2009

The State of the Birds United States of America 2009

Bob Ford
U.S. Fish and Wildlife Service

Paul Schmidt
U.S. Fish and Wildlife Service, Paul_Schmidt@fws.gov

Miyoko Chu
Cornell Lab of Ornithology, mcc37@cornell.edu







The State of the Birds

United States of America

2009

Cover photos from top, left to right: Magnolia Warbler by Pamela Wells; Saguaro National Monument, Arizona, by Gerrit Vyn, Greater Prairie-Chicken by Gerrit Vyn; Pacific forest, Opal Creek, Oregon, by Gerrit Vyn; Snowy Owl by Gerrit Vyn; arctic coastal plain tundra, Colville River Delta, Alaska, by Gerrit Vyn; Osprey by James Livaudais. This page: Scarlet Tanager by Gerrit Vyn.
Facing page: Bar-tailed Godwit nest by Gerrit Vyn.

Birds are a priceless part of America's heritage. They are beautiful, they are economically important—and they reflect the health of our environment. This State of the Birds report reveals troubling declines of bird populations during the past 40 years—a warning signal of the failing health of our ecosystems. At the same time, we see heartening evidence that strategic land management and conservation action can reverse declines of birds. This report calls attention to the collective efforts needed to protect nature's resources for the benefit of people and wildlife.

Contents

Foreword 3
Overview 4
Aridlands 6
Grasslands 8
Game Birds. 10
Urban Birds. 11
Forests 12
Arctic 16
Wetlands 18
Waterfowl 20
Marsh Birds 21
Coasts. 22
Oceans 24
Hawaiian Birds. 26
Endangered Species. .28
Challenges 30
Our Approach 33
Acknowledgements . .34

Foreword

Birds Are Important Indicators of Our Nation's Environmental Health

The United States is blessed with diverse landscapes, a wealth of natural resources, and spectacular wildlife, including more than 800 bird species. Birds are a national treasure and a heritage we share with people around the world, as billions of migratory birds follow the seasons across oceans and continents. Our passion for nature is evident: Wildlife watching generates $122 billion in economic output annually, and one in every four American adults is a bird watcher.

In the past 200 years, however, the U.S. human population has skyrocketed from about 8 million to 300 million. As we have harvested energy and food, grown industries, and built cities, we have often failed to consider the consequences to nature. During our history, we have lost a part of our natural heritage—and degraded and depleted the resources upon which our quality of life depends. We have lost more than half of our nation's original wetlands, 98% of our tallgrass prairie, and virtually all virgin forests east of the Rockies. Since the birth of our nation, four American bird species have gone extinct, including the Passenger Pigeon, once the world's most abundant bird. At least 10 more species are possibly extinct.

Birds are bellwethers of our natural and cultural health as a nation—they are indicators of the integrity of the environments that provide us with clean air and water, fertile soils, abundant wildlife, and the natural resources on which our economic development depends. In the past 40 years, major public, private, and government initiatives have made strides for conservation. Has it been enough? How are birds faring?

In an unprecedented partnership, government wildlife agencies and conservation groups have come together to produce this first comprehensive analysis of the state of our nation's birds. The results are sobering: bird populations in many habitats are declining—a warning signal of the failing health of our ecosystems. Where we have been negligent too long, such as in Hawaii, we are on the verge of losing entire suites of unique and beautiful birds and native plant communities.

At the same time, we see heartening evidence that birds can respond quickly and positively to conservation action. Many waterfowl species have undergone significant increases in the past 40 years, a testament to coordinated conservation efforts in wetlands. Through focused conservation efforts, we have brought magnificent Peregrine Falcons and Bald Eagles back from the brink of extinction.

We ask you to join us in continuing to reverse the damage to our nation's habitats and protect our remaining natural landscapes—the foundation upon which our precious resources, our wildlife, and the lives of our children depend. Cooperative conservation efforts among the government, conservation organizations, and ordinary citizens—private landowners, hunters, and bird watchers—really are making a difference.

It is imperative that we redouble our efforts now, before habitat loss and degradation become even more widespread, intractable, and expensive to solve. Together, we can ensure that future generations will look back at this first State of the Birds report with disbelief that their common birds could ever have been so troubled.

North American Bird Conservation Initiative, U.S. Committee

American Bird Conservancy

Association of Fish and Wildlife Agencies

Cornell Lab of Ornithology

Klamath Bird Observatory

National Audubon Society

The Nature Conservancy

U.S. Fish and Wildlife Service

U.S. Geological Survey

Bar-tailed Godwit nest, Alaska.

JACKJEFFREYPHOTO.COM

The `I`iwi is a bird unique to the Hawaiian Islands. More bird species are vulnerable to extinction in Hawaii than anywhere else in the United States.

OVERVIEW

The State of Our Nation's Birds

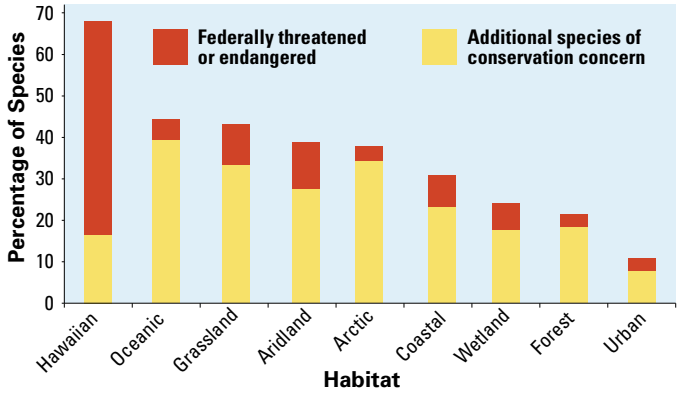
The United States is home to a tremendous diversity of native birds, with more than 800 species inhabiting terrestrial, coastal, and ocean habitats, including Hawaii. Among these species, 67 are federally listed as endangered or threatened. An additional 184 are species of conservation concern because of their small distribution, high threats, or declining populations.

Successful conservation requires information about the population status of every species to ensure the survival of endangered birds and to manage common species so they never become threatened. This report presents a new synthesis of major bird-monitoring databases, including data from thousands of citizen scientists and professional biologists. We used data from three continentwide monitoring programs to create bird population indicators for major U.S. habitats, reflecting the health of these habitats and the environmental services they provide. These habitat indicators are based on the population changes of obligate species—those that are restricted to a single habitat and are most sensitive to environmental changes. We supplemented this information with data from many other surveys that focus on species that are rare, endangered, or difficult to monitor, such as ocean birds. (See pages 33–34 for methods.)

The results reflect the influence of human activities and global change on our nation's birds. Every U.S. habitat harbors birds in need of conservation. Hawaiian birds and ocean birds appear most at risk, with populations in danger of collapse if immediate conservation measures are not implemented. Bird populations in grassland and aridland habitats show the most rapid declines over the past 40 years. Birds that depend on forests are also declining.

In contrast, wetland species, wintering coastal birds, and hunted waterfowl show increasing populations during the past 40 years, reflecting a strong focus during this period on wetlands conservation and management.

Species of Conservation Concern



Percentage of bird species that are threatened, endangered, and of conservation concern in each habitat.

Hawaiian Birds in Crisis

More than one-third of all U.S. listed bird species occur in Hawaii and 71 bird species have gone extinct since humans colonized the islands in about 300 AD. At least 10 more birds have not been seen in as long as 40 years and may be extinct. Proven conservation measures are urgently needed to avert this global tragedy, including increasing investment in protecting remaining forests, eliminating exotic predators, and captive breeding.

Declining Seabirds Signal Stressed Oceans

At least 39% of the U.S. birds restricted to ocean habitats are declining. These birds face threats from pollution, over-fishing, and warming sea temperatures caused by climate change, as well as threats at island and coastal nesting sites. Declining seabirds may be our most visible indication of an ocean ecosystem under stress.

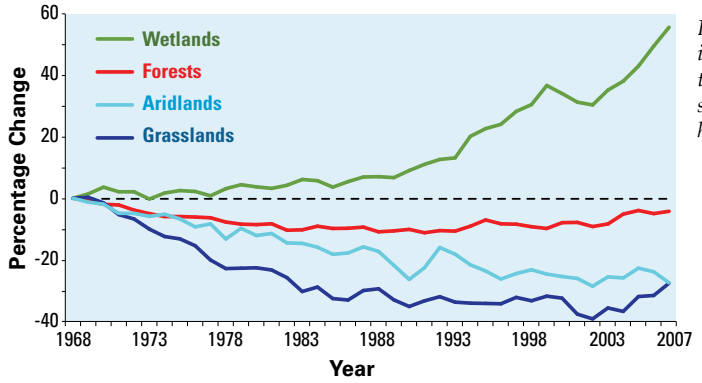
High Concern for Coastal Shorebirds

Although some coastal birds are increasing, shorebirds that rely on coastal habitats for breeding and refueling on migration are besieged by human disturbance and dwindling food supplies. Sea level rise caused by accelerating climate change will inundate shoreline habitats. Half of all coastally migrating shorebirds have declined; for example, Red Knots have declined by an alarming 82%. Because of their relatively small and highly threatened global populations, shorebirds are of high conservation concern.

Wetland Birds Show Amazing Resilience

The upward trend for wetland birds in the U.S. is a testament to the amazing resilience of bird populations where the health of their habitat is sustained or restored. The overwhelming success of waterfowl management, coordinated continentally among Canada, the United States, and Mexico, can serve as a model for conservation in other habitats.

Bird Population Indicators



Bird population indicators based on trends for obligate species in four major habitats.

Grasslands and Aridlands: Degraded, Neglected

Dramatic declines in grassland and aridland birds signal alarming neglect and degradation of these habitats. Incentives for wildlife-compatible agricultural practices in grasslands and increased protection of fragile desert, sagebrush, and chaparral ecosystems are urgently needed to reverse these declines.

Forest Birds Face an Uncertain Future

Although forest birds have fared better overall than birds in other habitats, many species have suffered steep declines and remain threatened by unplanned and sprawling urban development, unsustainable logging, increased severity of wildfires, and a barrage of exotic forest pests and diseases.

Conservation Successes for Endangered and Common Birds

The will of our nation to prevent extinction and reverse environmental degradation is exemplified by the remarkable recovery of the Bald Eagle, Peregrine Falcon, and other bird populations after the banning of DDT and other harmful pesticides. Targeted conservation programs for listed species remain necessary, and proactive measures involving voluntary partnerships between local, state, tribal, and federal government, nongovernmental organizations, and private citizens are needed to maintain the integrity of U.S. habitats and to keep our common birds common.

Over the last two decades, unprecedented private-public partnerships, called Joint Ventures, have been highly effective at leveraging scarce funds to conserve millions of acres of wetlands and other wildlife habitat. Also, bird conservation initiatives such as Partners in Flight, the U.S. Shorebird Conservation Plan, and the North American Waterbird Conservation Plan have raised awareness and inspired conservation action at continental and regional scales. The North American Bird Conservation Initiative (**www.nabci-us.org**) provides opportunities for coordinating these vital activities.

Black Oystercatchers inhabit coastal areas where habitat loss is a threat. Coastal reserves help ensure that oystercatchers and humans can coexist.

ARIDLANDS

Unique Birds of the Aridlands Face Loss and Degradation of Habitat

Greater Sage-Grouse by Ted Schroeder

Consider This:

- Aridlands harbor more than 80 nesting bird species, including many unique and beautiful birds found only in deserts, sagebrush, or chaparral.
- More than 75% of birds that nest only in aridlands are declining and 39% of all aridland birds are species of conservation concern.
- Habitat loss from urban development, habitat degradation from overgrazing and invasive plants, and a changing climate are causing significant problems for many aridland birds.
- A regional system of protected areas is critically needed to accommodate increasing development while meeting the habitat requirements for keeping bird populations stable.

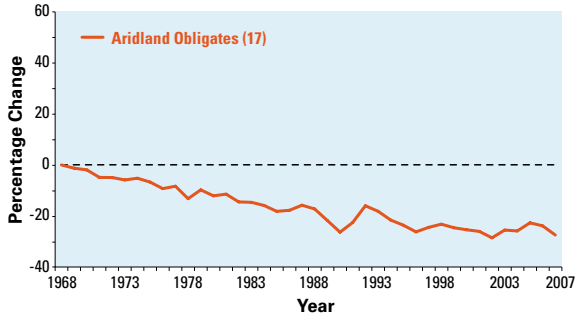
Gerrit Vyn

The State of Aridland Birds

Of 83 aridland-breeding bird species, 39% are species of conservation concern, including 10 federally listed as endangered or threatened. These species are especially vulnerable because of their small ranges or restricted habitat requirements, or both.

Sixty percent of all aridland species and 76% of aridland obligate species have declined. The aridland birds indicator, based on 17 of 30 obligate species with sufficient data, shows a steady decline over the past 40 years, to nearly 30% below the baseline value. An additional 13 species, including nine species of conservation concern, are not adequately monitored.

Aridland Birds Indicator



Aridlands in the U.S. include the Sonoran Desert (shown here), Chihuahuan, Mojave, and Great Basin deserts, and major shrub-scrub ecoregions (coastal California chaparral, Edwards Plateau, Colorado Plateau). Aridlands are characterized by low annual precipitation with variability from one year to the next.

Birds in Trouble

Greg Lavaty

Golden-cheeked Warbler

Federally listed as endangered: California Condor, (Northern) Aplomado Falcon, (San Clemente) Loggerhead Shrike, (Least) Bell's Vireo, Black-capped Vireo, Golden-cheeked Warbler. Threatened: (Western) Snowy Plover, (Coastal) California Gnatcatcher, (Inyo) California Towhee, (San Clemente) Sage Sparrow.

- Endangered Golden-cheeked Warblers depend on ash-juniper woodlands that are being cleared for agriculture or suburban development in the Texas hill country.
- Species such as Elf Owl, Bendire's and LeConte's thrashers, and Gilded Flicker are of conservation concern because of their small range, known threats, or declining populations.
- Resident game birds that depend on aridlands, including Greater and Gunnison's sage-grouse and Scaled Quail, have suffered significant declines and are threatened by continued degradation of their fragile habitats. About 45% of potential sagebrush habitat has been converted to other habitat types, including agriculture and urban areas.

Major Threats

Development and Energy

Unplanned and sprawling urban development is by far the greatest threat to aridlands. Some of our nation's fastest growing cities are in aridlands (e.g., Los Angeles, Phoenix, Las Vegas, San Diego).

Coastal sage and chaparral of southern California represent a global biodiversity hotspot with numerous threatened or endangered plants and animals. About 40% of the area is now urban or suburban, supporting nearly half of California's human population.

Energy development and exploration have major impacts on aridland birds. Poorly planned energy infrastructure degrades and fragments habitat and provides conditions favorable for invasive plant species.

