

Saving Migratory Birds for Future Generations:

The Success of the Neotropical Migratory Bird Conservation Act



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Compiled by American Bird Conservancy
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Executive Summary

Of the bird species that regularly breed in North America, 341 are Nearctic-Neotropical migratory birds (commonly known as “Neotropical migrants”) that breed in the United States and Canada, and winter in Latin America and the Caribbean. Among these Neotropical migrants are many species of plovers, terns, hawks, cranes, warblers, and sparrows. Of the 341 species, 127 are known to be in decline. Sixty species are in severe decline (population decrease of 45% or more in the past 40 years), of which 29 are songbird species. Scientists still know too little about the status and population trends of one-fifth of all Neotropical migratory birds to be able to say whether or not these species are declining, stable, or doing well.

There are many threats to Neotropical migrants, including fragmentation of their breeding, staging, and wintering habitats due to development, land conversion, habitat degradation, and deforestation, collisions with buildings and communication towers, poisoning by toxic chemicals such as pesticides, predation by introduced predators, and global climate change.

While the situation is dire for many species, such as Golden-winged and Cerulean warblers, Buff-breasted Sandpiper, Long-billed Curlew, Reddish Egret, and Wood and Bicknell’s thrushes, there are viable conservation actions and programs in place that may help reverse this trend.

Created to conserve migratory birds, the Neotropical Migratory Bird Conservation Act (NMBCA) is one program with a proven track record of success. The NMBCA grants program was passed in 2000, and began supporting projects in 2002, when it received its first appropriation in the amount of \$3 million. Funding for the program was also \$3 million in 2003, then \$4 million each year from 2004 to 2007, \$4.5 million in 2008 and \$4.75 million in 2009. At least 75% of the total funding available for grants each fiscal year is used to support projects outside the United States. All NMBCA grants must be matched by non-federal funds at a ratio of three partner dollars for every one federal dollar. Between 2002 and 2008, the program supported 260 projects, coordinated by partners in 44 U.S. states/territories and 34 other countries. More than \$25 million from NMBCA grants have leveraged over \$116 million in matching partner contributions. Projects involving land conservation have affected about three and a half million acres of bird habitat. The NMBCA has also helped fill gaps in our understanding of the population status of Neotropical migrants through support of research and monitoring projects.

Unfortunately, current NMBCA funding levels can only provide grants to one-third of qualifying applications. A significant increase in funding for the NMBCA is needed to support the growing conservation needs of Neotropical migratory birds and their habitats.



Piping Plover: Bill Dalton



Black-capped Vireo: Bill Hubick



Rose-breasted Grosbeak: Jim Scarff



Least Tern: Ralph Wright



Bicknell's Thrush: George Jett

Introduction

Millions of Americans love birds. We marvel at their beauty and variety, and their ability to fly, sometimes for thousands of miles without stopping. But it is not simply their intrinsic aesthetic and emotional value that makes them so important to us. They have tremendous economic and social value too. Birdwatching is a huge and growing industry, generating billions of dollars per year from the feeding of birds, purchase of equipment, and travel in the pursuit of seeing birds. Birds are also of incalculable benefit to our agricultural industries as pollinators, controllers of insects and rodents, and dispersers of seeds.

Because they are sensitive to habitat change, and because they are easy to census, birds are a favored tool of ecologists. Changes in bird populations are often the first indication of environmental problems that can affect us directly. Whether ecosystems are managed for agricultural production, wildlife, water, or tourism, success can be measured by the health of birds.

Birds have been a driving force behind the American conservation movement since its early days, when unregulated hunting, the use of toxic pesticides, and the destruction of wetlands threatened our wildlife and wild places. The environmental problems we face today are complex, and we need effective conservation programs to help counter them.

The annual spring and fall migrations of billions of birds are a natural wonder that mark the changing of the seasons, and connect different peoples and regions across the Americas, from the Canadian tundra to the rainforests of the Amazon and the tip of South America. Recently, there has been considerable attention paid to migrating birds due to surveys documenting declining populations of many songbirds.

Policymakers have also responded to the scientific community's reports citing the decline of many of America's bird species. In the President's 2008 budget request, the Department of the Interior launched the Birds Forever initiative. It includes an increase of \$9 million to support targeted programs and planning of broad-scale conservation activities to address threats to native bird species. The initiative supports the President's 2007 announcement highlighting migratory bird conservation and the need and desire to work across international borders to conserve shared species.

However, before these beneficial new initiatives were conceived, Congress had passed legislation creating a program designed to conserve migratory birds: The Neotropical Migratory Bird Conservation Act (NMBCA). Each year, funds for the Act must be appropriated by Congress, and every five years the Act needs to be reauthorized.

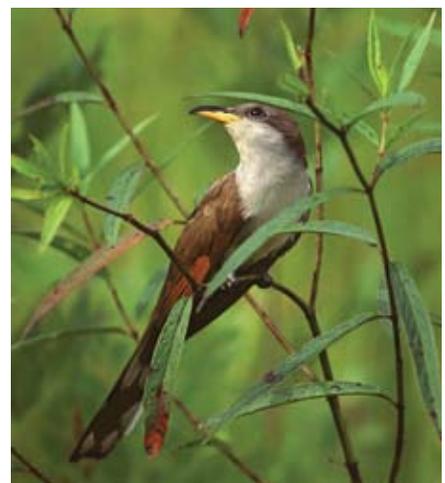
Thanks to the strong leadership of Representative Ron Kind of Wisconsin, who champions the legislation and heads up the National Wildlife Refuge Caucus in Congress, and Senator Ben Cardin of Maryland, bills to reauthorize NMBCA has been introduced this year, calling for \$20 million in appropriations from Congress by 2015. Combined with the required matching funds,



Western Tanager: Peter LaTourrette, www.birdphotography.com



Lawrence's Goldfinch: Peter LaTourrette, www.birdphotography.com



Yellow-billed Cuckoo: Ted Ardley

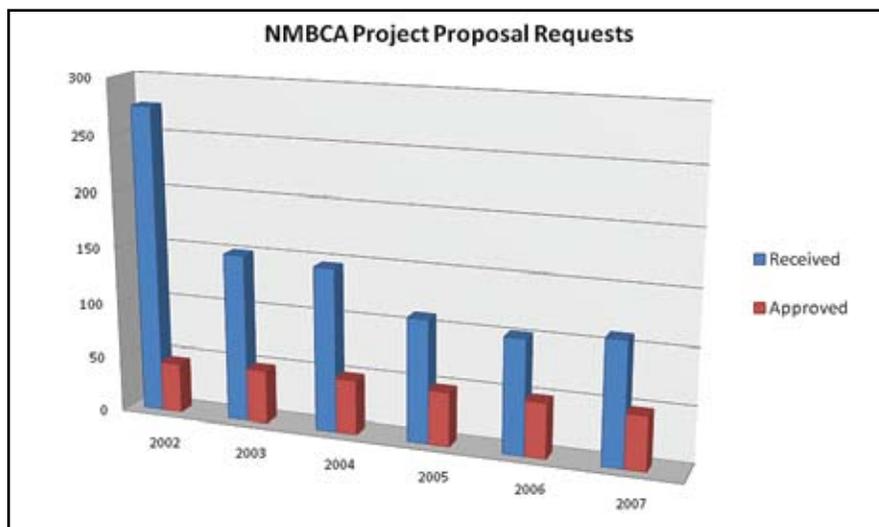
the NMBCA would generate at least \$80 million per year to help conserve migratory birds. In addition to efforts to get this bill passed, there is also the urgent and important task of securing as much funding as possible for the NMBCA in the annual appropriations bill that funds the U.S. Fish and Wildlife Service.

Because the Act and its funding are so important for bird conservation in the Americas, American Bird Conservancy (ABC) has embarked on the 'Act for Songbirds' campaign that will work to secure this reauthorization of the NMBCA at the \$20 million funding level, and will continue to advocate for maximum appropriations for the Act once it is passed by Congress.

This report is prepared to help the general public, conservation organizations, and elected officials understand the NMBCA's purpose, goals, and successes, and the need for continuing the program at an increased funding level to improve the conservation of Neotropical migratory birds.



Scarlet Tanager: Greg Lavaty



Bobolink: Pennsylvania Game Commission

The above graph shows how qualifying project proposal requests received by the U.S. Fish and Wildlife Service far exceed available funding. A significant increase in NMBCA funding is needed to support growing conservation needs.

