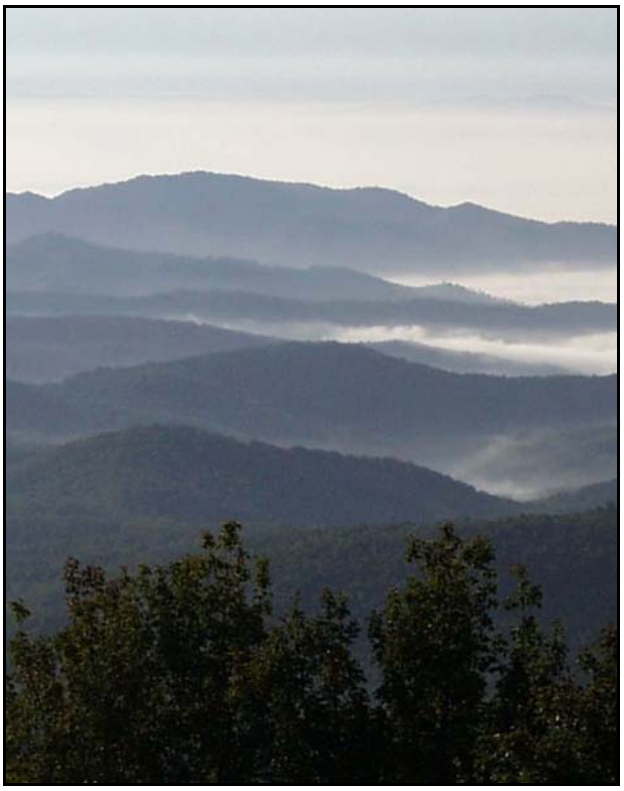
APPALACHIAN MOUNTAINS
Bird Conservation Initiative
Concept Plan



Appalachian Mountains Bird Conservation Region Partnership
August 2005

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Executive Summary

The Appalachian Mountains Bird Conservation Region (AMBCR) partnership is built on the concept that meaningful and effective bird conservation must take place at the landscape scale with a sound, scientifically based, biological foundation. To achieve its goals, the partnership brings together the jurisdictional commitment and collective energies, talents and expertise of the state and federal agencies, non-governmental organizations, and industrial and private landowners with land management responsibilities and bird conservation interests within the AMBCR boundaries. The coordination provided through the AMBCR will facilitate bird conservation planning at the highest level of efficiency and enable partners to achieve the delivery of conservation in a synergistic and effective manner.

The AMBCR is dominated by various-aged forest stands, including oak-hickory and northern hardwood. Other types of early successional habitat, high elevation spruce stands, wetlands, and grasslands are also interspersed throughout the region. This diverse, forest-dominated cover provides habitat for 234 species of breeding, migrant, and wintering birds over an area of approximately 105 million acres. North American populations for many of these species are concentrated in the AMBCR and a number of these bird species have experienced steep population declines (Sauer et al. 2005). Populations for at least 33 species have greater than 10% of their population in the Appalachian Mountains and at least 10 species have greater than 25% of their population in this region. Remarkably, almost 80% of the entire Cerulean Warbler (*Dendroica cerulea*) population occurs in the AMBCR. Clearly, the Appalachian Mountains provide significant and critical habitat for a large number of declining bird populations located in eastern North America. Appropriate and properly coordinated conservation strategies will need to be designed and implemented to stabilize and/or improve these bird populations. The AMBCR partnership seeks as its mission to:

Provide a forum for partners to coordinate and improve the effectiveness of bird conservation planning and implementation in the AMBCR in order to restore and sustain viable populations of native birds and their habitats.

The AMBCR partnership embraces the goal of the North American Bird Conservation Initiative (NABCI) which reads in part as follows:

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

To fulfill its mission within the context of the NABCI goal, the AMBCR partnership seeks:

1) to develop a sound science foundation as the basis for conservation design and adaptive management,

2) to target conservation actions toward landscapes with the greatest ecological and socioeconomic potential to support viable populations of

priority birds in a variety of forest, grassland, and wetland/riparian habitats, and

3) to initiate projects and fund-raising for habitat conservation and management and other work within the AMBCR that will further the conservation objectives of the various bird initiatives encompassed by AMBCR.

Efforts are underway to establish an organizational structure conducive to the application of bird conservation coordination across the AMBCR. A Steering Committee, Technical Focus Groups, and a Coordinator are working together to develop a process to identify and prioritize conservation strategies and methods for implementing management activities designed to achieve bird conservation goals. The Steering Committee has been established to provide guidance and support to the AMBCR Coordinator on the direction and management of the initiative, priorities, planning activities, budget and funding needs. The Steering Committee also serves as liaison between the AMBCR and other entities, both public and private, concerned about bird conservation initiatives within the region. This conceptual plan articulates the path by which more detailed planning and implementation efforts are to be achieved in the Appalachians. Finally, a primary purpose of this concept plan is to outline the process by which the AMBCR partnership will proceed toward development of a revised or new Joint Venture partnership, in fulfillment of US Fish and Wildlife Service's (FWS) Director's Order 146, Joint Venture Administration (September 2002).

Introduction

Based on Breeding Bird Survey data analysis (Sauer et al. 2004), 86 of the 234 bird species that breed and winter throughout the Appalachian Mountains Bird Conservation Region (AMBCR, Figure 1) are declining, some significantly. The Appalachian Mountains BCR covers portions of 15 states and 11 Partners In Flight (PIF) physiographic regions covering approximately 105 million acres. Mostly privately owned forest land, the AMBCR provides a wide variety of habitats for 185 breeding and over 150 year around bird species (Appendix B). Most of these are landbirds associated with upland habitats. Several are listed as threatened, endangered, or of special concern by state and federal wildlife agencies. Many are of continental conservation concern, some being extirpated from the region, or in dire need of conservation action. Rich et al. (2004) list 48 species as either Watch List or Stewardship Species in the AMBCR. Many of these high priority species have most or a significant portion of their global population in the Appalachian Mountains and have experienced steep population declines. Populations for at least 33 species have greater than 10% of their population in the Appalachian Mountains and at least 10 species have greater than 25% of their population in the Appalachians. Remarkably, almost 80% of the entire Cerulean Warbler (*Dendroica cerulea*) population occurs in the AMBCR. One species, the Red-cockaded Woodpecker, is federally listed as Endangered. The Appalachian Mountains are also used by many species during migrations, including many short distance temperate migrants and Neotropical migrants, such as the federally endangered Kirtland's Warbler and the experimental Whooping Crane population.

