

The background of the cover features three birds in flight against a light, overcast sky. The birds have orange-brown bodies and speckled wings. One bird is in sharp focus in the foreground, while two others are blurred in the background, one above and one below it.

THE AMERICAN BIRD CONSERVANCY GUIDE TO  
**BIRD CONSERVATION**

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BY DANIEL J. LEBBIN, MICHAEL J. PARR, AND GEORGE H. FENWICK



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# HISTORIC LANDMARKS IN AMERICAN BIRD CONSERVATION

**1886** George Grinnell founds the first Audubon Society.

**1896** Harriet Hemenway, her cousin Minna Hall, and their friends start a campaign to urge women to stop wearing bird plumes.

**1900** The Lacey Act puts limits on market hunting by making it illegal to hunt birds in one state and sell them in another.

**1903** President Theodore Roosevelt designates Pelican Island, Florida, as a federal refuge, thereby establishing the National Wildlife Refuge System.

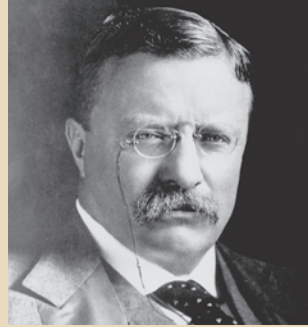
**1916** Canada and the U.S. join in support of the Migratory Bird Convention, making it unlawful to take or sell any migratory bird, nest, or egg, unless under permit. The U.S. government passes the Migratory Bird Treaty Act soon after, in 1918.

**1934** Waterfowl licenses are introduced and become the funding mechanism for wetlands acquisition, supporting habitat conservation for waterfowl and other birds.

**1934** Roger Tory Peterson publishes his landmark *Field Guide to the Birds*. The book was the first to highlight readily noticeable visual field marks, making bird identification accessible to the layman and contributing to the understanding of birds by a broader audience.

**1940** A Department of the Interior reorganization consolidates the Bureau of Fisheries and the Bureau of Biological Survey into one agency to be known as the Fish and Wildlife Service, with the mission of working with others to conserve, protect, and enhance fish, wildlife, plants, and their habitats for the continuing benefit of the American people.

**1962** Rachel Carson publishes *Silent Spring*.



*President Theodore Roosevelt*



*Brown Pelican:*

*Pelican Island protected in 1903*



*First Duck Stamp*



*Rachel Carson*

**1970** The U.S. Environmental Protection Agency is created, with the mission of protecting human health and safeguarding the natural environment—air, water and land—upon which life depends.

**1972** DDT is banned in the U.S. This pesticide caused reproductive failure in some birds, particularly the Brown Pelican, Osprey, Bald Eagle, and Peregrine Falcon, resulting in severe population declines.

**1973** Congress passes the Endangered Species Act, which not only prohibits the unauthorized take, possession, sale, and transport of listed species, but also provides for comprehensive habitat protection, including a provision for the federal government to acquire land for endangered species conservation.

**1973** The Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) is signed, ensuring that the international trade in wild animals and plants does not threaten their survival. More than 150 nations now participate.

**1989** The North American Wetlands Conservation Act is passed to authorize grants for the conservation of wetland bird habitat.

**1990** Partners in Flight is formed.

**1992** The Wild Bird Conservation Act is passed, essentially halting U.S. importation of wild birds.

**1994** American Bird Conservancy is founded.

**2000** The Neotropical Migratory Bird Conservation Act designates funds for habitat protection, education, research, and the monitoring of neotropical migratory birds in Latin America, the Caribbean, and the U.S.

**2005** The North American Bird Conservation Initiative is established.

**2005** The Alliance for Zero Extinction identifies the last remaining sites for the most endangered bird species on Earth.

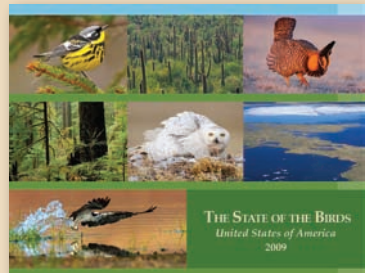
**2009** *The State of the Birds* report published.