Agriculture and Invasive Species

Invasive nonnative plants are a serious threat to virtually all aridlands. In the Great Basin and other areas, more than 17% of remaining sagebrush is dominated by introduced grasses such as cheatgrass. Invasive grasses fuel wildfires that devastate sagebrush and desert plant communities, eliminating native plants that evolved in the absence of fire.

Unsustainable livestock ranching practices have degraded habitat and damaged soils, fostering areas dominated by nonnative plants.

Climate Change

The impact of climate change in aridlands is difficult to predict, but warmer conditions and changes in precipitation may dramatically affect the production of seeds needed by birds. Improved monitoring of bird populations may provide the first indications of changes to habitats.

Solutions

- Proactive conservation measures, such as ensuring sustainable agriculture and environmentally sustainable energy development, are needed to reverse declines of native aridland birds.
- Linking the protected lands system with "smart growth" in communities will provide opportunities for people to enjoy birds, as well as for birds to move and adapt to increasing pressure from development.
- Immediate, innovative efforts are needed to encourage the coexistence of agriculture and native birds, including wildlife-compatible grazing practices, maintenance of native habitat patches, and planting native seed mixes in disturbed areas.
- Continual efforts must be made to prevent invasive plants from spreading in areas most affected by wildfire.

Beyond Our Borders

More than 50% of aridland birds are permanent residents of the U.S. borderlands. Effective conservation requires close collaboration with the Mexican government and private conservation organizations. Most migratory species winter in Mexico and Central America, including the endangered Golden-cheeked Warbler. New and existing international partnerships must be supported to ensure the survival of aridland birds.

Unplanned urban growth is by far the greatest threat to aridland birds. A regional system of protected areas can enhance quality of life for people and enable birds to survive.

Reasons for Hope

Brian L. Sullivan

California Condor

Endangered California Condors and Aplomado Falcons have been reintroduced to areas where they had been extirpated in the United States. Public lands have provided important habitats for these species. Today, 174 condors are flying free, and the number grows each year.

Vast areas of public land managed by the Bureau of Land Management and Department of Defense offer opportunities to protect and manage habitats for aridland birds.

Harris's Hawk by Gerrit Vyn

GRASSLANDS

America's Heartland is Home to Our Nation's Fastest Declining Birds

Greater Prairie-Chicken by Gerrit Vyn

Consider This:

- Grassland birds are a vital part of North American landscapes. Forty-eight species nest in U.S. grasslands, including ducks, grouse, hawks, and songbirds.
- Grassland birds are among the fastest and most consistently declining birds in North America; 48% are of conservation concern and 55% are showing significant declines.
- Only about 2% of the tallgrass prairie that existed in the early 1800s still remains. Although birds may settle in pastures and haylands, frequent haying, burning, and overgrazing can create "ecological traps" where birds try to nest but fail to raise their young.
- Farmland conservation programs provide the best hope for birds and other wildlife. Agricultural practices can become more compatible with birds, and land can be managed inexpensively for birds with funding from conservation programs.

Judd Patterson

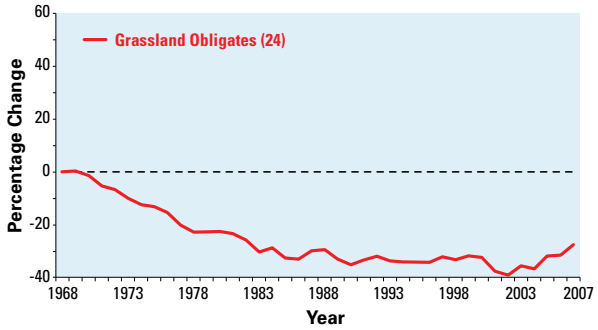
Native grasslands once stretched across the United States from Canada to Mexico, and east from the Rocky Mountains as far as Ohio. More than 95% of the tallgrass prairie has been converted to agriculture and other uses. Short- and mixed-grass prairies continue to be converted to agriculture.

The State of Grassland Birds

Of 46 grassland-breeding birds, 48% are species of conservation concern, including 4 with populations that are federally endangered. Eight of twelve sparrow species are listed as of conservation concern. Of the 42 grassland species with sufficient monitoring data, 23 are declining significantly.

The grassland birds indicator, based on data for 24 of 25 obligate species, dropped by nearly 40% from the baseline value, with a slight recovery evident in the last five years.

Grassland Bird Indicator



Birds in Trouble

Federally listed as endangered: (Northern) Aplomado Falcon, (Attwater's) Greater Prairie-Chicken, (Masked) Northern Bobwhite, (Florida) Grasshopper Sparrow.

Donald Metzner

Western Meadowlark

- Some of the American landscape's most iconic birds are showing steep declines. Eastern and Western meadowlarks, Bobolinks, Short-eared Owls, and Northern Bobwhites have declined by 38–77% since 1968.
- Six species that breed in the Great Plains of the United States and Canada and that winter in Mexico's Chihuahuan grasslands are showing steep declines of 68–91%: Mountain Plover, Sprague's Pipit, Lark Bunting, Baird's Sparrow, Chestnut-collared Longspur, and McCown's Longspur.
- Lesser and Greater prairie-chicken, Sharp-tailed Grouse, Northern Bobwhite, and Northern Pintail—all popular game birds—have declined from historic levels because of loss and fragmentation of grasslands. Lesser Prairie-Chicken is a candidate for listing under the Endangered Species Act.

Major Threats

Agriculture

Grassland birds have declined because of the intensification of agriculture, including larger fields with fewer grassy edges, native weeds, and insects, as well as the spread of row crops into drier regions.

Pastures cannot support many birds if overgrazed, burned too frequently, or burned at the beginning of the nesting season or the end of the grass-growing season.

Grasslands in public lands and parks are often mowed too frequently and kept too short to provide bird habitat. Open areas are frequently allowed to revert to forest instead of being managed as grassland.

Energy and Climate Change

High commodity prices and demand for biofuels contribute to reduced acreage for farm conservation programs, which may reverse the recent improvement in grassland bird populations.

Wind turbines, if improperly sited, can fragment grasslands and disrupt nesting activity of game birds such as Lesser Prairie-Chickens.

Global warming is expected to increase drought conditions in grassland regions, leading to lower productivity and reduced food supply for birds.

Solutions

- Farm conservation programs remain our best tool for restoring and maintaining grasslands for birds, especially in areas of row-crop agriculture and across the short-grass prairie.
- Haying, grazing, mowing, and burning can be conducted in ways that are compatible with birds, usually at very small cost to the producer. These costs can be compensated by conservation programs that provide other benefits as well, such as erosion control.
- Wetland conservation programs should continue to include adjacent grasslands because such areas are valuable for both grassland and wetland birds.
- Many national, state, and local parks could be managed to benefit grassland birds, and new acquisitions from willing landowners should be explored. Management should include a balance of disturbance to eliminate woody vegetation while allowing a healthy tall grassland.

Beyond Our Borders

More than half of grassland obligate species depend on Canadian prairie habitats, as well as those in the central United States. Chihuahuan Desert grasslands in Mexico host a wide variety of U.S.-breeding birds in winter, but more than a million acres have been converted to agriculture in the past five years. Ranchlands are often overgrazed, causing desertification.

Migrants such as Bobolink, Upland and Buff-breasted sandpipers, American Golden-Plover, and Swainson's Hawk fly to South America where grasslands are being converted to agricultural production.

Farm conservation programs provide millions of acres of protected grasslands that are essential for the birds in a landscape where little native prairie remains.

Greg Lavaty

Henslow's Sparrow

Reasons for Hope

After recent, alarming declines in some grassland specialists, such as Henslow's Sparrow, increases have resulted from the Conservation Reserve Program and other programs that have restored wildlife habitat. Healthy populations of these birds will require maintaining or increasing acreages and conservation practices.

Birds that use wet grass and grass adjacent to wetlands are doing better than average, perhaps because these species have been the focus the Conservation Reserve Program, Wetlands Reserve Program, conservation easements, and other initiatives.

Bobolink by Gerrit Vyn

Spotlight on Resident Game Birds

Managing Land for Game Birds Helps All Birds

Upland game bird hunting in the United States generated nearly $2 billion and provided recreation for nearly 3 million licensed hunters in 2006. Because management for the 19 native resident game bird species falls under the jurisdiction of state wildlife agencies, regional partnerships such as the Northern Bobwhite Conservation Initiative and North American Grouse Partnership formed so states can work together on rangewide management efforts. These efforts target landscape-level habitat changes that benefit both game and non-game species. In addition, volunteer organizations assist management efforts for resident game birds, including the National Wild Turkey Federation, Quail Unlimited, Pheasants Forever, and the Ruffed Grouse Society.

The State of Resident Game Birds

Of 19 native resident game bird species, 47% are species of conservation concern and 2 are federally endangered. Based on the best data from a variety of sources, Greater Sage-Grouse, Gunnison's Sage-Grouse, Greater Prairie-Chicken, Lesser Prairie-Chicken, Sooty Grouse, and Northern Bobwhite are thought to have declined by more than 50% in the last 40 years, and Scaled Quail have declined by 33%. For these species, further research is required to understand fully the limiting factors. Introduced Chukar, Ring-necked Pheasant, and Gray Partridge show stable overall populations; however their numbers are augmented by captive-breeding and release programs because of demand for recreational hunting.

Birds in Trouble

Federally listed as endangered: (Attwater's) Greater Prairie-Chicken, (Masked) Northern Bobwhite.

Northern Bobwhite has declined by 75% over the past 40 years because of alteration of grassland-shrub communities in pine, agricultural and grazing lands where the limiting factor is nesting and brood-rearing habitat.

Both Greater and Lesser prairie-chickens are highly social species that are sensitive to loss and fragmentation of native grasslands. Encroachment by osage orange, western red cedar, and invasive grasses also reduces habitat quality.

Despite state and federal measures to avoid, minimize, and mitigate known threats, Greater Sage-Grouse continues to be threatened by the spread of invasive grass species, degradation and loss of sagebrush habitat from livestock grazing, the development of renewable energy, and the spread of West Nile virus.

Heavy livestock grazing and subsequent invasions of nonnative plants have eliminated understory flowering plants and grasses from habitat used by Montezuma Quail in southern Arizona and northern Mexico.

Reasons for Hope

Farm Bill programs that result in the retirement of millions of acres of intensely cropped lands offer the greatest hope for the long-term management of many resident game birds. Greater Prairie-Chicken populations have benefited from the creation of core grasslands in several states, and population goals for recovery of Northern Bobwhite have been written into recent Farm Bill initiatives.

By the early 1900s, most Wild Turkey populations had been wiped out in North America. As late as the Great Depression, fewer than 30,000 Wild Turkeys remained in the entire United States. Reintroduction programs, active management, and regulated hunting have allowed the Wild Turkey population to expand to more than 7 million birds by 2008.

Sustainable forest management provides forest habitat diversity for Ruffed Grouse, which inhabit young forest.

GERRIT VYN

Cooperative partnerships have implemented landscape-level management benefiting both game and non-game bird species.

Northern Bobwhites have declined by 75% during the past 40 years. Recent Farm Bill initiatives include goals for recovery of bobwhite populations.

American Robins can thrive in many habitats, including urban yards and parks.

Gregg Lee

Spotlight on Urban Birds

Habitat for Birds and People

Although bird communities in urban environments are often dominated by a few exotic and ubiquitous species such as Rock Pigeons and House Sparrows, a surprising number of native birds have adapted to life around humans.

American Robins can thrive in many habitats, including lawns with abundant earthworms. California Quail and Abert's Towhees find suburban plantings a suitable substitute for native aridland habitats. Gulls, vultures, and crows seek abundant food at garbage dumps and along roadsides. Hummingbirds, chickadees, sparrows, finches, woodpeckers, and other birds take advantage of bird feeders. Even hawks and owls find increasingly safe nesting sites and abundant prey in our towns and cities.

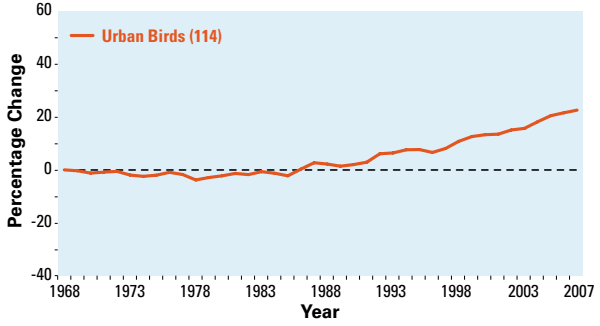
The urban/suburban indicator, based on data for 114 native bird species, shows a steady, strong increase during the past 40 years, driven primarily by a small number of highly successful species such as Wild Turkey, Double-crested Cormorant, vultures, gulls, doves, House Finch, and Great-tailed Grackle. This indicator may represent a sensitive "first alert" to environmental changes from urban and suburban development.

Creating greenspace for birds in cities can help adaptable urban birds as well as migrants stopping over during their long journeys.

In general, urban-adapted species from eastern forests, especially permanent residents, have shown stable or increasing populations, whereas migratory birds, such as Common Nighthawk, Chimney Swift, and Wood Thrush, show the same declining trends as many eastern forest obligates. This suggests that birds living in urban habitats year-round benefit from higher overwinter survival. In the West, a majority of common urban/suburban species are declining, especially birds native to southwestern aridlands and Pacific Coast forests.

The wide variety of native birds that thrive in urban areas underscores the importance of these artificial habitats to the survival of many bird populations. Creating greenspace in urban environments, landscaping with native plants in backyards and parks, adopting architecture and lighting systems that reduce collisions, and keeping pets indoors will provide the greatest benefit to breeding birds and migrants seeking safe places to rest and find food during their spectacular journeys.

Urban Birds Indicator



Exotic Bird Species

The most common birds in nearly every urban environment are exotic species introduced from other parts of the world. Exotic species also occur in most natural habitats in North America and many have significant negative effects on native birds, other wildlife, and humans. European Starlings can damage seed and fruit crops and compete with native birds for nest cavities. Mute Swans, introduced from Eurasia in the 19th century, have displaced ducks and geese from wetlands and have overgrazed aquatic vegetation. Other exotic birds have positive economic impacts, such as Ring-necked Pheasant, a popular species with hunters.

Of the 17 exotic species considered in this report, some have been established for more than a century and now occur across the continent. These birds, including Rock Pigeon, European Starling, and House Sparrow, show stable or declining trends over the past 40 years. In contrast, populations of some recently introduced species are growing, including Eurasian Collared-Doves, whose abundance and distribution have increased exponentially since they colonized Florida from the Bahamas in the 1970s.

