



Assessment of Bird Damage to Sunflower and Corn in North Dakota

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Production

- North Dakota: Top Sunflower Producer
 - Supports a \$906 million economy.
- Corn acreage has increased.
- Damage contributed to a reduction in sunflower crop.

Blackbirds

- Population
 - Red-winged Blackbird
 - Yellow-headed Blackbird
 - Common Grackle
 - Surpasses many other states
 - Prime habitat
 - Migration flyway
 - Food distribution



Increase

+



Increase

+

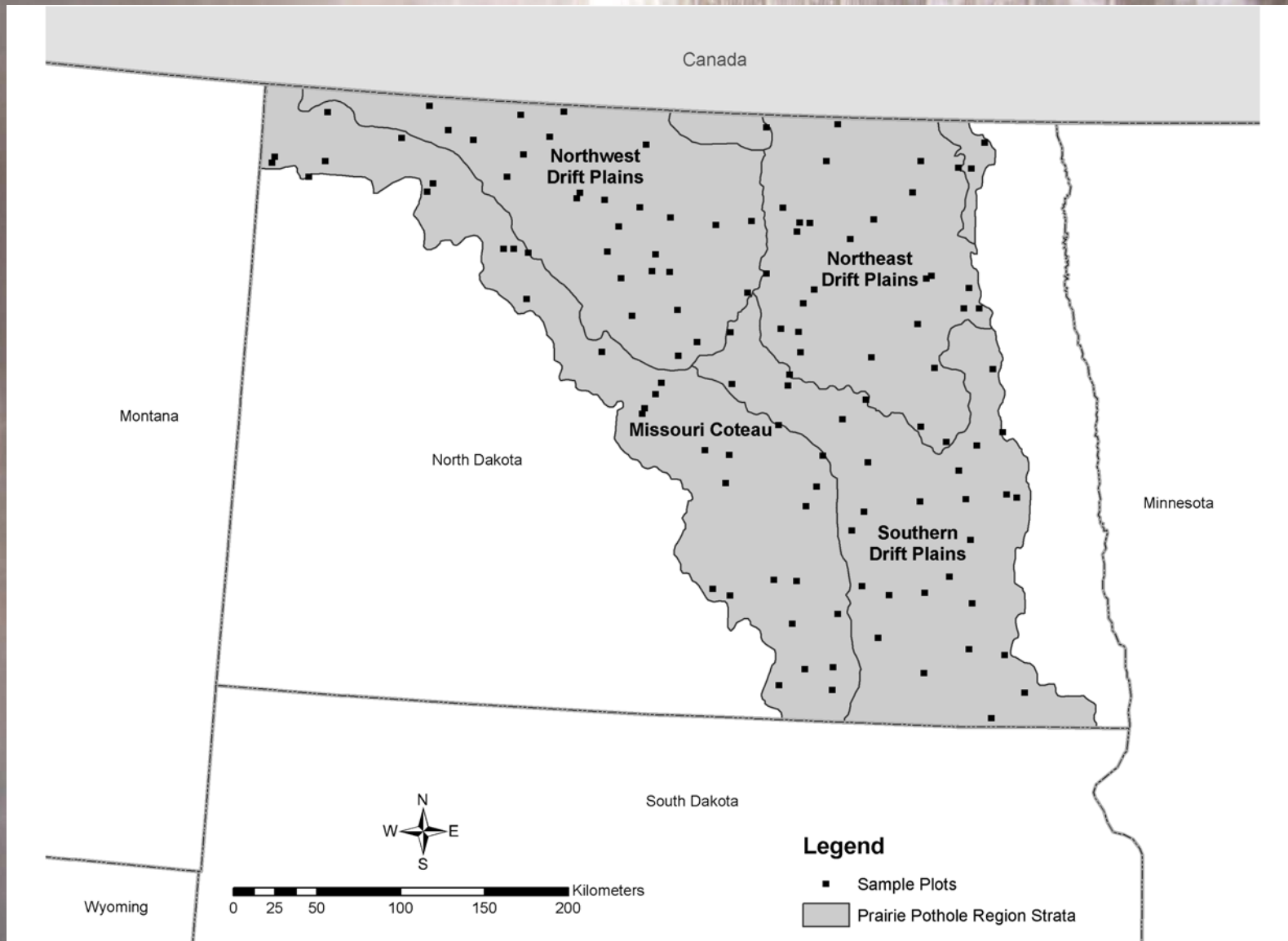


Constant

**Increase in
Blackbird
= Population
In North
Dakota**

Study Area

- Prairie Pothole Region (PPR)
 - 36,800 mi²
 - North Central Plains
 - Large number of wetlands
 - Migration flyway
 - Agriculture
 - Cattail



