Rainwater Basin wetland ecology and history

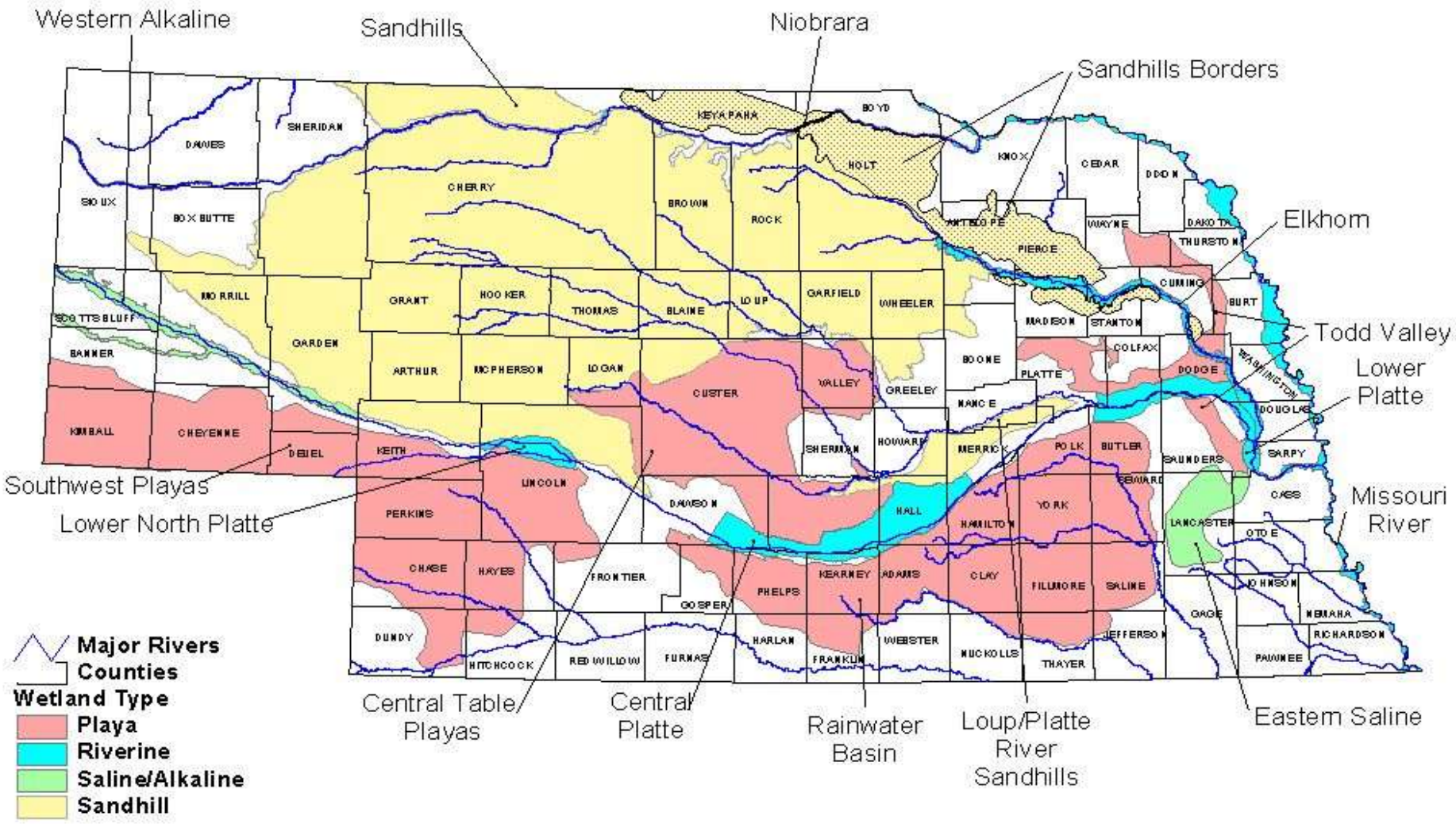
Data Collection- Level 1 and 3

How the data are being used