Population Trends of Migratory Birds

Many Neotropical migratory birds have experienced significant population declines since systematic, continent-wide surveys began in 1966. Of the 178 continental bird species included on WatchList 2007, a list of birds of the highest conservation concern compiled by American Bird Conservancy and the National Audubon Society, over one-third, 71 species, are Neotropical migrants.

According to a recent study (Butcher, Niven 2007), which combines Breeding Bird Survey and Christmas Bird Count

Neotropical Migratory Birds on the American Bird Conservancy/Audubon Watchlist 2007	
Allen's Hummingbird	Long-billed Curlew
American Golden-Plover	Lucy's Warbler
Audubon's Oriole	Mangrove Cuckoo
Bay-breasted Warbler	Marbled Godwit
Bell's Vireo	Mountain Plover
Bicknell's Thrush	Olive-sided Flycatcher
Black Rail	Painted Bunting
Black Skimmer	Piping Plover
Black Swift	Prairie Warbler
Black-capped Vireo	Prothonotary Warbler
Black-chinned Sparrow	Red Knot
Blue-throated Hummingbird	Reddish Egret
Blue-winged Warbler	Red-faced Warbler
Brewer's Sparrow	Roseate Tern
Buff-breasted Sandpiper	Rufous-winged Sparrow
Calliope Hummingbird	Sanderling
Canada Warbler	Semipalmated Sandpiper
Cerulean Warbler	Short-eared Owl
Clark's Grebe	Snowy Plover
Colima Warbler	Sprague's Pipit
Costa's Hummingbird	Stilt Sandpiper
Elegant Tern	Surfbird
Elegant Trogon	Swainson's Hawk
Elf Owl	Swainson's Warbler
Eskimo Curlew	Swallow-tailed Kite
Golden-cheeked Warbler	Thick-billed Kingbird
Golden-winged Warbler	Varied Bunting
Grace's Warbler	Virginia's Warbler
Gray Vireo	Wandering Tattler
Gull-billed Tern	Western Sandpiper
Hermit Warbler	White-crowned Pigeon
Hudsonian Godwit	White-rumped Sandpiper
Kentucky Warbler	Willow Flycatcher
King Rail	Wilson's Plover
Kirtland's Warbler	Wood Thrush
Least Tern	

Neotropical Migratory Songbird Species	Estimated Decline in Last 40 Years
Black-chinned Sparrow	89%
Cerulean Warbler	83%
Sprague's Pipit	81%
Olive-sided Flycatcher	76%
Eastern Meadowlark	72%
Loggerhead Shrike	71%
Bell's Vireo	66%
Blackpoll Warbler	65%
Bay-breasted Warbler	64%
Golden-winged Warbler	64%
Lark Sparrow	63%
Rufous-crowned Sparrow	59%
Canada Warbler	57%
Prairie Warbler	56%
Grace's Warbler	54%
Wood Thrush	51%
Brewer's Blackbird	51%
Bobolink	51%
Eastern Wood-Pewee	51%
Western Meadowlark	51%
Brown Thrasher	49%
Audubon's Oriole	49%
Painted Bunting	48%
Black-throated Green Warbler	48%
Brewer's Sparrow	47%
Wilson's Warbler	45%
Prothonotary Warbler	45%
Connecticut Warbler	45%
Brown-headed Cowbird	45%

The percentages in this chart combine data from the Christmas Bird Count and the Breeding Bird Survey (Butcher, G.S. & D.K. Niven, 2007).

data, 127 species of Neotropical migratory birds are in decline. Of those, 60 species have declined by at least 45% in the past 40 years; this includes 29 species of songbirds (see above chart). Populations of several songbird species, such as the Cerulean Warbler and Olive-sided Flycatcher, have plummeted by more than 70% during this period.

Analysis of data collected by Partners in Flight generates similar figures, with a total of 118 Neotropical migratory bird species considered to be in decline. This amounts to nearly half (44%) of the species for which sufficient data has been collected. Currently, there is insufficient data for more than one-fifth (21%) of Neotropical migratory species to conclude whether or not their populations are declining.

An annual census of birds in Rock Creek Park in Washington, D.C. that started in the late 1940s, found that the number of migratory songbirds breeding there has dropped by 70% over the past half century. At least three species, the Black-and-white, Hooded, and Kentucky warblers, no longer nest in the park. At another location in the D.C. area, Cabin John Island in the Potomac River, roughly half of the migratory bird species have been lost since the late 1940s.

Researcher Sidney Gauthreaux of Clemson University in South Carolina, has used a network of weather surveillance radar stations across the United States to create images of migrating flocks of birds. A comparison of radar images taken from stations in Texas and Louisiana for the years 1963-67 and 1987-89 found the number of large migratory flights had dropped by nearly 50%.

Migratory Bird Threats

Deforestation in Latin America and the Caribbean

The greatest threat facing Neotropical migrants is habitat loss, and nowhere is this more acutely felt than on migration stopover and wintering sites across Latin America and the Caribbean. For the 71 Neotropical migratory bird species on the WatchList 2007, there is increasing scientific evidence that some or all of their population declines are linked to habitat loss or threats on their wintering grounds.

Deforestation in Latin America is accelerating at an alarming rate, driven by the needs of the rapidly expanding human population, which tripled between 1950 and 2000. The projected human population growth shows substantial momentum; for example, Mexico's population is expected to increase nearly 50% by 2030. Estimates of the percentage of remaining forests that are lost each year in the Neotropics are generally around 1-2%. However, stronghold areas for wintering migrants, typically in humid forest ecosystems of Mesoamerica, the Caribbean, and the northern Andes, have already been devastated, and in some cases over 90% of major ecosystems have already been lost to deforestation.

The Worm-eating and Swainson's warblers occur almost exclusively in mature tropical forests, making deforestation a severe threat to these species. Another well-documented form of habitat loss for migrants over the past three decades is the wholesale conversion of shade coffee to sun

varieties, particularly in Colombia, which is contributing to the precipitous decline of the Cerulean Warbler. There is also a lack of protected areas in key ecosystems for migrants, and what little habitat is protected is often ineffective and not adequately guarded against unsustainable development or illegal logging.



Worm-eating Warbler: Barth Schorre

The small amount of forest that remains is highly fragmented, degraded, and still being cleared. This situation is being exacerbated by the growing demand for biofuels and agricultural production for exports. Colombia is currently planning to convert 7.4 million acres of forests into croplands for biofuels, much of it for the U.S. and European markets. Cutting forests to establish monoculture grass pasturelands for cattle is ubiquitous throughout Latin America and the Caribbean. Most of the public and private nature reserves in Latin America, including the bird reserves American Bird Conservancy and its partners have created to protect primary forests, are threatened by unsustainable, fire-dependent monoculture grazing regimes in their buffer zones.

Duke University ecologist John Terborgh estimates as many as half of all land birds that winter south of the United States funnel into just five countries: Mexico, Haiti, Cuba, the Dominican Republic, and the Bahamas. As a result, deforestation in these countries has a particularly severe impact on migratory bird populations. Mexico has only 50% of its forests left, Haiti has lost 97% of its original forest cover, Cuba has permanently converted three-quarters of its forests to agriculture, and the forests of the Dominican Republic have been reduced by 71%. Only the Bahamas still has most of its forests intact. With less and less suitable habitat and food resources available in Latin America, the outlook for migrants is grim unless effective conservation measures are instituted and supported over time.

Loss of Staging Areas and Stopover Habitat

Suitable habitat and food resources along the way are critical for migratory birds to succeed in their marathon fall and spring migrations. Fewer rest stops, or insufficient food to fuel the journey, add stress that can significantly undermine their chances of survival or breeding success.

Migratory birds often flock together in staging areas before embarking on their journey. Most species make several stops on the way, to rest, refuel, and in some cases, gain sufficient weight to breed at their destination. If these staging areas and stopover habitats are degraded, or completely lost, it can greatly reduce the survival rates and breeding success of the migrants that depend on them, ultimately resulting in overall population declines.

The Gulf Coast, from Texas to Florida, is vital stopover habitat for species that have just flown across the Gulf of Mexico. These birds are often exhausted from the journey and need good habitat to safely rest and feed before resuming their flight. Unfortunately for many migrating birds, development along the shoreline of the Gulf is booming.

