Does a "Sonic Net" Protect Sunflower from Damage by Blackbirds?

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Background

- Blackbird flocks cause millions of dollars of damage to North Dakota Sunflower Crops each year.[1]

- Most bird deterrents rely on scare tactics which are subject to habituation, making them less effective over time.[2]

- The Sonic Net produces "pink noise" designed to overlap the range of frequencies used by the target species.[3,4]

  ◇ This reduces the ability of birds to hear acoustic signals of predators or conspecific alarm calls.[4,5]

  ◇ Preliminary research shows up to an 82% decrease in bird abundance with no sign of habituation in an airfield test [5]

Sonic Nets may be an effective means to reduce bird damage to crops. The "noisy" environment increases predation risk causing birds to leave the area.

Sonic Net Treatment Reduces or Prevents Further Damage to Sunflower
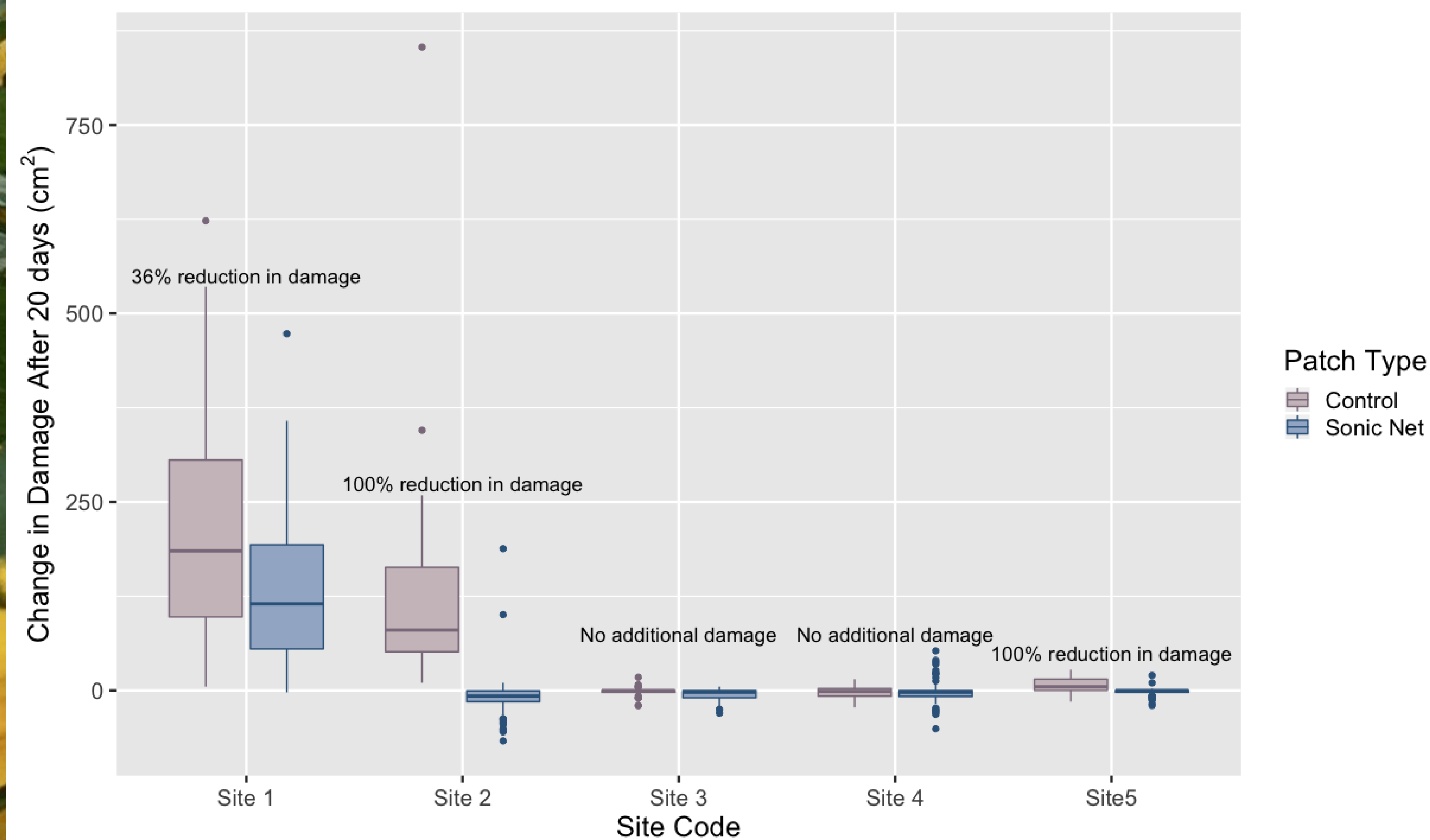
Figure 1. Sonic Net Treatment Reduces or Prevents Further Damage to Sunflower. Five experimental sites were selected in fields with active blackbird flocks, and control and treatment plots were established. Damage estimates were recorded for 63 individually marked flowers per plot. In treatment patches a Sonic Net played "pink noise" from sunrise to sunset, no sound was played in control plots. After 20 days each individual flower was re-measured for damage. The percent differences between the average change in damage between control vs. treatment in the same site are reported.

