NWRC headquarters in Fort Collins, CO.

About Wildlife Services' National Wildlife Research Center

As part of the WS program of the U.S. Department of Agriculture's Animal and Plant Health Inspection Service, NWRC is a leader in providing science-based solutions to the complex issues of wildlife damage management as related to agriculture, property, human health and safety, invasive species, and threatened and endangered species. NWRC scientists strive to find solutions that are biologically sound, environmentally safe, and socially acceptable for use in resolving wildlife damage-management problems throughout the United States and abroad. Often, the WS program's operational personnel assist NWRC scientists in developing and evaluating new management tools and methods.

NWRC employs more than 160 scientists and support staff at its headquarters in Fort Collins, CO, and at field stations throughout the United States. NWRC's scientists have expertise in a wide range of disciplines, including animal behavior, wildlife biology, wildlife sensory biology, chemistry, immunology, epidemiology, statistics, population modeling, genetics, toxicology, and veterinary medicine.

"Solutions to problems depend upon knowledge which only research can provide."

Edwin R. Kalmbach, first Director for the predecessor of the NWRC (1940–54)

More Information

In addition to identifying, developing, and testing new methods for dispersing problem vultures, NWRC scientists are also determining the age structure of black vulture populations and documenting habitat use and movements of vultures. For more information regarding NWRC's vulture research, please visit our Web site at <http://www.aphis.usda.gov/ws/nwrc>.

WS Office Phone Numbers

For assistance on wildlife damage issues in your State, please call the WS program's toll-free number at 1–866–4USDAWS (1–866–487–3297) or one of the numbers listed below.

At headquarters (Riverdale, MD):
- Operational Support Staff
  (301) 734–7921

In the field:
- NWRC headquarters (Fort Collins, CO)
  (970) 266–6000
- NWRC Gainesville, FL, Field Station
  (352) 375–2229
- Eastern Regional Office (Raleigh, NC)
  (919) 855–7200
- Western Regional Office (Fort Collins, CO)
  (970) 494–7443

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Solutions Through Science

Reducing Damage Caused by Vultures

Wildlife Services
NWRC
National Wildlife Research Center

Problem

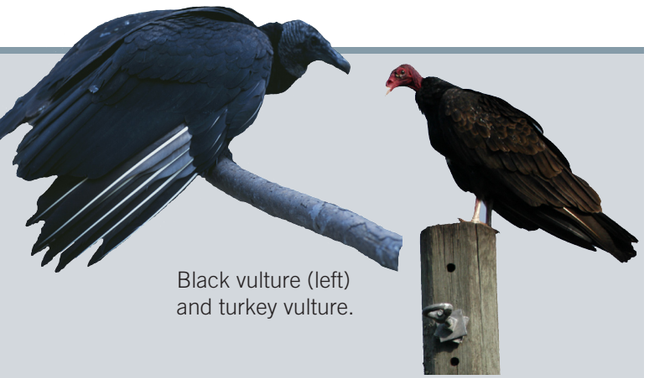
Vultures play an important role in ecosystems by cleaning up animal carcasses, but vultures also cause problems in both rural and urban settings. In recent years, vulture populations have increased as these adaptable birds have adjusted to higher levels of human activity. As a result, the birds are coming into ever more conflict with people.

Vultures often damage residential and business property. Their droppings can kill trees and create unsanitary and unsafe working conditions at power plants, refineries, and communication towers. Their aggressiveness unsettles park users and homeowners. Vultures harass and kill livestock. In flight, they can be a danger to aircraft.

As complaints multiply, pressure grows on wildlife biologists to develop safe, effective ways to manage vulture populations that will both maintain healthy numbers of birds and reduce conflicts and damage. The National Wildlife Research Center (NWRC)—the research arm of the Federal Government's Wildlife Services (WS) program—is hard at work on America's "vulture problem." This leaflet describes how NWRC researchers are using science-based approaches to address human–vulture conflicts.

Identifying Vultures

Two species of vultures live in the United States. Turkey vultures *(Cathartes aura)* are found almost nationwide. Black vultures *(Coragyps atratus)* are found primarily in Texas and the southeastern United States, although their range is expanding northward.



Black vulture (left) and turkey vulture.

Turkey vultures are almost exclusively scavengers, relying upon their very sensitive sense of smell and good eyesight to locate food. Black vultures, on the other hand, rely solely on visual cues to find food and also attack and kill live animals.

Adult turkey vultures have blackish-brown feathers and red heads. Black vultures have black feathers and gray heads and have a distinctive white patch near the ends of their outstretched wings.

Science-Based Solutions

To help resolve vulture-related problems, scientists at the NWRC Gainesville, FL, field station are conducting research with both captive and free-ranging vultures to better understand the ecology, behavior, and impact of these birds and their responses to management practices. In particular, scientists are investigating methods for dispersing vultures from problem roosts and preventing property damage. Scientists are also learning more about the impact the birds have on livestock.

Dispersing Roosts

Vultures roost in trees and on manmade structures such as buildings and towers. Many problems associated with vultures can be successfully resolved by dispersing the birds from their roosts.

Research conducted by NWRC scientists has demonstrated that proper installation of a vulture effigy almost always causes abandonment of the roost within 3 to 5 days. The effigy is either a taxidermic mount of a vulture or a commercially available artificial likeness.

Taxidermic (left) and artificial vulture effigies are used to disperse vultures from their roosts.

To further convince vultures to leave, it is sometimes necessary to use pyrotechnics or handheld lasers in addition to the effigy. The bright beams of the lasers do not cause physical harm but irritate the birds and cause them to move to other locations. Research has shown that application of lasers can cause vultures to leave a roost for a night, but lasers' use alone will not result in permanent abandonment of the roost.

Preventing Property Damage

When vultures loaf on houses and other structures, they damage property by pecking, tearing, and defecating. To help prevent damage, NWRC scientists tested the effectiveness of several commercially available perching deterrents. Four of these—an electrified track; sharp, dense metal spikes; a cylindrical rolling perch; and a motion-activated sprinkler—proved very effective in preventing vultures from perching on roofs in test pens. Installation of any one of these devices, particularly on the ridgeline of a roof, should alleviate most problems homeowners experience with nuisance vultures.

Understanding Impacts to Livestock

Because of increasing reports of vulture predation on newborn livestock, NWRC scientists are working to identify the factors associated with vulture predation on livestock. In a survey of Florida livestock producers, larger farms reported more vulture depredation problems than smaller operations. Constant vigilance, sound husbandry practices, and persistent harassment are the most effective means to protect livestock from black vultures. However, such a regimen is usually more difficult to maintain on larger livestock operations.

To gain a better understanding of vulture impacts on livestock, NWRC scientists are conducting research to (1) develop a population model for black vultures that can be used to evaluate potential management options, and (2) analyze vulture movement patterns and roosting activity using geographic information system (GIS) techniques.

NWRC scientists continue to investigate vulture impacts to livestock.

NWRC scientists are investigating nonlethal methods for preventing vulture damage to houses and other structures.