Another key stopover habitat is Delaware Bay, where *rufa* Red Knots and other migratory shorebirds time their migration precisely to coincide with the breeding season of horseshoe crabs. The birds gorge themselves on horseshoe crab eggs to fuel their continued migration and to gain sufficient weight to breed successfully on their Arctic breeding grounds. Human overfishing of the crabs has depleted their egg supply, and as a result, Red Knot numbers are dropping dramatically. Scientists, including those in the U.S. Fish and Wildlife Service and U.S. Geological Survey, predict the *rufa* Red Knot could soon be extinct. Efforts to limit crab harvest to allow the species a chance to rebound have been partially successful and are ongoing.

Loss and Fragmentation of Breeding Habitat

Due to resource extraction and a growing human population that results in more development and land conversion for suburban sprawl, there are fewer and fewer large blocks of unbroken habitat available for migratory birds. This is of particular concern for species that rely on large stands of mature forests for breeding, or those that are particularly vulnerable to edge effects, including increased noise, traffic, predation, and brood parasitism by cowbirds.

Mountaintop removal/valley fill coal mining operations are causing habitat fragmentation and the devastation of habitat in West Virginia, Ohio, Tennessee, and Kentucky. Most of the mining areas are in mature forested habitat,



Habitat fragmentation: Mike Parr

which is cleared of all trees prior to mining. The entire tops of the mountains are then removed and deposited in the valleys below, further destroying riparian and other habitats. Species that rely on mature forest habitats in the Appalachian region, such as the Kentucky Warbler in the understory, the Worm-eating Warbler in cove hardwoods, the Wood Thrush in moist hardwoods, and the Louisiana Waterthrush along wooded streams, are adversely impacted by forest fragmentation and habitat loss caused by mountaintop removal mining.

Most notably affected, though, is the Cerulean Warbler, a species that has declined drastically over the last 40 years, particularly in the Appalachian coalfields that make up the core of its breeding range. Cerulean Warblers need large tracts of mature, structurally-diverse, deciduous forests, which are being removed by mountaintop mining operations, creating large forest openings and fragmentation of forest cover. Ceruleans nesting near these openings occur in reduced density and have lower breeding success. Mined areas are often not reclaimed to forests, since it is much less expensive and time-consuming to reclaim an area to grasses than it is to plant trees. As a result, forest regeneration on previously mined areas is extremely slow. Often, the soils are compacted so firmly that trees are unable to take root, meaning that the areas will remain as grass or shrublands for many years to come.

Many bird species, such as the Bay-breasted Warbler and Olive-sided Flycatcher, migrate to the Boreal Forest in Canada, where timber, mining, and drilling operations are spreading at a rapid pace. Logging is often allowed during nesting season, and as a result, many bird nests are destroyed each year.

Glass building: stock xchng



Glass and Lights: Collisions with Buildings and Structures

It has been conservatively estimated that collisions with windows and buildings kill up to 975 million birds in the United States alone every year. Many studies have found that up to 80% of birds involved in collisions die. These collisions occur both during daytime and nighttime. At night, lights on tall buildings, or intense flood lights pointing into the sky on buildings of any height, emit light fields that entrap migrants reluctant to fly from a lighted area to a dark one, particularly during periods of inclement weather and low cloud cover. More and more birds enter these lit areas, using up their vital energy stores, colliding with each other and the structure, or becoming exhausted and unable to fly. Some of these birds are from declining migratory populations. Those that survive night strikes are at continued risk during the daytime from collisions with glass as they seek cover and food to build up their energy stores before resuming migration.

Studies have shown that all birds are potential victims of daytime collisions with windows because birds cannot perceive clear and/or reflective glass as a barrier to be avoided. Particularly dangerous configurations and conditions include windows that reflect habitat and sky, or provide lines of sight to indoor plantings or habitat on the other side of the building. Other building characteristics that can lead to collisions include buildings with high percentages of glass, night lighting, and greater insect abundance around a building.

Collisions with Power Lines

According to the U.S. Fish and Wildlife Service as many as 174 million birds die annually from power line strikes. Conservationists are working with energy companies to improve the safety of power lines through design changes and technologies to help birds see the wires, which can be nearly invisible to birds at night or in bad weather.

Lights on Communications Towers

The U.S. Fish and Wildlife Service estimates that between five and 50 million birds are killed in the United States each year after colliding with tall towers during night migration. Most incidents happen in poor weather with low cloud cover during the spring or fall. The birds are attracted to the aviation safety lights on towers above 199 feet in height, and collide with the tower, its guy wires, or surrounding structures. There have been many reports of thousands of birds killed at single towers in one night. In Eau Claire, Wisconsin, in 1963, more than 12,000 birds were collected at the base of a television tower in one morning; and during the fall of 1972 single night kills of more than 1,000 birds were reported at television towers in Tennessee and Florida. In 1998, 10,000 Lapland Longspurs and several other species died in a single-night, multi-tower catastrophe in Western Kansas.

At least 231 species have been documented to be affected by tower strikes, with Neotropical migrants making up a large proportion. More than 50 of these species are of conservation concern, such as the Wood Thrush, Golden-winged Warbler, and Cerulean Warbler, and this additional mortality must be considered a potential threat to their populations. A concerted campaign by conservation groups is underway to encourage tower construction and communication companies to change lighting regimes to minimize tower impacts, but thus far federal guidelines remain voluntary.



Pesticide spraying: FWS

Pesticides and Other Toxins

Pesticides, other toxic chemicals, and heavy metals such as lead cause significant bird mortality. Repeated exposure to some pesticides can also lead to sub-lethal effects such as decreased breeding success. These effects are sometimes hard to detect, but nevertheless can produce dramatic population declines over time. Such was the case with DDT, which caused the thinning and breakage of eggshells, nearly wiping out several bird species in the United

States, including the Peregrine Falcon, Brown Pelican, and our national symbol, the Bald Eagle.

The United States applies approximately 5 billion pounds of pesticides and disinfectants each year. The assumption is that because these pesticides are licensed by the federal government, it automatically means they are safe for the environment. This assumption is unfounded.

American Bird Conservancy has compiled a database of pesticide poisoning incidents documenting more than 2,500 incidents reported and investigated by State and Federal authorities since 1968. The AIMS database (www.abcbirds.org/abcprograms/policy/pesticides/aims/aims/index.cfm) includes data on 113 pesticide active ingredients that have been implicated in the deaths of more than 400,000 birds from both legal uses and misuse of pesticides.

Carbofuran (Furadan®) use has been responsible for more than 20% of all incidents (555), with documented kills of more than 40,000 birds. The U.S. EPA filed a Notice of Intent to Cancel all uses of carbofuran in January 2008 after 18 years of restricting and cancelling selected uses without eliminating the threat to birds posed by legal uses of the pesticide. Many other pesticides in the AIMS database have been cancelled or voluntarily withdrawn from use in the United States, but at least 40 pesticides in the AIMS database remain on the market. The vast majority of pesticide bird kills go unnoticed or unreported, so these data represent just the tip of the iceberg.

Unfortunately, many of these pesticides continue to be used in Latin America where they remain legal exposing Neotropical migratory birds during the winter.

Lead contamination is also a problem. Hunters using lead bullets often leave offal piles behind, or sometimes are unable to collect shot animals, which are then eaten by scavengers such as condors, vultures, eagles, hawks, and ravens. The amount of lead ingested can be fatal or cause severe impairment.

Introduced Predators

Migratory birds can fall prey to a variety of non-native predators such as dogs, rats, and domestic and feral cats. For example, there are now more than 90 million pet cats in the country. The majority of these roam outside at least part of the time. In addition, millions more feral cats roam our cities, suburbs, rural areas, and beaches. Scientists estimate that free-roaming cats kill hundreds of millions of birds, small mammals, reptiles, and amphibians each year.



House cat: stock.xchng

Cat predation is an added stress to wildlife populations already struggling to survive habitat loss, pesticides, and other human impacts.

Climate Change/Global Warming

Global warming is already making survival more difficult for many bird species. Between 20 to 30% of all species are at an increased risk of extinction if average temperatures increase more than 2.5°C according to the report, *Climate Change 2007: Impacts, Adaptation and Vulnerability* by the Intergovernmental Panel on Climate Change.

Like many plants and animals, birds' life cycles and behaviors are closely linked with the changing seasons. For Neotropical migrant species, changes in temperature, day length, and wind signal when they should begin their long flights southward in the fall and north again in the spring. Variables such as sunlight, temperature, and precipitation also affect the timing and availability of flowers, seeds, insects, and other food sources that must be available when birds reach their stopover locations and final destinations.

