

Genetic technologies, such as gene-drives, whole genome sequencing, and the use of environmental DNA, are key tools in wildlife damage management research.



## History and Organization

The NWRC was established in 1940 as part of the U.S. Bureau of Biological Survey (which later became the U.S. Fish and Wildlife Service). In 1986, the Center transferred to USDA and today is part of the Wildlife Services program, a unit within USDA's Animal and Plant Health Inspection Service (APHIS). The Wildlife Services program provides leadership and expertise to resolve wildlife conflicts that threaten public health and safety, agriculture, property, and natural resources.

As the research arm of Wildlife Services, the NWRC employs more than 150 scientists, technicians, and support personnel at our 43-acre headquarters campus in Fort Collins, CO, and at eight field stations around the country. Our scientists are experts in a wide range of fields, including:

- analytical chemistry
- animal behavior
- chemistry
- ecology
- economics
- epidemiology
- genetics
- immunology
- information transfer
- molecular and cellular biology
- pesticide registration
- reproductive physiology
- sensory biology
- statistics
- toxicology
- veterinary medicine
- virology
- wildlife biology
- wildlife diseases

## State-of-the-Art Facilities

The NWRC headquarters and field stations have state-of-the-art facilities for wildlife research: chemistry, genetics, disease, and other laboratories; a wide range of outdoor animal holding pens; tropical- and temperate-simulated natural environments; and a biosafety-level 3 suite. These facilities allow for the study of traditional laboratory animals and many wildlife species in both laboratory and semi-natural settings. Scientists can also test, evaluate, and modify new tools and techniques in-house before conducting field studies.

Our specially trained team of wildlife veterinarians and animal care technicians care for all animals housed at the NWRC headquarters and field stations. The NWRC complies with all Animal Welfare Act regulations and standards and is committed to treating and handling research animals safely and humanely. We also apply innovative techniques and approaches to reduce the number of animals we use in our research.

## Collaborations

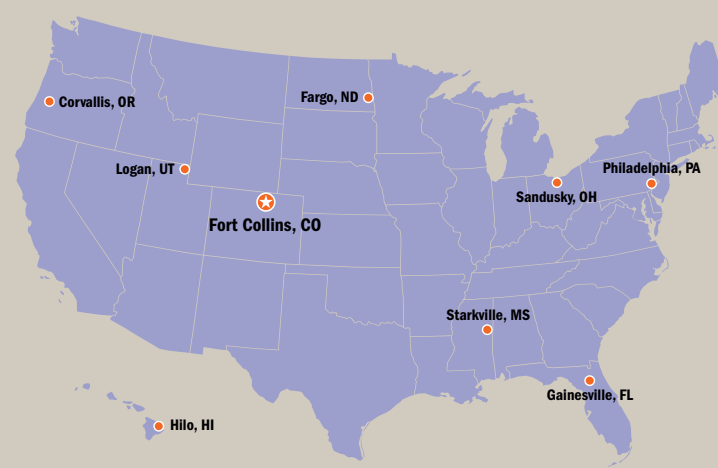
NWRC scientists work closely with their colleagues in Wildlife Services' operational unit to develop and transfer methods for managing or mitigating wildlife damage. NWRC scientists also work with many other researchers,



Wildlife Services supports the U.S. Fish and Wildlife Service's collaborative work to recover endangered black-footed ferrets by manufacturing and delivering an oral vaccine bait that protects their main food source—prairie dogs—from deadly sylvatic plague.

partners, and stakeholders, including other Federal, State, and local governments; Tribal nations; foreign governments; industry groups; scientific and professional societies; environmental and animal welfare organizations; U.S. animal and public health laboratories; and the general public. To further extend our research and training, the Center creates formal and informal cooperative programs with universities, State and Federal agencies, international organizations, and stakeholders.

## NWRC Field Station Locations



NWRC develops methods for reducing wildlife hazards near airports.



## For More Information

To learn more about the NWRC, contact us:

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USDA-APHIS Wildlife Services  
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Fort Collins, CO 80521 • Phone: (970) 266-6000  
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[www.aphis.usda.gov/wildlifedamage/nwrc](http://www.aphis.usda.gov/wildlifedamage/nwrc)

## Directions to NWRC



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4101 LaPorte Ave.  
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# National Wildlife Research Center

PROVIDING  
INNOVATIVE  
SOLUTIONS TO  
HUMAN-WILDLIFE  
CONFLICTS



Animal and Plant Health  
Inspection Service  
Wildlife Services  
Miscellaneous Publication No. 1544

## Our Values

In our work to help America manage its wildlife resources wisely and effectively, NWRC upholds these core values and principles:

- Conducting high-quality research
- Considering stakeholder needs
- Maintaining excellent standards of animal welfare
- Providing information and technology transfer
- Collaborating with numerous and diverse partners
- Promoting personal and institutional integrity
- Valuing and investing in workforce diversity
- Developing and advancing the Center's workforce

## The National Wildlife Research Center (NWRC)

*is one of the world's leading research facilities devoted entirely to developing methods for managing wildlife damage effectively. As part of Wildlife*

*Services, a program within the U.S. Department of Agriculture (USDA) Animal and Plant Health Inspection Service, the Center's work covers a broad range of concerns: agricultural and property damage, wildlife diseases, wildlife hazards to aviation, invasive species, and threats to endangered species. In all, we're committed to finding innovative solutions that create a balance between people and wildlife and better enable us to coexist.*

## Identifying Problems, Finding Solutions

Wildlife is an important, highly valued public resource. Yet by its very nature, wildlife is dynamic and mobile—and can damage agricultural and environmental resources and pose risks to human safety and health.

NWRC evaluates wildlife damage situations and develops methods and tools to reduce or eliminate damage and resolve conflicts. Our scientists study native and invasive birds, mammals, and other wildlife that cause serious but localized damage problems. We conduct research to make sure the methods developed are biologically sound, effective, safe, economical, and socially responsible. The majority of the Center's research budget is devoted to nonlethal tools and techniques.



NWRC supports the National Rabies Management Program by evaluating oral rabies vaccine baits for wildlife species.

We collaborate with numerous universities, not-for-profit research organizations, and other public and private research entities. The NWRC has a broad, diverse research agenda and multi-disciplinary approach that is uniquely suited to offer scientific information and solutions to wildlife damage problems. Our research is organized under four categories:

**Agriculture and Resource Protection**—Focuses on reducing wildlife damage to crops, aquaculture, timber resources, natural resources, livestock, and property; examines the ecology, behavior, and management of birds and mammals; and develops methods to mitigate wildlife-aviation strike hazards.

**Invasive Species**—Develops methods for reducing damage by invasive vertebrate species to agriculture, as well as native wildlife and ecosystems.

**Native and invasive wildlife can sometimes...**

Feed on crops and aquaculture

Carry and spread disease

Collide with aircraft

Damage property

Attack livestock, pets, and people

Damage native ecosystems

**Wildlife Disease**—Explores ways to reduce the spread and transmission of disease agents among wildlife, humans, and domestic animals; develops disease diagnostic methods; develops methods and strategies to monitor wildlife pathogens and prevent and control wildlife diseases; assesses risks to agriculture and human health and safety; and coordinates wildlife disease surveillance and monitoring activities.

**Technology Development and Transfer**—Develops new products that help prevent or reduce wildlife damage; promotes research outcomes so others can adopt them for real-world use and public benefit; and moves new technologies to the marketplace through patents, invention licenses, and partnerships with the private sector.

The NWRC also has a number of support units, including pesticide and drug registration, analytical chemistry, biological testing, animal care, administration, information transfer, archives, quality assurance, quality control, facility management, and legislative and public affairs.

## Current Research

The NWRC is known nationally and internationally for excellence and leadership in resolving human-wildlife conflicts. With the diverse expertise of our staff and collaborators, NWRC assembles teams to find innovative, cutting-edge solutions to wildlife damage issues. The Center's research covers a wide range of topics:

- Strategies to manage blackbird damage to U.S. crops
- Injectable and oral contraceptives for managing locally overabundant wildlife
- New techniques to manage predation by wild animals on endangered and threatened wildlife, as well as domestic animals
- Techniques to reduce mammal damage to forests
- Integrated pest management strategies to reduce rodent damage to crops and rangeland

- Tools and strategies to reduce bird predation at aquaculture facilities
- Registration of chemicals and drugs for use as wildlife damage management tools
- Taste and olfaction in selected wildlife species and nonlethal chemical repellents for birds and mammals
- Techniques to reduce wildlife hazards to planes and other aircraft
- Economic assessments of management tools and techniques, as well as cost estimates for a variety of wildlife damage issues
- Genetic techniques to learn more about animals, their abundance, behavior, movements, and evolution and develop new pesticides that are species-specific, humane, and have low environmental burden
- Methods to manage invasive species, such as feral swine, that threaten native ecosystems and agricultural crops
- The ecology and transmission of diseases to livestock, wildlife, and people, along with techniques to keep diseases from spreading



Nonlethal techniques, such as using livestock protection dogs to prevent livestock predation, are a focus of NWRC's predator research.



NWRC is developing a new oral toxicant bait for use with invasive feral swine while limiting hazards to nontarget species and the environment.