A FEDERAL AGENCY FRAMEWORK FOR BIRD CONSERVATION: THEMES AND CAPABILITIES

DRAFT SEPTEMBER 26, 2000

PREPARED BY THE
NABCI FEDERAL AGENCY SUBCOMMITTEE

Send comments to:

Roxanne Bogart 703-358-1964 Roxanne_Bogart@fws.gov

cc: Bob Ford Robert_P_Ford@fws.gov
Jack Capp jcapp@fs.fed.us

A FEDERAL AGENCY FRAMEWORK
FOR
BIRD CONSERVATION:

THEMES AND CAPABILITIES

Background

The vision of the North American Bird Conservation Initiative (NABCI) in the United States is:

> "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."

Achieving this vision requires the development of regionally-based, biologically-driven, landscape-oriented partnerships, throughout the Western Hemisphere, responsible for delivering comprehensive bird conservation through integrated planning, implementation, and evaluation. In the United States, the primary purposes of NABCI are (1) to broaden bird conservation partnerships, (2) to increase financial resources available in the U.S. for national and international bird conservation, and (3) to enhance the effectiveness of those resources and partnerships by facilitating integrated bird conservation. Achieving integrated bird conservation, in essence, requires coordination and integration of existing bird conservation initiatives, including the North American Waterfowl Management Plan (NAWMP), Partners In Flight (PIF), the U.S. Shorebird Conservation Plan (USSCP), and the North American Colonial Waterbird Conservation Plan (NACWCP), and the creation of a unified front to increase resources for bird conservation. The role of the NABCI Federal Agency Subcommittee is to coordinate Federal activities for bird conservation, and provide a forum for interagency communication, including sharing information and discussing issues in bird conservation, both national and international.

Themes for Bird Conservation

The NABCI Federal Agency Subcommittee has identified five themes for bird conservation that provide a framework for the Subcommittee's work in support of NABCI and its defining vision, goal, and purposes. These five themes are:

1. Conserving Habitats and Landscapes
2. Managing Populations and Communities
3. Monitoring and Assessment
4. Developing Partnerships
5. Conducting Outreach and Communications.

The themes reflect the critical bird conservation issues and needs of the diverse array of Federal agencies represented on the Subcommittee, and thus provide a useful framework for pursuing coordinated budget requests for bird conservation-related activities across agencies. These issues and needs apply both nationally and internationally. Below are descriptions of how agencies represented on the NABCI-US Federal Agency Subcommittee contribute to each of the five themes, in terms of agency mandates, programs, capabilities, and skills.

This "Federal framework for bird conservation" can provide a semi-permanent source of information to look for opportunities and linkages among Federal agencies. Furthermore, it can provide non-governmental organizations with a better understanding of bird conservation opportunities across a range of Federal agencies; these opportunities are not always apparent in some agency budgets or program descriptions. By coordinating agency budgets and activities based on these five themes, Federal agencies can significantly enhance opportunities for collaboration and increase resources for bird conservation and the conservation of landscapes for all native wildlife.

THEME #1: Conserving Habitats and Landscapes

> Habitat loss, fragmentation, and deterioration are by far the primary threats facing bird populations in North America. Conserving habitats is defined broadly, requiring that both habitat quantity (e.g., loss, fragmentation) and habitat quality (e.g., deterioration from pollution and contamination) issues be addressed. Prior to actual on-the-ground habitat restoration, acquisition, or enhancement, a series of actions are needed to insure that the highest priority habitats are targeted for conservation. Such conservation planning activities include gaining consensus on the dominant threats to avian habitats, prioritizing species and habitats at risk, and defining regional, national, and international population and habitat goals. Accounting for landscape patterns and species/community impacts are critical steps in the planning process. The end result of these planning actions is the protection and restoration of habitats most critical to priority bird populations based on specific landscape designs and bird and habitat conservation objectives.

Fish and Wildlife Service (FWS). The FWS plays a leadership role in administering, coordinating, and supporting a host of different programs and initiatives that conserve habitats within the United States and abroad for North American migratory birds. Grants programs that fund on-the-ground habitat conservation and international capacity building and training activities through partnerships include the North American Wetlands Conservation Act, the Coastal Program, Federal Aid, Neotropical Migratory Bird Conservation Act, and Winged Ambassadors programs. The FWS operates the national implementation office for the North American Waterfowl Management Plan, an international agreement to conserve waterfowl and other migratory birds and wildlife through habitat conservation action of joint venture partnerships, and the Partners for Fish and Wildlife Program, which provides technical assistance to private landowners to manage their habitats for wildlife. In addition, the FWS supports the landscape conservation planning, implementation, and evaluation efforts of other bird conservation initiatives that, like the North American Waterfowl Management Plan, identify priority species and habitats and management prescriptions for birds, such as Partners In Flight, the U.S. Shorebird Conservation Plan, and the North American Colonial Waterbird Conservation Plan. The FWS is playing a leadership role in the North American Bird Conservation Initiative through its support for the development of new local partnerships for bird habitat conservation and its active participation at the national and international level in NABCI.

The FWS manages over 93 million acres for migratory birds and other wildlife on its National Fish and Wildlife Refuge System (System), comprised of more than 500 national wildlife refuges and thousands of waterfowl production areas. Lands protected through the System are in public ownership to meet the life-long habitat needs of wildlife and plant resources. Migratory birds is often considered the central connecting theme of the System. The Environmental Contaminants program focuses on detecting and removing toxic chemicals, restoring habitats, and preventing harm to fish and wildlife and their habitats. The Endangered Species Program's Habitat Conservation Plans and recovery efforts offer opportunities for conserving habitats for threatened and endangered bird species and other wildlife that use critical habitats of listed species.