Birds that rely on very specific habitats for at least part of their life cycle, such as the endangered Golden-cheeked Warbler in Texas, could become extinct if their already limited habitat disappears. For each of these reasons, many bird species are considered to be particularly vulnerable to global warming and associated climate change. At least seven North American warbler species (Prothonotary, Blue-winged, Golden-winged, Black-throated Gray, Pine, Hooded, and Cape May) are documented to have shifted their range north in the past 24 years by an average of more than 65 miles.

A study of 20 species of migratory birds in North America showed that spring arrival dates were up to 21 days earlier in 1994 than in 1965, while just a few species were later. Many species, including the Tree Swallow, are now nesting up to nine days earlier than 30 years ago.



How the Neotropical Migratory Bird Conservation Act Works

The Neotropical Migratory Bird Conservation Act of 2000 establishes a competitive matching grants program that supports public-private partnerships carrying out projects in the United States, Canada, Latin America, and the Caribbean that promote the long-term conservation of Neotropical migratory birds and their habitats. The goals of the Act include:

- Perpetuate healthy populations of Neotropical migratory birds.
- Assist in the conservation of Neotropical migratory birds by supporting conservation initiatives in the United States, Canada, Latin America, and the Caribbean.
- Provide financial resources and foster international cooperation for those initiatives.

The U.S. Fish and Wildlife Service, with assistance from an Advisory Group, manages the grants program, which began supporting projects in 2002, when it received its first appropriation in the amount of \$3 million.

Why the Act is Needed

An estimated 127 species of Neotropical migratory birds are in decline. Declines are significant (45% or more in the past 40 years) in 60 species, of which 29 are songbirds. Some species, including the Cerulean Warbler and Olive-sided Flycatcher, have seen their populations plummet as much as 70% in the last 40 years. Unfortunately, each year, NMBCA grant requests from qualified applicants far exceed the program's available funding. As a result, many conservation opportunities are lost.

Match Requirements

Under the Act, for every federal dollar, three non-federal dollars are required in matching contributions. For projects in the United States and Canada, the non-federal share must be monetary. For projects in Latin America and the Caribbean, the non-federal share may be monetary or in-kind contributions.

Project Locations

Projects are located in the United States, Canada, or any country or territory in Latin America and the Caribbean.

Collaboration

The program encourages organizations to work collaboratively with national and international bird conservation initiatives, including Partners in Flight, the U.S. Shorebird Conservation Plan, the North American Bird Conservation Initiative, and the U.S. Bird Conservation Joint Ventures.

Eligible Projects

Projects focus on the protection and management of Neotropical migratory bird populations; the maintenance, management, protection, and restoration of Neotropical migratory bird habitat; research and monitoring projects; law enforcement; and community outreach and education projects.

Eligible Applicants

An individual, corporation, partnership, trust, association, or other private entity; an officer, employee, agent, department, or instrumentality of the federal government, state, municipality, or political subdivision of a state, or of any foreign government; a state, municipality, or political subdivision of a state; any other entity subject to the jurisdiction of the United States or of any foreign country; or an international organization may apply for a grant.



American Redstart: Greg Lavaty

Definition of a Migratory Bird

For the purposes of the NMBCA, a Neotropical migratory bird is one that breeds in or migrates through the United States, at least to some extent, and spends the non-breeding season in Mexico, Central America, the Caribbean, and/or South America. Birds from all taxa are included, so that proposals may benefit landbirds, waterbirds, shorebirds,

waterfowl, raptors, and others. See addendum on page 19 for a list of these birds.

Criteria Used in Selecting Projects

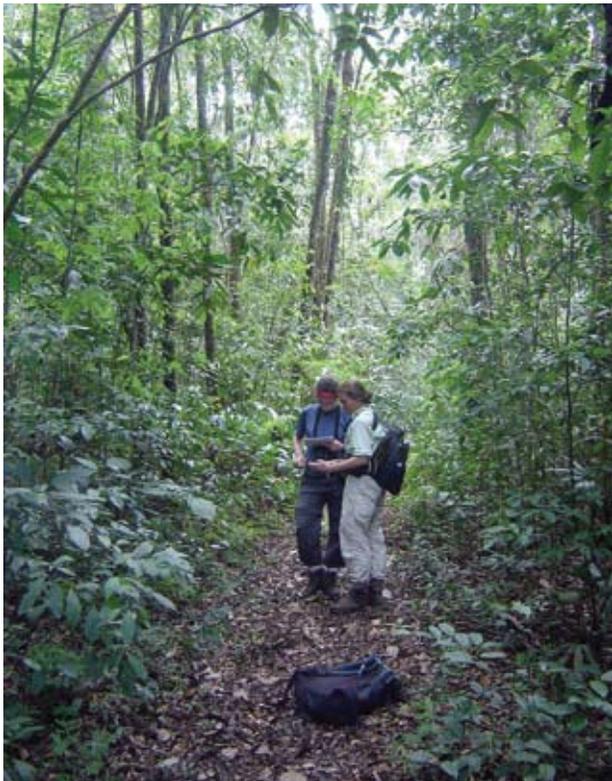
Applicants should answer the following criteria when considering a proposal:

- Is the project located in important breeding and non-breeding areas for Neotropical migrants?
- Does the project address Neotropical migrants identified as a conservation priority by a government agency or conservation initiative? For example: USFWS Birds of Conservation Concern List (U.S. Fish and Wildlife Service, 2002).
- Are natural resources in the project area under threat? For example: Timber is being harvested in an unsustainable manner in the project area, reducing its value to Neotropical migrants.
- What is the conservation value of the project to Neotropical migrants? When the project is completed, how will the birds benefit? More competitive proposals usually focus on on-the-ground activities. For example: Residents of communities near Neotropical migrants' habitats are informed about the value of the birds, and take actions to conserve them.



Wood Thrush: ClipArt.com

- How will conservation activities continue after the project has been completed? For example: After land acquisition, Neotropical migrant habitat will be managed for conservation as part of a private reserve network.
- Is the project coordinated with an international bird conservation plan? For example: Partners in Flight.
- Does the proposal represent a partnership or is it coordinated among public, private and/or other organizations? For example: Prairie Pothole Joint Venture.
- Is the proposal well written, with clear objectives? Does it follow the correct format?
- Is the budget accurate, with reasonable requests for overhead and personnel? Does the project provide good benefits for the costs? For example: The budget clearly lays out budget items and costs in enough detail and with enough explanation/justification to determine what actions are being taken to achieve the project goals and that they are reasonably priced.
- Does the project satisfy other important national or local objectives, in addition to Neotropical migratory bird conservation? For example: biodiversity conservation.



Researchers in Bonampak, Chiapas, Mexico

Statement of Intent

Every five years, the NMBCA must be reauthorized by Congress, and each fiscal year, funds for the Act must be appropriated. Because the Act and its funding are so important for bird conservation in the Americas, American Bird Conservancy (ABC) is supporting an early reauthorization of the NMBCA at a significantly higher funding level than the existing Act and will work to secure future appropriations at the maximum authorized funding levels.

The NMBCA Works: Examples of Successful Projects

The U.S. Fish and Wildlife Service's Division of Bird Habitat Conservation is responsible for managing the NMBCA's Grants Program. The Act has a proven record of making a difference for Neotropical migratory birds. From 2002 through 2008, partners in 44 U.S. states/territories and 34 other countries have been involved in 260 projects supported by the NMBCA. More than \$25 million in Act grants have leveraged some \$116 million in total partner contributions. Projects involving land conservation have impacted almost three million acres of bird habitat. The following projects are just some examples of the many projects that have been made possible by the NMBCA grants program.

Migratory Bird Conservation Alliance Links America's Heartland to Mexico

Location: Missouri's St. Louis County; Mexican States of Tamaulipas and Quintana Roo

Congressional District: Missouri's 3rd

Funding Approved: April 2005

NMBCA Grant: \$50,000/**Matching Funds:** \$203,902

The forested and coastal habitats of Tamaulipas and Quintana Roo, Mexico, regularly serve as stopover and wintering sites for more than 220 Neotropical migratory bird species, 29 of which are considered a conservation priority in the U.S. Central Hardwoods Joint Venture region.

Partner groups combined a \$50,000 NMBCA grant, and \$203,902 in matching funds to develop the Migratory Bird Conservation Alliance, which is strengthening and coordinating efforts in avian monitoring, outreach and education, training, and habitat conservation in three locales, St. Louis County, Missouri, and the Mexican States of Tamaulipas and Quintana Roo.