Discussion

- A Sonic Net reduces or prevents additional damage to treated plots.

  ◇ Four of 5 Sonic Net sites showed no additional damage

  ◇ Sonic Net sites had **significantly** less additional damage than control sites.

- Further research is required to see if these trends will extend across larger areas of coverage.

- Economic analysis is still pending to determine if this technology is cost effective, based on these preliminary results.

- Sonic Nets were also tested in 2 roosts with established flocks, but there was no discernable effect on flock size.
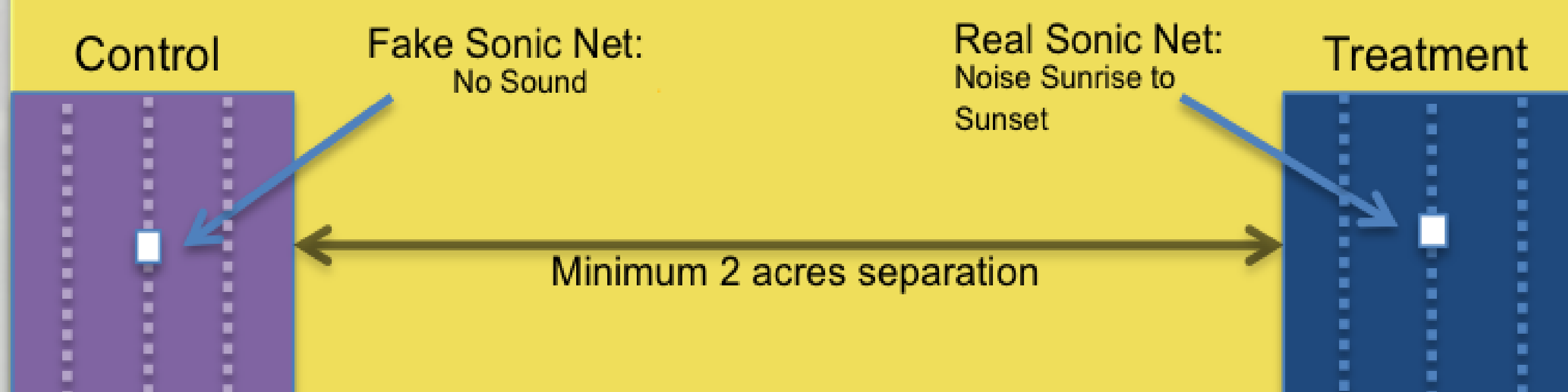
The Sonic Net was found to be effective in preventing or reducing further damage to sunflower crops over a 20 day period. However, we don't yet know if this technology will be cost effective.

Methods

5 sunflower fields
2 half acre plots in each field
63 individual sunflower per plot
across 3 transects

1. Damage Estimates Before
2. 20 days treatment
3. Damage Estimate After

Control

Fake Sonic Net: No Sound

Real Sonic Net: Noise Sunrise to Sunset

Treatment

Minimum 2 acres separation

Examples from Site 1:

Control | Sonic Net

Before — 6.3% damage | Before — 6.0% damage

20 days of treatment

After — 75.0% damage | After — 6.5% damage

References and Acknowledgements

References:

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