

A New Conservation Partnership: Conserving the Migratory Birds of the Americas¹

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Introduction

Over five billion birds move each year across the Americas, flying great distances over almost every location and habitat on the continents (Weidensaul 1999). Over 350 of the over 800 bird species in the United States migrate each year to Latin America and the Caribbean (Degraaf and Rappole 1995). Some fly each way over 4000 miles, chasing the seasons across oceans and continents (Weidensaul 1999). In addition, migratory birds are very important to Americans. Over 75 million Americans participate in bird watching, photography, hunting, nature study, and feeding. These Americans support businesses and communities by spending over \$28 billion each year on these activities (U.S. Department of Interior 1997). Bird watching is the fastest growing outdoor activity currently in the United States (Cordell and Herbert 2002). Migratory birds are also critical in sustaining cultures (Jorgensen 1995).

Migratory bird species and their habitats are declining worldwide (Birdlife International 2000) Over half of the 350 plus migratory species in North America show a declining trend, such as the Cerulean Warbler (*Dendroica cerulea*), which has declined at a rate of 4.2 percent/ year during the period 1966-2000 (Hamel 2000, Sauer et al. 2001). Only about 54 percent of the original forest of Central America and the Caribbean remain today (World Resources Institute 2000). The human population of Latin America and the Caribbean likely will increase by at least 50 percent by the year 2050 (United Nations 1992).

For many of these species that are declining in numbers, habitat loss outside of the United States is a significant cause of population decline. For these species, conservation efforts in the United States may not be enough to sustain the species. It is increasingly clear we must pay much more attention to bird conservation in Latin America and the Caribbean if we are to conserve those migratory birds so important to

Americans. If we do not invest in conservation outside the United States, we likely will lose the millions of dollars we have invested in bird conservation here at home.

The Nature Conservancy (TNC) and the USDA Forest Service International Programs (IP) formed a new conservation partnership to help conserve the migratory birds of the Americas. TNC's Migratory Bird Program was already well established as a very successful bird conservation program in the Americas, with projects throughout North America, Latin America and the Caribbean. The IP was building its migratory bird conservation program using the diverse conservation experience and partnership skills found throughout the USDA Forest Service (Watson and Capp 2001). This includes staff from State and Private Forestry, Research and Development, National Forest Systems, and IP branches of the Forest Service. IP leverages these skills around the world for conservation work and partnered with TNC for international bird conservation work.

The partnership has eight goals:

1. **Conserve and sustain the migratory birds of the Americas.** Part of this goal, as a working principle, is that our migratory bird conservation will help conserve the biodiversity of the Americas.
2. **Prioritize our work on species most at risk.** There is urgency for conservation of migratory birds and little time to waste on lower priorities.
3. **Apply the research and management skills and experience of our two organizations.** We have highly skilled and experienced conservationists with diverse inter-disciplinary skills in science, management, education, community relationships, and partnership building.
4. **Be engaged on the ground and in the field.** Funding for field personnel and field projects are very important.
5. **Encourage and form new partnerships.** We will emphasize collaboration with conservation organizations and local communities in other countries.

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6. **Emphasize building stronger conservation capacity in other nations.** This is accomplished through training, education, and interactions with United States conservationists.
7. **Maintain a strong science base for all of our work.** We will continue to strengthen our science base through the application of the best applicable techniques in research and monitoring.
8. **Work where bird conservation is needed most.** We will link our work in other countries with bird conservation work in the United States based on the shared migratory species and habitats of highest concern.

Prioritizing Our Work

We reviewed species lists from established North American bird conservation plans and initiatives. These included species listed under the U.S. Endangered Species Act, the List of Species at Risk in Canada, high priority species on the Partners in Flight Watch List (Pashley et al. 2000), North American Waterfowl Management Plan, North American Waterbird Conservation Plan (Kushlan et al. 2002), and the U.S. Shorebird Conservation Plan (Brown et al. 2001). The latter four plans identified species of most concern or most in need of conservation attention.