A host of biological and behavioral characteristics were measured for bird species in the project areas, and the data were used to enhance breeding and wintering range maps. Partners engaged community members and students in bird identification, monitoring, or other awareness-increasing activities, and created researcher-exchange opportunities between the two countries.

Partners in the project include: American Bird Conservancy, Amigos de Sian Ka'an, Missouri Department of Conservation, Central Hardwoods Joint Venture, Mexico's Natural Protected Areas Commission, University of Missouri-Columbia, Tennessee Wildlife Resources Agency, University of Texas-Brownsville, Autonomous University of Tamaulipas, University of Tennessee-Knoxville, Bird Studies Canada, and PRBO Conservation Science.



Kirtland's Warbler: Forest Service/Huron Manistee National Forest

Increasing Bird Conservation Capacity in the Bahamas

Location: Marquette and Genesee Counties, Michigan; the Commonwealth of the Bahamas

Congressional District: Michigan's 1st and 5th

Approved: April 2006

NMBCA Grant: \$18,300/**Matching Funds:** \$67,100

Development throughout the Bahamas poses an increasing threat to its many endemic, resident, and wintering birds. Of particular concern is the Kirtland's Warbler, which is listed as endangered under the Endangered Species Act, and breeds only in Michigan and winters almost exclusively in the Bahamas.

The Kirtland's Warbler Research and Training Program, an initiative begun in 2002 by partners in Michigan and the Bahamas to study this species' population status and habitat requirements, was the catalyst for the current project. While the information gained from this program is vital,

it alone will not help the Kirtland's Warbler and other Neotropical migratory birds.

Bahamians trained in natural resources management and implementing conservation programs are greatly needed, but few have the necessary training or education. Project partners are supporting two Bahamian college students in completing their coursework in the natural sciences at U.S. academic institutions. These students spent a summer field season in Michigan to assist with the project and gain valuable field experience.

Bird banding in Veracruz, Mexico: Eduardo Martinez



Gulf of Mexico Avian Migratory Stopover Habitat Protection

Location: Mobile County, Alabama; Jefferson Parrish, Louisiana; Brazoria County, Texas; State of Veracruz, Mexico; and Honduras.

Congressional District: Alabama's 1st; Louisiana's 3rd; and Texas' 14th and 22nd

Approved: April 2007

Grant: \$135,879/**Matching Funds:** \$407,932

In Texas, the Gulf Coast Bird Observatory is leading its Site Partner Network program into its second decade, with partners now in each U.S. and Mexican state around the Gulf of Mexico. Partners at the network's 62 sites seek to conserve essential habitat for the Gulf's more than 300 migratory bird species, and to expand the scientific knowledge base about these species. In Louisiana, project partners will acquire a small parcel of remnant barrier island live oak-hackberry forest on Grand Isle (the only known occurrence of such habitat) and add it to the Lafitte Woods Preserve. In Alabama, a parcel of critical migrant stopover habitat on Dauphin Island will be acquired for inclusion in the island's bird sanctuary. In Mexico, partners

will conduct a second year of monitoring in Veracruz as part of the Avian International Monitoring Network initiative.

This initiative, launched with Act funding in 2005, is designed to collect migration data from every partner site for a Gulf-wide snapshot of the migration phenomenon. In Honduras, partners will complete their three-year study to determine the Central American flyway of the declining Cerulean Warbler. The recipient of the grant, Gulf Coast Bird Observatory, Inc. is working with partners Dauphin Island Bird Sanctuary, The Nature Conservancy, and the Malcolm C. Damuth Foundation.

Monitoring Migratory Raptors as Key Indicators of Ecosystem Quality

Location: Tompkins County, New York; multiple sites throughout the United States; Provinces of Ontario and Quebec, Canada; and State of Veracruz, Mexico.

Congressional District: New York's 22nd and others

Approved: April 2007

Grant: \$83,050/**Matching Funds:** \$255,799

Hawks, falcons, eagles, and kites—collectively referred to as raptors—are top predators and, as such, are key indicators of ecosystem quality. Raptors are more readily studied and monitored during migration because it is a time when these otherwise low-density birds aggregate conspicuously along shorelines and mountain ridges. In 2004, partners initiated the Raptor Population Index Project to help address the need for better and more standardized information about the status of raptors.

Grantee Hawk Migration Association of North America, and partners Hawk Mountain Sanctuary and HawkWatch International, will build upon their previous accomplishments in raptor conservation by promoting the adoption of



Swainson's Hawk: Greg Lavaty

their revised standard monitoring protocol to increase the quality and homogeneity of data collected at sites throughout the continent; improving the design and reporting capabilities of the online data-collection system; preparing an initial, large-scale analysis of raptor populations using data from at least 22 sites in the United States, Canada, and Mexico that meet certain scientific standards; and making project information easily available to land managers and other members of the public. This project is continental in scope, with primary coordination taking place from the grantee's headquarters in upstate New York.



Olive-sided Flycatcher: Ted Ardley

Restoring Lands for Neotropical Migrants in the Northern Andes

Location: Colombia, Ecuador, and Peru

Approved: April 2008

NMBCA Grant: \$204,500/**Matching Funds:** \$613,500

The northern Andes are the winter home of many Neotropical migrant birds such as the Cerulean, Golden-winged, and Canada warblers, and Olive-sided Flycatcher. There is evidence that population declines in these species may be caused at least in part by habitat loss on their Andean wintering grounds. The forests where these species winter were never extensive, because the birds are restricted to narrow elevation ranges in the mountains. These same elevations have high human populations and have been heavily deforested for agriculture and cash crops such as coffee.

It is critical to conserve what little habitat remains, and to restore additional habitat for the wintering migrants. The habitat restoration undertaken by this project has three components: 1) Acquisition of remaining patches of natural forest to preserve as wintering habitat for migratory birds; 2) Reforestation of approximately 2,500 acres using native tree species; 3) Encouragement of ranchers, and coffee growers in the areas surrounding these reserves

and restored lands to use bird-friendly cultivation practices. These practices include cultivation of shade-grown coffee, which maintains a canopy of natural trees over the coffee shrubs resulting in higher quality habitat; and silvopasture techniques, in which livestock graze among trees that provide bird habitat.

This NMBCA project involves partners in Colombia, Ecuador, and Peru in the acquisition of new lands; the establishment of plant nurseries to produce up to 660,000 young trees and shrubs for reforesting previously-cleared lands, bird-friendly shade-coffee, and silvopasture plantings; and the provision of workshops and outreach activities that show local farmers and ranchers how to improve their agricultural practices and at the same time make their lands more useful to wintering Neotropical migrant birds. Partners include American Bird Conservancy, Fundación ProAves (Colombia), Fundación Jocotoco (Ecuador), and Asociación Ecosistemas Andinos (Peru).

Protecting Habitat for Oak-Dependent Species in Latin America

Location: Costa Rica, El Salvador, and Mexico

Approved: April 2007

NMBCA Grant: \$156,600/**Matching Funds:** \$516,000

Threatened by potentially unsustainable logging and land clearance for development and farming, oak and oak-pine habitats are among the highest priorities for conservation in Latin America. Expanding upon previous Act-funded project activities, project partners are working to protect more than 11,000 acres of wintering habitat for two high-priority North American breeding bird species: the endangered Golden-cheeked Warbler and the threatened Golden-winged Warbler. The protected habitat is also within sites recognized by the Alliance for Zero Extinction as irreplaceable for the conservation of threatened endemic species.



Golden-winged Warbler: Bill Hubick

Partners in Costa Rica, El Salvador, and Mexico developed three reserve management plans, conducted reforestation on two reserves, and carried out education and outreach activities advancing their goals of local community sustainability, bird conservation, and biodiversity for the Central American Pine-Oak Forests Ecoregion. The partners in this project included American Bird Conservancy, Pronatura Chiapas, SalvaNatura, and Costa Rica's National Institute of Biodiversity.

Protecting Neotropical Migrant Birds in the Dominican Republic

Location: Sierra de Bahoruco National Park, Dominican Republic

Approved: April 2006

Grant: \$108,185/**Matching Funds:** \$325,338



Bay-breasted Cuckoo: Miguel A. Landestroy

In the Dominican Republic, an estimated 90% of habitats important to migratory and resident birds has been lost in the last 20 years. Therefore, government-established protected areas such as Sierra de Bahoruco National Park, the country's most important park and a key site for conserving Caribbean biodiversity, are critical.