To provide a forum for coordinating all-bird conservation in the AMBCR, concerned avian ecologists, biologists, and land managers from federal, state, non-governmental organizations (NGO's) and industry formed a partnership in 2003. This new partnership seeks to implement "all-bird" conservation objectives by providing information at a regional scale according to national level plans and integrated under the North American Bird Conservation Initiative (NABCI; (http://www.nabci.net/vision.htm). This partnership accepts the responsibility for delivery of national or international bird conservation plans in the United States and will strive to deliver bird and bird habitat conservation priorities in the Appalachian Mountains.

This conceptual plan is intended to serve as a framework for developing and organizing all-bird conservation in the AMBCR. Actions critical for adequate and timely development and implementation of this initiative are:

A) Identify an appropriate mission statement
B) Identify the key conservation issues
C) Develop a sound biological foundation
D) Develop an effective conservation design and delivery program
E) Develop an appropriate and effective administrative and technical organizational framework to support the mission and goals of the initiative

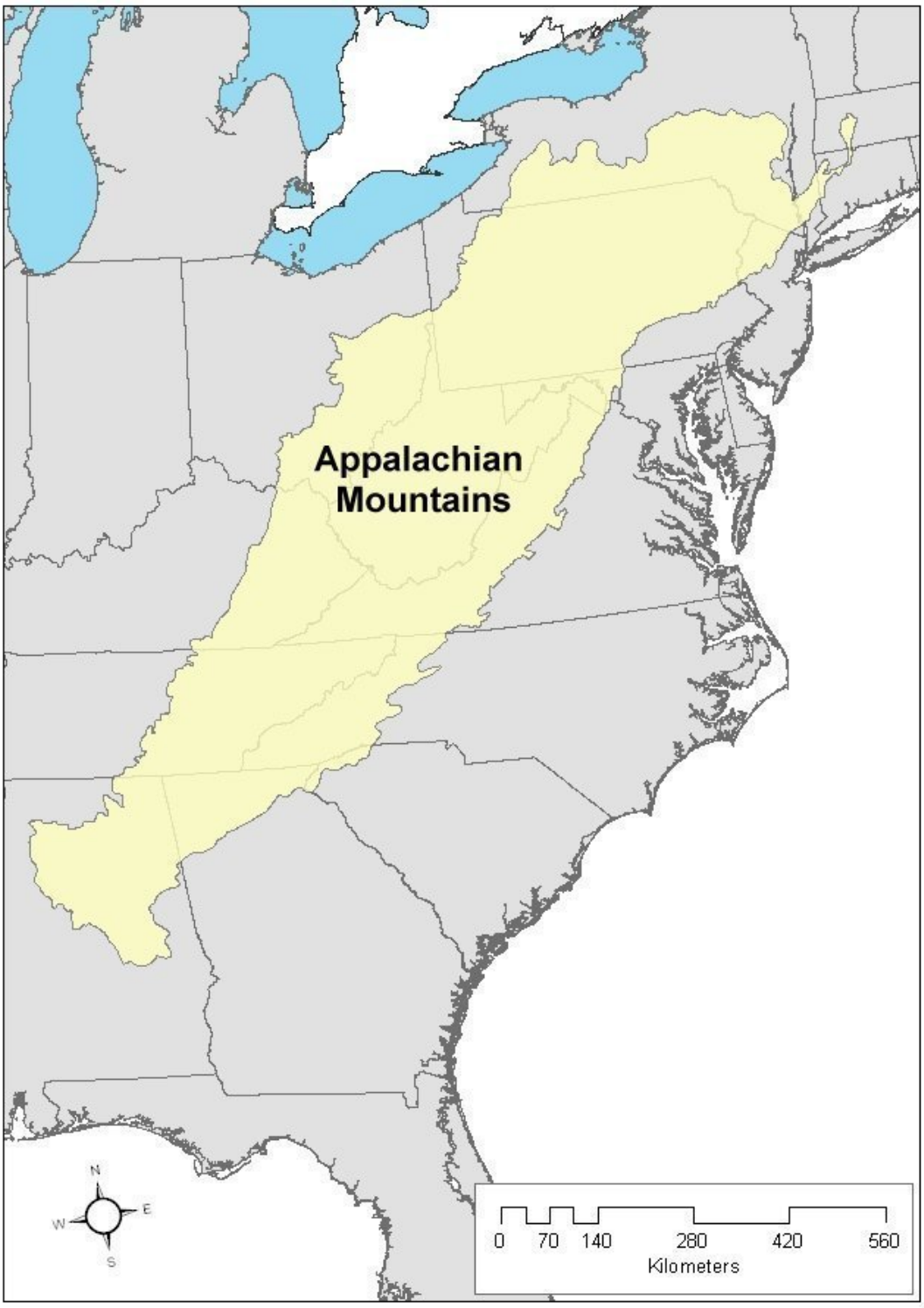

Figure 1. Appalachian Mountains Bird Conservation Region

F) Develop a timetable for implementation, and
G) Develop an evaluation program.

This concept plan is written to provide a direction for efforts in the AMBCR tiered to these needs. Each item will be discussed in general terms, recognizing more detailed information and guidance will be provided in subsequent planning documents, expected to be developed within the next year.

Mission

The mission of the AMBCR is to:

> **Provide a forum for partners to coordinate and improve the effectiveness of bird conservation planning and implementation in the Appalachian Mountains Bird Conservation Region in order to restore and sustain viable populations of native birds and their habitats.**

Ecology and Conservation Issues

The AMBCR partnership is organized around the Appalachian Mountains Bird Conservation Region (Figure 1) in accordance with the NABCI's recognition of Bird Conservation Regions (BCR's; http://www.nabci-us.org/bcrs.html). Federal ownership and land management responsibility, primarily National Park Service and US Forest Service, covers approximately 15% of the AMBCR area; state and private lands cover approximately 85% of the area (relative estimates for each are not yet available). Because conservation implementation on private lands will be a significant landscape challenge in the AMBCR, analysis and strategy for conservation implementation on these areas will be required.

The AMBCR includes the Blue Ridge, the Ridge and Valley Region, the Cumberland Plateau, the Ohio Hills, and the Allegheny Plateau physiographic areas. While lower and flatter portions are in agricultural use, the majority of this region is forested. Its rugged terrain is dominated by oak-hickory and other deciduous forest types at lower elevations and by various combinations of pine, hemlock, spruce, and fir in higher areas.

The greatest bird conservation asset in the Appalachian Mountains is concentration of forest and woodland species. The majority of the conservation efforts in the region will be focused on birds in these habitats. Currently, the quality of habitat, in terms of the composition and vertical structure of existing forests, may be a primary limiting factor to increasing populations of declining forest birds. In the future, the quantity of habitat in terms of the amount and type of habitat is likely to be a limiting factor to sustaining populations of forest species.

