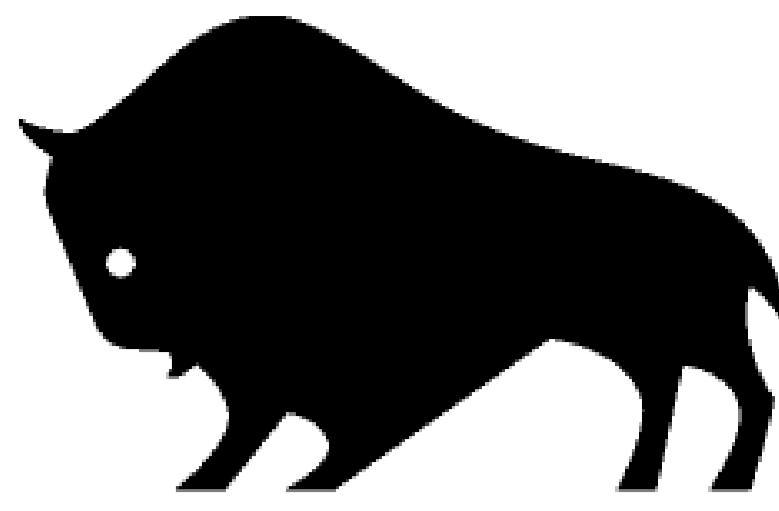




Blackbird Predation in Sunflower

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Background

The Manitoba sunflower crop accounts for 90% of Canadian production. As with all crops, each year growers face production issues. Blackbird damage has been an ongoing issue in sunflower production for many years across North America.

The most common blackbird species impacting sunflower are the 'red-winged' blackbirds. The red-winged blackbirds are a medium sized songbird that feed and roost in large flocks. The main habitat of the red-winged blackbirds are wetlands including marshes and swamps. The scavenging flocks are developing their long-range flying feathers in preparations for migration.



Figure 1. Red-winged blackbird perched on sunflower neck.

Damage

Nutritive value and accessibility of sunflowers makes them attractive to feeding blackbirds. Since blackbirds roost in wetlands, damage is often highest at field margins facing wetland or other roosting sites. However, feeding remains variable and adjacent plants can have very different levels of damage. Blackbirds often test randomly selected areas at the onset of feeding, but continue to damage these 'test sites' rather than moving to new untouched areas.

It has been determined that up to 75% of total blackbird damage can occur during the eighteen days following sunflower anthesis. Despite heavy feeding rates during this early growth stage, sunflowers can compensate for up to 15% seed removal. Continued feeding after this growth stage results in greater losses as the heads can no longer compensate for seed loss. Feeding often continues until either the flock migrates or the crop is harvested.

Food safety issues have arisen from attempted blackbird scaring techniques. Lead buck shot has been found in sunflower seeds as a result of producers attempting to scare birds. This results in product quality a risk and a disruption in supply.