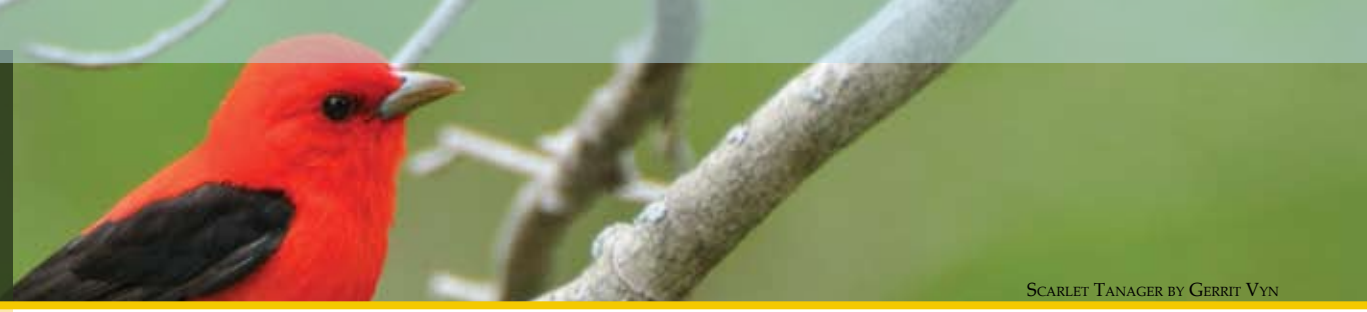
The impacts of exotic species on the well-being of humans and our native flora and fauna are not well studied. Exotic birds merit closer monitoring, and careful vigilance will be needed to protect against negative impacts to our native birds.

Introduced to the Bahamas in the 1970s, Eurasian Collared-Doves have spread to Florida and across the United States.

Vicki Lackey

FORESTS

Healthy Forests Are Key to the Future of Birds and Our Natural Resources



Scarlet Tanager by Gerrit Vyn

Consider This:

- North America has a tremendous diversity of forests harboring more than 300 breeding bird species.
- Some forest birds are doing well, giving hope for continued conservation efforts, but roughly one-third of all forest-breeding species have declined.
- Forests are threatened by unplanned and sprawling urban development, unsustainable logging, intense wildfires following decades of fire suppression, overbrowsing by deer, and tree pests and diseases exacerbated by a changing climate.
- Opportunities abound for forest bird management, including a balance of economically viable but sustainable forestry and grazing practices; the U.S. manages 193 million acres of National Forests.

Courtesy Canadian Parks and Wilderness Society

As many as five billion birds fly south from the boreal forest each fall, according to the Boreal Songbird Initiative. Many of these birds spend the winter in the United States.

The State of Forest Birds

Of 310 forest-breeding birds nationwide, 22% are species of conservation concern, including 11 federally listed as endangered or threatened. Roughly one-third of all forest-breeding species have declined. The overall indicator for obligate forest birds, based on 96 species with adequate data, declined by roughly 10% through 1980, then recovered slightly in recent years (see graph, page 5). Bird population trends in forests differed across four geographic regions (see pages 14–15).

The eastern forests indicator, based on data for 25 obligate species, declined steadily over the past 40 years, dropping by nearly 25% since 1968.

In western forests, the indicator based on 38 obligate species shows a slightly declining trend; however, monitoring data were unavailable for 40% of western forest obligates, including 10 species of conservation concern. Many western forest birds, such as Montezuma Quail, Elegant Trogon, White-headed Woodpecker, and Hermit Warbler, are at risk because of their small geographic range or small and threatened populations.

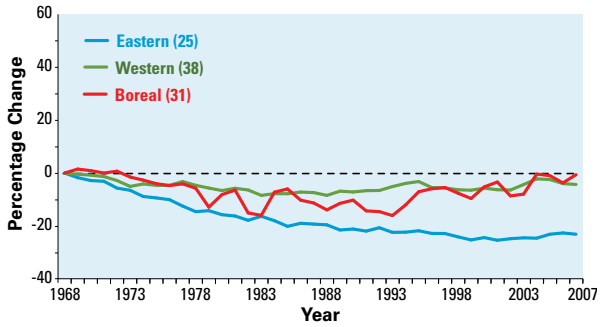
The indicator for boreal forests, based on 31 of 37 obligate species with adequate data, has fluctuated greatly with a generally declining trend over the first 25 years, and then a general increase more recently. Many boreal birds are not well monitored over large parts of their range, however, reducing our confidence in this indicator.

Gary H. Rosenberg

Elegant Trogon

Similarly, in subtropical forests of South Texas and Florida, monitoring data were insufficient to create a bird population indicator. Many species in these regions are known to be expanding their range northward, perhaps in response to warming temperatures.

Forest Birds Indicator



Sustainable forestry, landowner incentives for forest preservation, and urban greenspace initiatives can protect natural resources and help ensure the long-term viability of many forest birds.

Major Threats

Development and Disturbance

Rapid urban growth threatens forests in all regions. Development increased from 15 million to 60 million acres during 1945–2002 and is still increasing exponentially.

The loss of economic incentives for private forestry has led to the sale and subdivision of forest industry lands and a rapid rise in second-home and other ex-urban development, causing forest loss and fragmentation.

Decades of unnatural fire suppression have created fuel for more intense fires, dramatically increasing the acreage burned in recent years (e.g., 9.8 million acres burned in 2006). Historically, natural fires burned large areas of some forest types annually, but were less intense. These fires were essential for the health of forests and their wildlife.

Resource Use

The U.S. harvests 21.2 billion cubic feet of timber from forests annually. Harvest increased by 40% during 1950–1980, but has declined since 1985. More than half of all timber comes from southeastern forestlands, 87% of which are privately owned. Only a small portion of timber originates from federal lands, but important forest types such old-growth forests in the Pacific Northwest and Alaska remain available for logging.

Invasive Species

Nearly every important tree species is afflicted by an exotic insect pest or disease, which will likely be exacerbated by a changing climate. Mountain pine beetle has killed vast areas of western pine forests and the hemlock woolly adelgid threatens eastern hemlock with extinction within 50 years.

Unnaturally high populations of white-tailed deer have destroyed the shrubby understory of many eastern forests, contributing to declines in forest-nesting birds.

Solutions

- The U.S. manages 193 million acres in 155 National Forests, 80% of which are in western states. By 2008, 13% of forestlands in the western U.S, 6% in the East, and 26% in Alaska had been set aside in forest reserves. Conservation of roadless areas and additional reserves and improved management, such as sustainable forestry and grazing practices, would ensure the long-term viability of many forest birds.
- Sustainable forestry practices improve the long-term health of forests. Economically viable practices on private lands and incentives for private landowners can provide a mosaic of forest ages and structure to benefit diverse birds and prevent development.
- Smart growth and urban greenspace initiatives are critical for stemming the tide of suburban sprawl and preserving the integrity and connectivity of forest ecosystems. Incentive programs that enable landowners to keep their land as forest need to be expanded.

Beyond Our Borders

Half of all forest bird species migrate from breeding habitats in the U.S. and Canada to winter in the Caribbean, Mexico, and Central and South America. Collaborative initiatives involving international partnerships are essential for successful conservation of these species and their habitats.

The Cerulean Warbler is one of more than 40 species of colorful wood-warblers that breed in U.S. forests. They migrate thousands of miles annually to winter in the Neotropics. Many long-distance migrants are threatened by loss and degradation of forests across the hemisphere.

Reasons for Hope

Shane R. Conklin

Red-shouldered Hawk

Forest-breeding raptors, such as Cooper's Hawk, Red-shouldered Hawk, and Merlin, as well as tree-nesting Bald Eagle and Osprey, have responded positively to protection from shooting, banning of harmful pesticides, and abundant prey in urban areas.

Cerulean Warbler by Greg Lavaty

Eastern Forest

Birds in Trouble

Federally listed as endangered: Wood Stork, Ivory-billed Woodpecker, Red-cockaded Woodpecker, Bachman's Warbler, Kirtland's Warbler. Threatened: Florida Scrub-Jay.

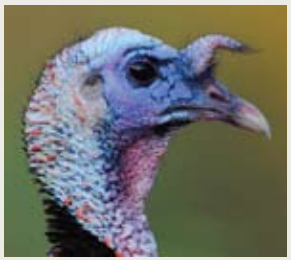
ROGER ERICKSSON

Golden-winged Warbler

The eastern U.S. has lost two forest species to extinction: Passenger Pigeon and Carolina Parakeet. Hope is dimming for Bachman's Warbler and Ivory-billed Woodpecker.

Many eastern forest birds are suffering consistent and troubling declines:

- Red-cockaded Woodpecker, Brown-headed Nuthatch, and Bachman's Sparrow, year-round residents of mature southern pine forests, especially the highly threatened longleaf pine ecosystem.
- Neotropical migrants that require large blocks of intact forests, such as Kentucky Warbler, Wood Thrush, and Eastern Wood-Pewee. The Cerulean Warbler is threatened by mountaintop-removal coal mining along Appalachian ridges and clearing of riverine forests.
- Species dependent on disturbed or early successional forest or natural disturbance (including pine barrens) including the Golden-winged Warbler, Whip-poor-will, Prairie Warbler, Eastern Towhee, and Field Sparrow, and popular game species such as Northern Bobwhite and American Woodcock.



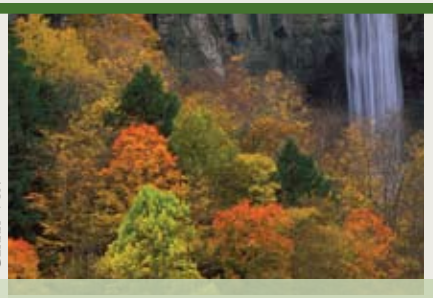
GERRIT VYN

Wild Turkey

Reasons for Hope

Wild Turkeys were close to extinction in the early 1900s but have increased tremendously (8.9% per year since 1968) in response to reintroduction programs, management, and forest regeneration.

Many characteristic eastern forest birds, including woodpeckers, chickadees, hawks, and owls, have adapted to urban and suburban plantings and parks, buffering them from the effects of habitat loss and fragmentation.



GERRIT VYN

An eastern deciduous forest turns ablaze with color in fall. Eastern forests include northern hardwood and other mixed forests of the Northeast and upper Midwest, oak-hickory and other deciduous forests of the Appalachians, coastal plain, and river valleys, and southeastern longleaf and slash pine forests.

Western Forest

Birds in Trouble

Federally listed as threatened: Marbled Murrelet, (Northern) Spotted Owl, (Mexican) Spotted Owl, (Southwestern) Willow Flycatcher.

KENNETH V. ROSENBERG

Lewis's Woodpecker

Several groups of birds are declining:

- Specialized permanent residents, such as Pinyon Jay (threatened by massive die-off of pinyon pines), Oak Titmouse (threatened by loss of California oak woodlands), and Yellow-billed Magpie (threatened by loss of oaks and by West Nile virus).
- Temperate migrants dependent on mature pine forests, including Lewis's Woodpecker, Plumbeous Vireo, Grace's Warbler, and Cassin's Finch.
- Neotropical migrants such as Black Swift, Western Wood-Pewee, and Black-throated Gray Warbler. The steeply declining Black Swift is vulnerable to increasing drought conditions because it nests behind waterfalls.
- Many Pacific forest birds, including Marbled Murrelet, Spotted Owl, Olive-sided Flycatcher, Varied Thrush, Band-tailed Pigeon, Rufous Hummingbird, and Chestnut-backed Chickadee. Murrelets and Spotted Owls require structurally diverse old-growth forests.

JAMES LIVAUDAIS

Spotted Owl

Reasons for Hope

Vast areas of western forests on public lands are protected from permanent conversion to other land uses. Improved forest management, such as restoring natural fire regimes and fencing riparian areas to prevent overgrazing, can benefit many forest birds.

GERRIT VYN

Redwood and Douglas-fir forests of the Pacific Coast are some of the tallest forests in the world. Western forests also include conifer, pine-oak, and pinyon-juniper forests of the mountains, riparian ribbons of deciduous forest along major rivers, and oak woodlands.

Boreal Forest

Birds in Trouble


JACK BARTHOLOMAI

Rusty Blackbird

Federally listed as endangered: Whooping Crane.

- Lesser Scaup and White-winged Scoter nest in boreal forests and winter in coastal regions; both have declined by more than 50% in 40 years.
- The U.S. Shorebird Conservation Plan identifies four boreal-nesting species that are of high conservation concern: Whimbrel, Hudsonian Godwit, Solitary Sandpiper, and Short-billed Dowitcher. Lesser Yellowlegs and Least Sandpiper also are experiencing long-term declines.
- Harris's Sparrow and Rusty Blackbird are temperate migrants that winter entirely within the U.S.; causes of their steep declines have yet to be determined (Rusty Blackbirds have declined by 75% in 40 years).
- Birds that periodically come south in winter, such as Bohemian Waxwing, Pine Siskin, White-winged Crossbill, and Evening Grosbeak, have experienced long-term declines.
- Many Neotropical migrants show consistent declines, including boreal specialists such as Blackpoll Warbler, Cape May Warbler, and Connecticut Warbler.


DEB SIMON

Trumpeter Swan

Reasons for Hope

Boreal wetland birds such as Common Goldeneye, Bufflehead, and Bonaparte's Gull have increased. Management efforts for Trumpeter Swans throughout their historic range have been highly successful.

Vast areas of virgin boreal forest still remain, presenting opportunities for large-scale conservation. In 2007 and 2008, Ontario and Quebec promised to protect more than 120 million acres of Canada's boreal forest—one of the largest conservation actions in North American history if implemented.

The boreal forest stretches south from the arctic tundra across an area larger than the Amazon rainforest, a blanket of spruces, birch, peat bogs, and other wetlands. Occurring mostly within Canada, the North American boreal forest extends into the United States in Alaska, in states bordering the Great Lakes, and in northern New England.


GARTH LENZ

Subtropical Forest

Birds in Trouble


MARK KEITHLY

Altamira Oriole

Federally listed as endangered: Wood Stork.
Threatened: (Audubon's) Crested Caracara.

- Smooth-billed Ani in Florida and Groove-billed Ani in Texas have declined dramatically for unknown reasons.
- Other less-common species of the Rio Grande Valley, such as Altamira and Audubon's orioles, also have declined, possibly due to Bronzed and Brown-headed cowbirds that lay eggs in the orioles' nests.

Reasons for Hope


SAM CROWE

Green Jay

Couch's Kingbird, Long-billed Thrasher, and Olive Sparrow are among many species that are moving northward in Texas, perhaps in response to warming temperatures.

Acquisition and restoration efforts by the U.S. Fish and Wildlife Service, the state of Texas, The Nature Conservancy, and National Audubon Society have created a string of protected areas along the Lower Rio Grande that are vital to many subtropical forest specialists. The newly formed Rio Grande Joint Venture is a public-private partnership striving to protect and restore additional remnant forests in south Texas and northeastern Mexico.

Nearly all of south Florida's remaining subtropical forests are protected within Everglades National Park and the Big Cypress National Reserve.