Bureau of Land Management (BLM). The BLM administers 264 million acres of land in 23 States. BLM lands extend from the Arctic Ocean in the north to the Mexican border and contain some of the greatest biological diversity in the West. The BLM manages significant portions of the boreal forests, tundra, sagebrush-steppe, and short-grass prairie; large areas within the Chihuahuan, Sonoran, and Mojave desert ecosystems of the southwest; over 50 million acres of forests and woodlands, 200,000 miles of streams, 2 million acres of lakes and reservoirs, and nearly 23 million acres of wetlands and riparian habitats, all of which support a vast array of fish, wildlife and rare plant species, including nearly 300 that are federally listed. In addition, BLM manages nearly 740 Areas of Critical Environmental Concern, 3 Globally Important Bird Areas, 4 National Monuments, 136 Wilderness Areas and 622

Wilderness Study Areas. The BLM has approximately 260 wildlife biologists, 60 botanists, 160 foresters and 40 ecologists available to conduct habitat inventories and design habitat restoration projects.

The BLM is required under the Federal Land Policy and Management Act to manage the public lands under the principles of multiple-use for the long-term benefit of the American people. The BLM carries out the intent of numerous laws, regulations and executive orders that are targeted at conserving threatened and endangered species habitats, wetlands, and clean water. Day-to-day management of the public lands under BLM's jurisdiction is guided by local land use plans. To date BLM has completed over 400 land use plans which are periodically revised or amended to accommodate new resource management issues. Land use plans frequently cover areas in excess of 1 million acres, often much larger. The BLM is proposing to initiate a major update of its land use planning base. These updates provide an opportunity to incorporate bird conservation goals. The BLM has many localized activity plans that tend to prescribe site-specific management on areas of a few hundred thousand acres or smaller. Examples of actions that are prescribed in activity plans include seasonal restrictions on certain activities, restoration priorities and opportunities, and other modifications to current management programs. The need for activities such as land acquisition, conservation easements, establishment of protective buffers are generally identified through the planning process.

The BLM is currently involved in two regional conservation planning efforts, the Northwest Forest Plan and the Interior Columbia Basin Ecosystem Project which have prioritized habitats at risk and have set landscape level conservation goals for suites of avian species (eg., old growth forests, riparian habitats, shrub-associated species, etc.) for more than 30 million acres of public land. In addition, BLM is developing coordinated planning and conservation initiatives for multiple bird and other species that occupy public lands throughout the prairie grassland and sagebrush ecosystems. Each of these plans include regional and national conservation goals, address threats to avian habitats, emphasize habitat protection and restoration, and identify priority bird species that will require conservation actions. BLM's initiatives address the fundamental components of the NABCI's goal: to deliver the full spectrum of bird conservation through regionally-based, biologically-driven, landscape-oriented partnerships. As manager of more lands than any single entity in the U.S., BLM has the opportunity to contribute substantially to the future prosperity of landbirds and their habitats.

Natural Resources Conservation Service (NRCS). The NRCS is engaged in habitat conservation on private lands and other non-Federal lands throughout the country by providing conservation planning assistance to approximately 1.73 million agricultural producers annually. Each year NRCS assists farmers, ranchers, and other land managers in meeting soil, water, and wildlife conservation goals and in participating in various cost-share programs for installation of conservation practices on about 66 million acres. More than 8,300 NRCS conservationists and biologists are working with Soil and Water Conservation Districts and landowners to put conservation practices on millions of acres every year, including over four million acres specifically designed for wetland and upland wildlife habitat enhancement.

Along with general conservation planning, NRCS is responsible for the technical aspects of USDA conservation program delivery to farmers and ranchers throughout the county. These programs greatly influence bird habitats on millions of acres of private, Tribal, and other non-Federal lands. Programs that contribute directly and substantially to bird habitat quality and availability on these lands include the Conservation Reserve Program, Wetlands Reserve Program, Wildlife Habitat Incentives Program, Environmental Quality Incentives Program, and others. The conservation work by NRCS on non-Federal lands is a critical link in improving and conserving landscapes for birds.

Environmental Protection Agency (EPA). The EPA, through its administration of a variety of laws, and working with state, tribal, and private sector partners, supports a number of significant programs that

have as either their primary goal or as one of several goals the direct protection or restoration of natural habitat. These programs or activities include: wetlands protection; marine protection (especially with regard to coral reefs); the National Estuary Program; geographic programs or initiatives such as the Gulf of Mexico Program, Chesapeake Bay Program, Great Lakes Program, Everglades/South Florida initiative, Northwest Forest Plan, and many smaller regional geographic initiatives; the Stratospheric Ozone Depletion program; the Acid Rain program; and the formal review and rating of all Federal Environmental Impact Statements and similar documents. EPA also administers a number of programs that support habitat conservation in a more indirect or complementary fashion, including: the Climate Change program; Coastal Management Program; Community-based Environmental Protection projects; Smart Growth; Innovative Community Partnership Program (formerly Sustainable Development Challenge Grants), guidance and support of constructed wetlands for wastewater treatment; and a broad research and development program that includes research supporting all of the key issues of the programs listed above.