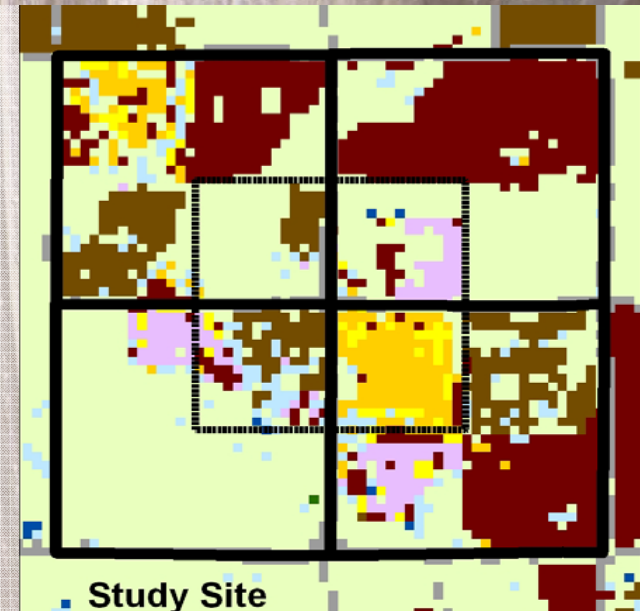
Ralston et al. 2004

Methods

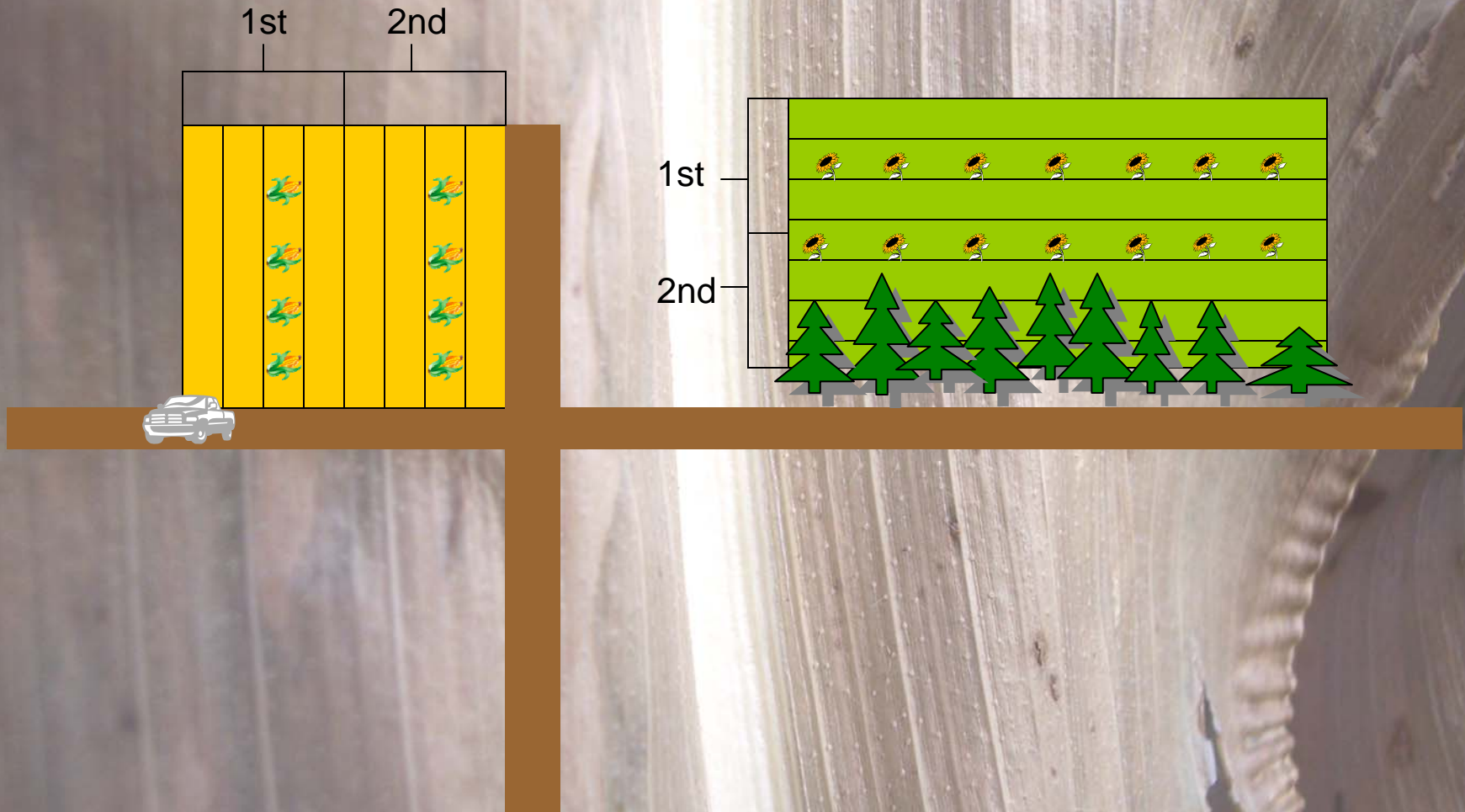
- 120 Sites
 - 4 mi² each
- 3 years
 - 2008, 2009, 2010
- Sites surveyed in August for presence of fields
- Fields surveyed for damage in September

Methods

- 2008, 2009
 - Surveyed for fields in center square mile
 - All corn or sunflower fields were surveyed for damage.
- 2010
 - If no fields were in the center, then one random field was chosen within 3 miles of the center.