A forest of live oaks in Tree Tops Park, Florida. Subtropical forests in the United States occur only in south Texas (Tamaulipan thorn forest) and in peninsular Florida (bald cypress and hardwood hammocks).


KENNETH V. ROSENBERG

ARCTIC & ALPINE

Key Nesting Areas Are Threatened by Global Warming and Energy Development

Snowy Owl by Gerrit Vyn

Consider This:

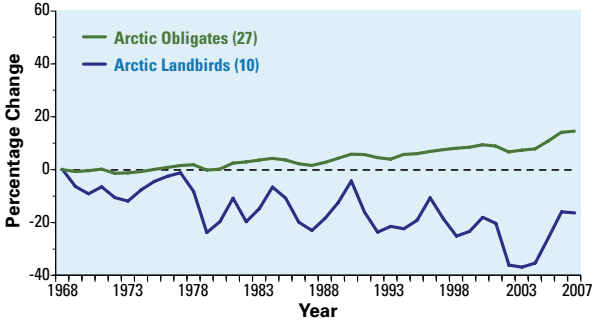
- Millions of birds travel from around the globe to the arctic each year. Eighty-five bird species rely on the arctic's long summer days and abundant insect prey to raise their young.
- Because the arctic is vast and remote, data are lacking for many species. Some birds, such as geese and gulls, seem to be faring well, but many shorebirds and landbirds are showing worrisome declines.
- Disturbance to tundra from energy exploration and changes caused by global warming are affecting the birds' food base and transforming arctic habitats. Arctic-breeding birds also face numerous threats during extensive spring and fall migrations.
- Reducing emissions is critical to slow global climate change, which is already affecting the arctic. Energy development and transportation plans should incorporate the conservation needs of birds.

Gerrit Vyn

The State of Arctic and Alpine Birds

Of the 85 species that breed in arctic and alpine regions, 38% are of conservation concern, including 3 federally listed as endangered or threatened. The arctic and alpine indicator, based on 27 obligate species, has increased steadily over the past 40 years. Dramatic increases in four arctic-nesting geese contribute to this overall trend. Because of the remoteness of these regions, however, the indicator represents only 46% of obligate arctic and alpine species. A group of 10 landbird species shows a declining trend over the same period, with steepest declines evident in alpine-nesting rosy-finches. Some sea ducks and many shorebirds are also declining; two-thirds of all arctic-nesting shorebirds are species of conservation concern.

Arctic and Alpine Bird Indicator



Alaska's arctic coastal plain tundra includes some of the world's most productive wetlands for migratory shorebirds and waterfowl. The arctic region also includes drier northern uplands and treeless alpine areas on mountaintops.

Birds in Trouble

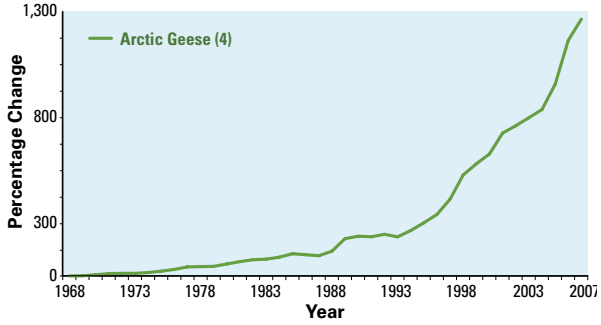
Federally listed as endangered: Eskimo Curlew. Threatened: Spectacled Eider, Steller's Eider.

Gerrit Vyn

Ivory Gull

- In arctic Canada, the Ivory Gull has declined dramatically in the last decade. This enigmatic and beautiful species depends on arctic sea ice for feeding, and is especially vulnerable to global warming.
- Arctic-breeding ducks that winter in marine waters have declined. The nonbreeding distribution of threatened Spectacled Eider was unknown until recent satellite imagery revealed important concentrations in arctic waters off Alaska.
- At least 38% of arctic-nesting shorebirds are decreasing and population trends are unknown for 25%. A monitoring program to assess shorebird populations is critically needed.

Arctic-Nesting Geese



Major Threats

Climate Change

Warming temperatures are more extreme at the poles than in other places on earth. Thawing permafrost in the southern arctic is lowering the water table and drying out coastal tundra supporting the highest densities of breeding shorebirds and waterfowl.

Warming temperatures may cause a mismatch between the timing of nesting and availability of food. Melting sea ice cover will affect seabirds, such as Ivory Gull, by causing shifts in their marine food resources. Changes to vegetation and snowpack could affect lemmings, important prey for Snowy Owls and other birds.

Energy

Oil exploration and production threaten major areas of great importance to arctic-breeding birds. Arctic warming will make it easier to develop offshore energy facilities and to transport products, increasing the risk of fuel spills that kill or harm birds.

Development and Disturbance

Predators that thrive near human development, such as arctic foxes and gulls, prey on the eggs and young of ground-nesting birds. Predators introduced to islands can devastate bird populations.

Solutions

- Reducing emissions is the only direct way to slow effects of global climate change. Better monitoring is needed to understand the effects of climate change on arctic wildlife.
- Energy and commercial development plans should avoid key breeding and staging areas, minimize effects on breeding birds from oil spills and other hazards, and include adequate disaster responses.
- A system of protected areas in productive regions of the arctic is needed to ensure that birds have areas to use as conditions change in the arctic.
- Management actions continue to be needed to control the overpopulation of geese that negatively affect the habitat for other species such as shorebirds.
- As arctic birds respond to a changing climate, increased monitoring efforts will be required in areas that are difficult to access, to determine population redistribution and impacts, and to develop conservation strategies.

Beyond Our Borders

Most arctic and alpine breeding birds have large populations in Canada, and some also inhabit arctic Europe and Asia. Birds that breed in the arctic may winter in habitats from South America to southern Canada, so protection of international wintering and migratory areas is essential. Of 51 shorebird species that breed in northern North America, substantial populations of 40 species (78%) winter in Latin America, Asia, Australia, Polynesia, and Europe.

Reason for Hope

Gerrit Vyn

Buff-breasted Sandpiper

Oil and gas leasing has been deferred for 10 years around Alaska's Teshekpuk Lake, which supports high densities of breeding shorebirds and large numbers of molting geese.

The future of arctic habitats and birds depends on our ability to curb global climate change and to explore energy resources with minimal impact to wildlife.

Long-tailed Jaeger by Gerrit Vyn

WETLANDS

Wetlands Restoration: A Model for Bird Conservation

Green Heron by Steve Wolfe

Consider This:

- Nearly one-quarter of all U.S. birds rely on freshwater wetlands, including more than 50 shorebird species, 17 long-legged waders, and 44 species of ducks, geese, and swans.
- Wetland bird populations are well below historic levels but management and conservation measures have contributed to increases of many wetland birds, including hunted waterfowl.
- Degradation and destruction of wetlands reduce clean water and other benefits to society and eliminate critical areas needed by wetland birds.
- Bird-related conservation programs have contributed significantly to the restoration of wetlands. For example, "Duck Stamps" and the North American Wetlands Conservation Act have generated billions of dollars and protected nearly 30 million acres.

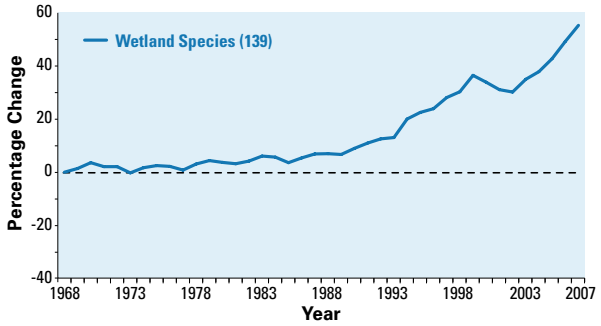
Kenneth V. Rosenberg

More than half of our nation's original wetlands have been drained or converted to other uses. Many wetlands are within other habitats, such as grasslands, boreal forest, and arctic tundra.

The State of Wetland Birds

Of 163 bird species that breed in freshwater wetlands, 24% are species of conservation concern, including 10 federally listed as endangered or threatened. Half of the remaining high-concern species are shorebirds that breed in the arctic, boreal forest, or grasslands. The wetland birds indicator, based on data for 139 species, shows a steady increase beginning in the late 1970s, coinciding with major policy shifts from draining to protecting wetlands. Dramatic increases in many wetland generalist species, as well as arctic-nesting geese and cavity-nesting ducks, contribute to this overall trend.

Wetland Birds Indicator



Birds in Trouble

Federally listed as endangered: Wood Stork, (Everglades) Snail Kite, (Yuma) Clapper Rail, Whooping Crane, (Mississippi) Sandhill Crane, Piping Plover, Least Tern. Threatened: Spectacled Eider, Steller's Eider, Bald Eagle (Sonoran Desert population only).

Marianne DiAntonio

Wood Stork

- Green Heron and Spotted Sandpiper are among the few wetland generalists that show long-term declines. Other declining wetland species include prairie-nesting Franklin's Gull and Black Tern, southeastern marsh specialists such as King Rail, boreal-nesting White-winged Scoters, Lesser Yellowlegs, and Rusty Blackbirds, and many arctic-nesting shorebirds.
- See pages 9, 15, and 16 for more information on wetland birds in grasslands, boreal forests, and arctic habitats.

Although many wetland birds show troubling declines, conservation programs have protected millions of acres and contributed to thriving populations of herons, egrets, hunted waterfowl, and other birds.

Major Threats

Agriculture

Excessive chemicals, nutrients, and sediments from unsustainable agriculture can disrupt the function of wetlands, dramatically reducing clean water and other environmental benefits, and eliminating critical areas needed by wetland birds.

Disturbance

Impacts of floods and drought on wetland birds are exacerbated by degradation from stream channelization, construction of levees, dikes, and dams, depositing of fill, and unsustainable forestry practices.

Energy and Climate Change

Rising corn prices and conversion of wetlands and adjacent grasslands for biofuel production threatens the nesting habitat of several duck species and other birds in the Prairie Pothole region.

Global climate change will degrade wetlands, affecting birds and other wildlife. Warming temperatures and more storms, droughts, and floods will cause unpredictable changes in hydrology, plant communities, and prey abundance.

Solutions

- Widespread public education efforts and government regulations helped reverse the loss of wetlands starting in the 1970s. Continuing education about the value of wetlands and management techniques are vital for successful landowner incentive programs.
- Creative policies based on incentives and regulation, such as the Wetlands Reserve Program and enforcement of regulations, have enabled private landowners to maintain agriculture and timber production while managing wetlands.
- Increasingly, hunting leases, bird watching, and ecotourism are providing landowners with economic opportunities that are enhanced by management of quality wetlands.
- Land purchases can be the most secure form of wetlands conservation. With more than 96 millions acres on 548 refuges, the National Wildlife Refuge System is our nation's only public land base dedicated solely to the conservation and protection of wildlife, with a high priority for migratory birds. This network can be increased in key areas.
- Small wetlands need special attention because of their vulnerability to conversion during droughts and their noteworthy value to wetlands birds.

Beyond Our Borders

The U.S. shares many wetland breeding bird populations with Canada. In addition, many waterbirds from arctic, boreal, and grassland regions of the United States migrate to Latin American and Caribbean countries for the winter. Continental programs such as the North American Waterfowl Management Plan provide a solid foundation to expand vital international cooperation.

Reasons for Hope

Wilber Sutter

Bald Eagle

Our national bird, the Bald Eagle, recovered from near extinction in the lower 48 states after protection from shooting, restoration of wetlands, and banning of DDT and other harmful pesticides. Most Bald Eagle populations were removed from listing under the Federal Endangered Species Act in 2007, after three decades of conservation work to restore the species.

Wetlands management and restoration also have contributed to thriving populations of many wetland generalists, including American White Pelican, Double-crested and Neotropic cormorants, herons, egrets, Osprey, Sandhill Crane, Black-necked Stilt, gulls, and kingfishers.

A majority of colonial-nesting wading birds, such as egrets, herons, and White Ibis, continue to recover from populations devastated by the plume trade and market hunting in the early 20th century. Once nearly confined to rookeries in south Florida, many of these species have expanded west into Louisiana and Texas, and north along the Atlantic Coast.

Osprey by James Livaudais

Spotlight on Waterfowl

Conservation Partnerships Produce Results!

The rich tradition of waterfowl hunting in North America has ensured a sustainable population of waterfowl across the continent. Federal Migratory Bird Hunting and Conservation Stamps ("Duck Stamps"), purchased primarily by hunters, have provided more than $700 million for wetlands conservation. The North American Wetlands Conservation Act (NAWCA), enacted in 1989, set the stage for creative partnership funding to protect vital wetlands. In an unparalleled conservation partnership among Canada, the United States, and Mexico, NAWCA partners have raised more than $3 billion dollars and have conserved nearly 25 million acres of wetlands and associated upland habitats.

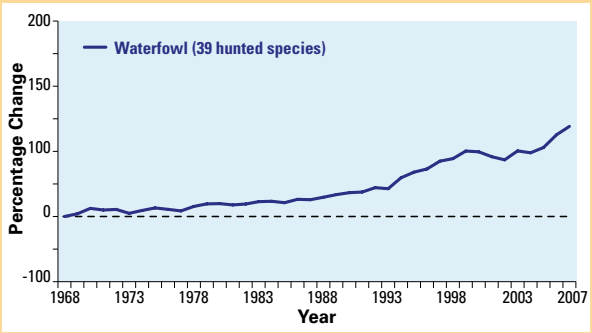
Waterfowl habitat conservation in North America serves as an example for other conservation challenges and offers hope that through synergy, planning, collaboration, and persistence, we can conserve and restore wetland habitats for the benefit of both wildlife and future generations.

Long-tailed Ducks by Gerrit Vyn

The State of Our Nation's Waterfowl

Among 44 species of ducks, geese, and swans, 2 are listed as federally threatened and 2 are of conservation concern (Emperor Goose and Trumpeter Swan). The waterfowl indicator, based on 39 hunted species, has increased steadily over the past 40 years, reflecting the success of management efforts. Many ducks, such as Mallard, Gadwall, Wood Duck, and Redhead, show stable or increasing populations, and most arctic-nesting geese, as well as Trumpeter Swans, have increased dramatically. Reintroduced populations of resident Canada Geese in the lower 48 states have been so successful that the geese have become a problem in many urban areas. However, a few duck populations, notably Lesser Scaup, Northern Pintail, and several sea ducks, continue to show troubling declines.

Waterfowl Indicator



Successful waterfowl conservation in North America is a model for widespread habitat protection that has reversed declines of many bird species.

Birds in Trouble

Federally listed as threatened: Spectacled Eider, Steller's Eider.

Significant declines of Northern Pintail and Lesser Scaup represent continued challenges for waterfowl management. Pintail numbers dropped to 2.6 million in 2008, 36% below the long-term average.