Forest Service (FS). The FS brings habitat conservation and restoration skills from four divisions of the Agency: Research and Development, State and Private Forestry, National Forest System, and International Programs. These divisions oversee activities such as habitat research, habitat management on private and state forested lands, habitat enhancement and management on the 192 million acres of multiple-use national forests and national grasslands, and technical cooperation, policy, and disaster assistance for other nations. Within these programs and activities, the FS has skills and experience in bioregional-scale planning for habitats at risk; implementing management activities to conserve and restore habitats through forest plans and landscape-scale management actions; developing integrated multiple resource forest management plans that entail bird habitat protection; bird habitat and population monitoring; land acquisition and conservation easements; silviculture to sustain and enhance bird habitats over time; NEPA and ESA skills in a multiple-use management perspective; and participating in bird conservation initiatives including PIF, NAWMP, WHSRN, TAKING WING; and on the ground conservation education and communications.

Department of Defense (DoD). The military training mission of the DoD depends upon maintaining a healthy landscape. Building on the DoD Environmental Conservation Instruction, DoD's Ecosystem Management Policies and Guidelines, and the Sikes Act, DoD integrates biodiversity conservation with military mission requirements. The *Handbook on Biodiversity Conservation* describes a model process for conserving biodiversity within an installation's Integrated Natural Resources Management Plan (INRMP). For bird conservation, the INRMP incorporates management of priority habitats and species as identified by the peer-reviewed Partners in Flight prioritization process. DoD is involved in several regional and national conservation planning efforts, such as the Pulling Together Initiative (invasive species), the Southwest Strategy, the Mojave Desert Ecosystem Program, the Sonoran Initiative, the Gulf Coastal Plain Ecosystem Partnership, and the ongoing Chesapeake Bay protection and restoration initiative. All of these efforts identify regional and/or national conservation goals and habitats and species at risk within each landscape. By partnering with Federal and non-Federal agencies and groups, habitats in greatest need of protection and restoration are identified and given conservation priority.

Bureau of Indian Affairs (BIA). Tribal governments manage bird hunting programs on their reservations in the context of Indian Self-Determination, and tribal wildlife resource managers and natural resources personnel have much more expertise in these areas. The BIA can assist interested parties in facilitating communications with tribes interested in conserving bird resources on their reservations. This is especially true with regard to the Circle of Flight Program in the Bureau's Midwest Region, the only notable bird conservation program funded through the Bureau's budget. This program focuses heavily on wetland and waterfowl restoration, but contributions are made by tribal, not Bureau, personnel. Because of the Indian Self-Determination focus in implementing fish and wildlife resource management and conservation programs on tribal lands, it may be difficult to acquire, quantify and consolidate related

tribal resource data, and obtain related information on associated problems, needs and accomplishments. Successful implementation of bird conservation measures (and other resource and public use oriented initiatives of interest) on Indian lands will require the active involvement of willing tribes working directly with , state and local agency personnel and the private sector.

THEME #2: Managing Populations and Communities

> Direct and in-direct bird management and policy actions are essential to conserve priority bird populations in decline (e.g., achieve stabilized or increasing population trends) and control overabundant birds adversely affecting priority species in need of conservation. Successful management of bird populations requires managing one or more biological processes, including mortality factors (e.g., predation, chemical contamination, avian disease), reproductive success/failure rates, migration patterns, and colonization rates. In addition, the use of biodiversity indicators is increasing as ecological models for conservation planning and evaluation advance (e.g., ecological hot spots of species richness, species turnover, variation over time and space, colonization patterns). Management needs that fall into this category of bird conservation include controlling exotic, invasive, and overabundant species, managing predators, and reducing mortality from towers, powerlines, wind turbines, hooks on longline fisheries (e.g., bycatch issues), and chemical contamination. Regulating hunting and direct and indirect take of migratory birds are other important aspects of migratory bird management, as is harvest of food sources that sustain birds, such as horseshoe crabs.

FWS. The FWS is the principal Federal agency responsible for conserving, protecting, and enhancing fish and wildlife and their habitats for the continuing benefit of the American people. The FWS has the legal mandate to undertake the following migratory bird trust responsibilities: population protection, habitat protection and restoration, international coordination, and regulations. These operations take place at the FWS's 7 Regional offices, 78 ecological field stations, and at headquarters in Washington, D.C./Arlington, VA. The FWS's National Fish & Wildlife Refuge System oversees over 500 refuges, nearly half of which were established for migratory birds.

The FWS's Division of Migratory Bird Management serves as the focal point in the U.S. for policy development and management actions to conserve migratory birds by reducing threats to their populations. Policies addressed include a host of important management issues, including mortality from towers, pesticide contamination, and bycatch, as well as overabundant and invasive species. The Division establishes annual migratory bird game hunting regulations, provides guidance and oversight for the national migratory bird permit program, and provides technical assistance, training, and guidance to agencies, states, and NGOs in all other aspects of migratory bird management. The International Conservation program assists Asian, Latin American, and Caribbean countries in managing migratory bird populations, particularly those that face eminent or perceived threats, through training, outreach, and other methods. The Endangered Species Program provides listed species protection and recovery activities, such as through regulation of adverse activities and reintroduction efforts. The Environmental Contaminants Program contributes to migratory bird management by controlling and abating chemical contamination that threatens the survival and reproduction of birds.

[needs revision] BLM. The BLM is responsible for managing habitats that support approximately two-thirds of all North American bird species. Among those species include 28 Federally listed threatened or endangered bird species, 2 species proposed for listing and 1 candidate species. The BLM has designated an additional 90 bird species as sensitive due to population or habitat concerns. Under BLM policy, candidate and sensitive species are managed to ensure that Federal listing is unnecessary. The BLM

works cooperatively with States and other agencies to develop conservation and recovery plans and to restore and protect habitats that are critical for the conservation of rare bird resources. The BLM has been active in funding and supporting peregrine falcon and California condor re-introductions on public land. The BLM is responsible for managing a variety of unique or Special Management Areas that are important for bird conservation, including 3 areas recognized as Globally Important Bird Areas, 739 Areas of Critical Environmental Concern, and 8 National Conservation Areas, which includes the Snake River Birds of Prey National Conservation Area, which supports one of the world's densest population of nesting raptors.