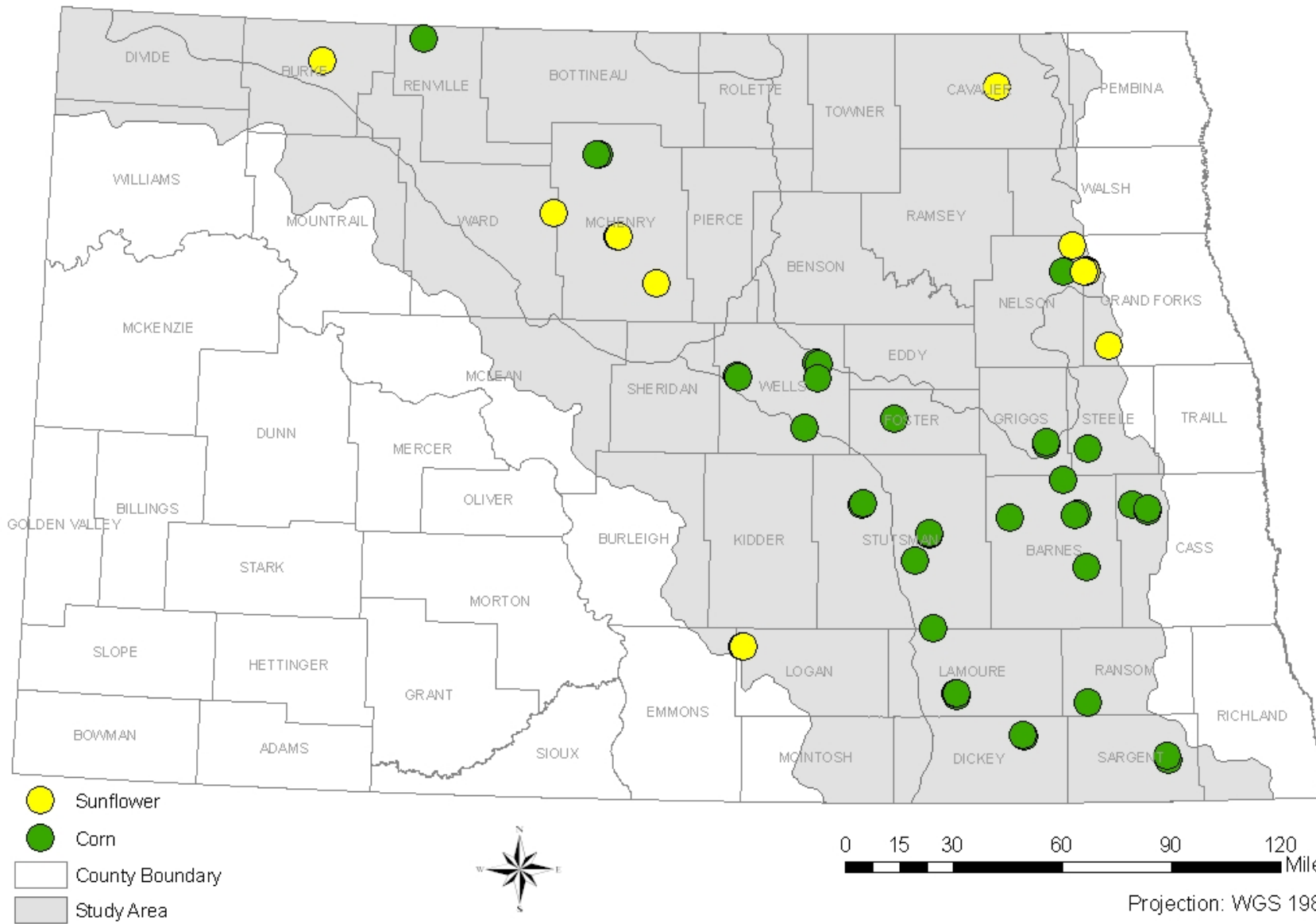
Methods



Damage Measurements

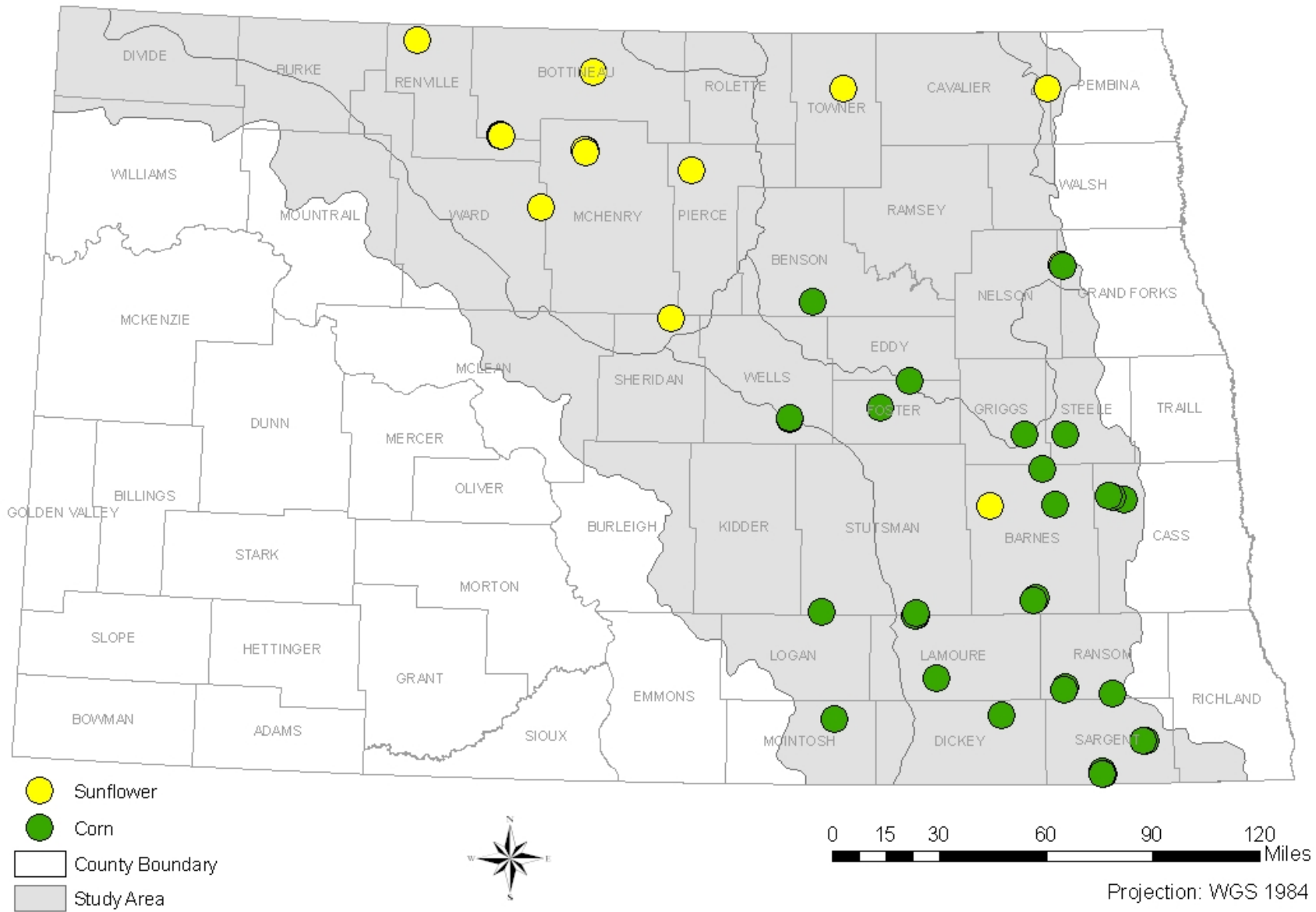


2008 Sunflower and Corn Fields



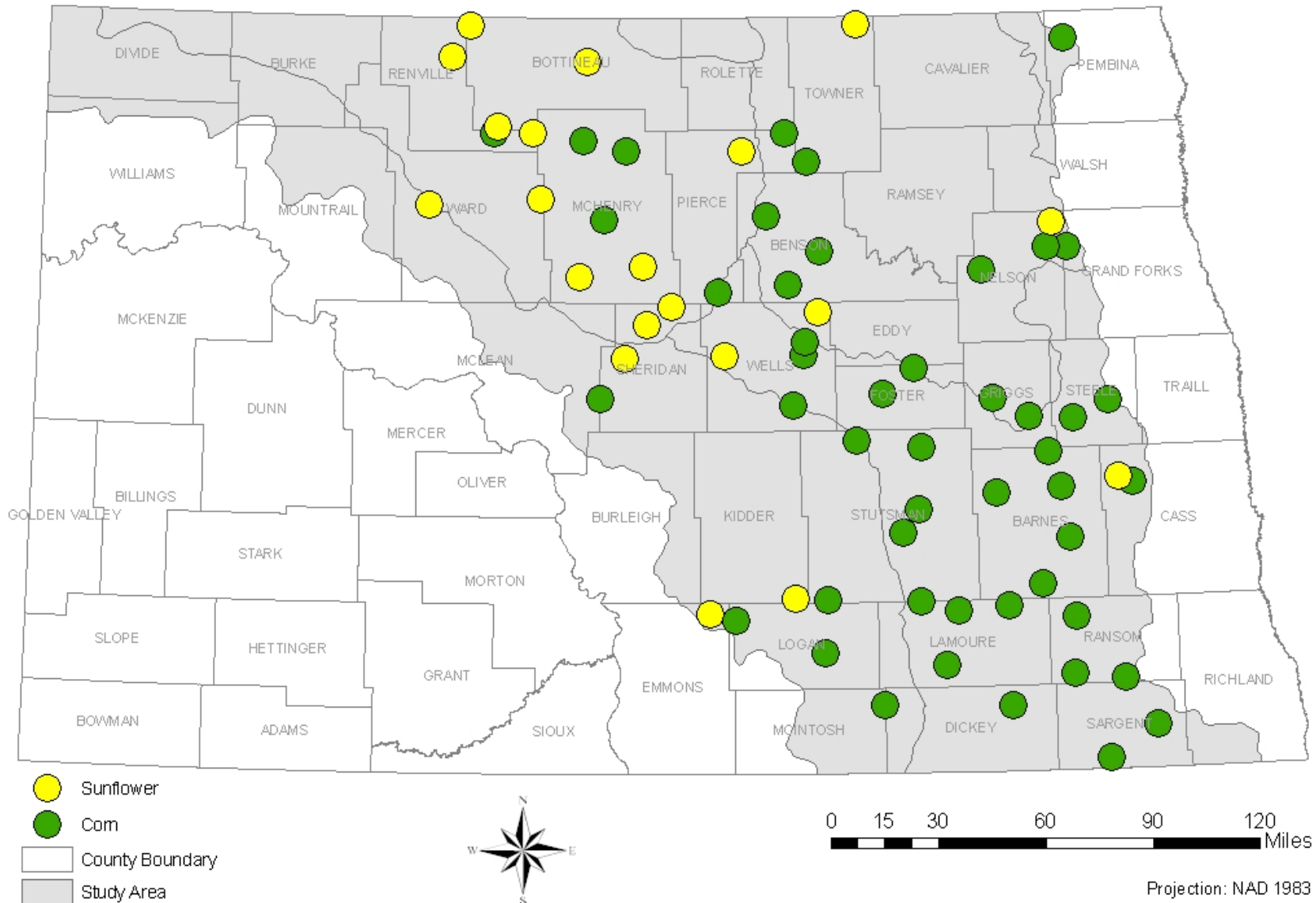
Corn 2008 N= 38 Sunflower 2008 N= 14

