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Blackbird Use and Damage of Wildlife Conservation Sunflower Plots: The Second Year

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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 Plots" (WCSP) study.



Sunflower field with large flock of feeding blackbirds

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 were planted in North Dakota (Figure 1). In 2006 the number of planted WCSP will increase as funds are available.

From 20 August to 18 October 2004 and from 23 August to 20 October 2005, 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 each field season, the same damage assessment sites were surveyed each time. We recorded head size (cm²) and damage amount (cm²) 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. In addition all commercial sunflower fields within 1.5 miles of WCSP were surveyed for damage at the end of the growing season.

WCSP Sites

In 2004 and 2005 the WCSP were located in the Prairie Pothole Region of North Dakota. For 2004 we had 13 WCSP and in 2005 we had 21 WCSP for a total of 34 WCSP (Figure 1).

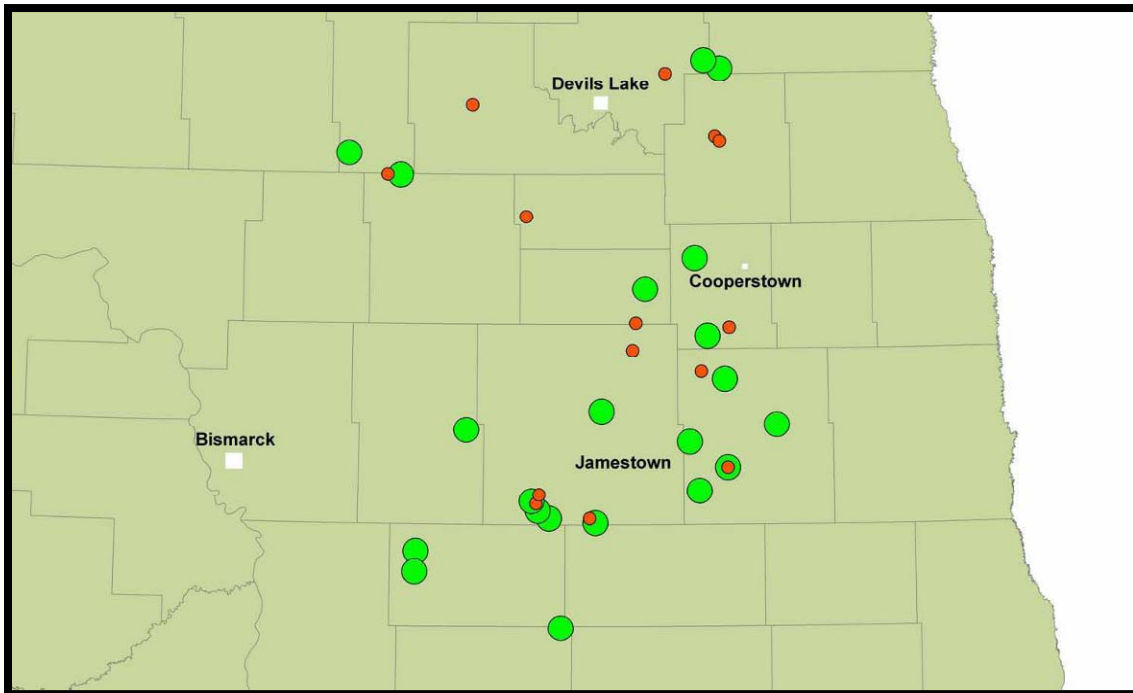


Figure 1. 2004 and 2005 WCSP locations

Results

We conducted weekly damage surveys on the WCSP in 2004 and 2005 (Figure 2). Damage for 2004 and 2005 was similar, however in 2004 the overall damage increased noticeably around 4 September and then again near 25 September. In 2004, the mean percent damage (Figure 3) was 38.6% (range 1.6% - 90.5%) in 13 WCSP. In 2004, the mean percent damage (Figure 3) was 4.6% (range 0.7%-23.4%) in 24 commercial sunflower fields. The 21 WCSP, in 2005, averaged a mean percent damage (Figure 3) of 31.6% (range 0.7% - 93.7%). The 49 commercial sunflower fields, in 2005, had a mean percent damage (Figure 3) of 3.7% (range 0.0%- 24.1%). These data show that WCSP are being damaged significantly more by blackbirds than commercial sunflower fields in this study.