EPA. Most of EPA's programs protect all living things, including birds, through protection of air and water quality, prevention and remediation of oil spills, the control of pesticides and other toxic chemicals at both the manufacturing and use/application stages, the control of hazardous waste sites and the remediation of abandoned sites, and other actions. Many of these programs are implemented through permits backed by strong legal enforcement mechanisms, and they are most commonly administered in the field by states or tribes with delegated authority. A specific threat to birds being actively addressed by EPA, working with industry, is that of mortality from exposure to toxic petroleum in poorly constructed or improperly operated oil production pits that birds and other wildlife mistake for ponds or wetlands. Another example of a wildlife-targeted program is the Endangered Species Protection Program under the EPA Pesticides Program that has as its purpose to protect listed species from the detrimental effects pesticide use. EPA is also active in efforts to understand and control invasive species through the President's Invasive Species Council and the Aquatic Nuisance Species Task Force. EPA's extensive research and development program that supports all of these programs includes significant work on the effects, exposures, and assessment methods applicable to wildlife exposure to toxic chemicals. Among the newer areas of emphasis is the understanding and screening of endocrine disruptors that dramatically affect wildlife reproductive processes.

Animal and Plant Health Inspection Service's Wildlife Service's Program (WS). The WS program of the Animal and Plant Health Inspection Service has the primary responsibility to control vertebrate invasive species that threaten agriculture, public health and safety, personal property and natural resources. This program consists of research and operational activities which have both direct and indirect impacts on the conservation of bird populations. An example of a direct WS activity involves the control and containment of brown tree snakes on Guam. This species has depleted several of Guam's native birds and WS's effort are designed to keep this species from spreading to other island habitats (especially Hawaii) and the mainland U.S. At the same time WS research is developing new trapping techniques and repellents to protect the remaining avifauna of Guam. An example of indirect bird conservation activities involve WS programs to control nutria in the southern U.S. This species is systematically destroying wetland habitats important to dozens of avian species from Louisiana to the Chesapeake Bay.

Ground-nesting endangered and threatened avian species are especially susceptible to predation. WS has active predator control programs designed specifically to protect these ground nesters. For example, the WS red fox program in the Aleutian Islands virtually eliminated red fox predation of goose nesting sites and is the primary reason that the Aleutian Canada goose can be considered for delisting. Predator trapping programs in California coastal marshes are the last defense for wetland species surviving in very limited wetland habitats. With a Puerto Rican parrot population numbering less than 50, mongoose trapping and removal has a significant impact on species survival. Habitat restorations are critical for long-term survival of avian species; however, until additional acres of habitat are available to disperse predator and prey, directed predator control will be a critical component of endangered and threatened avian species conservation.

[needs revision] FS. The FS plays a pivotal role in conserving bird population/communities. The Research and Development Division has conducted extensive research and produced scores of publications concerning bird population monitoring and ecology of birds. The wildlife ecology unit, part of the National Forest System, is developing processes to insure that viability of species is assured when Land Management Plans are implemented. The National Forest System has produced dozens of species conservation plans and is experienced in implementing them. The State and Private Forestry division works with private landowners to promote stewardship that conserves wildlife populations. The Office of International Programs works throughout the Americas and around the world to provide technical assistance to other countries. Finally, the 192 million acre National Forest System provides some of the last remaining forest habitat for many species of birds.

DoD. DoD has significant responsibility for Federally listed species. The DoD manages proportionally more Federally listed species on its land base compared to other agencies with larger landholdings. In most cases, DoD has not only helped to stabilize these populations, it has increased habitat availability and helped to reverse populations declines. Among its success stories are extensive control of cowbirds and other conservation activities on Ft. Hood for the Golden-cheeked Warbler and Black-capped Vireo; conservation efforts in Southern California for California Least Tern, Western Snowy Plover, and Least Bell's Vireo; in Southeastern U.S. for Red-cockaded Woodpecker and Bachman's Sparrow; in Florida for Florida Scrub Jay and Florida Grasshopper Sparrow; in Alaska for Peregrine Falcon (delisted Aug 1999), Steller's Eider, and Aleutian Canada Goose; in Puerto Rico for Yellow-shouldered Blackbird; and across the U.S., especially the Chesapeake Bay region, for Bald Eagle.

By conserving Partners in Flight priority species and their habitats, DoD strives to prevent imperiled species from becoming candidates for Federal listing. Excellent examples of proactive conservation of priority species and habitats occur on Army lands for grassland species, such as Henslow's Sparrow and Grasshopper Sparrow; in the Southwest and California for Western Yellow-billed Cuckoo and other riparian species; in Maine, a significant fall staging area for shorebirds; and in Alaska where the first North American study of ecology of paleotropical migrants was conducted.

BIA. Tribal governments manage bird hunting programs on their reservations in the context of Indian Self-Determination, and tribal wildlife resource managers and natural resources personnel have much more expertise in these areas. The BIA can assist interested parties in facilitating communications with tribes interested in conserving bird resources on their reservations. Many tribal governments manage bird hunting programs on their reservations, some of which are nationally renowned, and are concerned with the prudent management and conservation of bird populations. Because of the Indian Self-Determination focus in implementing fish and wildlife resource management and conservation programs on tribal lands, it may be difficult to acquire, quantify and consolidate related tribal resource data, and obtain related information on associated problems, needs and accomplishments. Successful implementation of bird conservation measures (and other resource and public use oriented initiatives of interest) on Indian lands will require the active involvement of willing tribes working directly with , state and local agency personnel and the private sector.