Examples of priority forest birds include Cerulean Warbler, Worm-eating Warbler, Wood Thrush, and American Woodcock. Appalachian Bewick's Wren (which may be

extirpated) occurs in disturbed early successional habitat. Golden-winged Warblers occur in early successional areas and Henslow's Sparrows may occur in grasslands.

The Appalachian Mountains contain the headwaters of several major eastern river systems that are used by waterfowl during migration and winter including the American Black Duck. In addition, large wetland complexes, such as Canaan Valley in West Virginia, and isolated beaver-created wetlands provide habitat for breeding Wood Duck, and a variety of other wetland/bog associated species such as Olive-sided Flycatcher, American Woodcock, Canada Warbler, Alder Flycatcher, Willow Flycatcher, Yellow-bellied Flycatcher, Golden-winged Warbler, and Swainson's Thrush. Shorebirds and waterbirds are not considered a high conservation priority at the BCR level (personal communication B. Andres and J. A. Wheeler 2004), but a few species such as Spotted Sandpiper, Upland Sandpiper, and American Bittern have local or regional conservation needs.

Being largely forested, a majority of the conservation goals will be derived from existing bird conservation plans developed by PIF (http://www.partnersinflight.org/). Any goals and actions for waterfowl, shorebirds, and waterbirds in the AMBCR will be derived from existing regional conservation plans associated with waterfowl (North American Waterfowl Management Plan (NAWMP), http://www.nawmp.ca/), shorebirds (US Shorebird Conservation Plan (USSCP), http://www.fws.gov/shorebirdplan/), and waterbirds (Waterbird Conservation for the Americas (WCA), http://www.waterbirdconservation.org/).

Coordination with upland game bird initiatives (Northern Bobwhite, Wild Turkey, American Woodcock, and Ruffed Grouse) will enhance potential to positively affect landscape management for multiple purposes.

The greatest future threat to bird habitat in the Appalachian Mountains are likely to be the continuing expansion of urban sprawl into rural areas and management of energy and fiber resources. Increased development pressures from second home and recreational development result in the permanent conversion of vegetation to urban infrastructures and fragment the habitats that remain, while providing increased opportunity for invasion of exotic plants and animals that often reduce quality and quantity of habitats needed by birds of the region. Increased forest fragmentation is also expected from mountain top mining/valley fill operations, timber harvests, and construction of wind turbine farms.

The Biological Foundation

AMBCR partners recognize that bird conservation goals and objectives developed for the Appalachians must be based upon a sound biological foundation. The partnership's goal is to:

> **Strengthen the biological foundation upon which planning, evaluation, and conservation delivery are based.**

This biological foundation has two basic components: 1) prioritizing species on the basis of their ecological vulnerability and conservation need, and 2) determining relationships between the abundance and viability of birds and habitat conditions at a variety of spatial scales. Once these relationships are established they can be used to guide conservation design and delivery and to determine the quality and quantity of habitat needed to reach sub-BCR and continental bird population goals. Both prioritization and species-habitat relationships will require periodic reassessment due to increased ability to develop, test, and implement population sustainability models. This adaptive resource management model, an iterative process of conservation delivery followed by evaluation of bird population responses, will be pursued.

Population Goals and Habitat Objectives

The AMBCR partnership recognizes that the continental population objectives developed by the various bird conservation initiatives under NABCI must be stepped down to the BCR level as part of a process for setting population-based habitat conservation targets.

The PIF North American Landbird Conservation Plan (NALCP, http://www.partnersinflight.org/cont_plan/default.htm) has established estimated population levels and objectives for 448 landbird species (Rich et al. 2004). Rosenberg et al. (2003) has stepped down PIF NACL continental objectives to the AMBCR level and these will be stepped down to the sub-BCR level and used as a basis for initial planning goals. Additionally, PIF bird conservation plans have identified habitat objectives in some areas of the Appalachian Mountains and will be used as a basis for initial planning as well.

Population and habitat objectives need to be identified at multiple scales in the AMBCR. To support this goal, a Technical Focus Group has been established to address these issues, revise priorities, and develop strategies to provide continued refinements to priorities in the BCR. This group will also identify conceptual methodologies to enumerate habitat objectives linked to population objectives, both based on the proposed sub-BCR designations.

Once established, these priorities and objectives will be reviewed by the Steering Committee. This group is expected to complete this task by September 2005.

Relevant waterfowl, shorebird, waterbird, and game bird population and habitat goals derived from the NAWMP, USSCP, WCA, Northern Bobwhite Conservation Initiative, state Wild Turkey Management Plans and pending plans for Ruffed Grouse and American Woodcock will be used to guide conservation for these groups in the AMBCR.

Bird abundance is expected to change following implementation actions such as habitat restoration and habitat manipulation. It will be necessary to develop a system that will adequately detect these changes so that adaptive implementation can occur. The AMBCR will strive to develop methods to evaluate the response of populations to

regional restoration and management efforts. A Technical Focus Group has been established to advance this aspect of AMBCR planning. Work of this group is expected to be complete by October 2005.

Research

Sound science is an essential component to support biologically based conservation programs such as AMBCR. The goal of research in the AMBCR is to:

Review and recommend research needed to further refine and improve the biological foundation for bird conservation in the AMBCR

A Technical Focus Group has been established to identify and summarize existing research relevant to AMBCR bird conservation, to identify present and future research needs, establish a database to document and track research and needs, and develop a strategy to manage this effort.

Partners in the AMBCR will undertake targeted research and monitoring projects to fill gaps in our basic knowledge of priority species, including identifying factors that limit population growth, increase knowledge of population size and trend, and model population response to habitat changes.

Perhaps the largest research need in the AMBCR is to link population response to habitat management efforts. Knowledge is available that link bird and general habitat preferences, but information is needed on bird response to management actions and how to convert an existing forest or other habitat structure to a structure that increases the capability and response by a particular bird species to meet specific population goals. Because most of the AMBCR is forested, a handbook that describes birds and their habitats similar to Hamel's (1992) work for the southern region and how to conduct forest management to achieve a particular response needs to be developed for land managers throughout the Appalachians.

A technical workshop among BCR partners is planned for early 2006, depending on degree of progress or completion of tasks identified for Technical Focus Groups. Following the workshop, an implementation plan is expected to be developed. The implementation plan will specify bird conservation needs and priorities throughout the BCR.

Conservation Design

The goal of conservation design in the AMCBR is:

To develop landscape designs that will, based on our best understanding of landscape conditions and population/habitat relationships, sustain the diversity and viability of Appalachian bird populations.