Next, we needed to identify areas of Latin America and the Caribbean where our bird conservation work could be focused for the greatest conservation benefit. To do this, we utilized the end products of TNC's ecoregional planning process (Groves et al. 2000), which provides extremely valuable information for prioritizing our work by identifying priority conservation areas based on species and biodiversity richness, occurrence of migratory and endemic species, and critical bird migration concentration points. Using the list of critically important conservation areas determined by the process, we identified which of our priority bird species utilized which of the priority conservation areas.

Conservation Themes and Strategies

We established four conservation themes to guide our partnership: restricted range neotropical migrants, high priority migrant corridors, shortgrass prairie birds, and migratory shorebirds. These themes represent combinations of species and sites that share common threats and conservation concerns. For each theme, we identified a set of priority migratory bird species that enabled us to focus on critical habitats where our conservation work would be accomplished.

We then conceptualized practicable conservation strategies to plan and deliver migratory bird conservation work at these priority conservation areas. To accomplish this, we began by identifying important factors in successful bird conservation in Latin America and the Caribbean. We identified seven factors: ecoregional planning, avitourism, invasive species, community-based conservation, sustainable agriculture, ecological fire management, and monitoring.

Ecoregional planning forms the scientific, landscape, and priority setting foundation. Avitourism can be a powerful economic force for bird conservation. Invasive species often degrade migratory bird habitats. Community-based conservation that generates support for conservation is a well-understood, effective, and often-used conservation strategy in much of Latin America and Caribbean. Agriculture greatly affects bird habitats. Fire is a major habitat determinant in most of Latin American and the Caribbean and must be understood ecologically. Monitoring of bird populations and habitats is critical to measuring the success of conservation projects.

To target our work for years 2002 and 2003, we decided to focus on three strategies (ecoregional planning, ecological fire management, monitoring) and three themes (restricted range migrants, high priority migrant corridors, shortgrass prairie birds) for our partnership. For each combination of theme and strategy, we developed a conservation project to implement bird conservation at one or more sites or geographic regions to benefit one or more high priority species. These conservation projects are described below, along with their theme, strategy, focal species, and geographic scope.

A Research and Training Program for the Conservation of Wintering Kirtland's Warbler and Associated Species in the Bahamas

- Bird Conservation Theme: Restricted Range Migrants
- Bird Conservation Strategy: Monitoring
- Focal Species: Kirtland's Warbler
- Geographic Scope: Bahamas archipelago

The Kirtland's Warbler (*Dendroica kirtlandii*) is listed as Endangered under the U.S. Endangered Species Act. Millions of dollars have been spent on its recovery in the United States. It spends the breeding season in a small area of northern Michigan and the non-breeding season in the Bahamas. The Kirtland's Warbler Recovery Plan lists new information on the non-breeding range as the number one priority information

need. Our partnership project in the Bahamas will build skills of Bahamian scientists and managers in bird census and habitat measurement techniques. The project will also determine a variety of demographic and condition information for the warbler, including: site fidelity, body condition, over-winter survival, habitat use, and foraging behavior. In the spring of 2002, project personnel sighted and banded multiple Kirtland's Warblers on the island of Eleuthera. Preliminary data were obtained on habitat types, food resources, and co-occurring migrant birds on the island of Andros.

Establishment of an International Partnership as a Conservation Strategy for the Bicknell's Thrush and other Neotropical Migrants in the Dominican Republic

- Bird Conservation Theme: Restricted Range Migrants
- Bird Conservation Strategy: Monitoring
- Focal Species: Bicknell's Thrush
- Geographic Scope: Dominican Republic

The Bicknell's Thrush (*Catharus bicknelli*) may be declining in numbers, has a restricted breeding range, occurs in habitat that is threatened in both breeding and wintering seasons (Rimmer et al. 2001), and is listed as Extremely High Priority on the Partners in Flight Watch List (Pashley et al. 2000). Very little is known about the non-breeding range of this species on the island of Hispaniola, except for some high quality research from the Dominican Republic (DR). Studies are in progress on the breeding and non-breeding range by the Vermont Institute of Natural Science (Rimmer et al. 2001).