Due to limited park resources and personnel, Bahoruco is vulnerable to threats such as encroaching slash and burn agriculture, squatters, wildfires, illegal hunting, and collection of birds for the pet trade. Project partners American Bird Conservancy, Secretariat of State of the Environment and Natural Resources, Grupo Jaragua, and Dominican Environmental Consortium are using an NMBCA grant and matching funds to help safeguard this national treasure by establishing a protocol for park staff to patrol and better protect its boundaries.

Park staff were trained in bird identification and monitoring, in order to establish an ongoing monitoring program for migratory and resident bird species. Partners modified the park's northwestern boundary to include and protect dry forest and semi-deciduous forest critical to endemic and migratory bird species. Additionally, partners developed nature trails at two sites to attract more visitors, and worked to increase local environmental awareness.

Creating a Protected Area Network for Migratory Birds in Colombia

Location: Colombia, including its Caribbean islands

Approved: Multiple years, from 2003-2008

Grants: \$598,954/**Matching Funds:** \$3,197,088



Cerulean Warbler: George Jett

Colombia hosts the world's richest bird diversity, with 1,882 species, including 187 Neotropical migrant birds that winter or pass through the country. Unfortunately, these species have received little research and conservation attention. Three NMBCA grants to Fundación ProAves and a host of partners over the past five years have enabled them to establish a network of 38 migratory bird monitoring stations across Colombia and off-shore islands.

With almost 300,000 observation records and 95,000 banded birds, ProAves was able to identify key habitats and sites for the most threatened Neotropical migratory and resident birds. This information led to the development of the most comprehensive bird reserve network in the tropics: 12 bird reserves totaling over 35,000 acres, owned by ProAves to protect and restore strategic habitat for migrants. NMBCA support has also assisted the establishment of two new National Parks (a further 490,000 acres)



Colombian students visit the Parrot Bus: Fundación ProAves

Cerulean Warbler stropover habitat in Chiapas, Mexico: Melinda Welton



and Colombia's first ecological easements. To date, ProAves protects more than 1,000 bird species (over 10% of all birds on the planet), while securing the wintering habitat of WatchList species such as the Golden-winged, Canada, and Cerulean warblers.

In 2005, ProAves, with American Bird Conservancy and NMBCA support, established the Cerulean Warbler Bird Reserve, the first protected area established for a Neotropical migrant in Latin America. With NMBCA funding, ProAves has designed and implemented reserve management plans including reforestation of over 1,600 acres; instigated a sustainable ecotourism program; established the National Banding System; provided training for over 300 students and young professionals; and established various rural environmental education initiatives, such as the National Migratory Bird Festival, the Parrot Bus, and the "Amigos de las Aves" (Friends of the Birds) groups that together have engaged over 70,000 high school students.

Creating Ecological Reserves in Mexican Northeast Prairies

Location: Galeana Municipality, Matehuala, Nuevo León; Saltillo, Coahuila; and State of San Luis Potosí, México

Approved: April 2007

Grant: \$249,060/**Matching Funds:** \$864,680

Mexico's prairies support high concentrations of vulnerable grassland birds, endemic species, and the most extensive colonies of the Mexican prairie dog.

Two primary threats to prairie habitat are conversion to agriculture and the lack of a common vision for development in the prairie region. Partners in this project work with ejidos (communally owned farmland) and other community members to define land use for 91,584 acres in El Salado prairie, and 29,702 acres in La India prairie. Partners will gather the necessary information to decree La India as a Natural Protected Area, and will acquire ejido grazing rights on 24,752 acres, expanding the network of ejido and private ecological reserves in the project area. Partners will also implement seven bird-friendly cattle-management plans on 49,504 protected acres, and continue to evaluate pesticide levels in grassland birds in Galeana Municipality.

The grantee for this project is Pronatura Noreste A.C., and the partners are BirdLife International, Profauna, Autonomous University of Nuevo León, Antonio Narro Autonomous Agrarian University (UAAAN), Mexico's Secretariat of the Environment and Natural Resources, National Forest Commission, American Bird Conservancy, The Nature Conservancy, and Western Hemisphere Shorebird Reserve Network.



Long-billed Curlew: Greg Lavaty



Calliope Hummingbird:
Michael Woodruff

Addendum

The following list of 341 Neotropical migrants are species of birds, all or part of whose populations breed north of the Tropic of Cancer and winter south of that line (Rappapole, J.H. 1995). English and scientific names follow the taxonomy of the American Ornithologists' Union's *Checklist of North American Birds* (AOU 1998) and The American Ornithologists' Union *Forty-second supplement to the American Ornithologists' Union Checklist of North American Birds* (AOU 2000).

Grebes [Podicipediformes]

- Pied-billed Grebe [*Podilymbus podiceps*]
- Eared Grebe [*Podiceps nigricollis*]
- Western Grebe [*Aechmophorus occidentalis*]
- Clark's Grebe [*Aechmophorus clarkii*]

Pelicans and Cormorants [Pelecaniformes]

- American White Pelican [*Pelecanus erythrorhynchos*]
- Brown Pelican [*Pelecanus occidentalis*]
- Neotropic Cormorant [*Phalacrocorax brasilianus*]
- Double-crested Cormorant [*Phalacrocorax auritus*]
- Anhinga [*Anhinga anhinga*]

Hérons, Bittens, and Egrets [Ciconiiformes]

- American Bittern [*Botaurus lentiginosus*]
- Least Bittern [*Ixobrychus exilis*]
- Great Blue Heron [*Ardea herodias*]
- Great Egret [*Ardea alba*]
- Snowy Egret [*Egretta thula*]
- Little Blue Heron [*Egretta caerulea*]
- Tricolored Heron [*Egretta tricolor*]
- Reddish Egret [*Egretta rufescens*]
- Cattle Egret [*Bubulcus ibis*]
- Green Heron [*Butorides virescens*]
- Black-crowned Night-Heron [*Nycticorax nycticorax*]
- Yellow-crowned Night-Heron [*Nyctanassa violacea*]
- White Ibis [*Eudocimus albus*]
- Glossy Ibis [*Plegadis falcinellus*]
- White-faced Ibis [*Plegadis chihí*]
- Roseate Spoonbill [*Ajaia ajaja*]
- Wood Stork [*Mycteria americana*]
- Black Vulture [*Coragyps atratus*]
- Turkey Vulture [*Cathartes aura*]

Geese and Ducks [Anseriformes]

- Black-bellied Whistling-Duck [*Dendrocygna autumnalis*]
- Fulvous Whistling-Duck [*Dendrocygna bicolor*]
- Greater White-fronted Goose [*Anser albifrons*]
- Snow Goose [*Chen caerulescens*]
- Wood Duck [*Aix sponsa*]
- Gadwall [*Anas strepera*]
- American Wigeon [*Anas americana*]
- Mallard [*Anas platyrhynchos*]
- Blue-winged Teal [*Anas discors*]
- Cinnamon Teal [*Anas cyanoptera*]
- Northern Shoveler [*Anas clypeata*]
- Northern Pintail [*Anas acuta*]
- Green-winged Teal [*Anas crecca*]
- Canvasback [*Aythya valisineria*]
- Redhead [*Aythya americana*]
- Ring-necked Duck [*Aythya collaris*]
- Lesser Scaup [*Aythya affinis*]
- Hooded Merganser [*Lophodytes cucullatus*]
- Red-breasted Merganser [*Mergus serrator*]
- Ruddy Duck [*Oxyura jamaicensis*]

Falcons, Kites, and Hawks [Falconiformes]

- Osprey [*Pandion haliaetus*]
- Swallow-tailed Kite [*Elanoides forficatus*]
- Mississippi Kite [*Ictinia mississippiensis*]
- Northern Harrier [*Circus cyaneus*]
- Sharp-shinned Hawk [*Accipiter striatus*]
- Cooper's Hawk [*Accipiter cooperii*]
- Common Black-Hawk [*Buteogallus anthracinus*]
- Broad-winged Hawk [*Buteo platypterus*]
- Swainson's Hawk [*Buteo swainsoni*]
- Red-tailed Hawk [*Buteo jamaicensis*]
- Ferruginous Hawk [*Buteo regalis*]
- American Kestrel [*Falco sparverius*]
- Merlin [*Falco columbarius*]
- Peregrine Falcon [*Falco peregrinus*]
- Prairie Falcon [*Falco mexicanus*]