These designs may consist of a number of habitat patches of certain sizes and quality embedded within landscapes with certain desired characteristics, or of areas where some threshold acreage of high quality habitat is to be protected, enhanced, or restored. To support this goal, AMBCR will need to identify biological, geographical, physical, and demographical data sets that are relevant to AMBCR planning and implementation. To develop this informational framework, a Technical Focus group has been established to develop a Geographic Information System (GIS) support framework. The scope of this group will be partly determined by the questions that need to be answered in order to complete conservation designs and other technical aspects. Multiple outcomes of this group will be a comprehensive data library, identification of informational gaps, and a strategy to fill this gap and develop a comprehensive GIS capability that supports:

1) development of technical capabilities to produce spatially-explicit delineation of habitat objectives at multiple scales
2) development of habitat suitability and source population sustainability models that link habitat and landscape management to support bird population objectives initially established by the PIF NALCP,
3) refinement and improvement of habitat based population objectives and sustainability models, and
4) management of habitats and bird populations within a larger biological and ecological context including rare plants, animals and communities and their natural dynamics.

The Technical Focus Group will provide information on how to best proceed with various approaches to modeling bird populations, habitats, and their linkages. The combination of population sustainability modeling and spatially derived habitat objectives should permit the development of a “blue-print” of future desired conditions within the Appalachian Mountains that will sustain priority bird populations.

Once landscape scale focus areas have been identified, a detailed assessment of land use and habitat types within each area needs to be developed. Also, a database with information on land use, ownership, threats and conservation opportunities in each focus area must be linked to a GIS. The database can then be used to define which bird species and species suites to target and what management and conservation tools are most applicable to meeting bird-habitat objectives within each focus area. Detailed information on species’ abundance per habitat type will be developed that can better link populations to habitat, and that information will be included in the information management system as well. Eventually, this information, along with GIS support technology, will allow the Appalachian Mountains partnership to better evaluate the amount and distribution of habitat needed to support the number of birds targeted in the BCR’s population targets as well as provide a mechanism to track progress toward those goals.

A longer term goal of this effort is to develop a strategy to obtain information on a BCR wide assessment similar to Southern Appalachian Assessment (SAMAB 1996).

Delineation of sub-BCR's

A need has been recognized to establish smaller planning areas within the entire BCR due to local priorities established by PIF physiographic area bird conservation plans which may be lost of at the scale of the BCR (Rosenberg 2003, Hunter, personal communication 2004). In an effort to preserve the integrity of local and regional priorities, planning units have been designated within the BCR that will serve to both facilitate recognition of local and physiographic priorities and provide for effective conservation at a smaller scale yet provide for effective conservation in the BCR. The following sub-BCR units are proposed (Figure 2.)

1) Southern Blue Ridge – no change from the Partners in Flight physiographic area delineation
2) Southern Ridge and Valley – includes the Southern Cumberland Plateau, the Southern Ridge and Valley, and a southern portion of the Mid-Atlantic Ridge and Valley PIF physiographic areas, with some slight modifications
3) Allegheny Plateau – includes all AMBCR portions of the PIF Allegheny Plateau except the southern extension
4) Appalachian Plateau - includes the Northern Cumberland Plateau and Ohio Hills except that the southern extension of the Ohio Hills in included in the Allegheny Mountains/Ridge and Valley

5) Allegheny Mountains/Ridge and Valley – includes the northern portion of the PIF Mid-Atlantic Ridge and Valley, the southern extension of the PIF Ohio Hills, and the AMBCR portion of the PIF Northern Ridge and Valley.

These sub-units are based on the Environmental Protection Agency's Ecoregional boundaries and in a few areas do not directly coincide with AMBCR boundaries. These areas show on the map as white spaces within the AMBCR boundary. Significant departures from sub-BCR unit and AMBCR boundaries will be presented to the US NABCI Committee for official recognition (i.e. PIF Southern Piedmont portion of AMBCR) while less significant departures will be partner driven decisions on how to incorporate into the AMBCR planning processes.

Conservation design in the Appalachian Mountains will be centered initially upon the delineation of geographically explicit bird conservation focus areas within the sub-BCR's that correspond to the general habitat affinities of mature forest, grassland, early successional, and wetland bird species suites. While there are other areas within the BCR that do or could provide high quality bird habitat, the focus areas will have the highest conservation and restoration potential at a landscape scale. These areas have not been fully identified but are expected to include significant blocks of public lands that can provide a core for conservation efforts, good potential for public-private partnerships, and/or have been identified by The Nature Conservancy or state Natural Heritage Programs as areas with noteworthy levels of biodiversity. National Park Service and US Forest Service lands are expected to serve as primary areas where