THEME #3: Conducting Monitoring and Assessment

Monitoring and assessing changes in habitats and bird populations is key to improving our understanding of the relationships between landscape alterations and population dynamics. Such evaluation activities, which are a critical part of any conservation delivery program, include monitoring and characterizing landscape change, monitoring and surveying populations, predictive modeling to better define biological processes linking habitat and population changes, conducting population viability assessments, and managing and integrating information to serve

evaluation needs and meet the goals of integrated bird conservation. These activities lead to improved conservation objectives and the biological assumptions that underlie them, and need to be built into planning and implementation activities to insure an actively adaptive process. Because of the migratory nature of many bird species, population responses must be evaluated at various geographic scales–continental, national, and regional. In addition, research and evaluation activities in the field need to be better linked with management actions through advanced decision support systems. Overall, improving the scientific foundation for bird conservation is pivotal to successfully conserving a resource as dynamic and complex as migratory birds.

U.S. Geological Survey (USGS). Science support for bird conservation must necessarily be conducted at a broad scale, and requires work across disciplinary boundaries. USGS can provide a host of capabilities to address bird conservation science needs including expertise in migratory bird biology at USGS Science Centers and Cooperative Fish and Wildlife Research Units and in monitoring designs and protocols for avian species and their habitats. It can provide management and support for long-term migratory bird data bases like those of the Bird Banding Laboratory and Breeding Bird Survey. The National Biological Information Infrastructure is a network through which information can be made available to users throughout the U.S. State-of-art expertise in digital cartography/mapping, and a number of extant data bases and ongoing mapping efforts, are potentially valuable for avian conservation. USGS also houses expertise in remote sensing, image processing, and spatial modeling with new techniques (e.g., under the forest canopy), and monitoring and analysis of aquatic habitat and surface- and groundwater processes, and the relationship between watershed characteristics and upland or wetland habitats. Expertise also exists for characterizing wetland habitats, such as riverine hardwood forests of the southeast and "potholes" of the northern prairies. Research and modeling capability can support habitat characterization (e.g., landform, rock type; topographic attributes such as relief, slope; soil characteristics) critical to the understanding of long-term and short-term patterns of temporal change in habitats.

FWS. The FWS's capabilities for science support for bird conservation include expertise in migratory bird research, monitoring, and evaluation at the international, national and regional levels, and at the local level in field offices and on refuges. The primary programs that house this expertise include the Migratory Bird Program, International Conservation, National Wetlands Inventory, Environmental Contaminants, and the National Wildlife Refuge System. Operations and technologies that support migratory bird conservation include annual harvest surveys of game birds, population and habitat monitoring programs, population and habitat assessment functions, and GIS and remote sensing technologies. Expertise in adaptive resource management is available through the Adaptive Management and Assessment Team (AMAT) which focuses on improving our understanding of the relationship between bird population dynamics and landscape change. The goal of AMAT is to improve the biological foundation of migratory bird conservation planning and implementation over time through evaluation functions that explicitly and actively incorporate learning into the conservation delivery process. An example of regional level population and habitat assessment capabilities is the Habitat and Population Evaluation Team in Minnesota. International research, inventory, and training in Asia and the Western Hemisphere is supported through grants programs such as the North American Wetlands Conservation Act, the Neotropical Migratory Bird Conservation Act, Winged Ambassadors, and Wildlife Without Borders - Russia.

BLM. The BLM conducts a tremendous amount of site-specific habitat monitoring and, to a lesser extent, population monitoring, particularly for threatened or endangered species. The BLM currently lacks a comprehensive monitoring strategy for most resources. Monitoring typically is issue-driven and for that reason is often fairly specific to local situations. The BLM has identified the need to address monitoring and assessment needs on a regional or landscape scale. In the Pacific Northwest, the northern Spotted Owl and Marbled Murrelet are the focus of intensive monitoring tied to the implementation of the

Northwest Forest Plan. Effectiveness monitoring is designed to validate that the plan protects adequate habitat for these species by tracking key ecological indicators such as the size and distribution of old growth forests and retention of snags and woody debris. In addition, extensive monitoring of population trends and demographic studies are on-going. BLM capabilities that could address bird conservation science needs include: Local expertise on location and importance of habitats to various bird species; expertise on habitat conditions and capability for birds at a local field office level; land cover information in many areas; monitoring/analysis of aquatic and riparian habitats and surface- and groundwater processes, and the relationship between watershed characteristics and upland or wetland habitats; assessment of physical conditions of riparian and wetland habitats, with emphasis on arid land ecosystems.

NRCS. Through its National Resources Inventory (NRI), NRCS maintains an inventory of land cover and use, soil erosion, prime farmland, wetlands, and other natural resource characteristics on the non-Federal land in the United States (78% of the US). Inventories have been conducted at 5-year intervals by NRCS in cooperation with the Statistical Laboratory at the Iowa State University. The 1997 NRI is the most extensive inventory yet conducted, covering some 800,000 sample sites. At each sample point, information about dozens of variables is available for four years – 1982, 1987, 1992, and 1997. From this time series, changes and trends in land use and resource characteristics over the period can be estimated and analyzed. The purpose of the NRI is to provide information that can be used for effectively formulating policy and developing natural resource conservation programs at the national or state level. The NRI has also been used to describe habitat conditions for birds and other ecological resources. There is no other data set that provides detailed land cover/use data for the United States at 5-year intervals. Of particular value is the trending of changes in land cover/use and wetlands over the life of the inventory. Because of research done with the 1982 NRI data, modifications to the 1997 NRI data elements were made to accommodate more specific data for habitat composition and configuration. The NRI has been used to correlate patterns of bird abundance with land use characteristics for several different purposes.