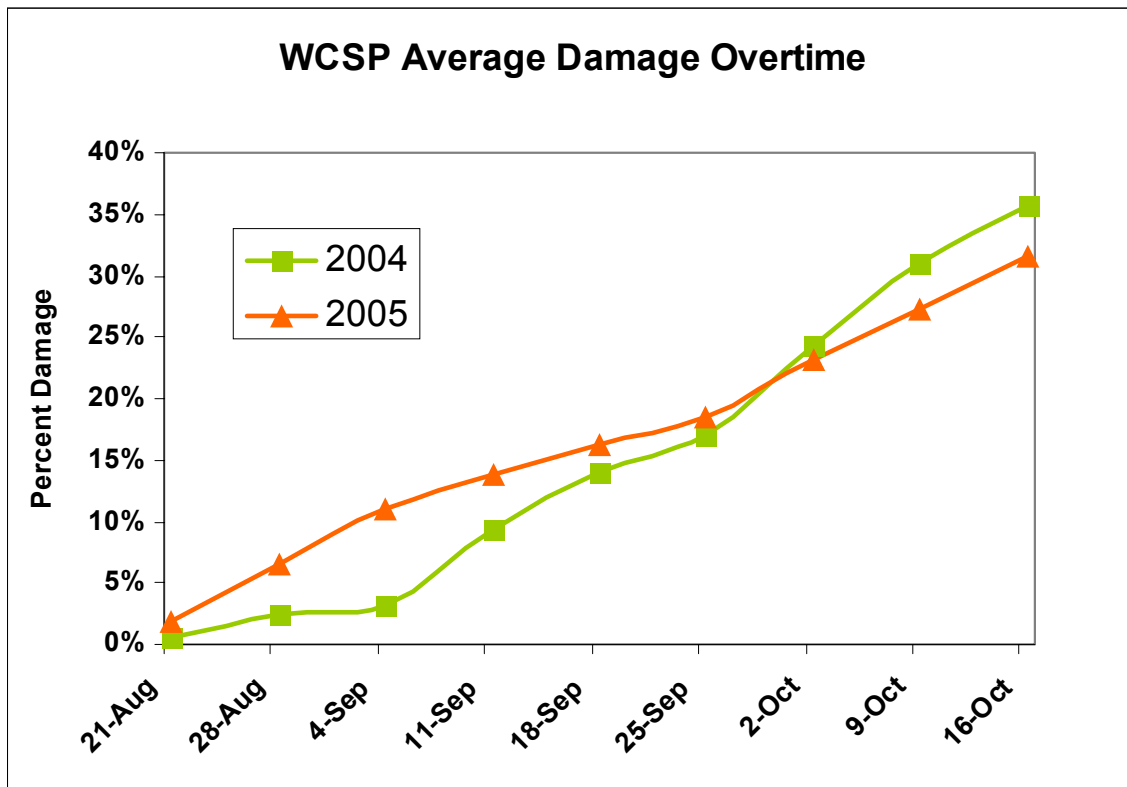


Figure 2. Percent sunflower damage in individual WCSP over time.

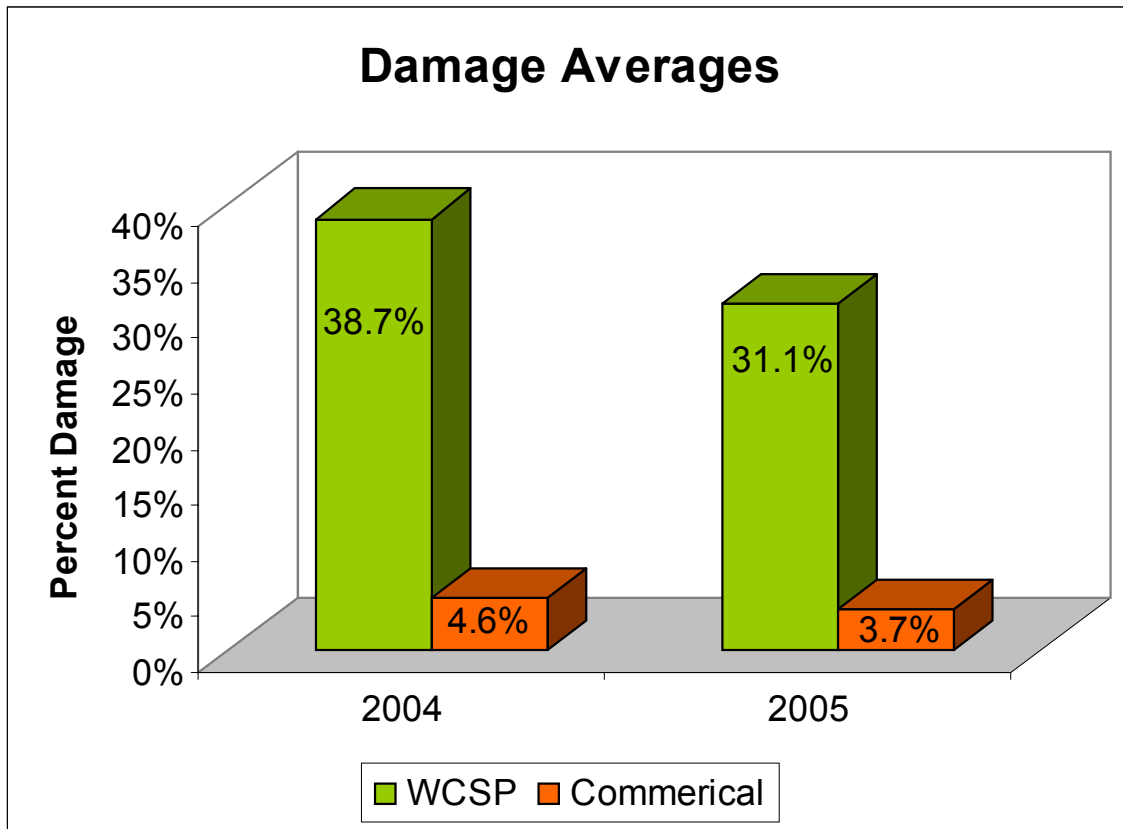


Figure 3. 2004 and 2005, WCSP and commercial sunflower field average damage

Goals

Our goal is to provide baseline data on the use of WCSP 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. We will 1) evaluate the efficacy of small sunflower plots for reducing blackbird damage to commercial fields, 2) identify and quantify avian use of WCSP, 3) identify and quantify habitat factors that influence bird use of WCSP, and 4) estimate the economic costs and benefits of using WCSP to reduce bird damage to sunflower.



Picture left: Red-winged Blackbird



Damage survey in progress

Acknowledgements

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