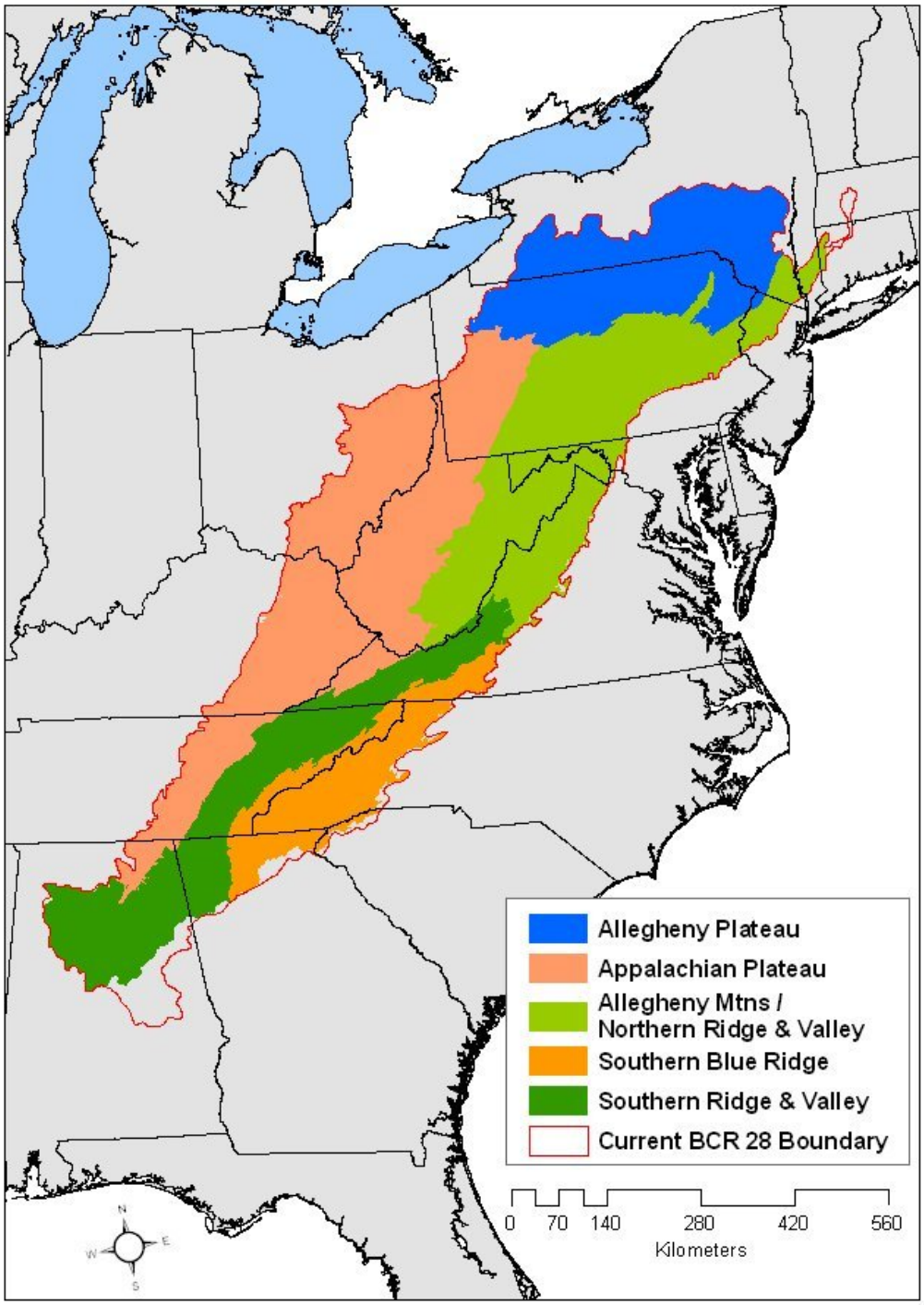

Figure 2. Appalachian Mountains BCR Proposed Subdivisions

conservation actions will be implemented. Eventually, private lands will be factored into this process of developing and evaluating options for management of these habitats on all lands across the BCR.

To establish a basis for identifying initial focus areas, two Technical Focus Groups have been established to develop:

- a Conservation Design for Uplands, and
- a Conservation Design for Wetlands

Work is expected to be completed by these technical focus groups in the fall of 2005.

Organizational Framework

The AMBCR will be organized in a framework similar to Joint Ventures, which are regional self-directed partnerships guided by a Management Board and technical committees. This framework will provide for a known successful structure for delivery bird conservation in the AMBCR. The AMBCR will use a Steering Committee and Technical Committee to provide technical guidance to the initiative staff and partners; however, the scope of issues and needs at this time will require more focused effort by smaller technical focus groups. A Coordinator position for the AMBCR has been established. Additional positions and organizational support will be developed as necessary given adequate funding.

An aspect of AMBCR planning that will challenge coordination and implementation is that a majority of the BCR lies within the Atlantic Coast Joint Venture (ACJV) and a smaller portion within the Upper Mississippi River Great Lakes Joint Venture (UMRGLJV). A large percentage is area without joint venture coverage (Figure 3). The nine easternmost states in the AMBCR (Georgia, South Carolina, North Carolina, Virginia, Maryland, New Jersey, Pennsylvania, West Virginia, and New York) are entirely within the ACJV and Ohio is entirely within the UMRGLJV. The Appalachian Mountain portions of three states (Alabama, Tennessee, and Kentucky) are outside any exiting regional conservation framework. Connecticut and Massachusetts, which are also in the ACJV, but which have minor portions of their land base in the AMBCR, will not be directly involved in the planning efforts. Because much of the AMBCR is within the ACJV, their staff has agreed to assist in the early development of the AMBCR.

Planning in the AMBCR will cover the entire BCR but conservation delivery activities will be limited to those partners and areas that want to be a full partner in the AMBCR. Thus, UMRGLJV will likely develop distinct implementation actions and will be included in planning coordination for that portion of the UMRGLJV within AMBCR.