EPA. The EPA plays a nationally-recognized leadership role in the monitoring and assessment of habitats and landscapes through the Environmental Monitoring and Assessment Program which includes both large-scale regional assessments and more generally applicable research and demonstration of concepts and tools such as environmental indicators, modeling, remote sensing, and a wide range of geospatial techniques. Among the regional assessments are the published Mid-Atlantic Integrated Assessment and several major projects underway, including the Western Pilot and Coastal 2000. EPA is also an active member of the Federal consortium for the characterization of North American landscapes, Multi-Resolution Landscape Characterization (MRLC) and has done pioneering work in the delineation and mapping of ecoregions, which contributed significantly to the development of the CEC Ecoregions–the basis for the NABCI Bird Conservation Regions. Two major projects of interest to bird conservation are the development of indicators of wetland health using various groups of organisms, including birds (the BAWWG project); and measuring change in vegetation over large areas to determine trends in ecological and hydrological conditions using advanced space-based technologies (San Pedro project). EPA's management of basic monitoring and assessment programs for air and water quality contribute in important indirect ways by highlighting areas of high environmental risk to wildlife, leading in turn to the redirection of resources and authorities to remediate the problems identified. EPA is also a leader in the management of environmental information, with a particular emphasis on making that information accessible to the public to facilitate participation in environmental and natural resource activities and decisions. EPA's Enviromapper Project and a wide range of demonstration projects under the Environmental Monitoring for Public Access and Community Tracking (EMPACT) program, a 1998 Presidential initiative, contribute substantially toward this goal. Among the most directly relevant EMPACT projects is the recently-activated BirdCast, a pilot radar ornithology project designed to combine the talents and energies of citizen birders with evolving NEXRAD technology in better understanding bird migration and the obstacles to that critical behavioral process.

FS. Monitoring and assessment are integral parts of the FS mission. The FS expertise in this area includes: Research stations and scientists that specialize in avian studies throughout the United States; Expertise in monitoring design and protocol; Integrated databases, notably the INFRA system currently under development; Regionally based monitoring strategies for birds, spanning millions of acres; Monitoring plan development and implementation on a large scale; Decades of baseline data on forest conditions; Partnerships such as the *Birds in Forested Landscapes* program with Cornell University; Research expertise on the economic contributions of birds and bird watching.

DoD. DoD's monitoring activities adhere to existing standardized methods for the monitoring activity required to facilitate data sharing among partners. A network of nearly 100 Monitoring Avian Productivity and Survivorship (MAPS) banding stations provides invaluable data for monitoring and assessing habitat quality and populations. DoD is a partner with the USGS and USFS in the Comprehensive Landbird Monitoring and Assessment Program in Oregon and Washington, which may become a pilot for a national standardized landbird monitoring protocol. Technology enhances our monitoring efforts. Satellite tracking of raptors and other birds provides information on migration routes and migratory stopover and overwintering locations. Radar ornithology (using the WSR-88D weather surveillance radar, NEXRAD) helps us identify migratory stopover habitats and hot spots, and also provides a real time assessment of training flight risk in relation to migratory bird movement. Combining radar images of bird movement with habitat maps layers in a GIS allows us pinpoint critical stopover habitats in which to focus conservation activities.

THEME #4: Developing Partnerships

> Developing diverse partnerships at every level is the most effective way to manage and conserve migratory birds. For integrated bird conservation to succeed, a wide array of agencies and organizations will need to take part in international, national, regional, and local partnerships, including and state agencies, private non-for-profit organizations, corporations, and individual landowners. Some partnerships will need to focus on specific issues and entities, such as local communities, watersheds, ecosystems, and landscapes so that varying political, biological, and social realities are addressed. These partnerships will also vary in function, addressing, for example, the coordination of monitoring efforts, habitat conservation, and population and land management. Most importantly, partnerships are essential for leveraging resources and developing coordinated funding strategies for priority conservation projects.

FWS. The FWS administers a number of programs that foster relationships between public and private sector agencies, organizations, and individuals that benefit migratory birds. These programs include Migratory Birds, Partners for Fish and Wildlife, and International Conservation. The North American Wetlands Conservation Act catalyzes partnerships between private and public interests to conserve wetlands for migratory birds and other wildlife in Canada, the U.S., and Mexico. The FWS is the national implementation office for the NAWMP, which supports regional joint ventures, diverse public-private partnerships for conserving waterfowl and other migratory birds in specific geographic regions. New partnerships are being formed across the country to undertake comprehensive bird conservation within and outside areas covered by traditional NAWMP joint venture areas. The Migratory Birds Program is fostering these emerging partnerships through its support for integrated bird conservation and initiatives such as Partners In Flight, the US Shorebird Conservation Plan, North American Colonial Waterbird Conservation Plan and NABCI. The Partners for Fish and Wildlife Program forms partnerships with private landowners to manage habitats on private lands for wildlife. The International Affairs Program fosters on-the-ground partnerships for conservation in countries throughout the Western Hemisphere, an element of which is training partners to develop their own capabilities for migratory bird management.

FS. Partnerships are key to the success of many Forest Service programs. The FS brings partnership skills from four divisions of the Agency Research and Development, State and Private Forestry, National Forest System, and International Programs. These skills include partnership development in research, habitat management on private and state-owned forested lands, and on habitats in other nations (particularly where U.S. birds migrate seasonally), and on the 192 million acres of multiple use national forests and grasslands. In 1986, Congress established the innovative Challenge Cost-Share Program encouraging direct public involvement in wildlife and fish habitat management on national forests and grasslands. For example, in 1999, state agencies and private sector partners worked with the FS to leverage almost $16 million of appropriated funds into nearly $42 million of habitat improvement on behalf of wildlife, fish, rare plants and people. The Agency also has many active partners in the recreation arena. A current focus of the FS is to advance as a national collaborative leader in watershed restoration and sustainability through large-scale watershed restoration projects on multiple land ownerships across the nation.