*Bald Eagle: recovered, then delisted in 2007*



*Red-and-Green Macaw: bird trade halted in 1992*



*The State of the Birds report*

## PESTICIDES

**W**orldwide, five billion pounds of pesticides are applied annually, 10% of which are used in the U.S. Agricultural lands occupy 19% of the U.S. and account for 70% of our pesticide use (average of 2.4 pounds per acre). Residential yards also occupy approximately 50,000 square miles of the U.S. Much of this is maintained as well-manicured but barren lawns that use ornamental plant varieties and offer little in the way of bird habitat, while requiring significant amounts of pesticides (and water). Ten to 20 percent of pesticide applications are for cosmetic purposes to produce blemish-free produce for consumers, with little effect on crop yield or taste. Far from declining since the publication of Rachel Carson's book *Silent Spring* in 1962, annual pesticide use has continued to increase in terms of pounds applied and number of chemicals registered. Millions of birds are still killed each year by these substances.

**Problems:** In the 1950s and 1960s, organochlorine insecticides including DDT and dieldrin were used widely. These pesticides are fat-soluble and resistant to degradation, and therefore tend to accumulate in animals and the environment. They become particularly concentrated in the bodies of predatory bird and fish species that consume prey animals with high organochlorine residues. Problems with these chemicals and other pesticides inspired the publication of *Silent Spring*, which raised awareness of pesticide threats and helped start the environmental movement in the U.S. DDT, dieldrin, and other organochlorine pesticides were banned in the U.S. and Canada in the 1970s, but they degrade very slowly in the environment, and as a result, trace amounts are still found in the blood of over 90% of migrant songbirds today. Some organochlorines are still used in Latin America, where migratory birds from North America winter. As organochlorine pesticides were phased out, they were replaced by organophosphates and carbamates. These insecticides break down much faster in the environment, but are also much more toxic to birds at lower doses. For instance, carbofuran (a carbamate), is linked to the largest number of direct bird fatalities caused by any pesticide used in the U.S., and also to population declines in the Horned Lark, Western Meadowlark, and other grassland birds. Fortunately, thanks to efforts by ABC and its partners, carbofuran has now been cancelled. Monocrotophos (an organophosphate), was withdrawn from use in the U.S. in 1989, accidentally killed tens of thousands of Swainson's Hawks in Argentina during the 1990s. Argentina, along with most other South American countries, banned this pesticide in the late 1990s, but it is still used to deliberately kill Dickcissels in Venezuela and Bobolinks in Bolivia, where these migrants feed on rice and other crops.



PHOTO: BILL HUBBICK

*Fish-eating birds, such as the Osprey, and other raptors atop the food chain can accumulate dangerous levels of pesticides.*

Agricultural pesticide use is rising rapidly in Latin America where many U.S. breeding birds winter, with over 100 million pounds imported into the region each year. As our economy becomes more



PHOTO: BILL HUBBICK

*Rodenticides used outdoors can poison birds such as this young Great Horned Owl that might be fed contaminated rodents.*

globalized, Latin American farmers are also supplying more and more fruits and vegetables to the U.S. market, particularly during the northern winter. Pesticides that are restricted or banned in the U.S. are often still used in great quantities in parts of Latin America, including on produce sold to the U.S. Weak regulations and uneven enforcement can result in high pesticide applications that expose birds. Pesticide use in Latin America causes health problems for resident as well as migrant birds – and for farm workers.

In total, the EPA and ABC have documented more than 2,500 incidents of bird kills attributed to pesticide use, many of which killed hundreds or thousands of individual birds. In most cases, the pesticides were used legally and according to label instructions. The effects of individual pesticides on birds can be difficult to predict in advance of widespread use, as toxicity can vary among species, or depend on interactions with other pesticides in the environment. Furthermore, the impacts of pesticides on birds are difficult to detect. All but the largest-scale bird kills caused by pesticides tend to

go unnoticed by people because, for the most part, we are not out actively looking for dead birds. Birds also often hide when they are sick, their small size makes them hard to find, and scavenging predators remove most carcasses within 24 hours. Pesticides can also take many hours to kill a bird, by which time it may have flown far away from the source of its poisoning, making correlations with specific pesticide applications difficult. Nevertheless, more than 670 million birds were estimated to be directly exposed to pesticides each year in the U.S. during the 1990s, with 67 million of these probably dying as a result. However, recent pesticide cancellations due to ABC action have likely reduced this mortality to 15 million birds annually.