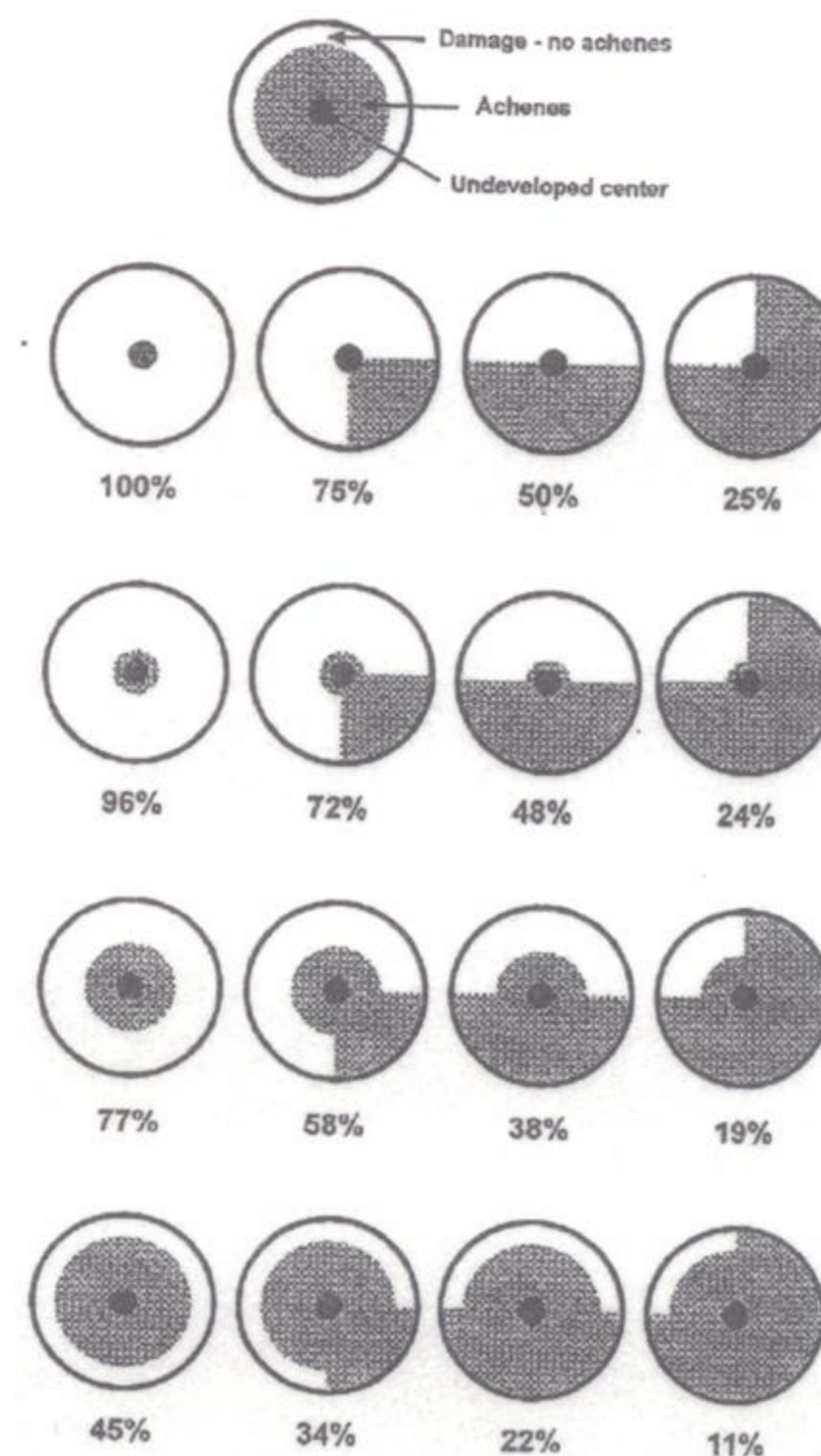


Figure 2. Lead buck shot found within sunflower shell poses food safety issues.

Control Options

A Blackbird Mitigation Plan has been drafted to educate sunflower growers on techniques to minimize sunflower exposure to blackbird predation. Across the United States, control strategies such as avicides, chemical frightening agents, habitat altering, conventional mechanical scaring devices and cultural practices have been employed over the years. Many of these control measures prove to be unsuccessful and do not satisfy agriculturists and environmentalists. The development of sunflower varieties that are bird resistant and productive has been proposed as a solution. To be successful, the varieties need to be altered to be less attractive to blackbirds by reducing nutritive value, accessibility and/or palatability.

Assessment



Annually in mid-September, the NSAC participates in the National Sunflower Association of the USA's Sunflower Crop Survey. Fields are randomly selected from around the province to provide an overall depiction from the various growing regions and sampled to determine incidence of pest damage.

The protocols for determining average blackbird damage in the survey requires that two locations are selected at random within a field at least 150 feet past the headland. Ten consecutive heads are visually evaluated for blackbird damage using the "Bird Damage % Seed Loss" chart (Figure 3).