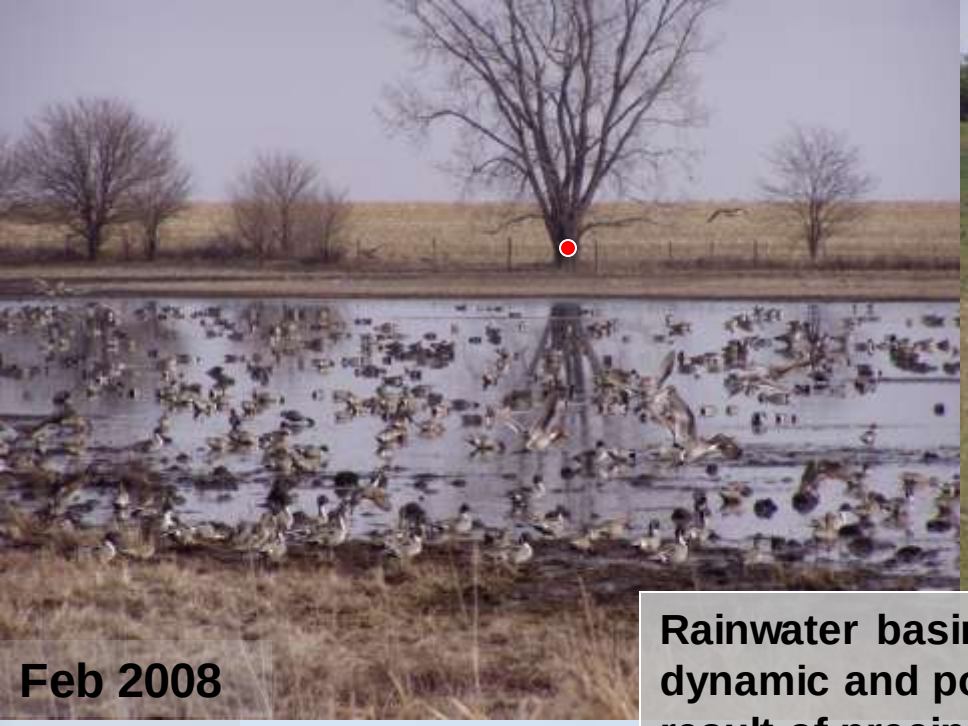
Annual assessment of Rainwater Basin wetland habitat quantity and quality available to waterfowl during spring migration