2009 Sunflower and Corn Fields



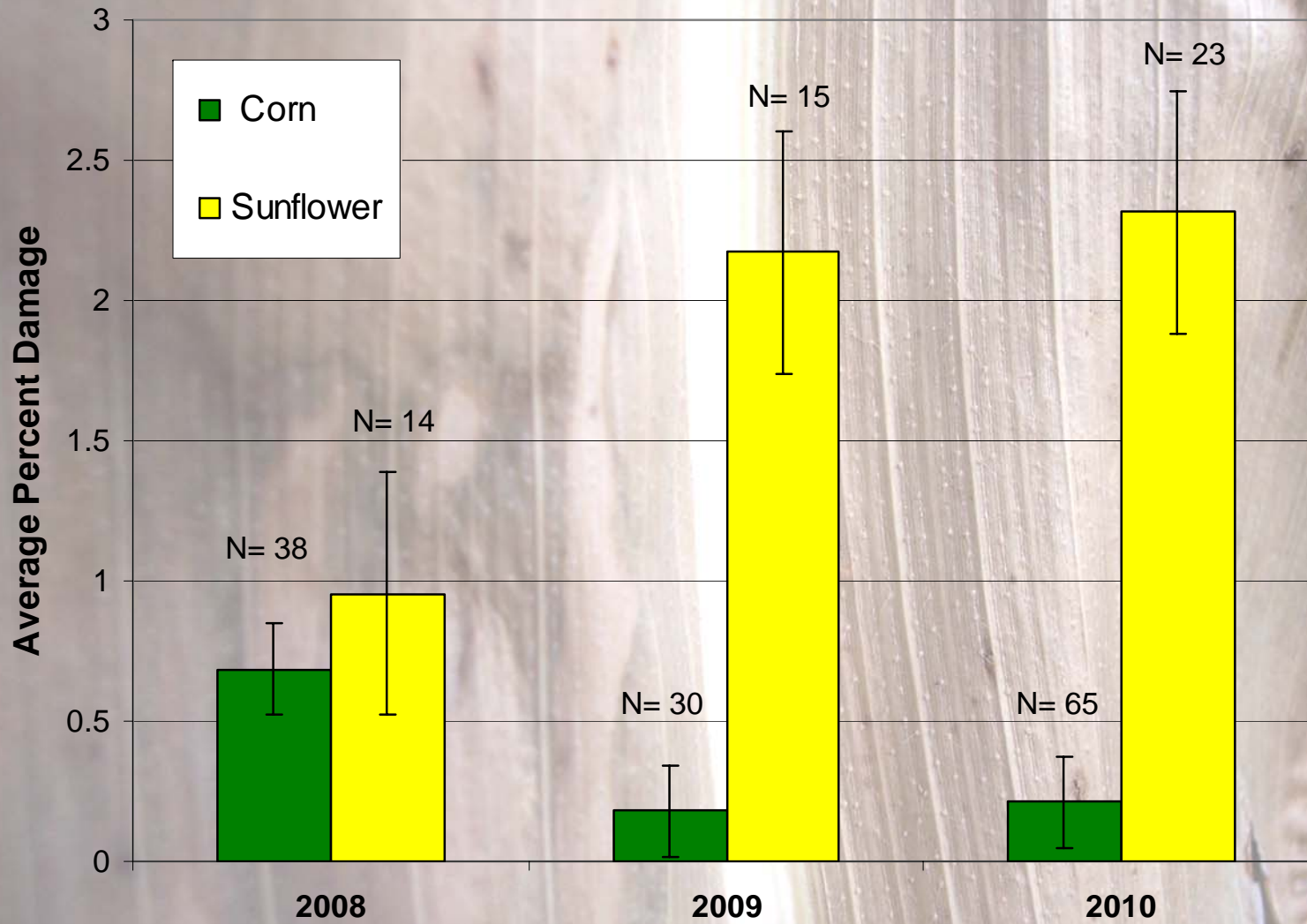
Corn 2009 N= 30 Sunflower 2009 N= 15

2010 Sunflower and Corn Fields

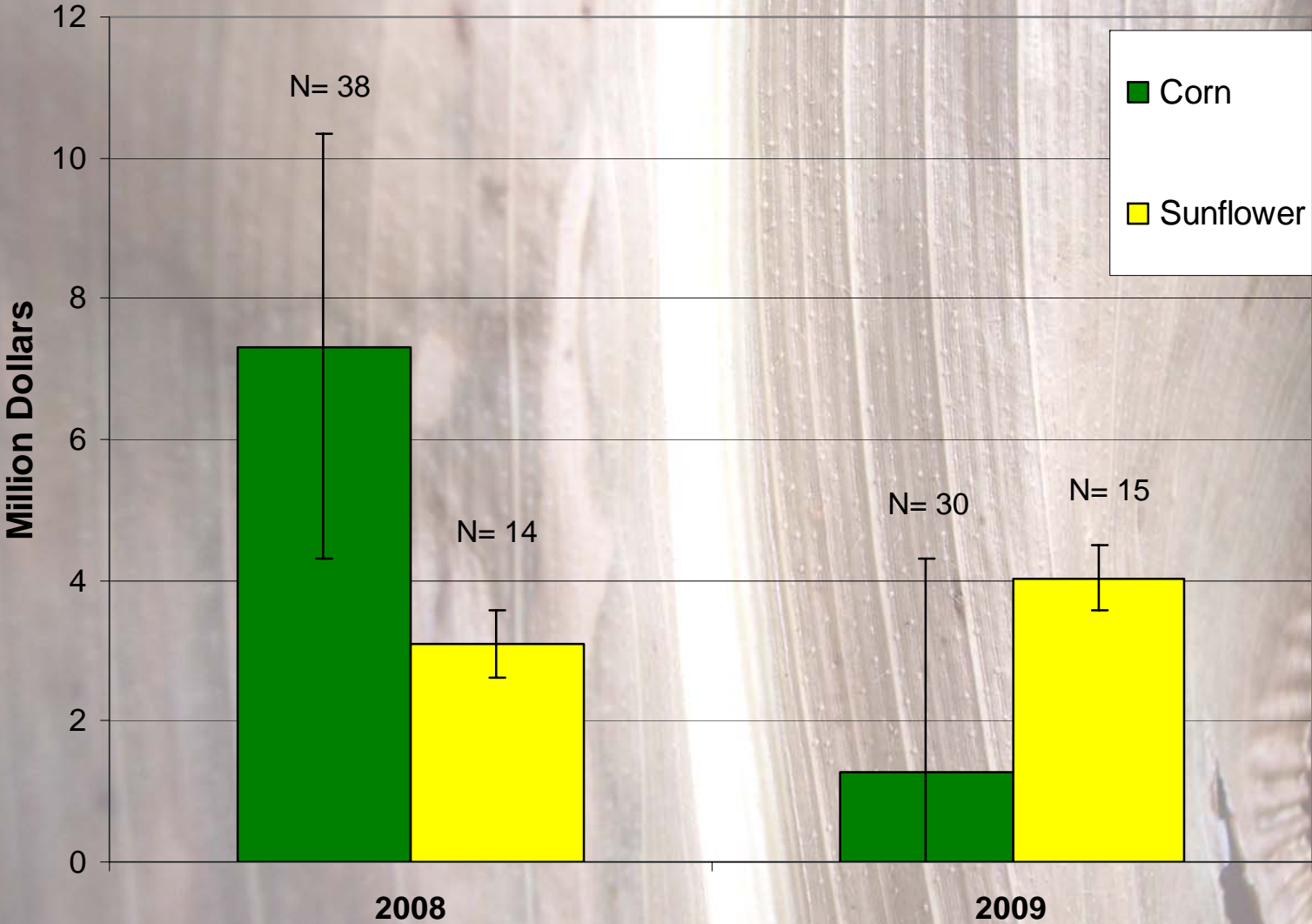


Corn 2010 N = 65 Sunflower 2010 N = 23

