

# Blackbird Use and Damage of Wildlife Conservation Sunflower Plots

Jonathan M. Raetzman<sup>1</sup>, George M. Linz<sup>2</sup>, William J. Bleier<sup>1</sup>

1. Department of Biological Sciences, NDSU Fargo, ND 2. USDA WS NWRC Bismarck, ND

## Introduction

Annual blackbird damage to sunflower is valued at \$5 to \$10 million. Perhaps more importantly, the National Sunflower Association has identified blackbirds as the key reason for growers to abandon sunflower in areas of prime production. North Dakota and South Dakota together produce approximately 70% of sunflower grown in the United States. This crop adds \$906 million to the regional economy. To date, cost effective and environmentally safe methods to reduce bird damage to sunflower remain elusive. In the 1980's, scientists from the National Wildlife Research Center (NWRC) showed that "decoy" sunflower plots can greatly reduce bird damage to local commercial sunflower fields. At the time, this idea was abandoned due to lack of grower support. Support has increased, however, over the past 10 years due to conservation interests and new federal farm programs. In 2004, Wildlife Services (WS) along with North Dakota State University (NDSU) started the "Wildlife Conservation Sunflower Plot" (WCSP) study.



**2004 Wildlife Conservation Sunflower Plot**

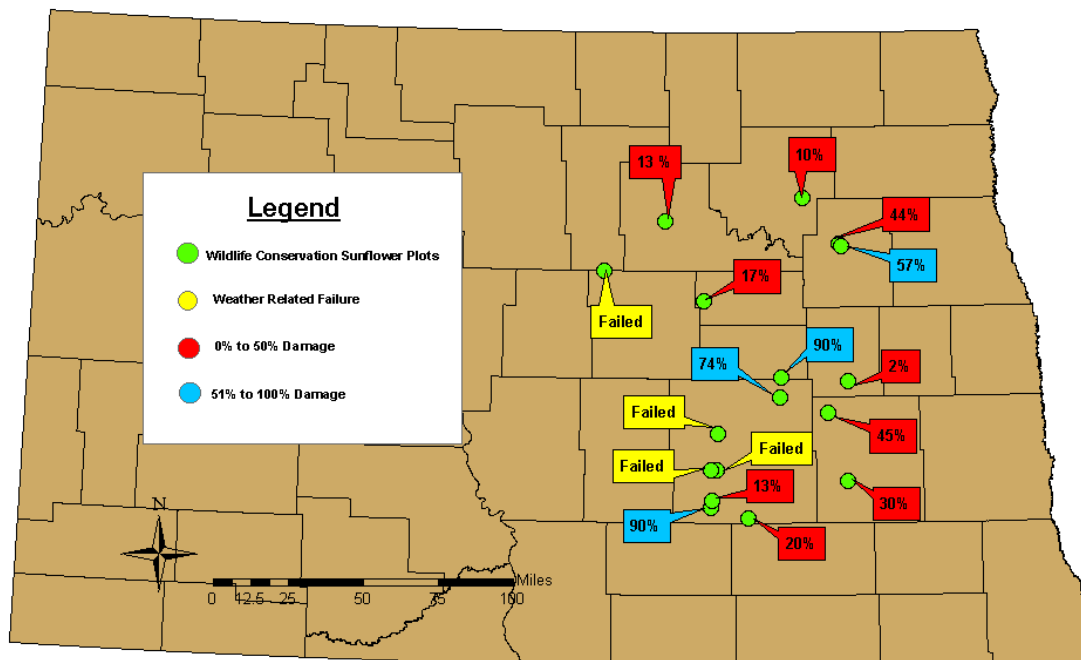
## Methods

From 2004-2006, we plan to cooperate with sunflower growers in North Dakota and South Dakota with historical blackbird problems, who are willing to plant at least one 8-ha sunflower plot near a likely blackbird roost. Farmers received \$370.50/ha up to maximum of approximately 8 ha. In 2004, 17 WCSP's were planted in North Dakota (Figure 1). In 2005 and 2006, the number of planted WCSP's will increase as funds are available.

From 20 August to 18 October 2004, weekly damage assessment surveys were conducted in the plots. These surveys were done by randomly choosing 24 damage assessment sites within each 8-ha WCSP. Over the 9-week study, the same damage assessment sites were surveyed each time. We recorded head size (cm<sup>2</sup>) and damage amount (cm<sup>2</sup>) for each individual head on a weekly basis. We will assume that every seed eaten in a WCSP is a seed saved from a commercial sunflower field.

## Results

Of 17 WCSP's planted, 4 fields failed to develop due to a cool, wet summer. Of the remaining 13 WCSP's, mean percent damage (Figure 1) was 38.6% (range 2% - 90%). These data show that WCSP's are being damaged significantly by blackbirds. We conducted weekly damage surveys on 11 of the 13 WCSP's (Figure 2). Damage among individual fields varied but the overall damage increased noticeably around 4 September and then again near 25 September (Figure 3).