A type of Playa Wetland

Nebraska's Wetland Complexes



Nebraska Game and Parks Commission
2005

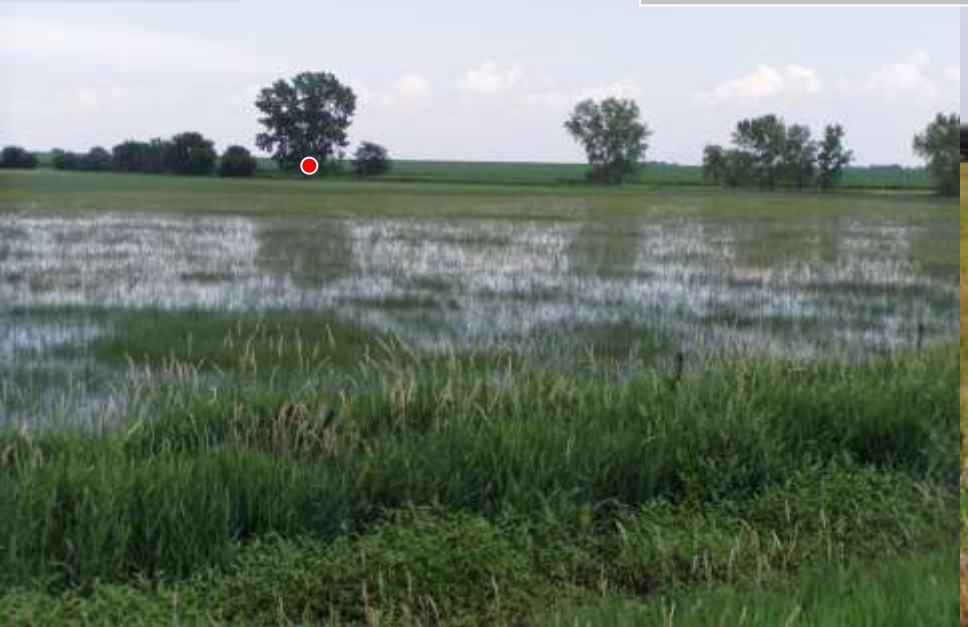


Feb 2008

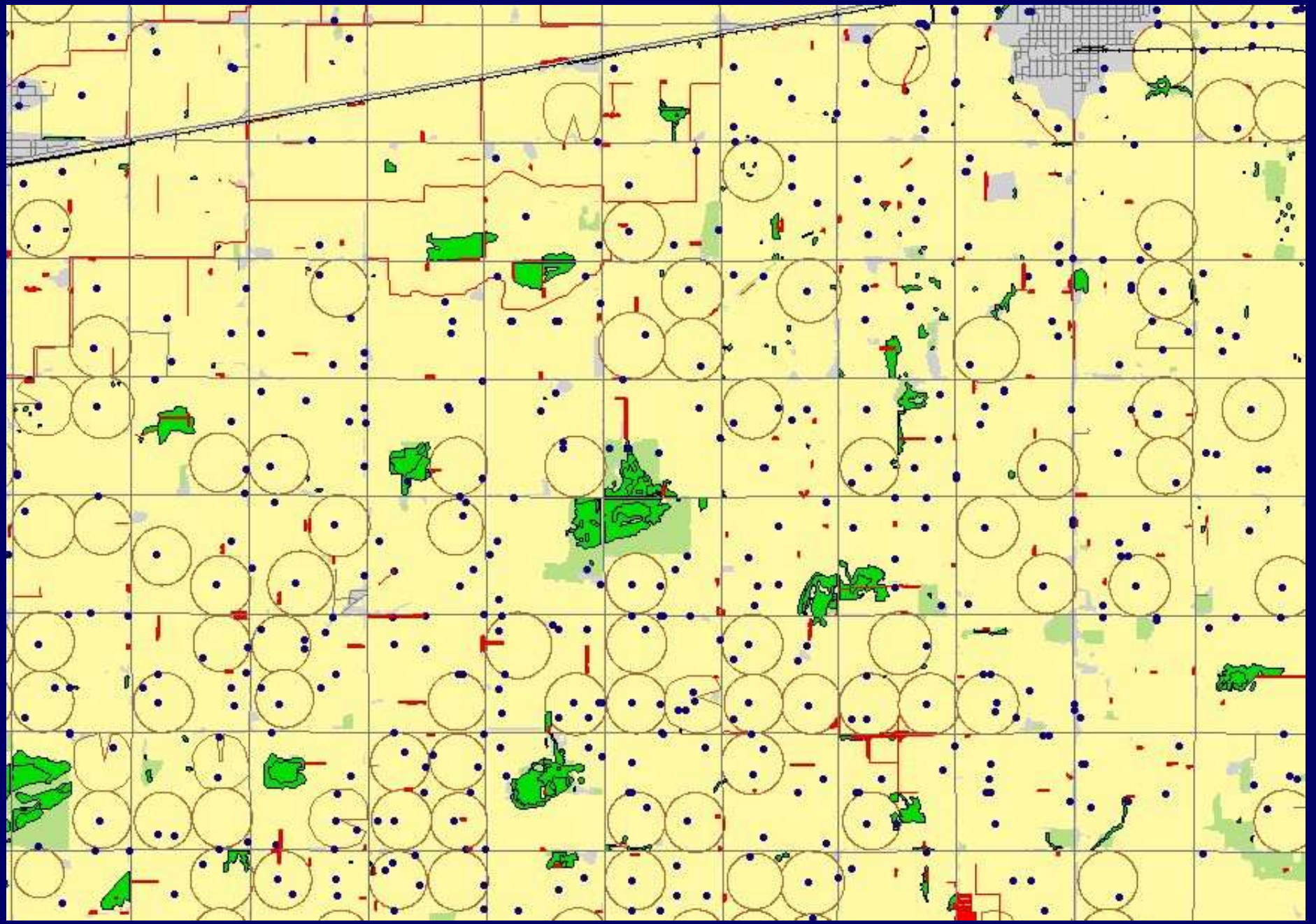
April