Coots, Rails, and Cranes [Gruiformes]

Black Rail [*Laterallus jamaicensis*]
King Rail [*Rallus elegans*]
Virginia Rail [*Rallus limicola*]
Sora [*Porzana carolina*]
Purple Gallinule [*Porphyryula martinica*]
Common Moorhen [*Gallinula chloropus*]
American Coot [*Fulica americana*]
Sandhill Crane [*Grus canadensis*]

Shorebirds, Plovers, Gulls, and Terns [Charadriiformes]

Black-bellied Plover [*Pluvialis squatarola*]
American Golden-Plover [*Pluvialis dominica*]
Snowy Plover [*Charadrius alexandrinus*]
Wilson's Plover [*Charadrius wilsonia*]
Semipalmated Plover [*Charadrius semipalmatus*]
Piping Plover [*Charadrius melodus*]
Killdeer [*Charadrius vociferus*]
Mountain Plover [*Charadrius montanus*]
American Oystercatcher [*Haematopus palliatus*]
Black-necked Stilt [*Himantopus mexicanus*]
American Avocet [*Recurvirostra americana*]
Greater Yellowlegs [*Tringa melanoleuca*]
Lesser Yellowlegs [*Tringa flavipes*]
Solitary Sandpiper [*Tringa solitaria*]
Willet [*Catoptrophorus semipalmatus*]
Wandering Tattler [*Heteroscelus incanus*]
Spotted Sandpiper [*Actitis macularia*]
Upland Sandpiper [*Bartramia longicauda*]
Eskimo Curlew [*Numenius borealis*]
Whimbrel [*Numenius phaeopus*]
Long-billed Curlew [*Numenius americanus*]
Hudsonian Godwit [*Limosa haemastica*]
Marbled Godwit [*Limosa fedoa*]
Ruddy Turnstone [*Arenaria interpres*]
Surfbird [*Aphriza virgata*]
Red Knot [*Calidris canutus*]
Sanderling [*Calidris alba*]
Semipalmated Sandpiper [*Calidris pusilla*]
Western Sandpiper [*Calidris mauri*]
Least Sandpiper [*Calidris minutilla*]
White-rumped Sandpiper [*Calidris fuscicollis*]
Baird's Sandpiper [*Calidris bairdii*]
Pectoral Sandpiper [*Calidris melanotos*]
Stilt Sandpiper [*Calidris himantopus*]
Buff-breasted Sandpiper [*Tryngites subruficollis*]
Short-billed Dowitcher [*Limnodromus griseus*]

Long-billed Dowitcher [*Limnodromus scolopaceus*]
Common Snipe [*Gallinago gallinago*]
Wilson's Phalarope [*Phalaropus tricolor*]
Red-necked Phalarope [*Phalaropus lobatus*]
Red Phalarope [*Phalaropus fulicaria*]
Laughing Gull [*Larus atricilla*]
Franklin's Gull [*Larus pipixcan*]
Bonaparte's Gull [*Larus philadelphia*]
Ring-billed Gull [*Larus delawarensis*]
California Gull [*Larus californicus*]
Herring Gull [*Larus argentatus*]
Western Gull [*Larus occidentalis*]
Glaucous-winged Gull [*Larus glaucescens*]
Sabine's Gull [*Xema sabini*]
Gull-billed Tern [*Sterna nilotica*]
Caspian Tern [*Sterna caspia*]
Royal Tern [*Sterna maxima*]
Elegant Tern [*Sterna elegans*]
Sandwich Tern [*Sterna sandvicensis*]
Roseate Tern [*Sterna dougallii*]
Common Tern [*Sterna hirundo*]
Forster's Tern [*Sterna forsteri*]
Least Tern [*Sterna antillarum*]
Sooty Tern [*Sterna fuscata*]
Black Tern [*Chlidonias niger*]
Black Skimmer [*Rynchops niger*]

Doves and Pigeons [Columbiformes]

White-crowned Pigeon [*Columba leucocephala*]
Red-billed Pigeon [*Columba flavirostris*]
Band-tailed Pigeon [*Columba fasciata*]
White-winged Dove [*Zenaida asiatica*]
Mourning Dove [*Zenaida macroura*]

Cuckoos [Cuculiformes]

Black-billed Cuckoo [*Coccyzus erythrophthalmus*]
Yellow-billed Cuckoo [*Coccyzus americanus*]
Mangrove Cuckoo [*Coccyzus minor*]

Owls [Strigiformes]

Elf Owl [*Micrathene whitneyi*]
Burrowing Owl [*Athene cunicularia*]
Short-eared Owl [*Asio flammeus*]

Nightjars [Caprimulgiformes]

Lesser Nighthawk [*Chordeiles acutipennis*]
Common Nighthawk [*Chordeiles minor*]
Common Poorwill [*Phalaenoptilus nuttallii*]
Chuck-will's-widow [*Caprimulgus carolinensis*]
Whip-poor-will [*Caprimulgus vociferus*]

Swifts and Hummingbirds [Apodiformes]

Black Swift [*Cypseloides niger*]
 Chimney Swift [*Chaetura pelagica*]
 Vaux's Swift [*Chaetura vauxi*]
 White-throated Swift [*Aeronautes saxatalis*]
 Broad-billed Hummingbird [*Cyananthus latirostris*]
 Buff-bellied Hummingbird [*Amazilia yucatanensis*]
 Violet-crowned Hummingbird [*Amazilia violiceps*]
 Blue-throated Hummingbird [*Lampornis clemenciae*]
 Magnificent Hummingbird [*Eugenes fulgens*]
 Ruby-throated Hummingbird [*Archilochus colubris*]
 Black-chinned Hummingbird [*Archilochus alexandri*]
 Anna's Hummingbird [*Calypte anna*]
 Costa's Hummingbird [*Calypte costae*]
 Calliope Hummingbird [*Stellula calliope*]
 Broad-tailed Hummingbird [*Selasphorus platycercus*]
 Rufous Hummingbird [*Selasphorus rufus*]
 Allen's Hummingbird [*Selasphorus sasin*]

Trogons [Trogoniformes]

Elegant Trogon [*Trogon elegans*]

Kingfishers [Coraciiformes]

Belted Kingfisher [*Ceryle alcyon*]

Sapsuckers [Piciformes]

Yellow-bellied Sapsucker [*Sphyrapicus varius*]
 Red-naped Sapsucker [*Sphyrapicus nuchalis*]
 Red-breasted Sapsucker [*Sphyrapicus ruber*]

Songbirds [Passeriformes]

Northern Beardless-Tyrannulet [*Camptostoma imberbe*]
 Olive-sided Flycatcher [*Contopus cooperi*]
 Greater Pewee [*Contopus pertinax*]
 Western Wood-Pewee [*Contopus sordidulus*]
 Eastern Wood-Pewee [*Contopus virens*]
 Yellow-bellied Flycatcher [*Empidonax flaviventris*]
 Acadian Flycatcher [*Empidonax virescens*]
 Alder Flycatcher [*Empidonax alnorum*]
 Willow Flycatcher [*Empidonax traillii*]
 Least Flycatcher [*Empidonax minimus*]
 Hammond's Flycatcher [*Empidonax hammondi*]
 Gray Flycatcher [*Empidonax wrightii*]
 Dusky Flycatcher [*Empidonax oberholseri*]
 Pacific-slope Flycatcher [*Empidonax difficilis*]
 Cordilleran Flycatcher [*Empidonax occidentalis*]
 Buff-breasted Flycatcher [*Empidonax fulvifrons*]
 Eastern Phoebe [*Sayornis phoebe*]
 Say's Phoebe [*Sayornis saya*]