Although not as well monitored as other species, several "sea ducks" such as King Eider, White-winged Scoter, and Long-tailed Duck appear to be declining—perhaps reflecting increasing threats in their coastal wintering habitats.

Reasons for Hope

In 2008, the U.S. Fish and Wildlife Service estimated that there were 37.3 million breeding ducks, an increase of 11% above historical averages through 2007. Redheads reached a record high and estimates for the Green-winged Teal were the second highest on record. Changes in precipitation, land use, and management practices encouraged by the North American Waterfowl Management Plan have contributed to recent waterfowl recoveries.

Ross's Goose was estimated at only 2,000 to 3,000 individuals in 1931, prior to stringent hunting regulation. After regulation, the population recovered to 188,000 breeding birds in 1988, and growth continues. Most other arctic-nesting geese have increased dramatically as well.

Wood Ducks have responded well to nest-box programs throughout their range; populations increased by more than 200% in the past 40 years.

Spotlight on Marsh Birds

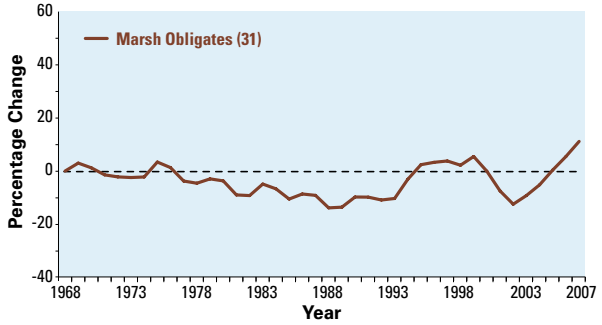
Secretive Marsh Birds Require Closer Monitoring

Thirty-three wetland bird species, including ducks, grebes, bitterns, and rails, depend on emergent vegetation in freshwater marshes for breeding. Many widespread marsh-nesting birds have shown stable or increasing populations over the past 40 years, but marsh specialists in the Midwest and Southeast have suffered declines.

The State of Marshland Birds

Of the 33 obligate marsh species, 21% are species of conservation concern, including the federally endangered Snail Kite and freshwater races of Clapper Rail. Other birds of high concern include Yellow Rail, Black Rail, and King Rail. For 31 species with adequate data, the marsh bird indicator shows a steady decline until about 1990, followed by wide fluctuations over the last two decades, perhaps reflecting precipitation patterns. Because many marsh birds are notoriously difficult to detect, the indicator may not accurately reflect the status of these populations.

Marsh Birds Indicator



Birds in Trouble

Federally listed as endangered: Snail Kite.

Marsh-nesting birds of Midwest prairies, such as Horned, Eared, and Clark's Grebe, Cinnamon Teal, Franklin's Gull, Clapper Rail, and Black Tern have shown population declines that are probably linked to loss and degradation of wetlands.

Several southeastern marsh specialists, notably King Rail and Purple Gallinule, also have experienced steep declines. Migratory populations of King Rail are listed as endangered or threatened by most states within its northern range.

Reasons for Hope

Widespread marsh species, such as Pied-billed Grebe, Least Bittern, Virginia Rail, and Common Moorhen can take advantage of small or ephemeral wetlands and have maintained stable range-wide populations over the past 40 years.

Everglades National Park protects the largest freshwater wetland in the United States; recent efforts to restore the greater Everglades ecosystem represent one of the largest conservation initiatives in U.S. history. Although populations of many wading birds remain well below historic estimates in the Everglades, several species, such as White Ibis, have benefited from the conservation effort there. The endangered Florida population of Snail Kite (the "Everglades Kite") has responded well to conservation efforts, reaching a population of 685 individuals in 2008.

Marshes respond quickly to management and restoration efforts, and small but productive marshes can support very large numbers of birds. Wetland restoration projects, such as Wakodahatchee in Florida and Sweetwater Wetlands in Arizona, are a mecca for waterbirds, as well as for bird watchers and wildlife photographers.

Common Moorhen by Clark Rushing

Marshes respond quickly to management and restoration efforts, and even small marshes can support large numbers of birds.

COASTS

Where Land Meets Sea, Coastal Protection Offers Hope for Birds

Common Murres by Gerrit Vyn

Consider This:

- Although coastal areas occupy less than 10% of our nation's land area, they support a large proportion of our living resources, including more than 170 bird species.
- Generalist birds, such as gulls, have been extremely successful in developed areas, but specialized species, such as migrating shorebirds, have declined.
- Coastal habitats continue to suffer from unplanned and unsustainable housing development, pollution, and warming oceans caused by climate change.
- The USFWS National Wildlife Refuge System manages extensive public lands in coastal zones. At least 161 coastal refuges may be at risk because of ongoing and predicted sea level rises.

Gerrit Vyn

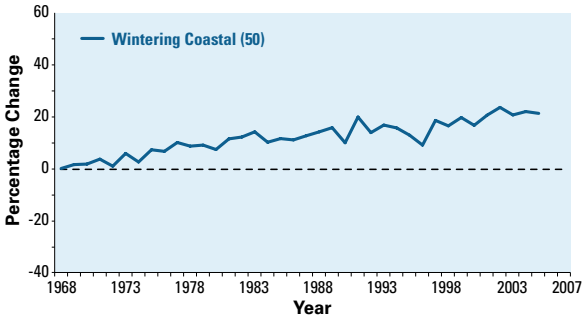
Coastal ecosystems include coastlines, nearshore islands, nearshore waters, estuaries, and tidally-influenced sections of rivers and creeks—productive habitats for abundant wildlife.

The State of Coastal Birds

Of 173 bird species that use coastal habitats at any time of year, 53 are species of conservation concern and 14 are federally listed as endangered or threatened. Fourteen of twenty-seven shorebird species that primarily use coastal habitats have declined.

Based on 50 species that winter exclusively in coastal habitats, the indicator shows a steady increase over the past 40 years, to roughly 20% above the 1968 baseline. Large increases in Common Eider, Northern Gannet, Laughing, Heermann's, and Western gulls, contribute to this overall trend. Sea ducks, such as King Eider and White-winged Scoter, as well as wintering shorebirds such as Wandering Tattler and Purple and Rock sandpipers, have shown steep declines.

Wintering Coastal Bird Indicator



Birds in Trouble

Bill Dalton

Least Tern

Federally listed as endangered: Brown Pelican, Wood Stork, (California) Clapper Rail, (Light-footed) Clapper Rail, Whooping Crane, (California) Least Tern, Roseate Tern, (Cape Sable) Seaside Sparrow. Threatened: Spectacled Eider, Steller's Eider, Piping Plover, Snowy Plover, Marbled Murrelet.

- Plovers, terns, and other beach-nesting birds are vulnerable to people and pets who inadvertently destroy or disturb nests. Wilson's Plovers have declined by 78% in 40 years. With a U.S. population of about 6,000, they are vulnerable to development and catastrophic hurricanes.
- Small populations of coastal marsh birds, such as rails and sparrows, are vulnerable to habitat loss and degradation from pollution and changing water levels that affect feeding areas and plant cover. Seaside and Saltmarsh Sharp-tailed sparrows are found only in coastal saltmarshes of eastern North America.
- Common Murres are still one of the most numerous seabirds in the Northern Hemisphere, but local populations can be severely reduced by climate change, disturbance, fishing, introduced nest predators, and oil spills. They have declined by 76% over the past 40 years.
- East Coast populations of Red Knots have declined by an alarming 82%. Semipalmated Sandpiper, Sanderling, and Dunlin have also shown dramatic declines.

Major Threats

Development

Nearly half of the U.S. population lives and works in coastal areas, with resident populations expected to increase by 25 million people by 2015. More than 180 million people visit the shore for recreation every year. These recreational uses often conflict with the needs of birds and other wildlife.

Conversion of marsh to open water from dredging, water control, boat traffic, and a changing climate have caused 93% of the coastal habitat loss that occurred from 1998 to 2004.

Resource Use

Red Knots and other shorebirds depend on horseshoe crab eggs for food. Overharvesting of horseshoe crabs during the past decade has reduced the density of crab eggs along the eastern seashore by up to 99%, which is believed to be a principal cause of steep declines of many shorebird species.

Diving birds such as loons, grebes, gannets, ducks, and shearwaters die from entanglement in fishing gill nets. Overfishing of forage fish (e.g., menhaden along the Atlantic Coast) and bycatch of fish (e.g., in small-mesh shrimp trawls) may deplete food needed by fish-eating birds.

Pollution and Climate Change

From 1998 to 2002, sediments in about half of estuaries in the U.S. had one or more contaminants exceeding benchmarks for "possible or probable adverse effects" on aquatic life. Excess nutrients from agricultural runoff deplete oxygen in coastal waters, forcing fish, shrimp, crabs, and the birds that feed on them to move from the area or die.

Oil spills, as well as chronic pollution from bilge pumping, outboard engines, and mishandling of petroleum products, kill untold numbers of coastal birds and can be linked to declining or depressed local populations of birds such as Common Murres and Marbled Murrelets.

Global climate change causes sea level rise, increased storm surge events, changes in marsh distribution, and changes in the food resources for some birds. In the Southeast, rising sea levels in the next century are expected to flood 30% of habitat in National Wildlife Refuges.

Additionally, birds nesting on beaches and nearshore islands suffer from some of the same threats as island birds, including predation and habitat damage from invasive species (see page 26).

Solutions

- Federal or state incentives can encourage coastal management benefiting people and wildlife. Neighboring communities can cooperate to restrict sprawling development and create greenways and natural areas.
- Incentives can be developed to create seaside preserves such as the Cape Cod National Seashore, with private or public ownership and local, state, or federal management.
- Nest sites can be protected from unintentional disturbance by fencing and other measures.
- Sustainable fishing will prevent overharvest of important food sources for birds, including horseshoe crabs.

Beyond Our Borders

Many of our nation's coastal birds spend part of the year in Canada, Mexico, and Central and South America. The international Western Hemisphere Shorebird Reserve Network is vital to the conservation of these long-distance travelers.

Half of all coastally migrating shorebirds have declined, indicating stress in coastal habitats besieged by development, disturbance, and dwindling food supplies.

Reasons for Hope

Jane Ogilvie

Brown Pelican

Since 1990, under the Federal Coastal Grants Program, about $183 million in grants have been awarded to acquire, protect or restore more than 250,000 acres of coastal wetlands.

The U.S. Department of Interior Ocean and Coastal Activities Implementation Plan provides better integration of coastal habitat management programs across agencies with ocean, coastal, and Great Lakes stewardship.

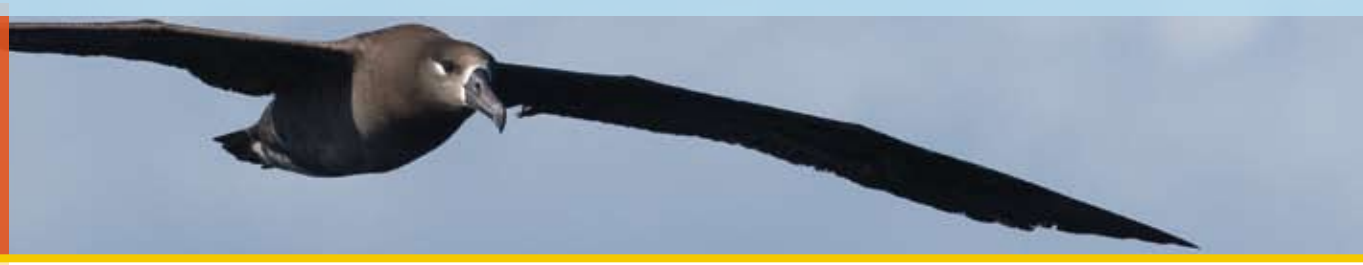
Fish-eating birds, such as Brown Pelican and Northern Gannet, rebounded after the pesticide DDT was banned in the U.S.

Whooping Cranes wintering in and around the Aransas National Wildlife Refuge in Texas have increased from 15 birds in 1941 to 266 in 2008, the result of successful endangered species conservation and management.

Saltmarsh Sharp-tailed Sparrow by Kenneth V. Rosenberg

OCEANS

Far at Sea: Birds Face Hazards from Fishing, Pollution, and Altered Food Supplies



Black-footed Albatross by Brian L. Sullivan

Consider This:

- At least 81 bird species inhabit our nation's marine waters, spending their lives at sea and returning to islands and coasts to nest.
- At least 39% of bird species in U.S. marine waters are believed to be declining, but data are lacking for many species. Improved monitoring is imperative for conservation.
- Ocean birds travel through waters of many nations and are increasingly threatened by fishing bycatch, pollution, problems on breeding grounds, and food supplies altered by rising ocean temperatures.
- The health of our oceans and wildlife will improve with policies that address sustainable fishing, changes in food supply, and pollution.

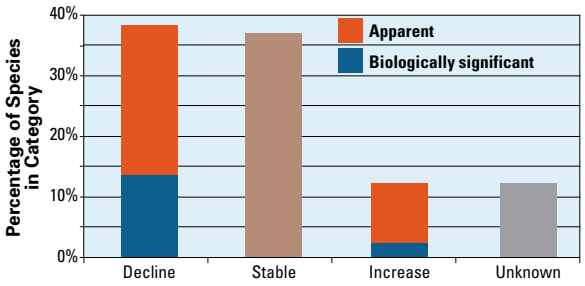
Brian L. Sullivan

Oceans may appear homogeneous but are composed of distinct habitats created by massive circulating currents. Human activity has affected the health of our oceans even far from land.

The State of Ocean Birds

Of 81 ocean bird species, almost half are of conservation concern, including 4 that are federally listed as endangered or threatened. Based on available data, 39% of ocean bird species are declining, 37% stable, and 12% increasing. Too little data exist to determine the population trends for 12% of ocean birds. There were insufficient data to generate an indicator similar to those presented for other habitats in this report, so trend categories were based on a variety of data sets and expert opinion.

Trends for Ocean Bird Species



Birds in Trouble

Federally listed as endangered: Short-tailed Albatross, Hawaiian Petrel. Threatened: (Newell's) Townsend's Shearwater, Marbled Murrelet.

Brian L. Sullivan

Black-capped Petrel

- Mortality from incidental capture in commercial fisheries (bycatch) is the most significant source of mortality for Black-footed and Laysan albatrosses, both species of high conservation concern.
- The Black-capped Petrel nests locally in the Caribbean and forages off the eastern U.S. seaboard, but little is known about the population size or threats to this rare species.
- The Ashy Storm-Petrel faces threats at its nesting colonies in southern California and Baja California. In marine foraging areas, it is vulnerable to contaminants, petroleum products, and plastics encountered while foraging.

Nearly half of ocean birds in the U.S. are of conservation concern, indicating deteriorating ocean conditions. Management policies and sustainable fishing regulations are essential to ensure the health of our oceans.

Major Threats

Resource Use

Overfishing by humans reduces and alters the food supply for many seabirds.