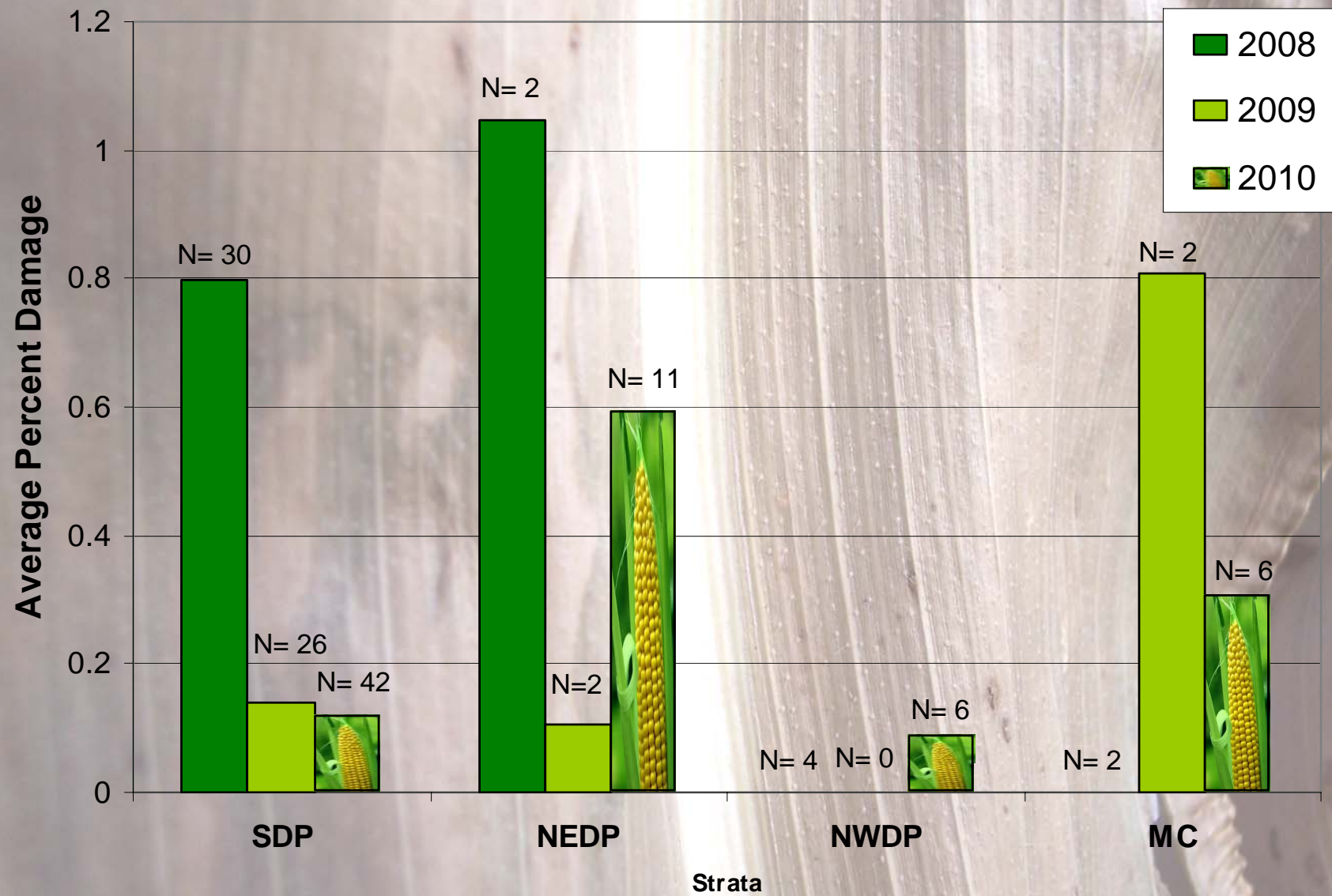
2008, 2009, and 2010 Crop Damage



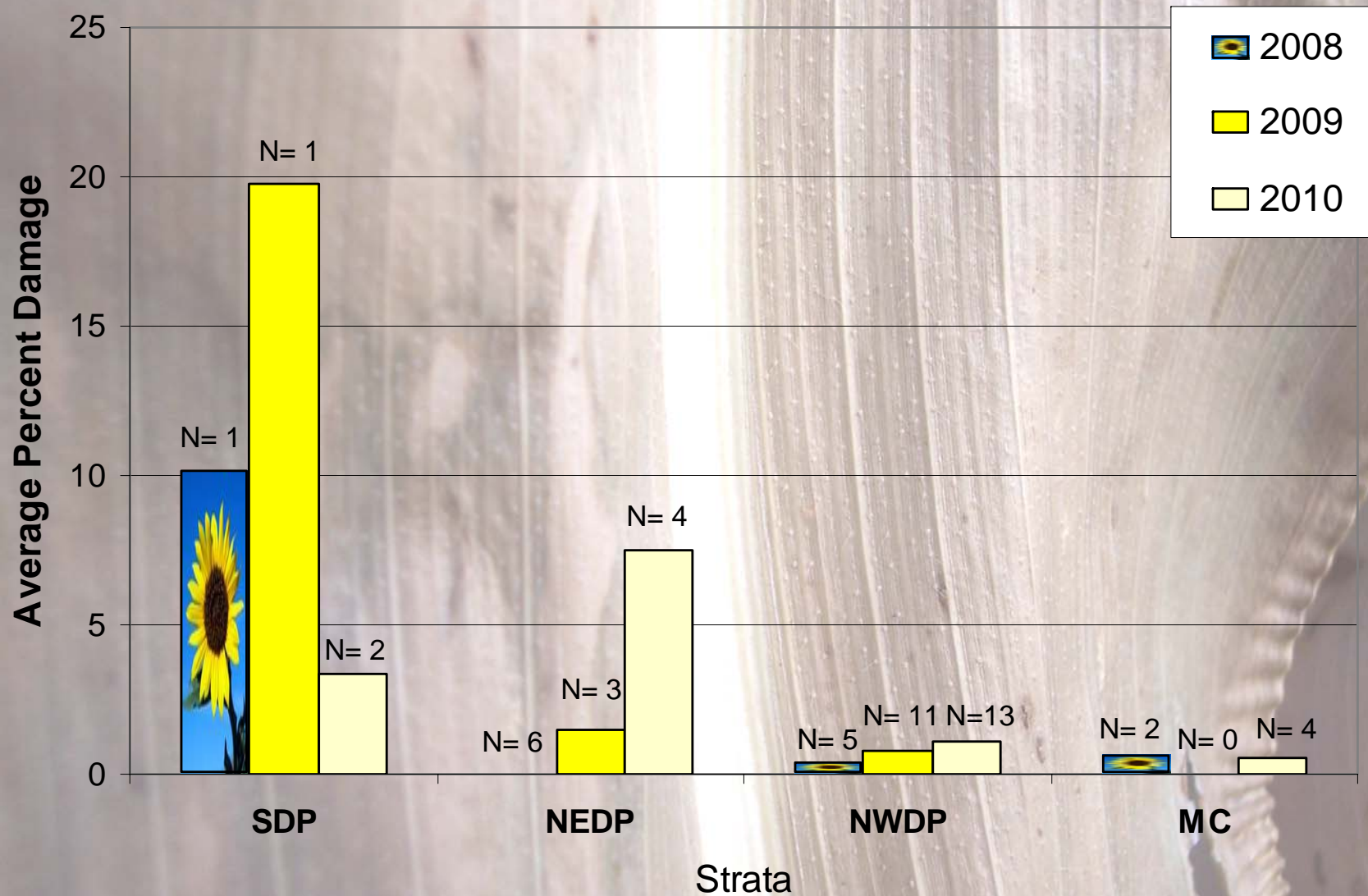
Cost of Damage Statewide



2008, 2009, and 2010 Corn Damage by Strata



2008, 2009, and 2010 Sunflower Damage by Strata



