

Wildlife Services

Protecting People
Protecting Agriculture
Protecting Wildlife

National Wildlife Research Center

FY 2008

Resource Protection Through Avian Population Management



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Major Cooperators

- Wildlife Services Operations in Florida, South Carolina, Pennsylvania, Virginia
- Florida Power and Light Company
- Innolytics, LLC
- Pennsylvania State University
- U.S. Geological Survey
- U.S. Fish and Wildlife Service

Groups Affected By These Problems:

- Airports
- Airlines
- Air travelers
- Homeowners
- Business owners
- City managers
- Military installations
- Electric utility companies
- Broadcast and communication tower owners and operators

National Wildlife Research Center Scientists Address Problems of Overabundant Bird Populations

Wildlife Services' (WS) National Wildlife Research Center (NWRC) is the only Federal research organization devoted exclusively to resolving conflicts between people and wildlife through the development of effective, selective, and acceptable methods, tools, and techniques.

Researchers at NWRC's field station in Gainesville, FL, conduct research to resolve problems caused by vultures, crows, and other species of overabundant birds. This research facility is a uniquely designed 26-acre site with large outdoor flight pens and aviaries which allow bird research to be conducted throughout the year under natural environmental conditions.

As land-use patterns change and urban populations surge into previously uninhabited areas, wildlife conflicts inevitably increase. Of growing concern are problems associated with vultures and crows, species that have shown the capacity to readily adapt to residential settings. Additionally, populations of non-native species such as feral pigeons and monk parakeets continue to grow with increasing detrimental impacts to human health and safety.

Applying Science & Expertise to Wildlife Challenges

Vulture Management at Military Air Bases—NWRC scientists documented vulture movements and resource use at military installations in order to reduce hazards to aircraft. At a site in South Carolina, 16 vultures were trapped and equipped with satellite transmitters that provide hourly updates on the birds' location, altitude, and speed. Dozens of other vultures were trapped and equipped with wing tags for visual identification. Key roost sites were identified for dispersal, and the birds' activities subsequent to dispersal are being monitored to determine effectiveness of the action. At an Air Force site in south Florida, vulture roosts and feeding sites were identified and a vulture management plan was developed to increase air traffic safety. Similar actions will be taken for the site in South Carolina.

Evaluation of Impacts of Lethal Control on Vulture Populations—As part of a cooperative effort with biologists from the U.S. Geological Survey and U.S. Fish and Wildlife Service (USFWS), NWRC scientists contributed demographic and behavioral data to assess the impacts of lethal take on black vulture populations. The data was included in a model used to set limits on lethal take of nuisance bird species through the USFWS permitting process. The model can be updated as new information becomes available and adapted to changes in bird population management objectives.

Management Methods for Urban Crow Roosts—NWRC scientists collaborated with WS operational staff and University researchers to develop strategies for managing large crow roosts in urban areas throughout the United States. One such roost of approximately 30,000 crows in the Lancaster, PA, area was the focus of investigations. NWRC scientists documented responses of crows to artificial effigies as a means of roost dispersal. The artificial effigies were incorporated into successful community-based efforts to rid areas of nuisance winter crow roosts. Researchers observed a shift from roost sites with effigies to sites where the crows were not harassed and were no longer causing problems for residents and business.



United States Department of Agriculture
Animal and Plant Health Inspection Service

Reproductive Control of Nonnative Avian Species—Monk parakeet populations are growing exponentially in certain areas of the United States. The species, which is native to South America, builds large stick nests that are often located in electric utility facilities. As a result, frequent short circuits and costly power outages occur.

To help retard the growth of parakeet populations, NWRC scientists are collaborating with utility companies to develop a contraceptive bait. The active ingredient is a cholesterol-inhibiting compound called diazacon. To date, nesting studies with captive parakeets and a field trial in south Florida have confirmed the potential utility of diazacon for parakeet reproductive control. Additional field studies are evaluating special feeders to limit access of the contraceptive bait to monk parakeets. The feeders prevent nontarget species, such as mourning doves, from eating the bait.

Through collaborations with private industry, NWRC scientists also developed a chemical reproductive inhibitor for feral pigeons. Information developed by NWRC scientists through feeding trials and captive nesting studies with pigeons was submitted to the U.S. Environmental Protection Agency in support of a Federal registration for a bait containing nicarbazin as the active ingredient. The product is now registered in 49 States.

Selected Publications:

Avery, M. L., K. L. Keacher, and E. A. Tillman. 2008. Nicarbazin bait reduces reproduction by pigeons (*Columba livia*). *Wildlife Research* 35:80-85.

Avery, M. L., C. A. Yoder, and E. A. Tillman. 2008. Diazacon inhibits reproduction in invasive monk parakeet populations. *Journal of Wildlife Management*. 72:1449-1452.

Blackwell, B. F., M. L. Avery, B. D. Watts, and M. S. Lowney. 2007. Demographics of black vultures in North Carolina. *Journal of Wildlife Management* 71:1976-1979.

Russello, M. A., M. L. Avery, and T. F. Wright. 2008. Genetic evidence links invasive monk parakeet populations in the United States to the international pet trade. *BMC Evolutionary Biology* 8:217.

Major Assistance Activities:

- WS initiated a satellite telemetry study to collect information on flight patterns and altitudes of vultures. The information was used to develop management strategies for reducing hazards to aircraft at military air bases.
- WS provided key research findings for the development and registration of chemical reproductive inhibitors to reduce populations of nonnative feral pigeons and monk parakeets.
- WS demonstrated the utility of artificial crow effigies as components of integrated management strategies for dispersal of nuisance winter urban crow roosts.
- WS developed crucial information for a black vulture management model that provides a scientific basis for evaluating impacts of lethal control on sustainability of populations.