Longline fisheries worldwide unintentionally injure and drown as many as 60 bird species, especially surface-feeding seabirds such as albatrosses.

Pollution

Pesticides, herbicides, heavy metals, and oil harm ocean birds. Major oil spills kill thousands of birds, but small spills and chronic releases from boats and ports also cause significant harm.

Many seabirds consume floating plastic and may feed it to their chicks. Ninety percent of Laysan Albatrosses surveyed on the Hawaiian Islands had plastic debris in their stomachs.

Climate Change

Sea-surface temperatures have risen up to 4 degrees Fahrenheit in the North Sea and are expected to continue increasing across the world's oceans, affecting important food sources for ocean birds.

Breeding failures of some seabirds in northern latitudes have been attributed in part to increased pests and diseases that survive in warmer winters.

Kittlitz's Murrelet population declines probably result from cyclical changes in the oceanic environment and glacial melting, affecting their ability to find food.

In addition to the threats noted above, ocean birds face challenges on their nesting grounds including development, disturbance, invasive species, and sea level rise. (See pages 22 and 26.)

Solutions

- Fisheries laws provide the platform to ensure a sustainable ocean environment and can include provisions to reduce bycatch, orient marine fishery policy toward ecosystem management, and separate conservation and allocation decisions.
- International efforts, such as the Agreement on the Conservation of Albatrosses and Petrels, can set a standard for cooperative management of seabirds.
- Coordinated, regionwide programs are needed to collect, assess, and distribute data to better assess the status of seabird populations.
- Increased monitoring of ocean birds and their food base are essential to measure change in ocean health and help develop more effective conservation actions.

Reasons for Hope

Brian L. Sullivan

Laysan Albatross

Regulations and voluntary measures to minimize bycatch have been established for U.S. fisheries in Alaska and Hawaii, resulting in significant decreases in ocean bird mortality, especially for Black-footed, Laysan, and Short-tailed albatross.

The recent protection of 335,561 square miles in four Marine National Monuments will greatly improve the health of our oceans, benefiting people as well as birds and other ocean life.

The Black-footed Albatross, a species of conservation concern, wanders the North Pacific for most of the year and returns to remote islands to breed.

Black-footed Albatross by Brian L. Sullivan

Spotlight on the Birds of the Hawaiian Islands

The Race to Save Hawaiian Birds

More bird species are vulnerable to extinction in Hawaii than anywhere else in the United States. Before the arrival of humans, the Hawaiian Islands supported 113 bird species unique in the world, including flightless geese, ibis, rails, and 59 species of Hawaiian honeycreepers.

Since humans arrived, 71 bird species have become extinct and 31 more are federally listed as threatened or endangered. Of these, 10 have not been seen in as long as 40 years and may be extinct. Humans have introduced many bird species from other parts of the world: 43% of 157 species are not native. Among landbirds, 69% are introduced species.

Birds in Trouble

JACKJEFFREYPHOTO.COM

Hawaiian Stilt

Federally listed as endangered: Short-tailed Albatross, Hawaiian Petrel, Nēnē, Hawaiian Duck (Koloa), Laysan Duck, Hawaiian Hawk (`Io), Hawaiian Moorhen (`Alae `Ula), Hawaiian Coot (`Alae Ke`oke`o), Hawaiian Stilt (Ae`o), Hawaiian Crow (`Alalā), O`ahu Elepaio, Nihoa Millerbird, Kāma`o, Oloma`o, Puaiohi, Kaua`i `Ō`ō, Laysan Finch, Nihoa Finch, `Ō`ū, Palila, Maui Parrotbill, Kaua`i `Akialoa, Nukupu`u, `Akiapōlā`au, Hawai`i Creeper, O`ahu `Alauahio, Kākāwahie, Hawai`i `Ākepa, Maui `Ākepa, `Ākohekohe, Po`ouli. Threatened: Newell's Shearwater.

Nearly all native Hawaiian forest birds are declining, their populations devastated by nonnative disease-carrying mosquitoes, predators, feral cattle and pigs, and loss of habitat. The Palila, found only on the Big Island, has declined from 6,600 birds in 2003 to 2,200 in 2008. The `Akikiki and `Akeke`e of Kauai have also declined dramatically since 1970 and are proposed for listing under the Endangered Species Act.

Exotic plants and diseases can wreak havoc on native habitats. Golden crownbeard is overwhelming the breeding habitat of Black-footed and Laysan albatrosses in the Northwestern Hawaiian Islands. `Ohia rust threatens one of the most important food plants of endangered Hawaiian honeycreepers.

Seabirds that nest on islands, including the endangered Hawaiian Petrel, face severe threats from feral cats and other introduced species, and habitat damage by feral ungulates.

Since 1979, approximately 30,000 Newell's Shearwaters, a threatened species, have collided with utility lines and structures or have been grounded after becoming confused by bright lights. Downed shearwaters often die of exhaustion, are hit by cars, or are killed by predators.

Reasons for Hope

JACKJEFFREYPHOTO.COM

`Akiapōla`au

Endangered Laysan Ducks, numbering 600 on Laysan Island, have been translocated to Midway Atoll, where the population now exceeds 200 after just a few years.

Population growth of forest birds such as Hawai`i Creeper and `Akiapōlā`au has been dramatic in the Hakalau Forest National Wildlife Refuge, where the U.S. Fish and Wildlife Service is fencing to exclude feral mammals, aggressively managing invasive plants, and replanting endangered plants. Application of these successful methods is urgently needed elsewhere.

Rats were eradicated from Midway Atoll in 1997, resulting in an increase of Bonin Petrels from an estimated 5,000 pairs in 1979 to more than 100,000 pairs in 2008, and recolonization by Tristram's Storm-Petrels and Bulwer's Petrels.

ERIC VANDERWERF

The 7,500-acre Hanawi Natural Area Reserve supports some of Hawaii's most important concentrations of native birds, including `Ākohekohe and Maui Parrotbill. Hawaii's islands were once forested with native trees such as koa, `ohia, mānele, and sandalwood. Since human colonization, approximately half of these forests have been lost.

Island Birds: Vulnerable and Often Overlooked

Most island birds evolved on remote archipelagoes, so they are extremely vulnerable to invasive plants, wildlife introduced by humans, the onslaught of new predators, habitat degradation, and disease. In the last five centuries, 87% percent of bird extinctions worldwide have taken place on islands.

Most of Hawaii's conservation crises result from the introduction of nonnative plants and animals, but climate change is a growing concern. The leading threats to Hawaiian birds include habitat degradation from trampling and grazing by introduced ungulates; nonnative predators (e.g., feral cats, mongooses, rats); nonnative plants and diseases; and bird diseases spread by introduced mosquitoes.

Most native birds are now largely restricted to forests above the mosquito line at about 5,000 feet, a haven that is expected to shrink as increasing global temperatures enable mosquitoes to survive at higher altitudes. In addition, rising sea level is projected to inundate important breeding sites for many species, especially for seabirds on the low-lying Northwestern Hawaiian Islands.

More Online

Visit **www.stateofthebirds.org** for information on birds of Puerto Rico, the U.S. Virgin Islands, Guam, Northern Marianas, American Samoa, remote Pacific Islands, and Navassa Island.

Saving Hawaii's Birds

- Restoration and protection of mid-elevation forest is essential for the recovery of endangered species such as `Akiapōlā`au, Hawai`i and Maui `Ākepas, and Hawai`i Creeper.
- A highest priority action with the greatest potential benefits for native birds is the fencing of habitats to exclude feral ungulates. This improves habitat quality and reduces numbers of disease-carrying mosquitoes (trampled areas and downed tree ferns collect water where mosquitoes breed).
- Protecting all groups of native Hawaiian birds by federal law should be explored and implemented, such as for Hawaiian honeycreepers, which are not protected under the Migratory Bird Treaty Act.
- Targeted trapping and use of rodenticides to reduce numbers of nonnative predators such as rats, cats, and mongoose will improve nesting success and survivorship of birds.
- Focused efforts are urgently needed to reduce the spread of invasive, exotic plants in areas important to threatened birds. Golden crownbeard needs to be eradicated from the Northwestern Hawaiian Islands, especially on Midway Atoll where the plant threatens to overwhelm nesting areas for the world's largest colonies of Laysan and Black-footed albatrosses.
- Some bird species require captive breeding to ensure the continued existence and recovery of wild populations. Release of captive-bred Palila and translocation of wild birds has resulted in the establishment of a small breeding population in a second location on the Big Island.
- Nesting albatrosses on Midway Atoll can encounter lead-based paint peeling from World War II era buildings. On Midway Atoll, as many as 10,000 Laysan Albatross chicks die from lead poisoning each year. Cost-effective measures of reducing this threat should be further explored.

PALILA BY JACKJEFFREYPHOTO.COMY

JACKJEFFREYPHOTO.COM

The endangered `Ākohekohe lives in the native forests of Maui. In its very restricted range, `Ākohekohe are vulnerable to habitat degradation by introduced plants and by the grazing of introduced cattle, pigs, and goats. Fencing to control feral mammals will help to stabilize or reverse population declines.

Hawaii's native birds and habitats are under siege from invasive species and disease. Immediate action is needed to prevent birds from going extinct within our lifetimes.

Snail Kite by Marijan Lammertink

Endangered Species

The Long Road to Recovery

In 1973, the United States Congress passed the Endangered Species Act to protect and recover imperiled species and the ecosystems upon which they depend. The Act has succeeded more often than it has failed, and some successes have been spectacular, such as the increase of the Aleutian Canada Goose from fewer than 1,000 birds to more than 60,000, and the remarkable comebacks of the Bald Eagle and Peregrine Falcon.*

However, the possibility of extinction is still a cold reality for many birds: 13 species may no longer exist in the wild (10 species from Hawaii, plus Bachman's Warbler, Ivory-billed Woodpecker, and Eskimo Curlew). Several species face unprecedented conflict with humans for land at peak economic value (for example, in peninsular Florida, mid-continental prairies, coastal California, Texas hill country, and the Pacific Northwest).

Of the 74 bird species, subspecies, and populations listed in the United States, 30 have increased since listing, 16 have remained stable, 15 have decreased, and 13 are possibly extinct.

Taxon	Status	Year of Listing	Habitat(s)	Estimated Population at Listing/Historic Numbers	Trend Since Listing	Current Population
Hawaiian Goose (Nēnē)	E	1973	Islands	Low of 30	Gradual increase	1,700
Hawaiian Duck	E	1973	Islands	<500 in 1949	Gradual increase	2,400
Laysan Duck	E	1973	Islands	Low of 7; ~500 at listing	Significant recent increase	650
Steller's Eider	T	1997	Arctic, Coasts	Unknown	Likely remained stable	(staging) 75,000
Spectacled Eider	T	1993	Arctic, Coasts	3,400; hard to survey	Likely increase	7,000
Greater Prairie-Chicken (Attwater's)	E	1973	Grasslands	1 million in early 20th Century	Decreasing	72
Northern Bobwhite (Masked)	E	1973	Grasslands	Extirpated late 1800s	Never fully established	10
Short-tailed Albatross	E	1973	Ocean	Believed extinct before 1950	Significant Increase	2,400
Hawaiian Petrel	E	1973	Ocean, Islands	Unknown	Decreasing	15,000
Newell's Shearwater	T	1975	Ocean, Islands	Unknown	Decreasing	At least 36,000
Brown Pelican (Gulf Coast, California)	E	1973	Coasts	Less than 1,000 in CA, almost extirpated along Gulf Coast	Steady increase	46,000
Wood Stork	E	1984	Wetlands, Coasts	~5,000 at listing	Steady increase	22,000
California Condor	E	1973	Aridlands	22 in 1987	Gradual increase	330
Snail Kite (Everglades)	E	1973	Marsh	65	Increase with fluctuations	685
Bald Eagle (Sonoran Desert)	T	1973	Wetlands, Coasts	21 in 1975	Steady increase	100
Hawaiian Hawk (`Io)	E	1973	Islands	~2,000	Stable	2,000
Crested Caracara (Florida)	T	1987	Subtropical Forest	100	Initial increase; since stable	1,000
Aplomado Falcon (Northern)	E	1986	Grasslands, Aridlands	Extirpated in the 1950s	Slow increase	100
Clapper Rail (California)	E	1973	Coasts	Unknown	Likely remained stable	1,350
Clapper Rail (Yuma)	E	1973	Marsh	750	Likely remained stable	1,000
Clapper Rail (Light-footed)	E	1973	Coasts	406 in 1980	Apparent steady increase	800
Common Moorhen (Hawaiian)	E	1973	Islands	57 in the 1960s	Gradual increase	<1,000
Hawaiian Coot	E	1973	Islands	~1,000	Gradual increase	3,000
Sandhill Crane (Mississippi)	E	1973	Wetlands	40	Slight increase	100
Whooping Crane	E	1973	Wetlands, Coasts	16 in 1941	Gradual increase	540
Snowy Plover (Western, Pacific Coast)	T	1993	Coasts	Unknown	Gradual increase	2,300
Piping Plover (Atlantic, Great Plains)	T	1985	Coasts, Wetlands	Unknown	Gradual increase	7,000
Piping Plover (Great Lakes)	E	1985	Coasts	Unknown	Increase with fluctuations	110
Black-necked Stilt (Hawaiian)	E	1973	Islands	~1000	Gradual increase	1,500
Eskimo Curlew	E	1973	Arctic	Historically abundant	Likely extinct	Unknown
Least Tern (Interior)	E	1985	Wetlands	5,000 but surveys incomplete	Probably stable	18,000
Least Tern (California)	E	1973	Coasts	1,200	Steady increase	13,000
Roseate Tern (Florida)	T	1987	Coasts	Unknown	Decreasing	350
Roseate Tern (Northeast)	E	1987	Coasts	~6,000	Fluctuating	6,000
Marbled Murrelet	T	1992	Coasts, Forests	Unknown	Decreasing	25,000
Spotted Owl (Northern)	T	1990	Western Forest	Unknown	Decreasing	8,500
Spotted Owl (Mexican)	T	1993	Western Forest	Unknown	Unknown	(in U.S.) 1,500