Future Plans: Landcover Analysis

Independent Variables

Wetland

Developed

Pasture

Corn

Beans

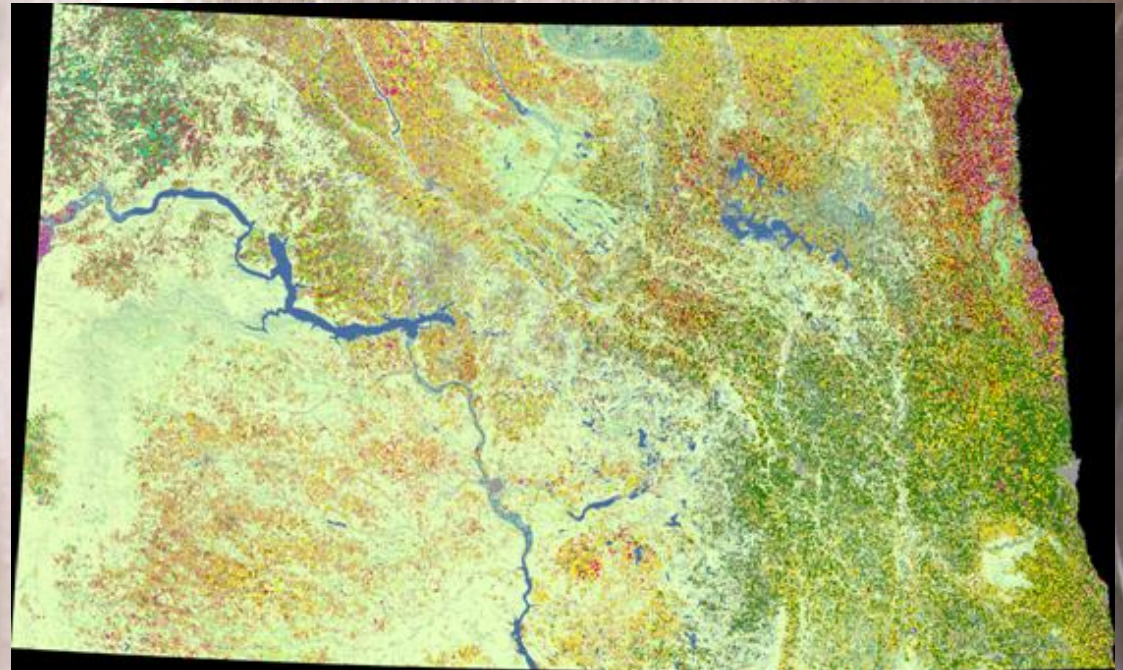
Sunflower

Wooded

Small Grains

Open Water

Other



Acknowledgements

- Mario Biondini
- Peter Oduor
- Jessie Monson
- Dereck Stonefish
- Jeff Homan
- Matthew Strassburg
- James Schanandore

A close-up photograph of several sunflowers in a field. The sunflowers have bright yellow petals and large, textured brown heads. The background is a clear blue sky. A semi-transparent rectangular box with a grid pattern is centered over the image, containing the text "Thank You" in a black, sans-serif font.

Thank You