Pesticide exposure also often harms birds without killing them. For example, DDT contamination caused many water-birds and raptors to lay eggs with thin shells that broke before the chicks could hatch. Populations of the Osprey, Bald Eagle, Peregrine Falcon, Brown Pelican, and other birds declined rapidly in the 1960s in the U.S. as a result. Other sub-lethal effects include disorientation dur-



## HIGH ALTITUDE

AREA: 242,953 SQ. MILES

AZE SITES: 1

PRIMARY COUNTRIES: ARGENTINA,

THREATENED SPECIES: 17

BOLIVIA, CHILE, COLOMBIA,

ECUADOR, PERU, VENEZUELA

**H**igh-altitude habitats occur throughout much of Latin America, but are most extensive in the Andes. Cloud forests typically grow up to elevations of 10-11,000 feet. Above this, forests are mostly replaced by tussock grassland, boggy areas, and barren rock. Páramo is a scrubby grassland that grows in the Northern Andes from Venezuela to northern Peru, as well as in Costa Rica and Panama. It is characterized by tussock grasses and small shrubs. Puna is an open grassland dominated by bunchgrass tussocks that occurs from central Peru to northwestern Argentina, and throughout the high Andean plains.

Woodlands dominated by *Polylepsis* trees form above 13,000 feet within both puna and páramo ecosystems, and are among the highest woodlands in the world. *Polylepsis* favors sheltered valleys and is a giant member of the rose family, characterized by its gnarled trunks covered with flaky red bark. Wetlands, including marshes, lakes, and streams, also occur at high altitudes.

**Birds:** Bird diversity declines with increasing altitude, but high-altitude habitats often support specialized, restricted-range species. Birds characteristic of the high altitudes include tinamous,



ILLUSTRATION: C. VEST



**Birds:** 1. White-tufted Sunbeam; 2. Ash-breasted Tit-Tyrant; 3. White-browed Tit-Spinetail; 4. Royal Cinclodes; 5. Andean Condor; 6. Gray-breasted Seedsnipe; 7. Streaked Tuftedcheek; 8. Golden-plumed Parakeet; 9. Andean Cock-of-the-Rock; 10. Golden-headed Quetzal; 11. Flame-faced Tanager; 12. Golden Tanager; 13. Masked Flowerpiercer; 14. Purple-throated Sunangel; 15. Barred Antthrush; 16. Sword-billed Hummingbird; 17. Green Jay; 18. Barred Fruiteater; 19. Pale-naped Brush-finch.

**Vegetation:** 20. *Polyepis* woodland; 21. puna bunchgrass; 22. cloud forest. **Threats:** 23. deforestation.

# THE AMERICAN BIRD CONSERVANCY GUIDE TO BIRD CONSERVATION

DANIEL J. LEBBIN, MICHAEL J. PARR, AND GEORGE H. FENWICK

Whether we live in cities, in the suburbs, or in the country, birds are ubiquitous features of daily life, so much so that we often take them for granted. But even the casual observer is aware that birds don't fill our skies in the number they once did. That awareness has spawned conservation action that has led to notable successes, including the recovery of some of the nation's most emblematic species, such as the Bald Eagle, Brown Pelican, Whooping Crane, and Peregrine Falcon. Despite this, a third of all American bird species are in trouble—in many cases, they're in imminent danger of extinction. The most authoritative account ever published of the threats these species face, *The American Bird Conservancy Guide to Bird Conservation* will be the definitive book on the subject.

The *Guide* presents for the first time anywhere a classification system and threat analysis for bird habitats in the United States, the most thorough and scientifically credible assessment of threats to birds published to date,

as well as a new list of birds of conservation concern. Filled with beautiful color illustrations and original range maps, the *Guide* is a timely, important, and inspiring reference for birders and anyone else interested in conserving North America's avian fauna. But this book is far more than another shout of crisis. The *Guide* also lays out a concrete and achievable plan of long-term action to safeguard our country's rich bird life. Ultimately, it is an argument for hope. Whether you spend your early weekend mornings crouched in silence with binoculars in hand, hoping to check another species off your list, or you've never given much thought to bird conservation, you'll appreciate the visual power and intellectual scope of these pages.

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