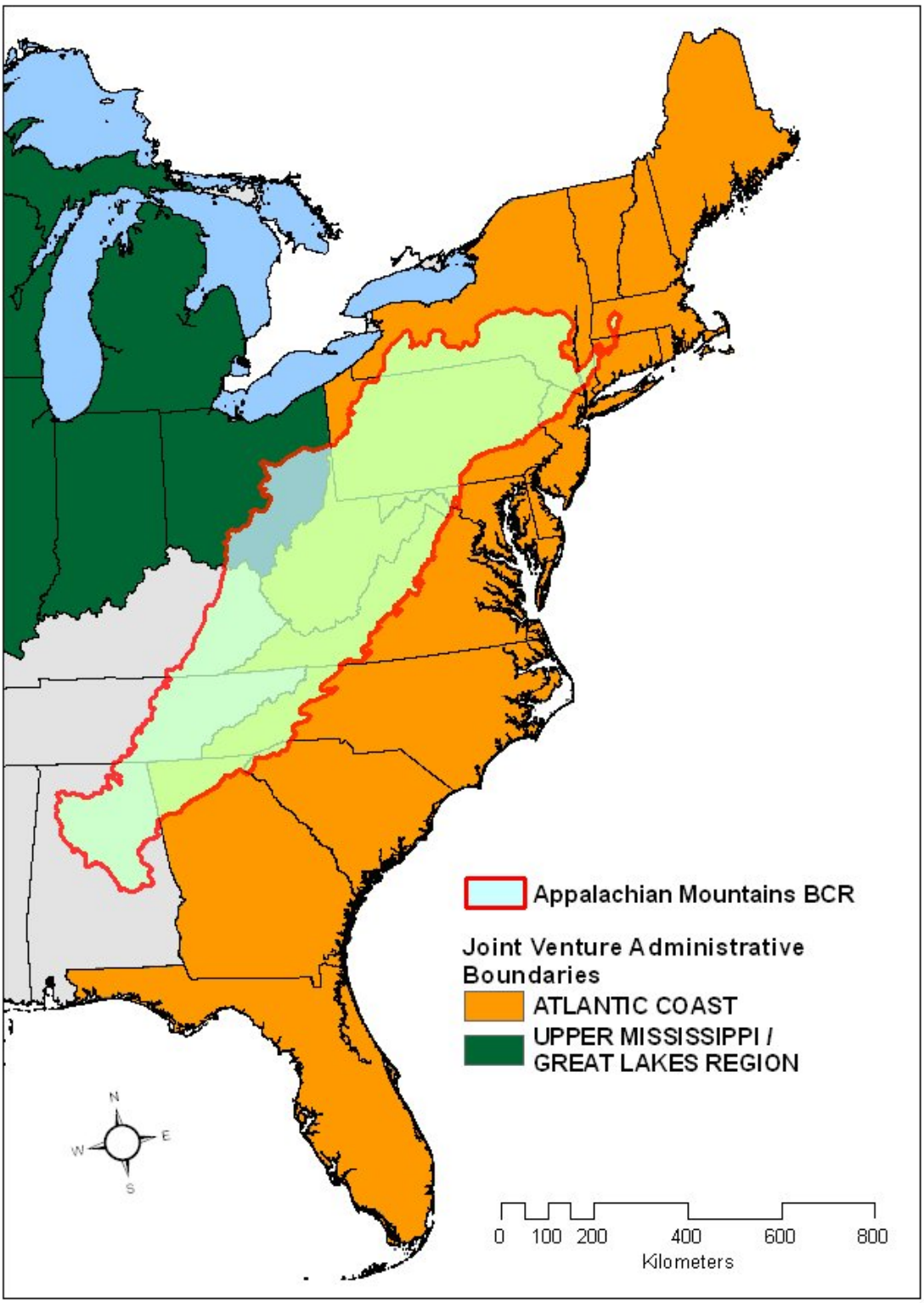

Figure 3. Appalachian Mountains BCR and Existing Joint Ventures

Steering Committee

The AMBCR Steering Committee provides guidance and support to the AMBCR Coordinator on the direction and management of the initiative, priorities, planning activities, budgets and funding needs, and serves as liaison between the AMBCR and other entities, both public and private. The Steering Committee currently consists of representatives of 12 state and four federal agencies, four non-governmental organizations (NGO's) and one private industries. Each of these agencies has either jurisdictional or cooperative land management responsibility or programs within the AMBCR. The Committee may add representatives of other agencies and organizations at its discretion. Potential new member organizations could include additional governments, tribes, and corporations interested in improving conditions for priority bird species in landscape-level public-private partnerships. The first Steering Committee chair was selected at the request of the ACJV Management Board Chair in fall of 2003. Subsequent Steering Committee chairs will be selected by consent of majority of the Steering Committee members after serving in this capacity for approximately two years.

Technical Focus Groups/Technical Committee

In the early development of the AMBCR, a series of Technical Focus Groups was organized to address specific technical developmental needs of the initiative described briefly in this plan. The groups will be comprised of staff of AMBCR partner agencies and organizations and other qualified and interested parties. The primary function of the focus groups will be to evaluate and develop strategies to support the Biological Foundation and meet the objectives of the Conservation Design through:

1) Assessment and prioritization of species and habitats at the sub-BCR level;
2) Development of a GIS support framework;
3) Development of research strategy;
4) Development of population response to management and limiting factors (threats) models;
5) Development of an upland conservation design;
6) Development of a wetland conservation design; and
7) Development of monitoring and evaluation strategies.

A focus group has been assigned for each of these topics and will remain operative as long as necessary. The coordinator will be a liaison between the groups and the Steering Committee. Additional technical or focus groups will be established as needed. Ultimately, additional paid staff may assume the role of science and Technical Focus Group coordination. Eventually, a broader Technical Committee may be formed to develop technical strategies to achieve desired technical functions.

AMBCR Coordinator

The coordinator's role is to assure that planning for the initiative proceeds in an effective and timely manner, that identified target products are delivered, and those goals and objectives of the initiative are met. The current AMBCR Coordinator is a full time employee of the US Fish and Wildlife Service's Southeastern Region Division of Migratory Birds, stationed in Asheville, North Carolina. In the near term, this will be the AMBCR's only dedicated paid staff position. In the future, additional staff may be hired to coordinate science and technical teams, work with local and regional partnerships, and/or continue to build the BCR's GIS and information management infrastructures. Any new staff is expected to be supervised by the coordinator.

ACJV Staff

Staff of the ACJV is available to assist with development of the initiative and to provide both technical and administrative functions to the extent possible given current duties. The ACJV coordinator, three assistant coordinators, science coordinator, GIS technician, and an outreach coordinator will contribute to development of the AMBCR.

ACJV Integrated Bird Conservation Committee

The purpose of the ACJV Integrated Bird Conservation Committee (IBCC) is to integrate biological planning, conservation design, conservation delivery, and evaluation among the major bird conservation initiatives operating within the joint venture area. The IBCC is comprised of representatives of the regional working groups from each major bird conservation initiatives in the ACJV. Other ACJV member organizations and agencies also have the option of having representatives on the IBCC. The AMBCR Coordinator will serve on the IBCC initially and may develop a similar functional group focused on the Appalachian Mountains in the future.

Focus Area Committees

Focus Area Committees may be established with partners delivering projects at local and regional scales within the AMBCR in specific geographic areas that have been determined to be important for bird conservation in the AMBCR. These teams could develop plans for their respective focus areas and implement conservation actions in accordance with those plans. Existing state working groups may be used to serve this function or new state working groups may be formed where working groups currently do not exist. The work of these committees would be directed through coordination with other technical functions of the AMBCR.

Conservation Delivery

Conservation delivery is a process that attracts, generates, leverages, and implements projects among partners that support AMBCR goals and objectives. The goal of the AMBCR partnership is to:

Foster and facilitate the effective delivery of objective-based bird conservation initiatives across the AMBCR by bringing the programmatic capabilities of all partners to bear in a coordinated fashion to maintain or improve landscape level conditions

The majority of the projects will be developed and implemented by local and sub-BCR partnerships, yet cumulative implementation will be tracked through a GIS and associated databases. The objectives of conservation delivery will be to:

- Facilitate and enhance the ability of the AMBCR partners to develop and implement projects, and
- Coordinate research, management, and funding needs
- Implement priority projects and conservation actions, especially within focus areas, through state, regional, and international partnerships
- Achieve long term restoration, preservation, conservation, and management of
    - forested habitats with appropriate vegetative composition and structure in the Appalachian Mountains will be critical to achieving established population goals
    - early successional (to include shrub-scrub, balds, grasslands) and wetland habitats, particularly mountain wetlands such as bogs, fens, and beaver ponds remain a conservation priority for maintaining and creating essential habitat for species associated with these habitats and that are declining.

<u>Role of the Atlantic Coast Joint Venture</u>

The relationship between the existing conservation framework in the ACJV and the developing AMBCR effort will provide a means by which ACJV expertise, funding, and implementation efforts will complement and support the AMBCR effort. The ACJV has recently broadened its scope of interest by becoming an “all-bird” Joint Venture (reference). Indeed, the ACJV has demonstrated its commitment to assisting with the AMBCR effort by agreeing to oversee initial planning and implementation aspects of the AMBCR until a time when AMBCR efforts can operate independently yet remain closely coordinated with the ACJV. The ACJV Management Board supports the development of the AMBCR and believes that once the initial planning is complete, partners in the Appalachians will decide how best to structure future joint venture boundaries. The ACJV has also contributed substantial funding to catalyze conservation efforts for the AMBCR. If the partners in the Appalachians decide a new joint venture is the best approach, they will need to complete the process outlined in the Director’s Order on Joint Ventures in order to be approved for funding through the US fish and Wildlife Service. This process includes the completion and approval of an implementation plan.

