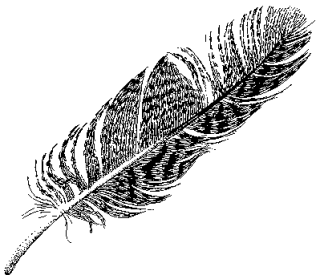
U.S. Fish & Wildlife Service

Migratory Bird Mortality

Many Human-Caused Threats Afflict our Bird Populations

Migratory Bird Management Mission

To conserve migratory bird populations and their habitats for future generations, through careful monitoring and effective management.



Are Birds in Danger?
Of the 836 species of birds protected under the Migratory Bird Treaty Act, about a quarter are known to be in trouble. There are 78 bird species listed as Endangered and 14 species listed as Threatened in the U.S. An additional 144 species are on the National list of Birds of Conservation Concern 2001 (some whose populations are declining precipitously). It cannot be assumed that the remainder of U.S. birds are safe, as population data on essentially a third of these species are lacking, making status determination very difficult if not impossible. The problems that birds face in the U.S. are symptomatic of the problems they face globally.

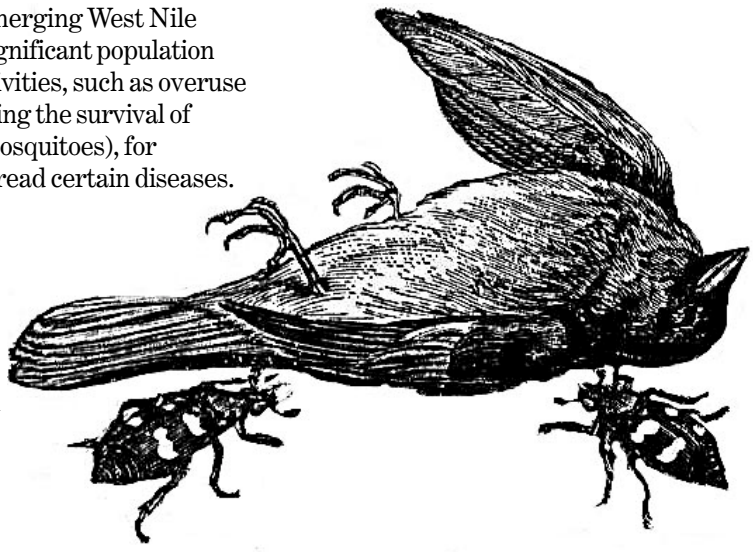
What Are the Human-Caused Threats to Birds?
Birds face tremendous challenges to their survival every day. The majority of these challenges are related to human activities. Vast numbers of birds are killed due to collisions with human structures and equipment, poisoning by pesticides and contaminants, and attacks by cats and other introduced predators.

Diseases such as botulism, avian cholera, salmonellosis, and emerging West Nile virus can also have significant population impacts. Human activities, such as overuse of pesticides (enhancing the survival of pesticide-resistant mosquitoes), for example, can help spread certain diseases.

The greatest threat to birds, and all wildlife, continues to be loss and/or degradation of habitat due to human development and disturbance. For migratory birds and other species that require multiple areas for wintering, breeding, and stopover points, the effects of habitat loss can be complex and far-reaching.

Added to deaths from natural causes, such as adverse weather, predation, or starvation, human-related bird deaths may result in greater mortality than a population can withstand. In other words, it is the cumulative or combined impact of all mortality factors that concerns scientists most. Thus, anything done to reverse human-related bird deaths – and thus potential impacts to bird populations – are of considerable interest to the Service.

How Many Birds are Killed?
The U.S. Fish and Wildlife Service estimates that a minimum of 10 billion birds breed in North America. Fall populations may be on the order of 20 billion. These figures represent only educated guesses. Mortality figures are also difficult to determine. Based on modeling and other approaches, estimates have been made for some of the most visible threats.



Collisions. Building window strikes may account for 97 to 976 million bird deaths each year. Communication towers conservatively kill 4 to 5 million birds annually (possibly closer to 40 to 50 million; a nationwide cumulative impacts study should help resolve this question). Strikes at high tension transmission and distribution power lines very conservatively kill tens of thousands of birds annually. Taking into account the millions of miles of bulk transmission and distribution lines in the U.S., and extrapolating from European studies, actual mortality could be as high as 174 million deaths annually. Electrocutions probably kill tens of thousands of birds but the problem is barely monitored. Cars may kill 60 million birds or more each year, private and commercial aircraft far fewer, while wind turbine rotors kill an estimated 33,000 birds annually.