Taxon	Status	Year of Listing	Habitat(s)	Estimated Population at Listing/Historic Numbers	Trend Since Listing	Current Population
Red-cockaded Woodpecker	E	1973	Eastern Forest	10,000	Steady increase	20,000
Ivory-billed Woodpecker	E	1973	Eastern Forest	Unknown	Unknown	Near or at zero
Willow Flycatcher (Southwestern)	E	1995	Eastern Forest	700; surveys incomplete	Apparent increase	2,000
Kaua`i `Ō`ō	E	1973	Islands	~10	Likely extinct late 1980s	0
Loggerhead Shrike (San Clemente)	E	1977	Aridlands	50	Gradual increase	230
Bell's Vireo (Least)	E	1986	Aridlands	600	Steady increase	6,000
Black-capped Vireo	E	1987	Aridlands	Unknown	Some increases noted	12,000
Florida Scrub-Jay	T	1987	Eastern Forest	11,000	Decreasing	6,500
Hawaiian Crow (`Alalā)	E	1973	Islands	96, including captive flock	Extinct in the wild	(all captive) 60
Elepaio (Oahu)	E	2000	Islands	Unknown	Decreasing	2,000
California Gnatcatcher (Coastal)	T	1993	Aridlands	Unknown	Decreasing; habitat loss	(in U. S.) 5,000
Millerbird (Nihoa)	E	1973	Islands	~400	Fluctuating	(in 1996) 155
Kāma`o	E	1973	Islands	350	Likely extinct early 1990s	0
Oloma`o	E	1973	Islands	Ten or fewer	Likely extinct 1980s	0
Puaiohi	E	1973	Islands	Unknown	Gradual small increase	350
Bachman's Warbler	E	1973	Eastern Forest	Probably extinct before listing	Likely extinct	Unknown
Golden-cheeked Warbler	E	1990	Aridlands	Unknown	Likely decreasing	21,000
Kirtland's Warbler	E	1973	Eastern Forest	167	Steady increase	3,000
California Towhee (Inyo)	T	1987	Aridlands	100	Steady increase	750
Sage Sparrow (San Clemente)	T	1977	Aridlands	Unknown	Likely stable	300
Grasshopper Sparrow (Florida)	E	1986	Grasslands	600	Stable or slight decrease	400
Seaside Sparrow (Cape Sable)	E	1973	Coasts	6,000+	Decreasing	3,200
Laysan Finch	E	1973	Islands	~11,000	Fluctuating	~11,000
Nihoa Finch	E	1973	Islands	~3,000	Unknown, likely fluctuating	2,800
`Ō`ū	E	1973	Islands	Unknown	Likely extinct c. late 1980s	0
Palila	E	1973	Islands	Unknown	Decreasing	2,200
Maui Parrotbill	E	1973	Islands	500	Stable	500
Greater `Akialoa (Kaua`i)	E	1973	Islands	Probably extinct before listing	Likely extinct c. 1960s	0
Nukupu`u	E	1973	Islands	Unknown	Likely extinct c. 1995	0
`Akiapōlā`au	E	1973	Islands	~1,200	Likely stable	1,200
Hawai`i Creeper	E	1975	Islands	~12,000	Decline	6,300
O`ahu `Alauahio	E	1973	Islands	Unknown	Likely extinct c. 1990	0
Kākāwahie	E	1973	Islands	Probably extinct before listing	Likely extinct	0
`Ākepa (Maui)	E	1973	Islands	10 in 1980	Likely extinct 1980s or 1990s	0
`Ākepa (Hawai`i)	E	1973	Islands	~14,000	Stable	14,000
`Ākohekohe	E	1973	Islands	~3,800	Stable	3,750
Po`ouli	E	1975	Islands	~20	Likely extinct in 2004	0

In the continental United States, populations of more species that were listed early-on have increased than those listed more recently, according to the American Bird Conservancy. This indicates that long-term conservation efforts can pay great dividends.

An Urgent Need for Protection

Some species languish on the candidate list owing to lack of resources for listing. The highest priority candidates must be quickly protected so that urgently needed conservation actions can be mounted. Funding for endangered Hawaiian birds must be increased: only 4.1% of all state and federal funding for federally listed bird species is spent on Hawaiian birds, which represent 44% of all listed species.

The most cost-effective solution of all is to stop bird species from declining before they require Endangered Species Act protection. Cooperative conservation measures involving government and tribal agencies, nongovernmental organizations, and private landowners are essential to keep common birds common and to recover failing bird populations while there is still time.

For more on endangered species, including birds listed in the U.S. island territories, visit **www.stateofthebirds.org**.

Key:

E—Endangered, T—Threatened

Population estimates include captive and wild populations where known. Estimates are approximate except for species with very small populations.

* Fully delisted: Aleutian race of the Canada Goose, and American and arctic races of the Peregrine Falcon. Partial delisting: Bald Eagle, Brown Pelican.

CHALLENGES

Successful bird conservation requires giving birds a long-term chance to survive and reproduce. Humans have created numerous threats to birds in addition to the natural challenges that birds constantly face from starvation, predation, and severe weather.

Based on decades of research, conservationists have identified the most important threats to birds, including the greatest threat of all—habitat loss. Addressing these conservation challenges can ensure a safe future for birds and improve the quality of life for people too. Here, we summarize the major challenges affecting bird populations.

ERIC EPSTEIN

Residential and Commercial Development

The accelerated pace of urban, suburban, and commercial development in the United States threatens the integrity of every major habitat, from continued draining of wetlands and destruction of coastal marshes, to loss and fragmentation of forests, aridlands, and grasslands because of suburban sprawl. Unlike timber production and livestock grazing, urbanization and sprawl cause permanent loss of natural habitats. Increased development in rural areas, such as second-home development, has equal or greater ecological consequences than growth of urban centers.

Steep declines in many bird populations are a direct result of unplanned and sprawling urbanization. Birds that are particularly hard hit include farmland species such as meadowlarks and Bobolink; eastern birds dependent on shrubby habitats, such as American Woodcock and Brown Thrasher; and birds of western deserts and chaparral, such as Bendire's and California thrashers. Fragmentation of forests by development can increase risk of predation for forest-interior birds, such as Wood Thrush, Kentucky Warbler, and Cerulean Warbler, and can contribute to nest failures from increasing numbers of cowbirds, which lay their eggs in these birds' nests. Coastal development causes loss of beach dunes and threatens fragile salt marshes, harming birds such as Black Rail and Seaside Sparrow, as well as migratory shorebirds and other water birds dependent on tidal mudflats and estuaries.

As many as one billion birds each year may die from collisions with man-made obstacles, including windows, transmission towers, power lines, and wind turbines. Tall, lighted buildings and other structures along coastlines kill millions of migrating birds each year. Conservationists are exploring and implementing innovative ways to reduce this grim toll, but much remains to be done.

Agriculture

The way that we use land to grow our food has significant impacts on birds. Because of conversion of grasslands to agriculture, grasslands are the most endangered ecosystem in North America. The Conservation Reserve Program and other initiatives pay farmers to keep areas with erodible soils and sensitive habitats out of production. Farmer participation in this successful program varies. In 2008, for example, farmer involvement was affected by high commodity prices for corn and other grain caused by the growing demand for food and biofuels. In the future, millions of program acres will expire or will not be renewed, putting vital grassland habitat in jeopardy.

Suburban sprawl and other causes of habitat loss are the biggest threats to birds.

Energy Production and Mining

Energy development has significant negative effects on birds in North America including habitat loss, reduction in habitat quality, direct mortality, and disruption. Construction, operation, and associated infrastructure of energy development such as oil and gas fields, wind farms, and geothermal fields reduce and fragment habitat. Oil and gas development in the West is affecting birds such as Greater Sage-Grouse by fragmenting large blocks of habitat. Energy field development alters natural environments in ways that favor invasive plants and animals. Gulls that prey on other birds are subsidized by garbage dumps at drilling facilities in Alaska. Surface water created as a result of coalbed methane extraction allows mosquitoes that transmit diseases such as West Nile virus to breed. Roads used for construction often become paths for invasive plants such as cheatgrass to spread.

Deaths of birds and nesting failures are associated with spills during transportation of petroleum products and oil field practices such as discharging oily waste into uncovered pits. Collisions with wind turbines, offshore oil rigs, and powerlines cause significant mortality. Construction and operations of energy fields can displace birds and disrupt nesting. Prairie-chickens and sage-grouse avoid nesting near tall structures. Studies show that they usually abandon breeding areas near drilling rigs or wind turbines.

Mining can cause extensive habitat disturbance, degradation, and loss. For example, coal mining that blasts mountaintops to reveal coal seams below has removed large areas of eastern forests and buried nearby streamside habitats under tons of debris. This contributes to the decline of birds that breed in interior forests, such as Cerulean Warblers.

Natural Resource Use

The intentional killing of birds has been a significant factor in the past, including egrets killed for plumes, shorebirds for food, and raptors for sport. Hunting is no longer a cause of bird population declines in the United States, thanks to strong regulations and harvest management. However, numerous other practices related to resource use are still a deadly factor for birds.

Peter Lee

Unsustainable logging in the boreal forest destroys habitat needed by wildlife.

Most U.S. forest ecosystems have been affected by logging, road construction, monocultural tree plantations, and fire suppression. These have caused fragmentation; a lack of mature trees, snags, and natural early successional forests; degradation of streamside habitats; and overgrowth of brush and small trees because of fire exclusion, all of which can have negative consequences for wildlife. For example, more than 85% of old-growth forest in the Pacific Northwest has been eliminated, leading to the listing of the Northern Spotted Owl and Marbled Murrelet as threatened under the Endangered Species Act.

The number and scope of severe threats to birds is daunting, but implementing solutions immediately and widely will pay off in benefits to society, the economy, and the health of our environment.

In arid regions of the West, excessive grazing has degraded grasslands and denuded streamside areas where most bird species forage and breed. Overfishing in oceans has led to the starvation and nesting failures of birds. Overharvesting of horseshoe crabs has been attributed to rapid declines of Red Knots, which must gorge on horseshoe crab eggs in Delaware Bay to finish their annual migration to the arctic. Many fishing practices such as long-lining, gill nets, and trawling can hook or entangle seabirds or disrupt their food supply.

Invasive and Problem Species

Invasive species are those that spread uncontrollably after being introduced to an area where they are not native. Invasive plants and animals are major threats to native bird species in numerous ways.

Nonnative predators have the greatest single impact by killing adult birds as well as eggs and young. Domestic and feral cats kill hundreds of millions of birds each year. Island nesting birds, particularly seabirds, are very vulnerable since they mostly nest on the ground or in burrows and are easily captured by rats, foxes, cats, dogs, and mongooses.

Invasive plants also impact birds by rendering the habitat unsuitable. Because of the aggressive shrub saltcedar, areas along southwestern waterways have become extremely poor habitat for Willow Flycatcher, Yellow-billed Cuckoo, and other species. Saltcedar has also crowded out beaches needed by nesting Snowy Plovers. Cheatgrass has modified millions of acres of sagebrush habitat, lowering its value for species of concern such as Greater Sage-Grouse, Sage Thrasher, and Sage Sparrow.

Introduced diseases are a major threat to some bird species. Avian malaria has contributed significantly to the decline and extinction of many Hawaiian birds, including the Kaua`i `Ō`ō. Birds on the mainland are also vulnerable to introduced diseases such as West Nile virus, which has been found in more than 200 bird species in the U.S. and which has caused significant mortality of American Crows and related species.

Many bird species have been introduced to the U.S. from other parts of the world and some have established self-sustaining populations. European Starlings and House Sparrows compete aggressively with native birds for nesting sites and frequently displace birds such as woodpeckers, swallows, and bluebirds.

Pollution

Pesticides, toxic chemicals, and heavy metals such as lead and mercury cause significant bird mortality and reduce breeding success. These effects are sometimes hard to detect, but can produce dramatic population declines over time. DDT caused the thinning and breakage of eggshells, nearly wiping out several bird species in the U.S., including Peregrine Falcons, Brown Pelicans, and Bald Eagles.

The U.S. applies approximately five billion pounds of pesticides annually. A pesticide poisoning database documents more than 2,500 incidents, including 113 pesticides implicated in the deaths of more than 400,000 birds. Carbofuran has been responsible for more than 20% of all incidents, and the deaths of more than 40,000 birds. Many of the pesticides highly toxic to birds have been eliminated from use in the U.S., but continue to be used legally in Latin America where migratory birds are exposed to them during the winter.

Lead, mercury, and selenium also harm birds. Ingested lead fragments and shot in game carcasses may have toxic effects on eagles, vultures, and other scavengers. Mercury deposition in forests and on surface waters from burning coal becomes concentrated in foods eaten by fish-eating birds and forest songbirds. High selenium concentrations in wetlands impair the hatching of eggs and reproduction of waterfowl and shorebirds. Industrial chemicals such as dioxins and PCBs, once linked to many poisonings, have been regulated and largely cleaned up, but new chemicals such as PBDE fire-retardants are emerging as contaminants that accumulate in plants and wildlife, with unknown effects on birds and humans.

Climate Change

Gerrit Vyn

Birds are at grave risk from habitat changes caused by climate change, including inundated nesting areas and altered food supplies.

The U.S. has warmed by an average of 1 degree Fahrenheit during the last century, primarily because of greenhouse gas emissions. Our nation is also 5–10% wetter on average now than historically, though most of this can be attributed to severe weather events, which can damage habitats without alleviating drought. Most estimates suggest that without action, the U.S. will warm by another 5–9 degrees over the next century and the sea level will rise by more than 1.5 feet.

Climate change already has influenced the abundance, distribution, and timing of migration and breeding for many bird species. A recent study by the National Audubon Society showed that more than half of the birds commonly found on the Christmas Bird Count are wintering farther north now than 40 years ago. American Robins are now arriving approximately 14 days earlier than they did in 1981 on their breeding grounds in the Colorado Rocky Mountains. Tree Swallows have advanced their breeding date by up to nine days earlier from 1959 to 1994. Red-winged Blackbirds, Eastern Bluebirds, and eastern populations of Song Sparrows now lay their eggs earlier because spring temperatures are warmer. A great concern is that the earlier arrival of migrating birds may be out of sync with food availability.