BLM. Partnerships are key to the success of many BLM programs. The BLM has been very active in developing and implementing partnership efforts. These include challenge cost-share funding partnerships for habitat restoration, inventory and monitoring and research. In addition, BLM has a long tradition of working closely with local communities and other partners on a variety of resource management issues. The BLM has led community-based partnerships and collaborative planning efforts agency-wide, and has numerous successful models of cooperative efforts that have improved habitats and populations of birds on public land. In 1985, Congress authorized the BLM's Challenge Cost-Share Program (the first agency to be granted this authority) which promoted involvement with the public, state and local governments and non-profit organizations in wildlife and fish habitat management on public lands. After 15 years, the BLM has completed over 5,000 Challenge Cost Share projects worth more than $100 million dollars in combined value. More recently, Congress authorized BLM to fund $2.5 million of projects each year through the National Fish and Wildlife Foundation for challenge grants aimed at conservation, research and education for a variety of wildlife programs.

U.S. Department of State (DOS). The DOS funds a Wetlands for the Future Initiative through the Ramsar Convention on Wetlands, an international treaty dedicated to the promotion of wetlands protection globally, with administrative support from the Ramsar Bureau (or Secretariat) and technical support from the FWS. Begun in 1994, the initiative provides annually for training and capacity building for wetlands management and protection of bird habitats in Latin America and the Caribbean. In FY1999, a project was approved which funded an exchange for research and conservation of the Pacific brant in wintering and staging areas in Alaska and Northern Mexico, supports the themes of monitoring and assessment and partnerships, this one being between wetland sites in Alaska and Baja California.

NRCS. The NRCS relies on many partners to help set conservation goals, work directly with landowners and operators on the land, and provide other assistance. Partners include conservation districts, state and Federal agencies, NRCS Earth Team volunteers, agricultural, wildlife, and environmental groups, and professional societies. Conservation districts provide over 8,000 full and part-time employees located in approximately 2,500 NRCS offices serving 3,000 conservation districts nationwide. State, and Federal agencies plus NGO's provide technical assistance to farmers and ranchers and other landowners through NRCS offices. Much of this assistance is directed at restoration of native habitats on private lands. Through this diverse partnership foundation, NRCS has the ability to extend bird conservation objectives to much of the conservation work already taking place on agricultural landscapes throughout the country.

EPA. The EPA makes important indirect contributions to bird conservation through fostering and supporting a number of partnership efforts. Foremost among these are watershed management, community-based environmental protection, and pollution prevention. Each involves diverse stakeholders working within communities or watersheds to define common goals and approaches and to

develop solutions to environmental and natural resource problems. Among the issues commonly addressed are habitat conservation, various pollution threats, citizen education, and occasionally more direct conservation of wildlife populations, including birds. EPA's role in this area is to promote and facilitate these approaches through convening conferences, providing training, developing technical tools (e.g., guidance on watershed restoration), providing information in the form of web sites or publications (e.g., how to obtain funding support), adapting EPA's own programs to better mesh with such efforts, and providing more direct support in the form of funding and technical assistance. EPA maintains a web site titled "Adopt Your Watershed" that contains information on over 5500 local watershed groups and tools for citizens; a web site on basic information about watersheds and working in them ("Watershed Information Network"); and an interactive database platform for obtaining information about individual watersheds ("Surf Your Watershed"). EPA also provides significant support to the President's American Heritage Rivers initiative and the interagency partnership Coastal America, both of which include habitat and living resource conservation as a high priority.

DoD. Partnerships at all levels help DoD to more effectively use its resource base. An ongoing MOU with The Nature Conservancy (TNC), renewed again in March 2000, addresses the larger issue of conservation of biodiversity on DoD lands. An agreement with Ducks Unlimited promotes coordination in managing waterfowl habitat. DoD continues to be an active partner in International Migratory Bird Day, which educates thousands of children and adults about migratory birds every year. Innovative partnerships at the local level greatly enhance management effectiveness. As an example, Ft. Hood (Texas) maintains partnerships with TNC-Texas to manage Golden-cheeked Warbler and Black-capped Vireo habitats, and with the Central Texas Cattleman's Association for control of cowbirds. Populations of both species have rebounded significantly due in large part to these partnerships. A partnership with the Gulf Coast Bird Observatory focuses on the importance of DoD lands around the Gulf of Mexico to conserve migrant birds.

THEME #5: Conducting Outreach and Communications

> A high level and quality of communications and publicity is greatly needed for such a broad-based partnership effort as NABCI. A host of education and outreach activities and products are essential for ensuring widespread organizational and individual support for and involvement in NABCI-related conservation activities. Agencies and organizations need to work in a highly coordinated fashion on strategic statements, partner activities, and periodic updates on NABCI to ensure that people are well-versed on NABCI, its goals, opportunities, and needs. Coordination between the NABCI-US Committee, NGO Subcommittee and Federal Agency Subcommittee is likewise critical to achieving the goals of NABCI. Furthermore, each partner agency needs to initiate an effective in-reach campaign that can insure a high internal profile for NABCI and, for agencies without conservation agendas, that agency missions are fairly balanced with bird conservation needs.