Rainwater basin wetlands are dynamic and pond water as a result of precipitation & surface runoff.

June



September



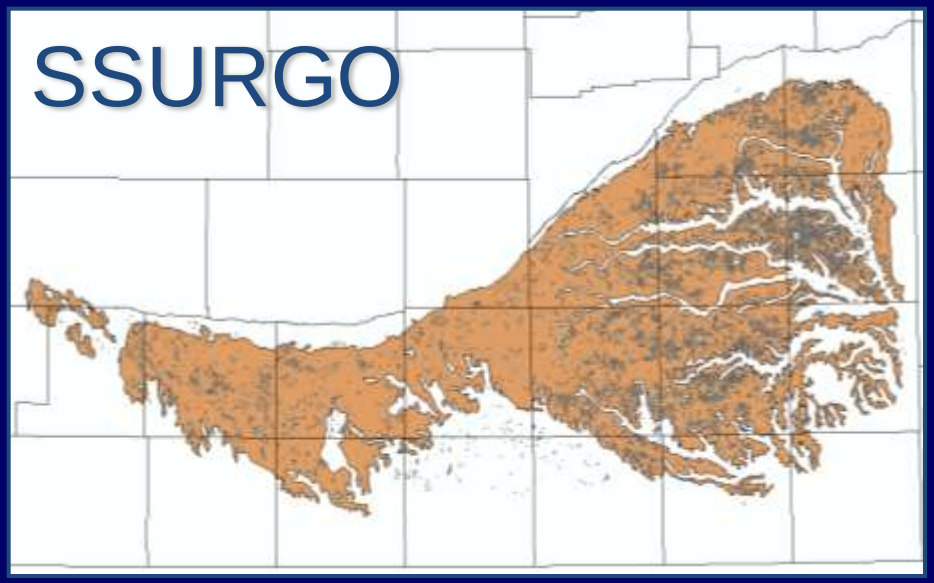
Rainwater Basin Joint Venture Partnership