Effective delivery of bird conservation will require

- Coordination and integration with other conservation initiatives in the Appalachian Mountains;
- Coordination and integration of AMBCR with State Comprehensive Wildlife Conservation Strategies;
- Development of strategies to incorporate integrated bird conservation objectives into private lands programs within the Appalachian Mountains;
- Development of partnerships with adjacent BCR's that share an avifauna with the Appalachian Mountains BCR; and
- Investigation of international conservation partnerships in regions where Appalachian birds migrate and winter.

Upper Mississippi River/Great Lakes Joint Venture

Currently, the Ohio portion of the AMBCR is within the Upper Mississippi River/Great Lakes Joint Venture (UMRGLJV). The coordinator of the UMRGLJV is aware of developing efforts in the AMBCR and will provide input as needed to promote Appalachian bird conservation programs.

Delivery and Funding Programs

Existing programs to be used in implementation of conservation strategies will include state and federal private lands programs, increased emphasis on the importance of bird habitats under federal jurisdiction through strategic planning processes for National Forests and National Wildlife Refuges, development of corporate partnerships, working with city, county and regional land use planners, and application of carbon sequestration (http://www.fws.gov/southeast/carbon/) programs. Private industrial landowners may have a key role in implementation of important habitat management and research projects.

The North American Wetlands Conservation Act, the Neotropical Migratory Bird Conservation Act, and the National Fish and Wildlife Foundation's general challenge and special grants programs are examples of financial resources the AMBCR partner agencies and organizations can utilize to help fund bird conservation. Partners will work to share skills and identify funding sources for identified projects and to help communicate the need for, and success of, those efforts to the conservation community and public.

Communications

Communication among the AMBCR Steering Committee, representatives of relevant bird conservation initiatives, and the conservation community at large will be vital to the success of bird conservation efforts. In addition, the Appalachian Mountains partnership recognizes the need to work with other conservation partnerships both within the United States and the international arena to insure that the conservation needs of the Appalachian Mountains' priority migratory bird species are met within all the geographic areas utilized throughout their annual cycle.

The AMBCR communication goal is to:

> **Develop effective communications products and plans to attract partners, raise funds, improve internal and external relations, and raise the awareness of the AMBCR partnership among multiple audiences (political, governmental, NGO, private and industrial landowners, citizens, etc.).**

The ACJV Outreach Coordinator will assist in development of this phase of the initiative. Products will be designed to be useful to multiple audiences, especially the US Congress. Expected outcomes from this are:

- Outreach and Education Video
- Web site
- Brochure
- Briefing Statements/Papers

Funding

Currently, only one full time position supported fully by the FWS is dedicated to the coordination of AMBCR efforts. Collateral duties of several ACJV staff will provide additional assistance to development and implementation of the AMBCR.

Many state wildlife agency, US Forest Service, and FWS Steering Committee representatives are dedicated to provide seed funding for two to three years to initiate priority needs in the AMBCR. US Forest Service funding (30K) is available through the American Bird Conservancy on a 1:1 non-federal match basis. The FWS ACJV has contributed more than 40K to support development of the initiative and project funding. The Coordinator has coordinated with FWS accountants to receive state funding to support development of this initiative.

As development progresses, additional needs are expected to be identified that will require implementation funding. The AMBCR Coordinator, Steering Committee, and Technical Focus Groups will be developing projected AMBCR staffing and project needs. The ACJV budget for FY 2006-2010 includes funding for the Appalachian Mountains planning. If the AMBCR partners decide to proceed with JV status and receive approval, the AMBCR will be eligible for congressional appropriation.

Evaluation

Periodic evaluation will be needed to track actions and results in order to consider adjustment of program needs. A goal of AMBCR evaluation is to:

Develop a process and articulate key issues that need evaluation in the Appalachian Mountains BCR at administrative, technical, and implementation levels.

The AMBCR will need to develop the technical capabilities to track progress in delivering population and habitat objectives at multiple scales. Furthermore, these methods will monitor progress and allow refinement of population and habitat objectives.

Timetable for Implementation

Task	Responsible Party	Completion Date
Establish Process for Collecting and Allocating Partner Funds	AMBCR Coordinator	June 2005
Completion of Final Draft Concept Plan	AMBCR Coordinator	July 2005
Establish Conservation Design – Uplands	Technical Focus Group	September 2005
Establish Conservation Design – Wetlands	Technical Focus Group	September 2005
Establish and Refine Species, Population and Habitat Objectives Strategy	Technical Focus Group	September 2005
GIS Development Framework Strategy	Technical Focus Group	October – December 2005
Develop Bird Population Response and Limiting Factor Strategy	Technical Focus Group	October 2005
Establish Monitoring and Evaluation Strategy	Technical Focus Group	October 2005
Develop Projected 10 year Budget	AMBCR Coordinator ACJV Coordinator Steering Committee Chair	October 2005
Implementation Workshop	All	Spring 2006
Determine Infrastructure Needs	AMBCR Coordinator	Spring 2006
Implementation Plan	AMBCR Coordinator Technical Groups	Spring 2007

Conclusion

Development and implementation of a fully supported and coordinated Appalachian Mountains Bird Conservation Initiative will require tremendous effort by all partners. The time required to achieve established goals will depend on partner support and funding. Because bird conservation is always a dynamic endeavor, Appalachian Mountain efforts are likely to continue as long as interest and support are present. Ongoing avian conservation research, habitat management, and outreach by concerned managers and biologists in the Appalachian Mountains are certainly making progress toward learning more about the avian resources of the Appalachians. As this partnership begins to better coordinate priorities throughout the BCR, current and future work will build the foundation for expanded bird conservation efforts and together will provide an opportunity to ensure Appalachian Mountains birds and habitats are present for generations to come.

Acknowledgements

We thank first the agencies and organizations that came together in 2003 to form the Appalachian Mountains Bird Conservation Region partnership. This plan and partnership would not have developed without their vision, guidance, and support. We also thank all the technical and administrative staff who provided many valuable comments and insights as the plan developed. Special thanks are offered to the staff of the ACJV who have encouraged and supported the development of this effort since its inception. We also thank the countless individuals, agencies, and organizations that have worked so hard to make the North American Bird Conservation Initiative and all the bird conservation initiatives it represents, driving forces in wildlife and resource conservation throughout the continent.