FWS. The FWS provides a host of outreach services in support of NABCI. FWS programs such as Migratory Birds and International Conservation conduct a variety of outreach activities within the U.S. and throughout the Western Hemisphere, including the publication of newsletters, posters, brochures, and other migratory bird-related outreach documents, participation at conservation-related conferences and festivals, regular communications with and outreach to partnerships involved in on-the-grounds bird conservation, and funding of important international outreach and education projects. In addition, the Migratory Birds Program, with assistance from partners organizations, plans and coordinates the International Migratory Bird Day, an annual event to increase citizen awareness of and involvement in the plight of migratory birds. The FWS's Refuge System provides a host of opportunities to increase citizen

awareness of bird conservation through its visitor's centers, annual bird festivals, and year-round birding opportunities. The FWS also Co-chairs the U.S.-NABCI Committee and Federal Agency Subcommittee and provides important staff functions as part of these co-chair roles including substantial outreach to the conservation community and public in the name of NABCI. FWS also supports outreach efforts of regional and local joint venture partnerships of the NAWMP, PIF, the US Shorebird Conservation Plan, and other bird conservation initiatives.

BLM. The BLM supports a variety of outreach activities including the publication of newsletters, educational posters and other migratory bird-related outreach documents through cooperative efforts with Partners In Flight, the Intermountain West and Prairie Pothole Joint Ventures and other partnerships with the non-government organization community. BLM local offices promote national events such as International Migratory Bird Day, and many local or regional events. BLM field offices have produced birding guides, maps and checklists for their area. The BLM also maintains a network of over 300 Watchable Wildlife Viewing areas that provide a host of opportunities for environmental education as well as opportunities for bird viewing in many locations.

EPA. The EPA has been extremely active in this area and is a recognized leader in the use of Internet technology for providing information to citizens that empowers their participation in critical environmental issues that affect their lives and communities. The EPA home page is one of the most popular web sites in the natural resource and environment area; for the month of March 2000 the EPA website had 90 million hits which translates to 14 million page requests. EPA provides information of many kinds ranging from full copies of documents to interactive mapping and analytic tools, access to data bases of many kinds, and distance learning programs like the Watershed Academy. More directly germane to this subject is the EPA bird conservation web site, which provides a comprehensive array of information about bird conservation initiatives, programs, projects, suggestions for citizen participation, and many links to other sites. All EPA programs have active outreach efforts that rely on a combination of direct interaction with citizens, traditional print media, video materials, and the Internet. EPA has a modest Environmental Education Program, which provides small grants to communities and schools to carry out local environmental education projects. EPA's International Activities program includes the dissemination of information and tools to our neighbors abroad.

NRCS. The NRCS has a powerful outreach infrastructure that could be used to further the bird conservation goals of NABCI. A host of outreach mechanisms could be used to highlight bird conservation. For example, the Backyard Conservation Program communicates how conservation practices used in rural agricultural landscapes can be applied on a smaller scale in backyards in urban and suburban settings. Some materials are printed in Spanish. About 2,500 NRCS offices are connected to the internet. Web sites are developed at and by all levels of the agency including many field offices and conservation districts. NRCS participates in many field days and conservation demonstrations to show the public the effects of sound conservation practices. The NRCS Plant Materials Program develops about 20 improved varieties of native plant species every year for conservation and restoration uses. Technical publications on habitat restoration and management for bird species are made available to the public. NRCS provides conservation assistance to 30 countries.

FS. The FS has many resources in the area of outreach and communications, including hundreds of ranger stations and visitor centers throughout the United States staffed with public affairs expertise. The Office of Communication in Washington DC specializes in press releases, posters, document and brochure publication, and houses the National NatureWatch program coordinator. Hundreds of wildlife viewing facilities exist throughout the National forest System and thousands of campfire program presentations are conducted in FS campgrounds every year. Smokey Bear and Woodsy Owl are universally recognized symbols for conservation. FS sponsors International Migratory Bird Day events

on National Forests nationwide and supports conservation education staff and programs dedicated to disseminating natural resource information to the public.

DOS. The DOS funds a Wetlands for the Future Initiative through the Ramsar Convention on Wetlands, an international treaty dedicated to the promotion of wetlands protection globally, with administrative support from the Ramsar Bureau (or Secretariat) and the U.S. FWS. Begun in 1994, the initiative provides annually for training and capacity building for wetlands management and protection of bird habitats in Latin America and the Caribbean. In FY 1999, a project for Mexico was approved which funded a workshop on training, public awareness and capacity building for wetland conservation in Mexico, supporting the themes of outreach and habitat conservation.

DoD. The Department of Defense (DoD) has a national Partners In Flight manager who coordinates major internal and external communications efforts. Fort Belvoir and the DoD Partners in Flight Program recently sponsored a public workshop to introduce land managers in the National Capital region to the Mid-Atlantic Coastal Plain Bird Conservation Plan. This successful workshop will be replicated in other locations in the future. A full-size display that depicts the various bird conservation program areas within DoD is used at conferences, meetings, bird festivals, and public events (such as IMBD celebrations at the National Zoo and National Aquarium in Baltimore). DoD personnel participate in school programs and public events for Earth Day, IMBD, and general bird conservation functions. A DoD MOU for Watchable Wildlife encourages programs and public opportunities for bird watching on DoD lands, including organized group trips on installations with otherwise restricted access. DoD publications highlight bird conservation activities, and include posters, installation bird checklists, and brochures. The DoD Bird Conservation Strategic Plan lays out the marching orders for DoD bird conservation efforts. In addition to annual support for *Bird Conservation* magazine, two special issues of *Bird Conservation* highlighted DoD's many successes in conserving birds and their habitats.