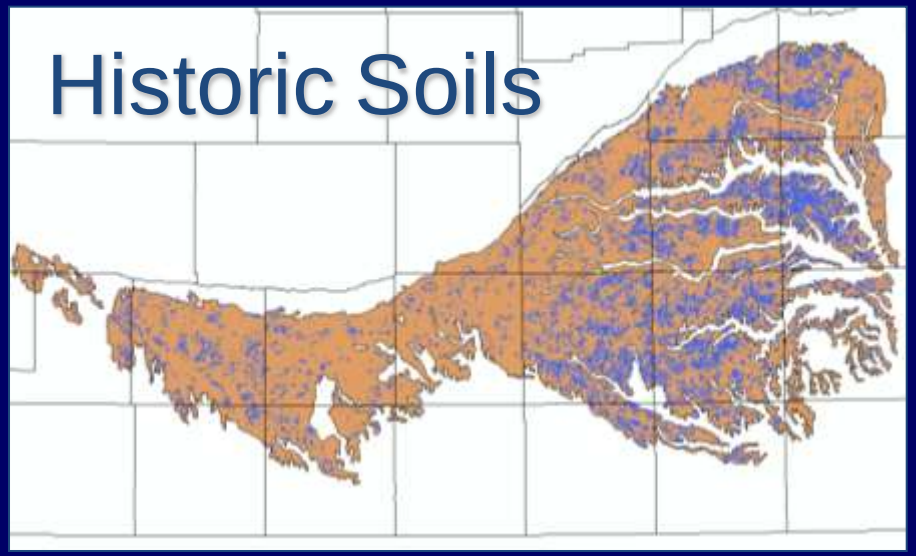
Board Membership

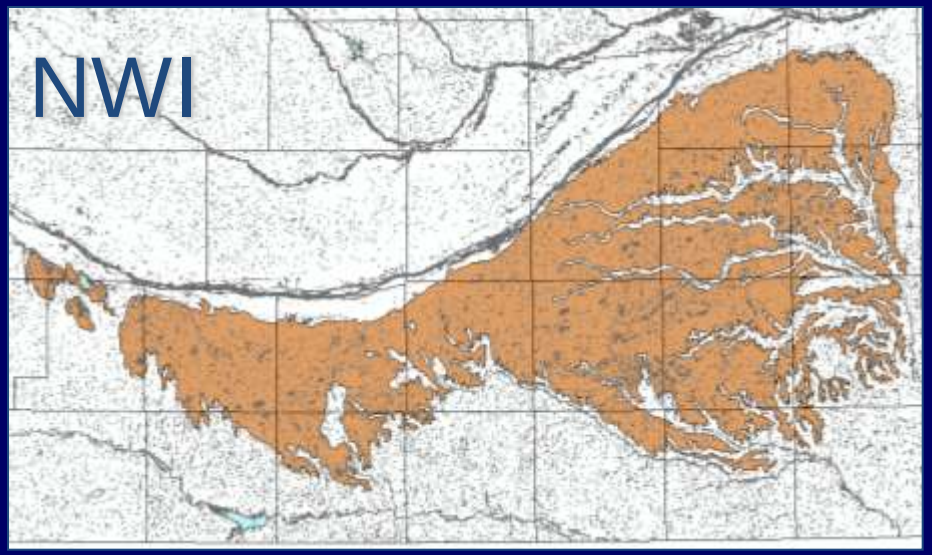
- Farmers/Landowners (4)
- Natural Resources Conservation Service
- U.S. Fish and Wildlife Service
- NE Game and Parks Commission
- The Nature Conservancy
- NE Association of Resource Districts
- 3 Natural Resource Districts
- Ducks Unlimited
- Pheasants Forever