Vermilion Flycatcher [*Pyrocephalus rubinus*]
 Dusky-capped Flycatcher [*Myiarchus tuberculifer*]
 Ash-throated Flycatcher [*Myiarchus cinerascens*]
 Great Crested Flycatcher [*Myiarchus crinitus*]
 Brown-crested Flycatcher [*Myiarchus tyrannulus*]
 Sulphur-bellied Flycatcher [*Myiodynastes luteiventris*]
 Tropical Kingbird [*Tyrannus melancholicus*]
 Couch's Kingbird [*Tyrannus couchii*]
 Cassin's Kingbird [*Tyrannus vociferans*]
 Thick-billed Kingbird [*Tyrannus crassirostris*]
 Western Kingbird [*Tyrannus verticalis*]
 Eastern Kingbird [*Tyrannus tyrannus*]
 Gray Kingbird [*Tyrannus dominicensis*]
 Scissor-tailed Flycatcher [*Tyrannus forficatus*]
 Loggerhead Shrike [*Lanius ludovicianus*]
 White-eyed Vireo [*Vireo griseus*]
 Bell's Vireo [*Vireo bellii*]
 Black-capped Vireo [*Vireo atricapillus*]
 Gray Vireo [*Vireo vicinior*]
 Yellow-throated Vireo [*Vireo flavifrons*]
 Plumbeous Vireo [*Vireo plumbeus*]
 Cassin's Vireo [*Vireo cassinii*]
 Blue-headed Vireo [*Vireo solitarius*]
 Warbling Vireo [*Vireo gilvus*]
 Philadelphia Vireo [*Vireo philadelphicus*]
 Red-eyed Vireo [*Vireo olivaceus*]
 Yellow-green Vireo [*Vireo flavoviridis*]
 Black-whiskered Vireo [*Vireo altiloquus*]
 Purple Martin [*Progne subis*]
 Tree Swallow [*Tachycineta bicolor*]
 Violet-green Swallow [*Tachycineta thalassina*]
 Northern Rough-winged Swallow [*Stelgidopteryx serripennis*]
 Bank Swallow [*Riparia riparia*]
 Cliff Swallow [*Petrochelidon pyrrhonota*]
 Cave Swallow [*Petrochelidon fulva*]
 Barn Swallow [*Hirundo rustica*]
 House Wren [*Troglodytes aedon*]
 Sedge Wren [*Cistothorus platensis*]
 Marsh Wren [*Cistothorus palustris*]
 Ruby-crowned Kinglet [*Regulus calendula*]
 Blue-gray Gnatcatcher [*Poliophtila caerulea*]
 Eastern Bluebird [*Sialia sialis*]
 Western Bluebird [*Sialia mexicana*]
 Mountain Bluebird [*Sialia currucoides*]
 Townsend's Solitaire [*Myadestes townsendi*]
 Veery [*Catharus fuscescens*]
 Gray-cheeked Thrush [*Catharus minimus*]
 Bicknell's Thrush [*Catharus bicknelli*]

Swainson's Thrush [*Catharus ustulatus*]
 Hermit Thrush [*Catharus guttatus*]
 Wood Thrush [*Hylocichla mustelina*]
 American Robin [*Turdus migratorius*]
 Gray Catbird [*Dumetella carolinensis*]
 Sage Thrasher [*Oreoscoptes montanus*]
 American Pipit [*Anthus rubescens*]
 Sprague's Pipit [*Anthus spragueii*]
 Cedar Waxwing [*Bombicilla cedrorum*]
 Blue-winged Warbler [*Vermivora pinus*]
 Golden-winged Warbler [*Vermivora chrysoptera*]
 Tennessee Warbler [*Vermivora peregrina*]
 Orange-crowned Warbler [*Vermivora celata*]
 Nashville Warbler [*Vermivora ruficapilla*]
 Virginia's Warbler [*Vermivora virginiae*]
 Colima Warbler [*Vermivora crissalis*]
 Lucy's Warbler [*Vermivora luciae*]
 Northern Parula [*Parula americana*]
 Yellow Warbler [*Dendroica petechia*]
 Chestnut-sided Warbler [*Dendroica pensylvanica*]
 Magnolia Warbler [*Dendroica magnolia*]
 Cape May Warbler [*Dendroica tigrina*]
 Black-throated Blue Warbler [*Dendroica caerulescens*]
 Yellow-rumped Warbler [*Dendroica coronata*]
 Black-throated Gray Warbler [*Dendroica nigrescens*]
 Golden-cheeked Warbler [*Dendroica chrysoparia*]
 Black-throated Green Warbler [*Dendroica virens*]
 Townsend's Warbler [*Dendroica townsendi*]
 Hermit Warbler [*Dendroica occidentalis*]
 Blackburnian Warbler [*Dendroica fusca*]
 Yellow-throated Warbler [*Dendroica dominica*]
 Grace's Warbler [*Dendroica graciae*]
 Pine Warbler [*Dendroica pinus*]
 Kirtland's Warbler [*Dendroica kirtlandii*]
 Prairie Warbler [*Dendroica discolor*]
 Palm Warbler [*Dendroica palmarum*]
 Bay-breasted Warbler [*Dendroica castanea*]
 Blackpoll Warbler [*Dendroica striata*]
 Cerulean Warbler [*Dendroica cerulea*]
 Black-and-white Warbler [*Mniotilta varia*]
 American Redstart [*Setophaga ruticilla*]
 Prothonotary Warbler [*Protonotaria citrea*]
 Worm-eating Warbler [*Helminthos vermivorus*]
 Swainson's Warbler [*Limnothlypis swainsonii*]
 Ovenbird [*Seiurus aurocapillus*]
 Northern Waterthrush [*Seiurus noveboracensis*]
 Louisiana Waterthrush [*Seiurus motacilla*]

Kentucky Warbler [*Oporornis formosus*]
 Connecticut Warbler [*Oporornis agilis*]
 Mourning Warbler [*Oporornis philadelphia*]
 MacGillivray's Warbler [*Oporornis tolmiei*]
 Common Yellowthroat [*Geothlypis trichas*]
 Hooded Warbler [*Wilsonia citrina*]
 Wilson's Warbler [*Wilsonia pusilla*]
 Canada Warbler [*Wilsonia canadensis*]
 Red-faced Warbler [*Cardellina rubrifrons*]
 Painted Redstart [*Myioborus pictus*]
 Yellow-breasted Chat [*Icteria virens*]
 Hepatic Tanager [*Piranga flava*]
 Summer Tanager [*Piranga rubra*]
 Scarlet Tanager [*Piranga olivacea*]
 Western Tanager [*Piranga ludoviciana*]
 Green-tailed Towhee [*Pipilo chlorurus*]
 Spotted Towhee [*Pipilo maculatus*]
 Rufous-winged Sparrow [*Aimophila carpalis*]
 Botteri's Sparrow [*Aimophila botteri*]
 Rufous-crowned Sparrow [*Aimophila ruficeps*]
 Chipping Sparrow [*Spizella passerina*]
 Clay-colored Sparrow [*Spizella pallida*]
 Brewer's Sparrow [*Spizella breweri*]
 Black-chinned Sparrow [*Spizella atrogularis*]
 Vesper Sparrow [*Poocetes gramineus*]
 Lark Sparrow [*Chondestes grammacus*]
 Lark Bunting [*Calamospiza melanocorys*]
 Savannah Sparrow [*Passerculus sandwichensis*]

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Red-faced Warbler: Greg Lavaty



Cape May Warbler: Ted Atley

Grasshopper Sparrow [*Ammodramus savannarum*]
 Lincoln's Sparrow [*Melospiza lincolni*]
 Swamp Sparrow [*Melospiza georgiana*]
 White-crowned Sparrow [*Zonotrichia leucophrys*]
 Rose-breasted Grosbeak [*Pheucticus ludovicianus*]
 Black-headed Grosbeak [*Pheucticus melanocephalus*]
 Blue Grosbeak [*Guiraca caerulea*]
 Lazuli Bunting [*Passerina amoena*]
 Indigo Bunting [*Passerina cyanea*]
 Varied Bunting [*Passerina versicolor*]
 Painted Bunting [*Passerina ciris*]
 Dickcissel [*Spiza americana*]
 Bobolink [*Dolichonyx oryzivorus*]
 Red-winged Blackbird [*Agelaius phoeniceus*]
 Eastern Meadowlark [*Sturnella magna*]
 Western Meadowlark [*Sturnella neglecta*]
 Yellow-headed Blackbird [*Xanthocephalus xanthocephalus*]
 Brewer's Blackbird [*Euphagus cyanocephalus*]
 Bronzed Cowbird [*Molothrus aeneus*]
 Brown-headed Cowbird [*Molothrus ater*]
 Orchard Oriole [*Icterus spurius*]
 Hooded Oriole [*Icterus cucullatus*]
 Audubon's Oriole [*Icterus graduacauda*]
 Baltimore Oriole [*Icterus galbula*]
 Bullock's Oriole [*Icterus bullockii*]
 Scott's Oriole [*Icterus parisorum*]
 Lesser Goldfinch [*Carduelis psaltria*]
 American Goldfinch [*Carduelis tristis*]



Dark-eyed Junco: Ted Ardley

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Prothonotary Warbler: Greg Lavaty