NWRC headquarters in Fort Collins, CO.

About the NWRC

NWRC is the research arm of USDA's Wildlife Services program. The Center is a leader in providing science-based solutions to the complex issues of wildlife damage management as related to agriculture; natural resources, including threatened and endangered species; property and infrastructure; and public health and safety. 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, Wildlife Services' operational personnel assist NWRC scientists in developing and evaluating new management tools and methods.

NWRC employs more than 150 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, 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 (1940–1954)

More Information

In addition to developing and testing new methods for dispersing problem blackbirds, NWRC scientists are also documenting habitat use and movements of blackbirds throughout the Great Plains. To learn more about NWRC's blackbird research, please visit our Web site at www.aphis.usda.gov/wildlifedamage/nwrc.

Wildlife Services Office Phone Numbers

- Wildlife Services State Office, Bismarck, ND
  (701) 335-3300
- NWRC headquarters (Fort Collins, CO)
  (970) 266-6000
- Eastern Regional Office (Raleigh, NC)
  (919) 855-7200
- Western Regional Office (Fort Collins, CO)
  (970) 494-7443
- Operational Support Staff
  (301) 851-4009

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Solutions Through Science

Protecting Sunflowers From Blackbirds

Wildlife Services
NWRC
National Wildlife Research Center

Problem

In late summer, large flocks of blackbirds gather in the northern Great Plains to prepare for their strenuous migration to southern wintering grounds in the United States and Mexico. The birds acquire energy for their trip by feasting on nutrient-rich seeds and berries. Unfortunately for farmers, many of those seeds come from agricultural crops. Red-winged blackbirds, common grackles, and yellow-headed blackbirds cause most of the damage to commercial crops. Sunflower producers in North Dakota, South Dakota, and Minnesota suffer millions of dollars in losses annually due to blackbirds.

Reducing blackbird damage to sunflower crops continues to be a challenge for researchers and farmers. Farmers can suffer losses ranging from slight to devastating (total crop loss). Blackbirds tend to eat a portion of the grain in a field, which lowers the overall yield, but their depredation is not often enough to trigger an insurance claim.

Birds that congregate in fields in mid-August are not easily harassed because they are in the process of molting their flight feathers and tend to stay in nearby wetlands. It is these birds that can cause the most damage.

Science-Based Solutions

To help reduce blackbird damage to commercial sunflower crops, scientists at the Bismarck, ND, field station of the U.S. Department of Agriculture's (USDA) National Wildlife Research Center (NWRC) are collaborating with North Dakota State University (NDSU) scientists to better understand the ecology and behavior of blackbirds. In particular, scientists are studying the effectiveness of various avian repellents to protect agricultural crops. NWRC scientists are also collaborating with USDA's Agricultural Research Service (ARS) and the University of Minnesota to develop a high-yielding strain of perennial sunflower that could be used as a lure crop to entice birds away from highly valuable commercial crops.

Red-winged blackbirds are responsible for the majority of wildlife damage to sunflower crops.

Thinning Cattails

Throughout the Prairie Pothole Region of the Great Plains, sunflower crops are often planted near cattail wetlands. This arrangement is ideal for blackbirds, as they roost in cattails and easily fly short distances to feed on nearby sunflowers. One management method NWRC and NDSU scientists developed that has proven successful at reducing blackbird damage to sunflowers is the thinning of adjacent cattails to make them less suitable for blackbirds.

Roughly 39 million red-winged blackbirds, 19 million common grackles, and 17 million yellow-headed blackbirds migrate through the Great Plains each fall.

Cattail stands are thinned to make them less suitable for blackbirds.

Researchers from NWRC, University of Minnesota, and USDA-ARS are exploring new methods, such as using perennial sunflower as a "lure" crop, to reduce blackbird damage to sunflowers.

Cattails can be sprayed with Government-approved aquatic herbicides between mid-July and early-September. Herbicides should be applied in strips either aerially or with ground-based sprayers. The remaining untreated cattails offer habitat for other migratory birds that prefer more open wetland areas. For more information and guidance on the use of aquatic herbicides for cattail thinning, please call USDA Wildlife Services in North Dakota at (701) 355-3300.

Using Lure Crops

In the early 1980s, NWRC scientists showed that planting "lure" crops could significantly reduce bird damage to nearby commercial sunflower fields. Due to logistical and economic reasons, however, land managers did not express much support for the concept. Today, the idea of lure crops or "wildlife conservation plots" is gaining acceptance.

The concept is simple—plant a small field (about 20 acres is ideal) of sunflowers or another crop, such as corn, that is attractive to blackbirds. Do not spray the crop with insecticides, and do not harass the birds using it. The goal is to keep the birds in the lure crop as long as possible, thereby reducing the time they spend in nearby commercial sunflower fields. Each seed eaten in the lure crop is one less seed eaten in the commercial field. To encourage the birds to stay in sections planted with the lure crops, farmers can continue to spray registered repellents and harass birds in their commercial fields.

NWRC scientists are finding that the most successful lure crops are those planted between wetlands and commercial fields. The lure crops have also proven beneficial to many other bird and wildlife species.

Repellents, Propane Cannons, Pyrotechnics, and Farming Practices

NWRC researchers are working to identify, develop, and improve the use of chemical repellents for reducing blackbird damage to ripening sunflowers. However, before any repellent can be used effectively in large-scale applications, land managers need a more effective method to spray repellents onto sunflower heads, which hang nearly horizontal to almost perpendicular to the ground. Wildlife Services field specialists and scientists also continue helping growers use other management tools and methods to reduce blackbird damage, including propane cannons and pyrotechnics to scare birds away from fields and farming practices that encourage the removal of ripened sunflowers earlier in the season. Applying a desiccant (drying agent), such as glyphosate and saflufenacil herbicides, to sunflowers enables farmers to harvest earlier and avoid late-season damage from blackbirds as a result.

NDSU

National Sunflower Association

NWRC scientists partner with experts from NDSU and the National Sunflower Association.