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**WEST NILE VIRUS THREATENS BACKYARD BIRDS**  
*Scientists Discover West Nile Virus Causing Severe Bird Population Declines*

**NEW YORK – May 16, 2007** – Scientists at the Consortium for Conservation Medicine (CCM), based at Wildlife Trust, New York, and the Smithsonian Institution's Migratory Bird Center report in an article appearing today in *Nature* that many species of birds, including backyard favorites such as tufted titmice and chickadees, are suffering serious declines from West Nile virus.

The arrival of West Nile virus in New York City in 1999 was accompanied by an unusual die-off of crows and other birds at the Bronx Zoo. Dead corvids (crows and jays) were then reported across New York and heralded the virus' spread throughout North America over the next eight years. However, scientists and backyard birders wondered whether the disease had a more significant impact – decimating populations, or just a few individuals. Its subsequent spread and continued transmission throughout North America have resulted in over 26,000 reported cases, 996 human deaths, and an estimated 280,000 illnesses, making it the most important mosquito-borne disease in the USA. The virus is primarily transmitted between mosquitoes and birds, with different bird species suffering variability in illness from infection.

Drs. Shannon LaDeau and Peter Marra of the Smithsonian Institution's Migratory Bird Center and Dr. A. Marm Kilpatrick, with the Consortium for Conservation Medicine based at Wildlife Trust, conducted a study that examined West Nile virus' impact on 21 species of North American birds over the past eight years. They showed that several different types of birds declined significantly when the virus hit their populations, including many backyard species such as American robins, tufted titmice, Carolina and black-capped chickadees and blue jays. Other species that were also impacted by this disease include American crows, eastern bluebirds, and house wrens.

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This new research set out to determine whether the disease has caused regional declines in birds, and which birds were most affected. Dr. Kilpatrick explained, "We used previous research on which birds mosquitoes prefer and on their susceptibility to infection to predict which of 21 species were likely to be hardest hit by West Nile virus." Dr. LaDeau used a statistical model to compare these predictions to the abundances and trends of the same 21 species over the last 26 years (1980-2005) using data from the Breeding Bird Survey, a citizen science project. They found that as West Nile virus spread south and west, sequential declines occurred in the species predicted to be hardest hit, but not in others. Several species have declined by almost 50% across entire regions, and only two of the seven (blue jays, house wrens) showed signs of recovering after the intense epidemics in 2002 to 2003.

"The extent of these declines shows how devastating introduced pathogens can be. The globalization of trade and travel that brought West Nile virus to the western hemisphere has completely altered our bird communities and may make some of our backyard birds relatively uncommon," said Dr. Kilpatrick. Dr. David Gibbons, Head of Conservation Science, Royal Society for the Protection of Birds, echoed this sentiment, "Globalization is likely to spread infectious diseases further and faster, which can only add to the deleterious pressures already facing birds and other wildlife, such as climate change, habitat loss and introduced predators."

Dr. Shannon LaDeau a postdoctoral fellow with the Smithsonian's Migratory Bird Center at the National Zoo stated, "Our work demonstrates the broad and potentially devastating impacts that an invasive pathogen can have on our native wildlife. It's also important to emphasize that we have only looked at a small subset of bird species in the U.S. Most species, such as birds of prey and many waterbirds, aren't monitored at these scales, so we don't have any way of knowing how or if their populations are declining."

Peter Marra, an avian ecologist with the Smithsonian's Migratory Bird Center at the National Zoo commented, "With increasing globalization often comes dire consequences for our native wildlife and their dependent ecosystems, including unprecedented movement of invasive pathogens around the world. West Nile virus is one pathogen that the public is familiar with due to its impact on humans in the recent past. West Nile also serves as a clear example of how many other pathogens, such as highly pathogenic Avian influenza, can easily enter and affect our ecosystems."

Dr. Peter Daszak, Executive Director of CCM at Wildlife Trust stated, "This work shows how devastating *pathogen pollution*, the introduction of disease through human activities, can be, for wildlife, for humans and for ecosystems." Mary Pearl, President of Wildlife Trust added, "This is exactly the sort of problem that our new field of Conservation Medicine addresses – the number of emerging diseases that affect both wildlife and people has risen dramatically in recent times. Our work shows that we have the tools to understand their spread and impact and the challenge now is to cut back their impact and prevent the next ones before they emerge."

*The study was funded by the National Science Foundation, the National Institute of Allergy and Infectious Disease, and the Smithsonian Institution.*

### **About the Consortium for Conservation Medicine**

The Consortium for Conservation Medicine (CCM), based at Wildlife Trust's New York headquarters, is a unique collaborative institution linking Johns Hopkins Bloomberg School of Public Health, Tufts University School of Vet. Med. Center for Conservation Medicine, University of Pittsburgh Graduate School of Public Health, University of Wisconsin-Madison Nelson Institute for Environmental Studies, Wildlife Trust and USGS National Wildlife Health Center (NWHC). The CCM is a think-tank for the origin, prediction, and prevention of emerging diseases. The CCM enables scientists from a multitude of disciplines to collaborate on key issues of human, animal, and environmental health and conservation. [www.conservationmedicine.org](http://www.conservationmedicine.org)

### **About Wildlife Trust**

Wildlife Trust empowers local conservation scientists worldwide to protect nature and safeguard ecosystem and human health. Wildlife Trust is a conservation science innovator and leverages research expertise through strategic global alliances. Wildlife Trust pioneered the field of Conservation Medicine, a new discipline that addresses the link between ecological disruption of habitats and the effects on wildlife, livestock and human health.

Founded in 1971 by British naturalist and author Gerald Durrell, Wildlife Trust has built its reputation on 35 years of global research, education, training and experience. Research and conservation work in the United States include programs in the metropolitan New York area, Florida and along the coast of the Southeastern U.S.

Internationally, Wildlife Trust trains and supports a network of scientists around the world to save endangered species and their habitats and to protect the health of vital ecosystems. Wildlife Trust created the first egalitarian international network of science-based conservation organizations called the Wildlife Trust Alliance and is a founding partner organization of the Consortium for Conservation Medicine, a unique think-tank of prestigious academic institutions.

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