Conservation for a Wildlife Success Story

Jeb Barzen
Private Lands Conservation LLC
Spring Green, WI

jeb@privatelandsconservation.org
Acknowledgments

- International Crane Foundation (ICF)
- Arkion Life Sciences LLC
- Landowners near Briggsville, WI
- Staff and Interns at ICF
- Wisconsin Department of Natural Resources & Department of Agriculture, Trade and Consumer Protection
- Private Donors
- Springborn Smithers
- Wisconsin Potato and Vegetable Growers Association
- World Wildlife Fund - US
- US Department of Agriculture
- Tryon Group
- Adventis Seed Corporation
- Wolf River Valley Seeds
Sandhill Cranes in North America

IUCN Crane Action Plan: Meine and Archibald, 1992
Overharvest was the Original Reason for Population Decline

Estimated Population of EP in 1936 = < 50 Nesting Pairs of Sandhill Cranes
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Figure 22. Annual and three-year average of fall counts of the Eastern Population of sandhill cranes.

- Survey was not conducted in 2001. The 3-yr average for 2001 was calculated using data from 1998-2000.
- In 2002 and 2003, the 3-yr averages did not include 2001.
- New survey areas are still being added which is partially responsible for the increasing count.

Changes in Breeding Distribution over Time for the EP 2/3 in WI

Damage = Removal of Planted Seeds
Corn Growth Stages
Is this a Problem?

Tom Lynn
The Ecological Problem
= Habitat Selection
Habitat Selection has Important Applications

Between Food Items Within a Habitat

Between Habitats Within a Home Range
Cranes Need a Mosaic of Habitats that Agriculture Provides

Uplands with Short Vegetation + Wetlands = Preferred Habitat
Between Field Prevention Fails

Dummies
Streamers
Balloons
Hunting
Lure Crops
Cannon & Other Pyro-techniques

Warwick Tarboton
Manitoba Conservation
Between Fields

Crane Use vs. Corn Availability

2007

R² = 0.86

Crane response to vulnerable corn

Vulnerable Corn (ha)

Crane observed in vulnerable corn

Cone (ha)
Vulnerability of Corn Alone Does NOT Predict Crane Use of Field

![Graph showing the number of cranes in germinated corn over weeks since corn emergence, comparing treated and non-treated corn. The graph indicates that vulnerability of corn alone does not predict crane use of the field.](image)
Selecting Individual Food Items
Corn Seedling Density 2001

**Trial 1**
05/15 - 06/14

**Trial 2**
06/26 - 07/07

Crane Use in Treated Field = Crane Use in Untreated Field

\[ H_0 : \text{Unused} - \text{Used} = 0 \]

\[ \Rightarrow \] = 95% Confidence Interval
Crop Damage is a Solvable Problem

Mike Sawyers

Su Liying

Treated

Untreated
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Figure 22. Annual and three-year average of fall counts of the Eastern Population of sandhill cranes.

Lindane

AQ & Other

Can Wildlife Success and Agriculture co-exist?
Crane Density & Distribution in Wisconsin 2007

Township level 07
# of Cranes per sq.mil.

- 0
- 1 - 5
- 6 - 10
- 11 - 50
- 51 - 100
- 101 - 150
- 151 - 200
- 201 - 300
- 301 - 400

Data courtesy ICF & Arklion Life Sciences LLC.
Heath Anderson
Deterrent Sold in Wisconsin
2007 (purple)
2008 (green)
# Acres of Corn Treated with Avipel In 3 States

<table>
<thead>
<tr>
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</thead>
<tbody>
<tr>
<td>WI</td>
<td>37,768</td>
<td>18,038</td>
<td>40,514</td>
<td>44,832</td>
<td>57,586</td>
<td>76,309</td>
<td>111,389</td>
<td>150,132</td>
<td>135,105</td>
<td>75,825</td>
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<td>MI</td>
<td>1,445</td>
<td>713</td>
<td>12,500</td>
<td>11,940</td>
<td>12,000</td>
<td>6,915</td>
<td>16,830</td>
<td>32,750</td>
<td>27,155</td>
<td>14,250</td>
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<td>MN</td>
<td>632</td>
<td>12</td>
<td>1,200</td>
<td>3,000</td>
<td>2,000</td>
<td>830</td>
<td>2,676</td>
<td>6,750</td>
<td>6,878</td>
<td>875</td>
<td>3,400</td>
<td>5,600</td>
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<tr>
<td>TOTAL</td>
<td>39,845</td>
<td>18,763</td>
<td>54,214</td>
<td>59,772</td>
<td>71,586</td>
<td>84,054</td>
<td>130,895</td>
<td>189,632</td>
<td>169,138</td>
<td>90,950</td>
<td>147,150</td>
<td>171,900</td>
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Cost of Treating
143,500 ac corn = $1.5-$2.1 Million USD in 2017

2,791,838 acres of corn grown near (1.2 km) wet meadows
- Other Crops Treated -
Damage from other Bird Species Prevented

<table>
<thead>
<tr>
<th>Species</th>
<th>Crop</th>
<th>Area Treated in 2014 (ha)</th>
<th>Location</th>
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<tbody>
<tr>
<td>Sandhill</td>
<td>Corn</td>
<td>68,447</td>
<td>Wisconsin, Minnesota &amp; Michigan</td>
</tr>
<tr>
<td>Crane</td>
<td>Corn</td>
<td>404,686</td>
<td>Nebraska, South Dakota</td>
</tr>
<tr>
<td>Pheasant</td>
<td>Corn</td>
<td>12,140</td>
<td>Louisiana</td>
</tr>
<tr>
<td>Icterids</td>
<td>Rice</td>
<td>12,140</td>
<td>Louisiana</td>
</tr>
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</table>
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Blue Cranes poisoned to prevent crop damage in South Africa

(398 cranes shot in Wisconsin with Ag Tags in 2012)

Angry people can make bad decisions
Who Owns the Land?

Federal Land as a Percentage of Total State Land Area

US:
- 73% Private
- 20% Fed
- 7% State

WI:
- 90% private
- 5.6% Fed
- 4.4% State

Worldwide Similar %

Conclusions

Does Deterrence Work in the Field?

- Damage is reduced to nearly zero & doesn’t move.
- Solution is ecologically based – it will persist.

Can Deterrence be Sustainable?

- Current adoption is moderate & can grow.
- Solution is deployed through marketplace.
- Applicable to other crops, other bird species.
- Effective, self-applied & economical – Good for growers.
Cranes Inspire.

How we React is What is Important.

Tom Lynn