Poisoning. In one recent study, pesticides were estimated to result in the direct deaths of at least 72 million birds annually. This is an underestimate of the total deaths, given that delayed deaths from poisoned prey, orphaned chicks, and neurological problems were not included and the study site was limited. Oil spills may kill hundreds of thousands or more, depending on the severity and timing of the spill. Up to two million birds are killed annually in oil and wastewater pits, mainly in the western states.

Cats. Many citizens would be surprised to learn that domestic and feral cats may kill hundreds of millions of songbirds and other avian species each year. A recent study in Wisconsin estimated that in that state alone, domestic rural cats kill roughly 39 million birds annually. Add the deaths caused by feral cats, or domestic cats in urban and suburban areas, and this mortality figure would be much higher.

Cats cause tremendous bird mortality.

By-Catch. Tens to hundreds of thousands of seabirds are estimated to die in U.S. fisheries each year. Monitoring for this, however, is again very limited.

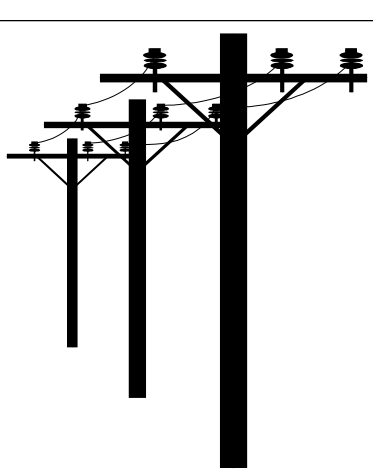
What Are We Doing to Reduce Mortality?

While the "incidental, accidental or unintentional take" of migratory birds is not permitted by the Service and is a criminal violation of the Migratory Bird Treaty Act, the Service attempts to work with those industries and individuals whose actions result in bird deaths, rather than pursuing criminal prosecution first.

For over 25 years, the Service has been a *co-founding partner of the Avian Power Line Interaction Committee* helping develop two voluntary guidance documents to reduce bird strikes and electrocutions. More recently, the Service *co-founded the Avian Subcommittee of the National Wind Coordinating Committee*, working to reduce bird strikes at wind turbines, and we *founded and chair the Communication Tower Working Group*, working to reduce bird strikes at communication towers. We also *co-chair the Interagency Seabird Working Group*, implementing a national plan of action to reduce seabird bycatch in longline fishing gear.

Because of jurisdictional and ownership issues, working to reduce cat-caused mortality, building window strikes, and oil spills is a more complex undertaking. Here, we *support initiatives such as the Cats Indoors Program and the Fatal Light Awareness Program*, which encourages building owners to turn off skyscraper lights during spring and fall night-time songbird migrations. For threats that can be addressed by individual citizen action, we design public education materials with related messages such as encouraging homeowners to reduce home pesticide use and consumers to select environmentally-friendly products, such as shade-grown coffee.

Declining bird populations are probably most often the result of combined or cumulative impacts of all mortality, thus addressing each of the contributing factors is a priority.



Close-phased wires are a potential electrocution hazard.

What Else Is Needed to Reduce Mortality?

Research is critical. In the case of collisions, for example, we don't understand specifically how light attracts birds to communication towers, tall buildings, wind turbines, transmission towers, or other lit structures. We need to learn if deterrents such as low-frequency sound, colored markers, or structural modifications reduce avian collisions. We also lack an understanding of how birds select stopover areas during spring and fall migrations. Without it, we cannot effectively manage habitats and recommend against building new structures in critical bird-use areas. Above all, the cumulative impacts of collisions on bird populations must be assessed– they are currently unknown. With the exponential increase in new structures, avian monitoring must be a priority. All of this information should be transmitted to land managers, industry representatives, and affected agencies.

***

Migratory birds are some of nature's most magnificent resources. Their conservation is a critical and challenging endeavor for the Migratory Bird Management Program and all who value nature.

For More Information:
U.S. Fish and Wildife Service
Division of Migratory Bird Management
4401 N. Fairfax Drive, Room 634
Arlington, VA 22203
703 358 1714
http://birds.fws.gov

January 2002