**Figure 1. WCSP locations and final percent damage. The mean damage was 38.6%, with a range of 2% to 90%.**

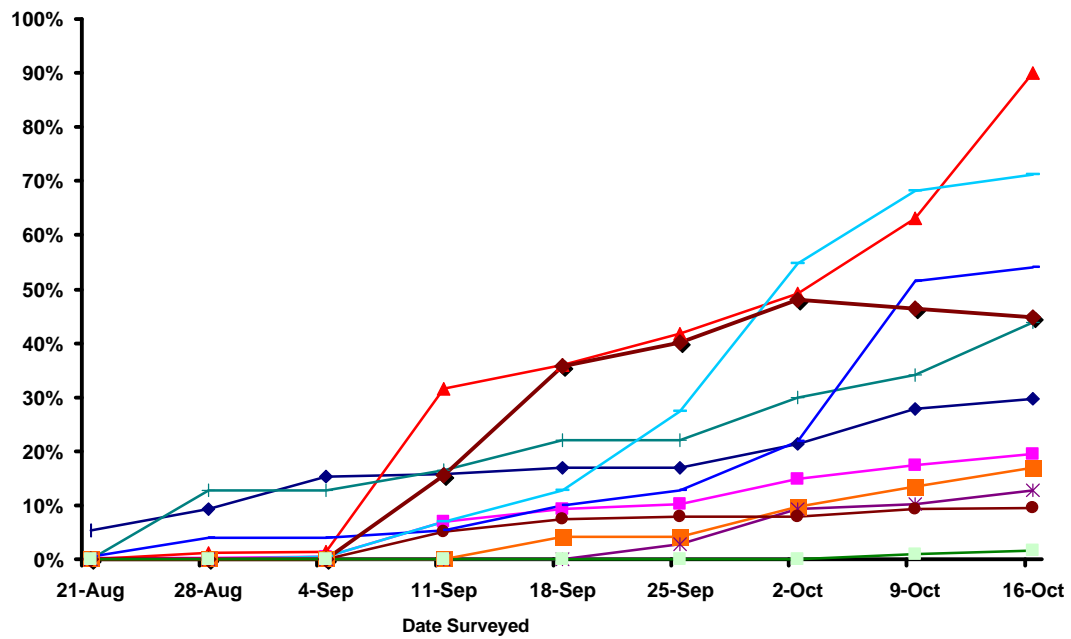


Figure 2. Percent sunflower damage in individual WCSP's over time.

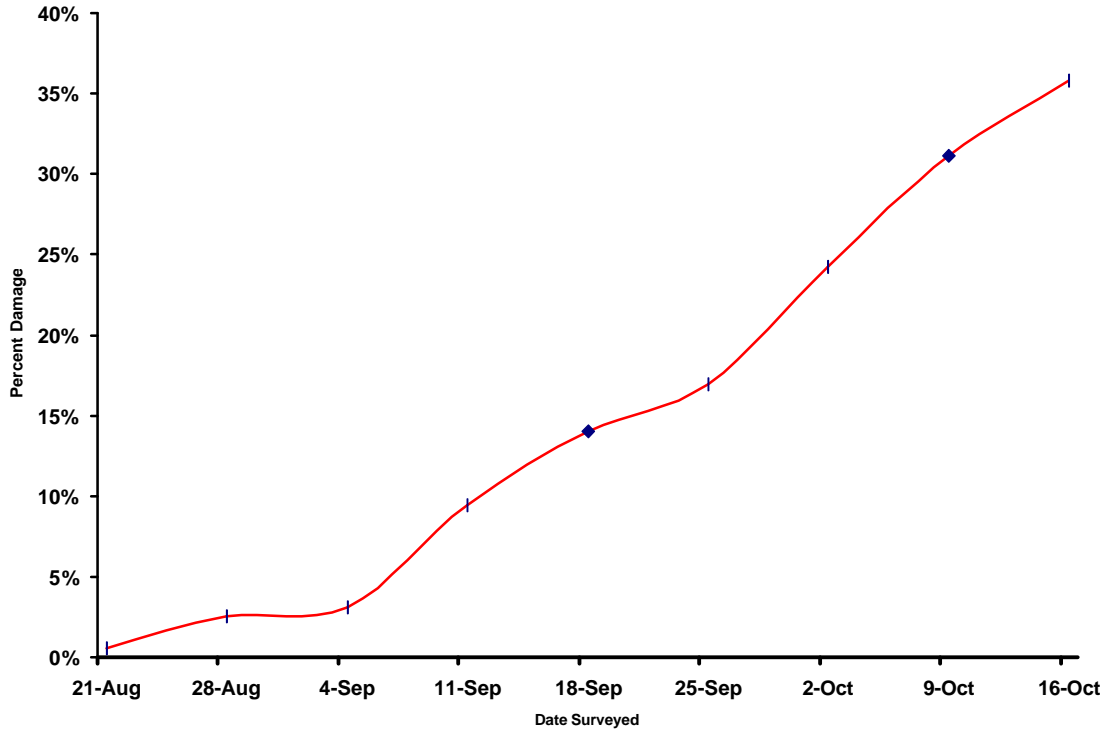


Figure 3. Average percent damage over time for 11 WCSP's.

**Goals**

Our goal is to provide baseline data on the use of WCSP's for wildlife resource managers to make an informed decision on the environmental effects and efficacy of these plantings for reducing blackbird damage to commercial sunflower and providing habitat for wildlife. Over the next two years, we will continue to 1) evaluate the efficacy of small sunflower plots for reducing blackbird damage to commercial fields, 2) identify and quantify avian use of WCSP's, 3) identify and quantify habitat factors that influence bird use of WCSP's, and 4) estimate the economic costs and benefits of using WCSP's to reduce bird damage to sunflower.

**Acknowledgements**

We thank SD/ND Wildlife Services, Bismarck, ND, for coordinating and supporting the WCSP. We thank all of the sunflower growers who participated in this study. This project was funded by the United States Department of Agriculture and Wildlife Services. George Linz and Scott Ralston provided photographs.