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APPENDIX A

Partners – August 2005

PARTNER	CURRENT REPRESENTATIVE(S) (2005)
Federal	
U.S. Fish and Wildlife Service, Southeast Region	Keith Watson, (Coordinator)
U.S. Fish and Wildlife Service, Southeast Region	Dean Demarest
U.S. Fish and Wildlife Service, Northeast Region, ACJV	Andrew Milliken
National Park Service, Northeast Region	Matthew R. Marshall
National Park Service, Southeast Region	Paul E. Super
U.S. Forest Service, Southern Region	George M. Bain
U.S. Geological Survey, Biological Resources Division	Glenn Holcomb
State	
West Virginia Division of Natural Resources	Paul Johansen (Chair)
Pennsylvania Game Commission	Daniel Brauning
Maryland Department of Natural Resources	Gwen Brewer
Kentucky Department of Fish and Wildlife	Brian Smith
Georgia Department of Natural Resources	Bill Fletcher
New York Department of Environmental Conservation	Bryan Swift
Alabama Department of Conservation and Natural Resources	Keith Guyse
Ohio Department of Natural Resources	David P. Scott
South Carolina Department of Natural Resources	Mark W. Hall
North Carolina Wildlife Resources Commission	Chris McGrath
Tennessee Wildlife Resources Agency	Greg Wathen
Virginia Department of Game and Inland Fisheries	Ray Fernald
New Jersey Department of Environmental Protection	Martin McHugh
Non-government organizations (NGO's)	
American Bird Conservancy	David Pashley
The Nature Conservancy	Rob Sutter
National Council for Air and Stream Improvement	T. Bentley Wigley
National Wild Turkey Federation	Bob Eriksen
Industry	
Arch Coal, Inc.	Larry Emerson

APPENDIX B

Birds of the Appalachian Mountains Bird Conservation Region

Snow Goose
Canada Goose
Mute Swan
Tundra Swan
Wood Duck
Gadwall
American Wigeon
American Black Duck
Mallard
Blue-winged Teal
Northern Shoveler
Northern Pintail
Green-winged Teal
Canvasback
Redhead
Ring-necked Duck
Greater Scaup
Lesser Scaup
Bufflehead
Common Goldeneye
Hooded Merganser
Common Merganser
Red-breasted Merganser
Ruddy Duck
Gray Partridge
Ring-necked Pheasant
Ruffed Grouse
Wild Turkey
Northern Bobwhite
Common Loon
Pied-billed Grebe
Horned Grebe
American Bittern
Least Bittern
Great Blue Heron
Great Egret
Snowy Egret
Cattle Egret
Green Heron
Black-crowned Night-Heron
Yellow-crowned Night-Heron
Black Vulture
Turkey Vulture
Osprey
Bald Eagle
Northern Harrier
Sharp-shinned Hawk
Cooper's Hawk
Northern Goshawk
Red-shouldered Hawk
Broad-winged Hawk
Red-tailed Hawk
Rough-legged Hawk
American Kestrel
Merlin
Peregrine Falcon
Black Rail
King Rail
Virginia Rail
Sora
Purple Gallinule
Common Moorhen
American Coot
Killdeer
Greater Yellowlegs
Spotted Sandpiper
Upland Sandpiper
Wilson's Snipe
American Woodcock
Little Gull
Bonaparte's Gull
Ring-billed Gull
Herring Gull
Lesser Black-backed Gull
Glaucous Gull
Great Black-backed Gull
Rock Pigeon
Mourning Dove
Black-billed Cuckoo
Yellow-billed Cuckoo
Barn Owl
Eastern Screech-Owl
Great Horned Owl
Northern Hawk Owl
Barred Owl
Long-eared Owl
Short-eared Owl
Northern Saw-whet Owl
Common Nighthawk
Chuck-will's-widow
Whip-poor-will
Chimney Swift
Ruby-throated Hummingbird
Belted Kingfisher
Red-headed Woodpecker
Red-bellied Woodpecker
Yellow-bellied Sapsucker
Downy Woodpecker
Hairy Woodpecker
Red-cockaded Woodpecker
American Three-toed Woodpecker
Black-backed Woodpecker
Northern Flicker
Pileated Woodpecker
Olive-sided Flycatcher
Eastern Wood-Pewee
Yellow-bellied Flycatcher
Acadian Flycatcher
Alder Flycatcher
Willow Flycatcher
Least Flycatcher
Eastern Phoebe
Great Crested Flycatcher
Eastern Kingbird
Loggerhead Shrike
Northern Shrike
White-eyed Vireo
Yellow-throated Vireo
Blue-headed Vireo
Warbling Vireo
Red-eyed Vireo
Blue Jay
American Crow
Fish Crow
Common Raven
Horned Lark
Purple Martin
Tree Swallow
Northern Rough-winged Swallow
Bank Swallow
Cliff Swallow
Barn Swallow
Carolina Chickadee
Black-capped Chickadee
Tufted Titmouse
Red-breasted Nuthatch
White-breasted Nuthatch
Brown-headed Nuthatch

Brown Creeper
Carolina Wren
Bewick's Wren
House Wren
Winter Wren
Sedge Wren
Marsh Wren
Golden-crowned Kinglet
Ruby-crowned Kinglet
Blue-gray Gnatcatcher
Eastern Bluebird
Veery
Swainson's Thrush
Hermit Thrush
Wood Thrush
American Robin
Gray Catbird
Northern Mockingbird
Brown Thrasher
European Starling
American Pipit
Bohemian Waxwing
Cedar Waxwing
Blue-winged Warbler
Golden-winged Warbler
Nashville Warbler
Northern Parula
Yellow Warbler
Chestnut-sided Warbler
Magnolia Warbler
Black-throated Blue Warbler
Yellow-rumped Warbler
Black-throated Green Warbler
Blackburnian Warbler
Yellow-throated Warbler
Pine Warbler
Prairie Warbler
Cerulean Warbler
Black-and-white Warbler
American Redstart
Prothonotary Warbler
Worm-eating Warbler
Swainson's Warbler
Ovenbird
Northern Waterthrush
Louisiana Waterthrush
Kentucky Warbler
Mourning Warbler
Common Yellowthroat
Hooded Warbler
Canada Warbler
Yellow-breasted Chat
Summer Tanager
Scarlet Tanager
Eastern Towhee
Bachman's Sparrow
American Tree Sparrow
Chipping Sparrow
Field Sparrow
Vesper Sparrow
Lark Sparrow
Savannah Sparrow
Grasshopper Sparrow
Henslow's Sparrow
Fox Sparrow
Song Sparrow
Swamp Sparrow
White-throated Sparrow
White-crowned Sparrow
Dark-eyed Junco
Lapland Longspur
Snow Bunting
Northern Cardinal
Rose-breasted Grosbeak
Blue Grosbeak
Indigo Bunting
Dickcissel
Bobolink
Red-winged Blackbird
Eastern Meadowlark
Rusty Blackbird
Brewer's Blackbird
Common Grackle
Brown-headed Cowbird
Orchard Oriole
Baltimore Oriole
Pine Grosbeak
Purple Finch
House Finch
Red Crossbill
White-winged Crossbill
Common Redpoll
Pine Siskin
American Goldfinch
Evening Grosbeak
House Sparrow