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Reducing Blackbird Damage to Feedlots and Ripening Sunflower Crops

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National Wildlife Research Center Scientists Address the Concerns of Sunflower Producers and Feedlot Managers

Wildlife Services' (WS) National Wildlife Research Center (NWRC) is the only Federal research facility devoted exclusively to resolving conflicts between people and wildlife through the development of effective, selective, and acceptable methods, tools, and techniques. NWRC's Bismarck, ND, field station is ideally located to study methods for managing blackbird damage to sunflower crops in the northern Great Plains.

Blackbirds and starlings damage grain crops and eat livestock feed, causing significant economic losses to agricultural producers. NWRC scientists are studying ways to refine current damage abatement methods and develop new methods for reducing damage. In addition, researchers are looking to expand capabilities to target specific problem-causing blackbird populations on both local and regional scales with predictable results.

Applying Science and Expertise to Wildlife Challenges

Conservation Sunflower Plots—During the last decade new farm programs have placed more emphasis on wildlife conservation. In 2004, NWRC and North Dakota State University scientists collaborated to evaluate decoy sunflower plots, called Wildlife Conservation Sunflower Plots, planted to reduce blackbird damage to commercial

Major Research Accomplishments:

- WS developed a model to estimate the mortality of starling populations managed with an avicide.
- WS is developing a strategy to plant Wildlife Conservation Sunflower Plots to reduce damage to commercial sunflower fields and provide habitat for other animals.
- WS determined the amount of cattail in the Prairie Pothole Region of North Dakota to be estimated at 547,341 acres.
- WS discovered two chemical compounds one that is currently registered as an insecticide for sunflower and one in development that might discourage blackbirds from feeding on sunflower.



sunflower fields and establish habitat for wildlife. As expected, the majority of birds using the plots were blackbirds; however, 28 non-blackbird species also were recorded in the sunflower fields. This study will continue in 2005 and 2006 to gather data to support the use of Wildlife Conservation Sunflower Plots as a broad-based dual-purpose wildlife management strategy.

Starling Population Management Modeling—Feedlots and dairies are major gathering sites of European starlings from November through February. Starlings eat valuable livestock feed and also leave fecal matter on livestock, facility superstructures, feeder troughs and feed, and may be a reservoir for transmissible diseases. Wildlife Services personnel manage starling numbers with an avicide but lack a standardized methodology to estimate mortality at feedlots and dairies. NWRC scientists have developed a bioenergetics model to estimate mortality and will test this model for accuracy in the field in winter 2005.

Blackbird Reproduction—Removal of birds from the breeding population should lower their breeding densities and presumably reduce the number of new birds added to the population each year. Logically, a smaller blackbird population should result in less crop damage. The population might compensate with increased reproduction but empirical data are not available to test this hypothesis. In 2004, NWRC and North Dakota State University scientists col-

laborated in a field study designed to investigate whether low-density populations of nesting red-winged blackbirds will lay more eggs than high-density populations. This study will continue in 2005.

Repellents—NWRC researchers are working to identify, develop, and improve the use of chemical repellents for reducing blackbird damage to ripening sunflower crops. In 2003 and 2004, field station scientists tested 10 potential bird repellents on caged blackbirds and found 2 compounds that showed sufficient repellency to warrant small-scale field testing. Data collected during these tests will be used to support Federal registration of environmentally-safe and effective feeding deterrents.

Groups Affected by This Problem:

- Sunflower producers
- South Dakota Oilseed Council
- North Dakota Department of Agriculture
- South Dakota Department of Agriculture
- Feedlot Owners Association
- Consumers of sunflowers, sunflower seeds, sunflower oil, and other products
- Processors, manufacturers, suppliers, and sellers of sunflower products

Major Cooperators:

- National Sunflower Association
- North Dakota State University
- North Dakota Department of Agriculture

Cattail Management—In the Prairie Pothole Region (PPR) of North Dakota, Wildlife Services thins dense cattail stands used as roosting sites by blackbirds with an aquatic plant herbicide. Research was needed to determine the acreage of cattail found in this region to address concerns that this program could negatively impact animal species that rely on cattails for habitat. NWRC and North Dakota State University scientists randomly selected 120, 4-square mile sample plots and acquired aerial infrared photographs of these areas. Scientists found that within the 95,172km² of the PPR, 4,396 wetlands contained 547,341 acres of cattails, representing 2.3% of the total land area. The amount of cattail sprayed annually by Wildlife Services is about 5,000 acres or less than 1% of the total available cattail. Based on the results of this research and other published studies, it is unlikely that the small percentage of cattail treated annually by Wildlife Services will negatively affect animals using cattail for food and shelter.

Selected Publications:

- Goldberg, D. R.; Samuel, M. D.; Rocke, T. E.; Johnson, K. M.; Linz, G. M. 2004. Could blackbird mortality from avicide DRC-1339 contribute to avian botulism outbreaks in North Dakota? Wildlife Society Bulletin 32:870-880.
- Linz, G. M.; Knutsen, G. A.; Homan, H. J.; Bleier, W. J. 2004. Attr activeness of brown rice baits to nontarget birds in harvested corn and soybean fields. Pest Management Science 60:1143-1148.
- Blackwell, B. F.; Huszar, E.; Linz, G. M.; Dolbeer, R. A. 2003. Lethal control of red-winged blackbirds to manage damage to sunflower: An economic evaluation. Journal of Wildlife Management 67:818-828.
- Peer, B. D.; Homan, H. J; Linz, G. M.; Bleier, W. J. 2003. Impact of blackbird damage to sunflower: bioenergetic and economic models. Ecological Applications 13:248-256.