	<i>Columbina passerina</i>
Eagle, Bald	<i>Haliaeetus leucocephalus</i>
Eagle, Golden	<i>Aquila chrysaetos</i>
Egret, Reddish	<i>Egretta rufescens</i>
Falcon, Peregrine	<i>Falco peregrinus</i>
Hawk, Cooper's	<i>Accipiter cooperi</i>
Merlin	<i>Falco columbarius</i>
Osprey	<i>Pandion haliaetus</i>
Oystercatcher, American	<i>Haematopus palliatus</i>
Pelican, American White	<i>Pelecanus erythrorhynchos</i>
Plover, Piping	<i>Charadrius melodus</i>
Plover, Snowy	<i>Charadrius alexandrinus</i>
Plover, Wilson's	<i>Charadrius wilsonia</i>
Stork, Wood	<i>Mycteria americana</i>
Tern, Gull-billed	<i>Sterna nilotica</i>
Warbler, Bachman's	<i>Vermivora bachmani</i>
Woodpecker, Red-cockaded	<i>Picoides borealis</i>
Wren, Bewick's	<i>Thryomanes bewickii</i>

State Protected (SP) - Species with a state protected status are protected by the Nongame Species Regulation (Section 220-2-.92, page 74-76) and the Invertebrate Species Regulation (Section 220-2-.98, pages 77-79) of the *Alabama Regulations for 2002-2003 on Game, Fish, and Fur Bearing Animals*.

## APPENDIX D

### USFWS Species of Conservation Concern (2002) 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)