

# USDA Finds Wildlife Conservation Sunflower Plots Valuable to Farmers and Birds

Researchers from the U.S. Department of Agriculture's Animal and Plant Health Inspection Service (APHIS), and North Dakota State University (NDSU) examined migratory bird use of croplands in North Dakota and found species diversity and densities to be highest in wildlife conservation sunflower plots (WCSP) compared to commercial sunflower or other non-sunflower row-crops such as corn, soybeans and wheat. The research findings were recently published in an article titled "Wildlife Conservation Sunflower Plots and Croplands as Fall Habitat for Migratory Birds," in the *American Midland Naturalist* (volume 164:119-135). The findings aid in the development of guidelines for future WCSP placement and management to improve migratory bird habitat while retaining productive agricultural practices.

WCSP (or "lure" crops) are a nonlethal wildlife damage management method used to reduce blackbird damage to ripening commercial sunflower crops. The WCSP concept is simple—plant a small field (about 20 acres or 8 hectares) of an early maturing variety of oilseed sunflower to draw blackbirds away from more valuable commercial sunflower fields. The lure crops are left alone and do not receive insecticide treatments or protection from bird damage. The goal is to keep birds in the WCSP as long as possible, thereby reducing the time they spend feeding in nearby commercial sunflower fields. The most successful WCSP for reducing blackbird damage are those planted between wetlands and commercial fields.

"Each seed eaten in the WCSP is one less seed eaten in the commercial field," said George Linz, a supervisory research wildlife biologist with USDA-APHIS National Wildlife Research Center (NWRC). "Farmers can continue to spray registered repellents and harass blackbirds in their commercial fields to encourage the birds to stay in the WCSP. We're finding

that in addition to reducing bird damage to the commercial fields, these crops also are benefiting many other bird and wildlife species. They're a win-win."

USDA researchers in cooperation with North Dakota wildlife services planted WCSP in locations likely to receive blackbird damage. Thus, it was not surprising that WCSP received higher blackbird damage than nearby commercial sunflower fields. For example, in 2005, blackbirds removed an average of 388 pounds/acre and 44 pounds/acre of sunflower seed in WCSP and commercial sunflower fields, respectively. Recently, NWRC scientists and NDSU collaborators observed more dense communities of fall migratory birds in WCSP and commercial sunflower fields compared to other non-sunflower crops (See Table 1). The most numerous species observed in WCSP (excluding blackbirds) include American goldfinch, clay-colored sparrows, mourning doves and Savannah sparrows. These numbers were more strongly associated with crop density, abundance of non-crop plants, and crop height within fields rather than the surrounding habitat type. In fact, researchers determined that WCSP with tall ( $\geq 4.3$  ft/1.3 m), densely planted rows ( $\geq 1.5$  crop plants/linear foot) with some non-crop plants—such as forbs from flowering mustard, cabbage and goosefoot families—resulted in the highest bird densities. Results showed greater bird densities in sunflower and especially in WCSP than previously reported during fall in fallow, sunflower and wheat fields; in cornfields during the breeding season; in Great Plains forest fragments in spring; and in Conservation Reserve Program grassland and row-crop fields in winter.

The cost-benefits associated with WCSP are still being evaluated; however, scientists are hopeful that the proper placement and management of WCSP will provide sunflower producers with an economically viable nonlethal blackbird damage management option that also improves wildlife habitat for other migratory birds.

Large flocks of blackbirds congregate in the northern Great Plains from August to October in preparation for a strenuous migration to southern wintering areas. Blackbirds acquire energy for migration by eating agricultural crops, especially sunflower. Red-winged blackbirds, common grackles and yellow-headed blackbirds cause most of the damage.

Sunflower producers in North Dakota and South Dakota annually lose \$4-7 million to blackbirds. Approximately 988,000 acres of sunflower are planted annually in North Dakota, more than any other state.

The NWRC is the research arm of USDA's wildlife services program. It is the federal institution devoted to resolving problems caused by the interaction of wild animals and society. The center applies scientific expertise to the development of practical methods to resolve these problems and to maintain the quality of the environments shared with wildlife. To learn more about NWRC, visit its website at [www.aphis.usda.gov/wildlife\\_damage/nwrc/](http://www.aphis.usda.gov/wildlife_damage/nwrc/).

Table 1. Non-Blackbird Density by Habitat Type

Habitat Type	Bird Density
WCSP	9.9 birds/acre or 24.4 birds/hectare
Commercial Sunflower	5.1 birds/acre or 12.7 birds/hectare
Non-sunflower Crops	2.9 birds/acre or 7.2 birds/hectare

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