Figure 3. Bird Damage % Seed Loss chart used to visually assess blackbird damage

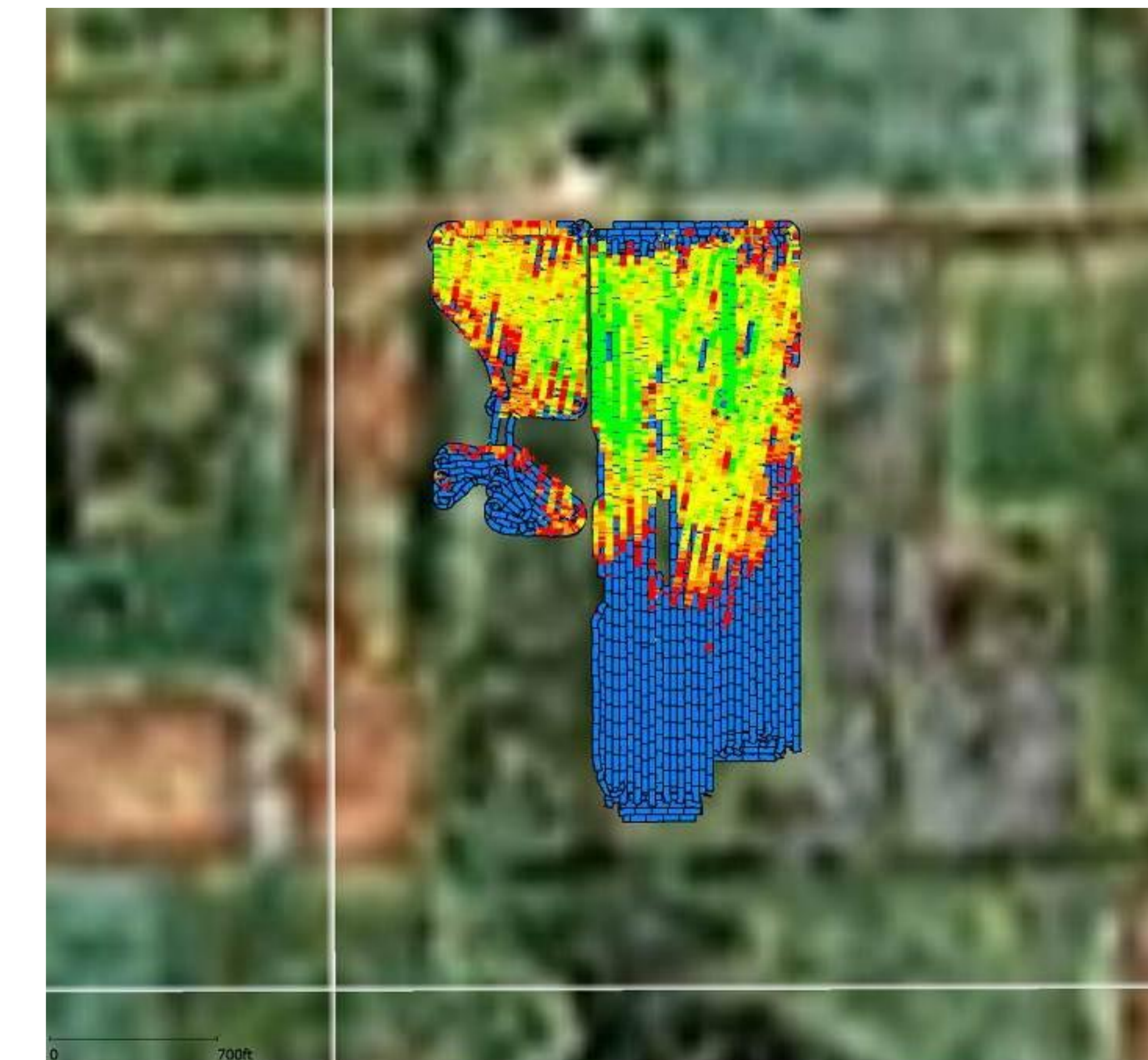
Results

Since the NSAC started participating in the survey five years ago, 83 fields have been assessed for blackbird damage. Of those sampled, 55% of the fields experienced damage ranging from 1% to 30%. The average damage for the two locations and average field losses (assuming 160 acres) are provided in Table 1. Estimates are based on \$0.30 per pound and Manitoba's provincial average yield of 1500lbs/ac.

Table 1: 2011 NSA Summer Survey Blackbird Damage

Field #	% Bird Damage	Blackbird damage per acre (lbs/ac)	Average Price	Bird Damage per acre (\$/ac)	Net loss: 160 acres Sunflowers
1	1.5	22.5	\$0.30	\$6.75	\$1,012.50
2	2	30	\$0.30	\$9.00	\$1,350.00
3	1	15	\$0.30	\$4.50	\$675.00
4	0	0	\$0.30	\$0.00	\$0.00
5	0	0	\$0.30	\$0.00	\$0.00
6	3	45	\$0.30	\$13.50	\$2,025.00
7	3	45	\$0.30	\$13.50	\$2,025.00
8	0	0	\$0.30	\$0.00	\$0.00
9	4.8	72	\$0.30	\$21.60	\$3,240.00
10	4	60	\$0.30	\$18.00	\$2,700.00

Commercial Damage



Grower: 2010 TFE
Farm: Home
Field: J1-J2
Year: 2011
Crop: JAGS
Area: 64.60 ac
Date: 6/11/2011

Yield Mass (Dry) - (lb/ac)
Above 2,183 = 6,542 ac
1,818 - 2,183 = 7,079 ac
1,551 - 1,818 = 6,909 ac
1,330 - 1,551 = 6,991 ac
Below 1,300 = 6,927 ac

Figure 4. Yield Monitor map illustrates blackbird damage in 2011. In April, 64.60 acres were planted. The combine registered 34.45 acres at harvest.

This yield monitor map was created by a sunflower grower using AFS software. The blue on the map shows that 64.6 acres of sunflowers were planted. Directly to the south of the field, a water hole is located in a neighbors field. Due to a wet spring, the water hole was much larger, and blackbirds took maximum advantage of the sunflowers within close proximity of the roosting site. The combine registered that 34.45 acres were harvested. The average yield over the 34.45 acres harvested was 1770 lbs per acre. When averaged over the 64.6 acres seeded, the average yield was 943 lbs per acre. Economic losses were estimated at \$28,596.

Summary

At historical prices, financial losses can be over \$100/acre for severely affected fields. Damage to sunflowers from blackbirds is an ongoing, variable, and uncontrollable natural phenomena with no practical means of management or mitigation. Current scare techniques such as cannons, as offered by Manitoba Conservation, offer little relief. The birds quickly become accustomed to the sounds, and noise restrictions surrounding town centers limits use from dusk to dawn. To help alleviate the unpredictable financial burden possible due to scavenging blackbirds, the NSAC feels that the most efficient and economically viable way to protect the species and producers is to have an insurance program developed for blackbird damage.

References

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