Our partnership project in the DR will train Dominicans in bird census, monitoring, and habitat mapping as well as determine a variety of thrush demographic attributes. A partnership agreement and an action plan have been completed among the Dominican government, IP, U.S. Agency for International Development, Dominican non-governmental conservation organizations, and TNC. Dominican conservationists have visited breeding season habitats and study sites in Vermont. USDA Forest Service and TNC conservationists have visited non-breeding season habitats in the DR. TNC and its partners in the DR have mapped the locations and density of migratory birds and protected areas in the DR. It is clear that protected areas will play the key role in conservation of the Bicknell's Thrush and other birds in the DR.

Conserving Grassland Bird and Prairie Dog Habitat in Northern Mexico

- Bird Conservation Theme: Shortgrass Prairie Birds
- Bird Conservation Strategy: Monitoring
- Focal Species: North American Great Plains grassland endemic birds
- Geographic Scope: Northern Mexico

North America's Prairie, the continent's largest biome, is arguably the most threatened. The shortgrass prairie has been severely altered with comparable impacts on the migratory birds that spend the breeding season there. Many shortgrass prairie bird species are in decline in all or parts of their ranges, including the Ferruginous hawk (*Buteo regalis*), Mountain Plover (*Charadrius montanus*), Sprague's Pipit (*Anthus spragueii*), and Burrowing Owl (*Speotyto cunicularia*) (Degraaf and Rappole 1995). Conservationists have been addressing these declines in the United States and Canada, but much less work is occurring in the arid grasslands of Mexico where most of these species spend the winter.

Our partnership, through the Prairie Wings Program of TNC, is helping design and implement conservation projects in two of the most critical grassland bird wintering areas in Mexico: the Saltillo Grasslands in the States of Nuevo Leon and Coahuila, and the Janos Grasslands in the State of Chihuahua. To accomplish the conservation goals at this site, we are assisting our conservation partner Pronatura Noreste in developing a management plan for the Saltillo Grasslands Protected Area, conducting bird inventories and monitoring in the Janos Grassland, and linking United States and Mexican field bird conservationists and their field projects.

Developing Ecological Fire Management Plans for Mexico

- Bird Conservation Theme: High Priority Migrant Corridors
- Bird Conservation Strategy: Ecological Fire Management
- Focal Species: Characteristic birds of fire-maintained habitats
- Geographic Scope: Mexico

Many conservation areas in Mexico have identified inappropriate fire regimes as a critical threat to the ecological integrity of their protected ecosystems. Wildland fires have always been part of the cultural

and ecological landscape of Mexico, resulting in biota that is dependent on fire, and land uses where fire is an indispensable tool. Wildfire, however, has been accepted as a serious threat to local communities. As a result, aggressive fire prevention and suppression campaigns have been developed reflecting strong public opinion that all wildfires are undesirable and detrimental. At the same time, natural resource managers recognize the ecological role of fire and the need to plan for and manage, rather than suppress all fires. It is imperative that this expertise is developed soon to enable Mexico to maintain and restore natural fire regimes and assess policies that call for suppression of all fires.

Fire plays a critical role in shaping migratory bird habitats in Mexico. Much of montane Mexico consists of forests and woodlands that are maintained by fire regimes that are poorly understood. Currently, in Mexico, no fire management plans for protected areas have completed or implemented although a few plans for protected areas have been drafted. Bird conservationists in Mexico have a strong interest in understanding the role of fire in vegetation dynamics and getting sites under effective fire management and natural disturbance regimes. Working together, and with Mexican partners, we are addressing:

- Negative impacts of aggressive fire suppression on bird habitats;
- Low public appreciation of ecological role of fire;
- Solutions to threats of wildfire on bird habitats;
- Strengthening Mexico's fire ecology science base;
- Producing practicable/effective fire management plans; and
- Building fire ecology and management capacity in Mexico.