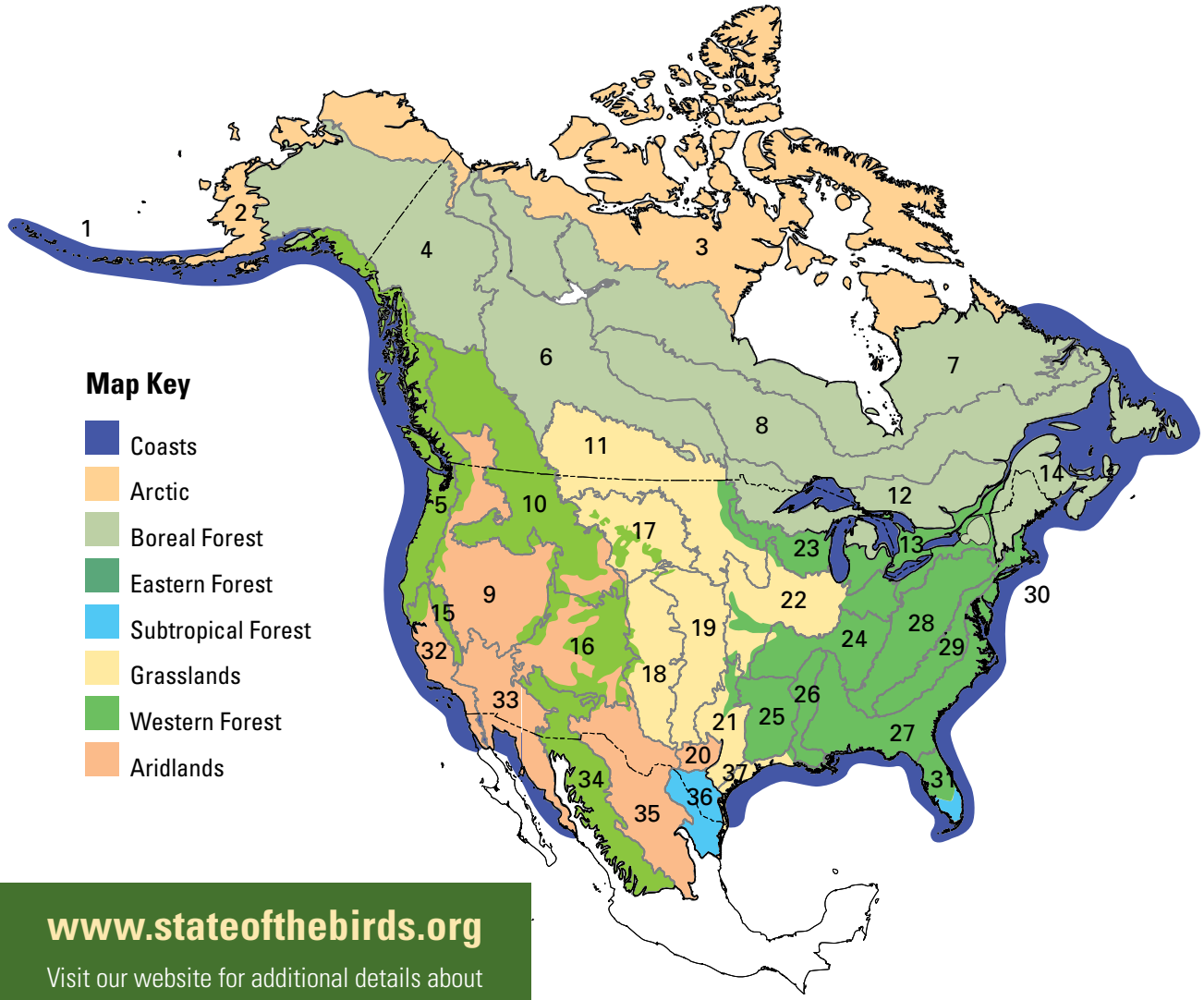
In addition to these effects on migration and breeding, birds are at grave risk from habitat changes caused by climate change, especially in arctic tundra, alpine meadows, sea ice and glaciers, coastal wetlands, marine atolls, and ocean ecosystems. Many specialized birds live in these habitats, including Ivory Gulls that scavenge polar bear kills on floating sea ice, rosy-finches that depend on high altitude meadows, rails and saltmarsh sparrows that depend on brackish coastal areas, and Kittlitz's Murrelets that appear to depend on glaciers. These species may face severe conservation challenges in the coming decades. Sea level rise will inundate islands, jeopardizing nesting birds. The potential spread of mosquito-borne avian malaria to highland refugia for Hawaiian honeycreepers is also a serious concern.

Climate change can affect the survival and reproduction of many bird species. Changes in prey distribution and abundance, reduced productivity, shrinking habitats, and competition and stresses from increasing populations will present a great challenge to birds on land and at sea.

OUR APPROACH

The State of the Birds: Focus on Habitats

To develop this first State of the Birds report for the United States, our team of experts drew upon a variety of sources to determine the conservation status and population trends of more than 800 bird species that occur regularly within the continental U.S., Hawaii, and U.S. oceans.



Numbers refer to bird conservation regions created by the North American Bird Conservation Initiative. See **www.stateofthebirds.org**.

www.stateofthebirds.org

Visit our website for additional details about the science behind bird population indicators as well as information about bird conservation and monitoring programs.

Healthy bird populations depend on maintenance of both the quality and quantity of habitats. These same habitats provide resources that are essential for human survival and quality of life. Trends in bird populations can give us initial insight into the health of these habitats, and thus provide an indication of environmental sustainability.

We began by assigning each bird species to one of seven primary habitats: oceans, coasts, wetlands, arctic, forests, grasslands, or aridlands. Hawaiian landbirds were treated separately. We defined habitats following the 2008 Heinz Foundation report, *The State of the Nation's Ecosystems*. A complete list of the birds in each habitat, as well as habitat trends from the Heinz report can be found at **www.stateofthebirds.org**.

Birds that are restricted to a single habitat for breeding were defined as habitat *obligates*, representing an important group of species that are most characteristic of a habitat and that should be most sensitive to environmental problems. Birds found in three or more habitats were considered *generalists*. We recognized birds that use urban and suburban landscapes as occupying a secondary habitat.

Bird Population Indicators: A Measure of Environmental Health

To assess the health of habitats, we created bird population indicators based on the best available monitoring data for groups of species in each habitat. The concept of wild bird indicators has been applied widely throughout the world in other State of the Birds reports and has been accepted as an important measure of environmental health. Each indicator represents the change in abundance for a group of bird species combined into a single indicator line. We chose 1968 as a base year

for these indicators, reflecting the 40-year span of reliable bird-monitoring data for many species, as well as a period of environmental consciousness and habitat protection in the U.S.

Species of Conservation Concern

Because reliable long-term trend data were not available to create bird population indicators for all U.S. habitats, we also used the proportion of species of conservation concern in each habitat as a separate indicator of health or threats to that habitat. Our last line of defense against extinction is the Federal Endangered Species Act of 1973, which lists 67 bird species as either endangered or threatened (see page 28).

We also recognize an additional 184 species of conservation concern, based on the U.S. Fish and Wildlife Service's 2008 Birds of Conservation Concern, and the 2007 WatchList, produced by the American Bird Conservancy and the National Audubon Society from information compiled by bird conservation partnerships. These species show elevated levels of risk based on small range or population size, high threats, or declining trends. Proactive conservation efforts aimed at keeping these species from becoming federally listed constitute the primary focus of Partners in Flight, the U.S. Shorebird Conservation Plan, Waterbird Conservation for the Americas, and the North American Bird Conservation Initiative.

The State of Our Bird Monitoring Data

In this first U.S. State of the Birds report, we relied on long-term trend data from three primary bird population surveys. The North American Breeding Bird Survey (BBS), administered by the U.S. Geological Survey and Canadian Wildlife Service, and conducted at more than 4,000 sites by volunteer observers, provided data for 365 breeding species since 1968. For 120 species that breed outside the area of reliable BBS coverage, but winter primarily within the U.S., we used trends from the National Audubon Society's Christmas Bird Count. Finally, trends for 13 waterfowl species were provided by the U.S. Fish and Wildlife Service and Canadian Wildlife Service from the Waterfowl Breeding Population and Habitat Survey, conducted by trained pilots and wildlife biologists across the northern U.S. and Canada.

Analysis for this State of the Birds report represents the first integration of long-term results across these three important surveys, using new statistical techniques developed by scientists at the USGS and National Audubon Society. Our analysis also highlights the lack of reliable long-term data for many poorly monitored bird groups, most notably arctic-nesting shorebirds, colonial seabirds, and oceanic species. New monitoring efforts for these species and habitats are essential for future State of the Birds reports.

A Special Thank You to Volunteers

Our understanding of the long-term health of birds depends largely on the thousands of bird watchers and biologists who volunteer each year for the Breeding Bird Survey, Christmas Bird Count, or many other monitoring programs. The dedication and skill of these citizen scientists reflects their love of birds and the natural world, as well as their concern for the health of habitats and our environment.

Without the continued involvement of this army of volunteer observers, this and any future State of the Birds reports would simply not be possible. For more on how to participate in bird-monitoring programs see **www.stateofthebirds.org**.

Diane Tessaglia-Hymes

Suggested Citation for this Report:

North American Bird Conservation Initiative, U.S. Committee, 2009. The State of the Birds, United States of America, 2009. U.S. Department of Interior: Washington, DC. 36 pages.

Contributors:

Project Leads: Bob Ford, Paul Schmidt

Science Team: Brad Andres, Laurel Barnhill, Bob Blohm, Brad Bortner, Greg Butcher, Jorge Coppen, Charles Francis, Debbie Hahn, Mark Koneff, David Mehlman, David Pashley, Kenneth V. Rosenberg, John R. Sauer, Jennifer Wheeler

Communications Team: John Bowman, Connie Bruce, Miyoko Chu, Ashley Dayer, Steve Holmer, Pat Leonard, Alicia King, Ellen Marcus, Gemma Radko, Nicholas Throckmorton, Blythe Thomas, Nancy Severance, Joshua Winchell

Lead Analyst: John R. Sauer

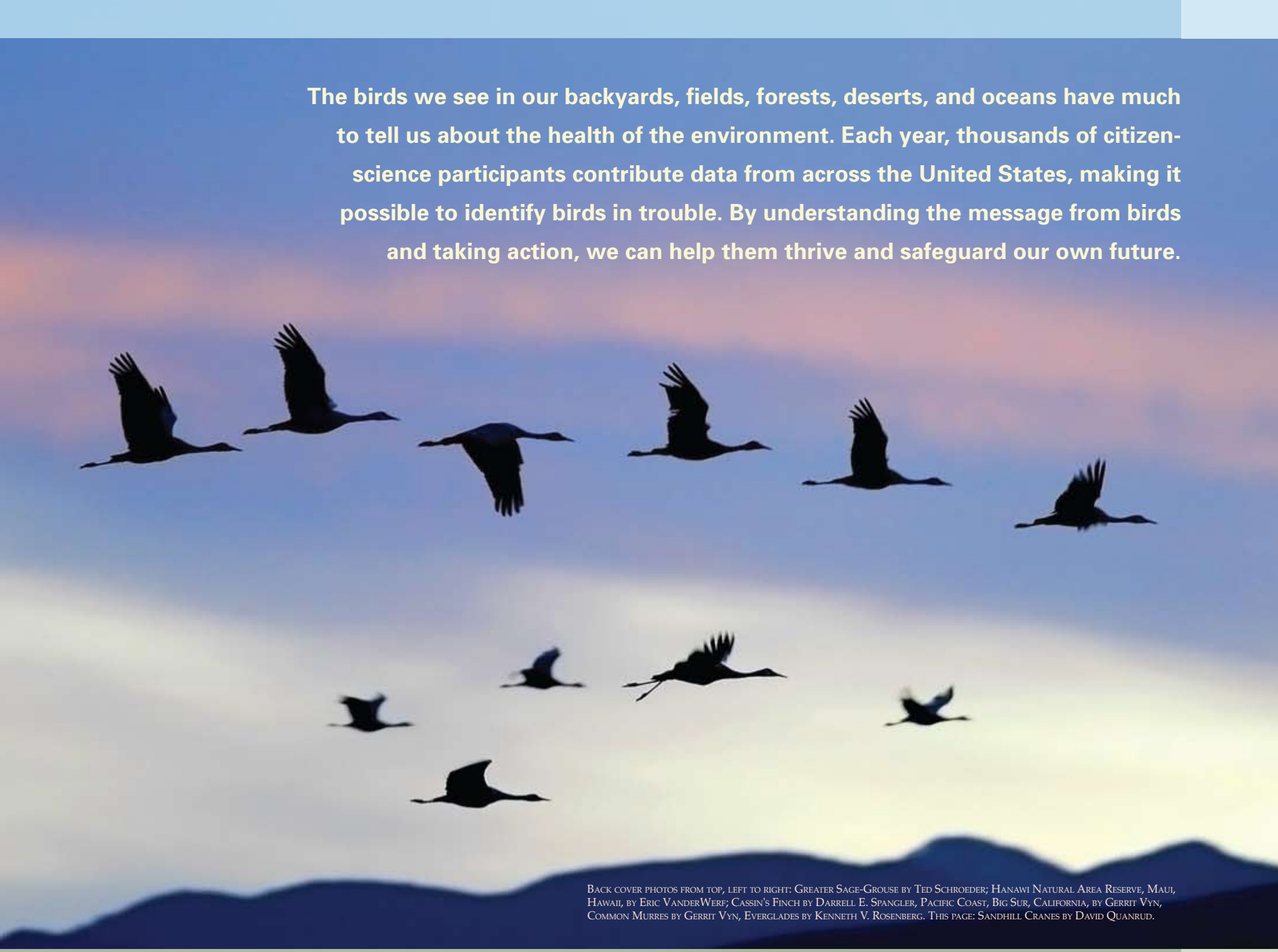
Editor: Miyoko Chu

Designer: Susan Steiner Spear

We thank the following people for reviewing or contributing to the development of this report: John Alexander, Eleanora Babij, Breck Carmichael, Tom Cooper, Martha Desmond, Dan Dessecker, George Fenwick, John Fitzpatrick, Krishna Gifford, Richard Gregory, Catherine Hickey, Dave Howell, Dave Krueper, Marcia Maslonek, Larry Neel, Daniel K. Niven, Mike Parr, Melissa Pitkin, Terry Rich, Diane Tessaglia-Hymes, Scott Yaich, Emily Silverman, George Wallace, Jeff Wells, Roger Wells.

The U.S. Fish and Wildlife Service took the lead in creating this report through an unprecedented partnership involving the U.S. Fish and Wildlife Service, State wildlife agencies, and nongovernmental organizations as a subcommittee of the U.S. North American Bird Conservation Initiative (NABCI).

The birds we see in our backyards, fields, forests, deserts, and oceans have much to tell us about the health of the environment. Each year, thousands of citizen-science participants contribute data from across the United States, making it possible to identify birds in trouble. By understanding the message from birds and taking action, we can help them thrive and safeguard our own future.



Back cover photos from top, left to right: Greater Sage-Grouse by Ted Schroeder; Hanawi Natural Area Reserve, Maui, Hawaii, by Eric VanderWerf; Cassin's Finch by Darrell E. Spangler, Pacific Coast, Big Sur, California, by Gerrit Vyn, Common Murres by Gerrit Vyn, Everglades by Kenneth V. Rosenberg. This page: Sandhill Cranes by David Quanrud.






AMERICAN BIRD CONSERVANCY

ASSOCIATION of FISH & WILDLIFE AGENCIES

The Cornell Lab of Ornithology

U.S. FISH & WILDLIFE SERVICE

Klamath Bird Observatory

nabci

Audubon

The Nature Conservancy
Protecting nature. Preserving life.™

PARTNERS IN FLIGHT • PARTENAIRES D'ENVOL • COMPAÑEROS EN VUELO

USGS
science for a changing world

United States Shorebird Conservation Plan

North American Waterfowl Management Plan
Plan nord-américain de gestion de la sauvagine
Plan de Manejo de Aves Acuáticas de Norteamérica