Ecological Blueprints

- Bird Conservation Theme: All
- Bird Conservation Strategy: Ecoregional Planning
- Focal Species: All migrants
- Geographic Scope: Central America, Baja California (Mexico)

A critical product of ecoregional planning is an ecological blueprint. The blueprint serves as a portfolio of sites to conserve the full array of biodiversity, including species, natural communities, and ecological systems of conservation priority. It is initially developed by prioritizing communities and ecological systems,

which serve as a "coarse filter" to capture all biodiversity. However, we know that through this process, some species may still not be captured in the portfolio. Therefore, our work plans to add species-level data, with an emphasis on migratory birds, to the base portfolio built on knowledge of communities and systems. Once completed, ecological blueprints guide conservation work throughout a region and help ensure the protection of biodiversity at a large geographic scale. Ecological blueprints thus serve as a foundation for bird conservation planning and targeting.

We are developing two ecological blueprints: one for Central America and one for Baja California, Mexico. While Central America represents only one-half percent of the world's landmass, it contains seven percent of the world's biodiversity. It serves as a major migratory bird migration corridor and habitat during the non-breeding season for migrants from the United States and Canada. Almost 70 species of migratory birds depend on Central America for their existence. For the Central America blueprint, we are constructing a GIS database of species-level biodiversity; providing a data system for future conservation planning and partnerships; incorporating Belize into the Central America portfolio of conservation sites; and including species-level data focusing on endemics, endangered species, and birds.

Scientists and environmental organizations consider Baja California, the Gulf of California, and the near-shore Pacific marine system of Mexico one of the most important regions of the world for conservation efforts. The unique geology, climate and vegetation of Baja California harbor many species and natural communities found nowhere else on earth. Few marine areas in the world have the combination of ecological productivity and biological richness of the Gulf of California and near-shore Pacific Ocean. This region contains extensive and intact coastal and marine ecosystems, including sea grass beds and mangroves, the nurseries of the sea, beaches used by sea turtles for nesting, an archipelago with plants and animals unique in the world, and marine habitat used by many species of whales for breeding and rearing.

During the initial phase of the project, a Conservancy team will review existing conservation priority setting exercises in the region developed by other conservation organizations and academic institutions. The team will analyze this data to identify information gaps and to establish compatibility with the Conservancy's standard planning methodology. Then, in collaboration with academic institutions and other conservation organizations in the region, we will establish conservation targets for the ecoregion, set conservation goals for each target, and select priority conservation areas that will ensure the long-term viability of each target. We

will generate an ecoregional map that highlights the functional conservation areas necessary to protect the biodiversity of the Gulf of California. We will also map current conservation projects in the region to determine gaps in conservation capacity.

Developing Consistent Ecological System Targets to Protect Migratory Bird Habitat in Latin America and the Caribbean

- Bird Conservation Theme: All
- Bird Conservation Strategy: Ecoregional Planning
- Focal Species: All migrants
- Geographic Scope: Latin America and the Caribbean

A critical foundation for ecoregional planning is a standard list and classification hierarchy of ecological systems. To expand ecoregional planning into additional countries in Latin America and the Caribbean where migratory birds spend the non-breeding season, more ecological information must be obtained. At this time, Latin America and the Caribbean do not have a standard classification of ecosystems that allows for comprehensive biodiversity conservation planning at the continental, regional, and local scales. Because the conservation of ecosystem diversity also protects the diverse array of constituent species and the ecological processes that they depend on, ecosystem or vegetation classification units have been often used as targets for conservation. In order to conserve migratory birds and biodiversity, we need a better understanding of how the landscapes can be divided into ecosystems, and not just vegetation types.

For all of Latin America and the Caribbean, we will produce a list of ecological systems, create written system descriptions, and store the resulting data in an information management system. The ecological systems will be mapped from satellite imagery by TNC. This base map will guide TNC's ecological blueprint development in Latin America and the Caribbean. Each ecosystem type will be assessed for importance to migratory birds and biodiversity to help establish conservation targets in each TNC ecoregion and help ensure that needs of birds are incorporated into the selection of ecoregional planning portfolio of conservation sites.

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