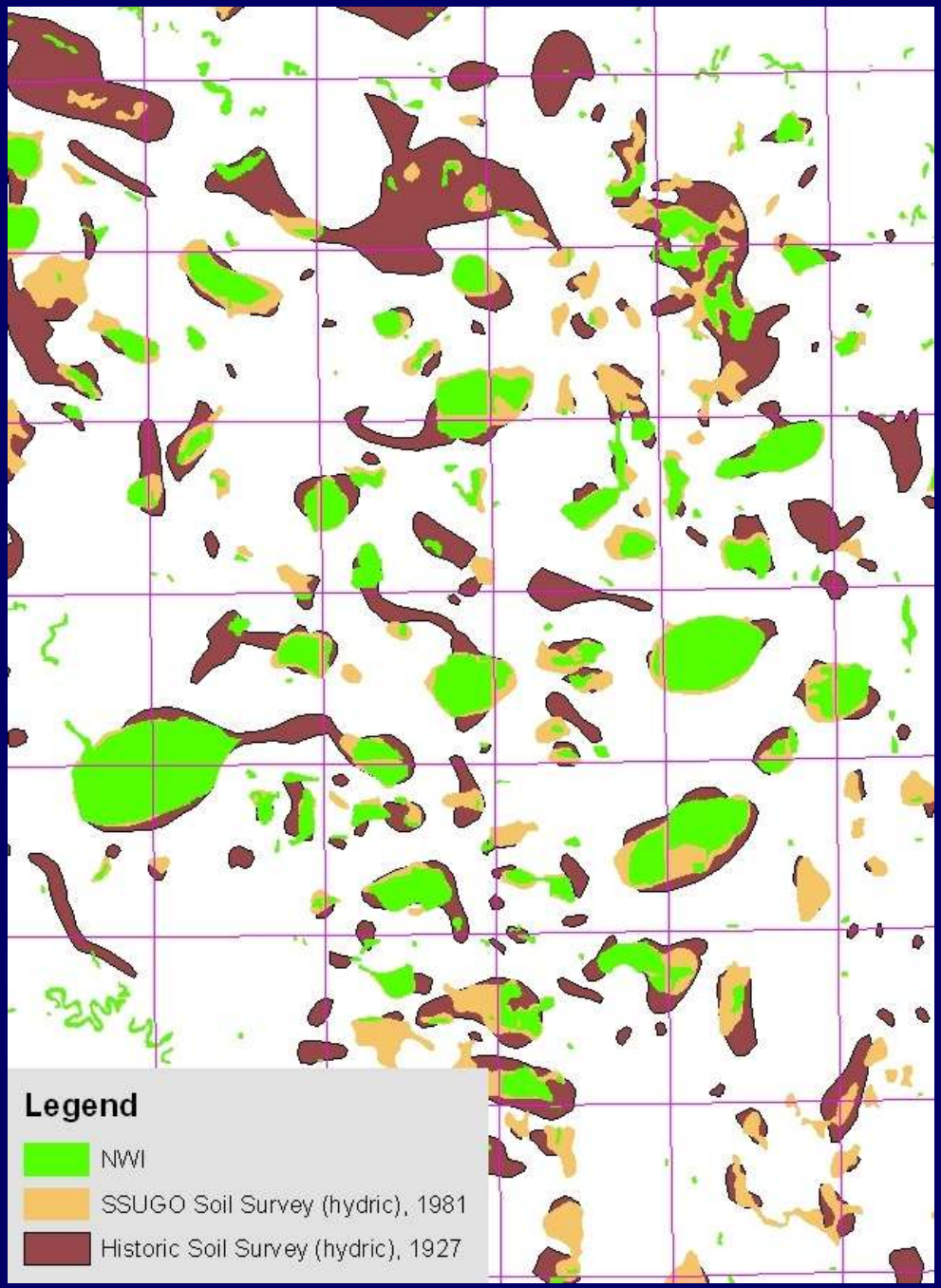
Wetland/Soils Inventories

-Level 1 Assessment-

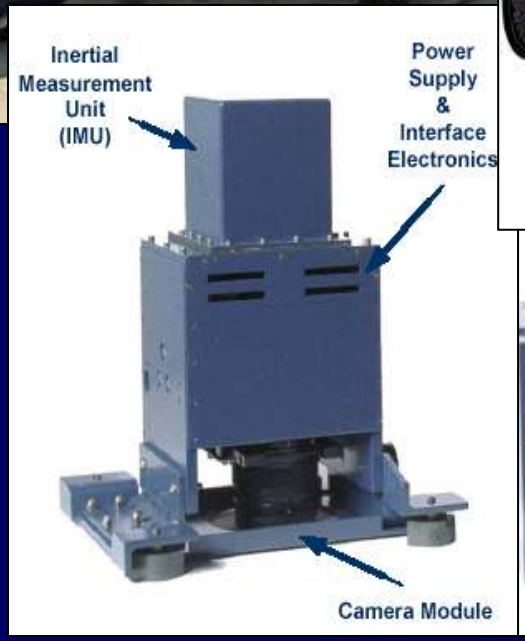







Legend
NWI
SSUGO Soil Survey (hydric), 1981
Historic Soil Survey (hydric), 1927

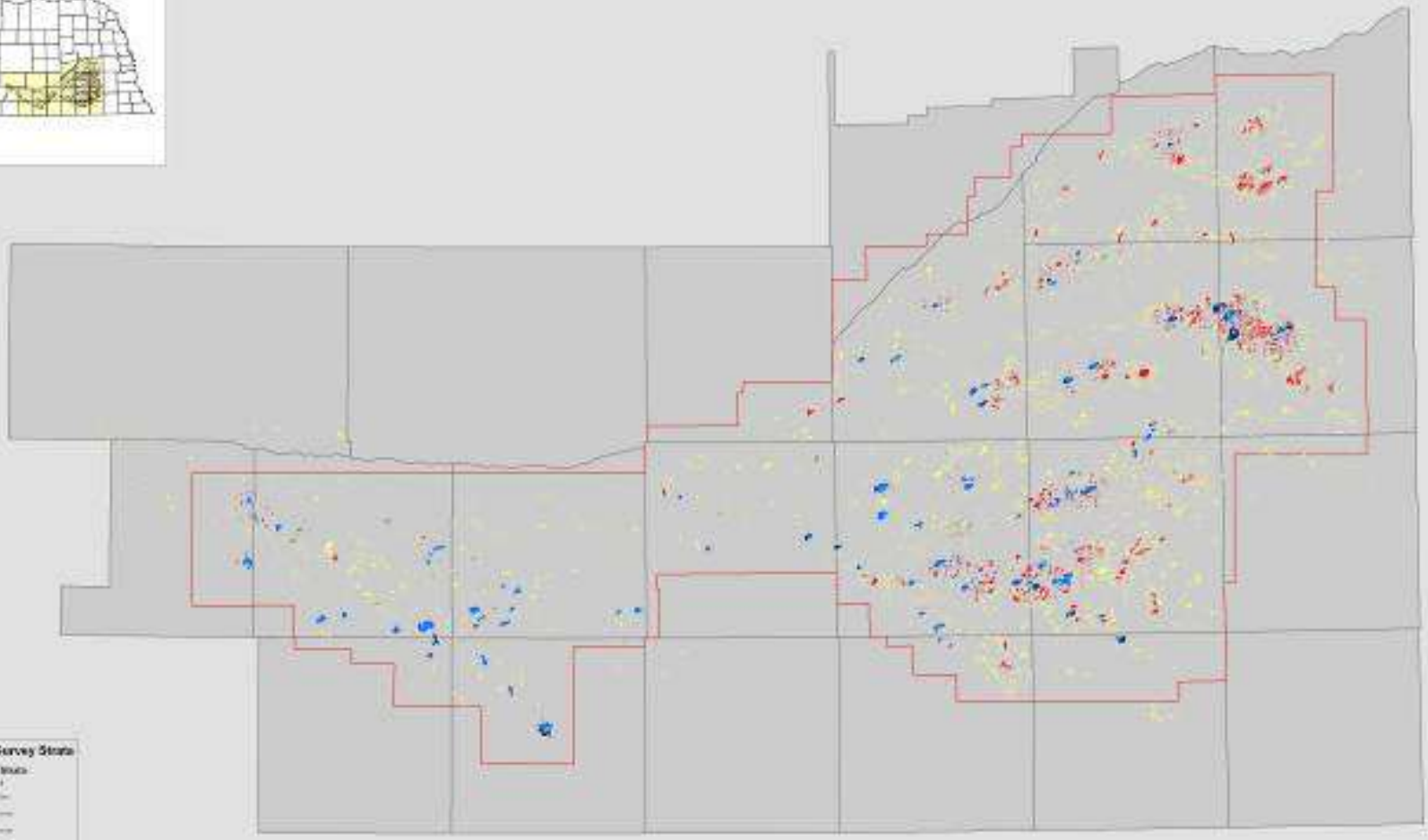
One meter resolution CIR aerial imagery was collected during peak waterfowl migration in springs 2004, and 2006-2009.
These years characterized a range of precipitation, with 2004 being average, 2006 below average, and 2007 above average.



U.S. Fish & Wildlife Service

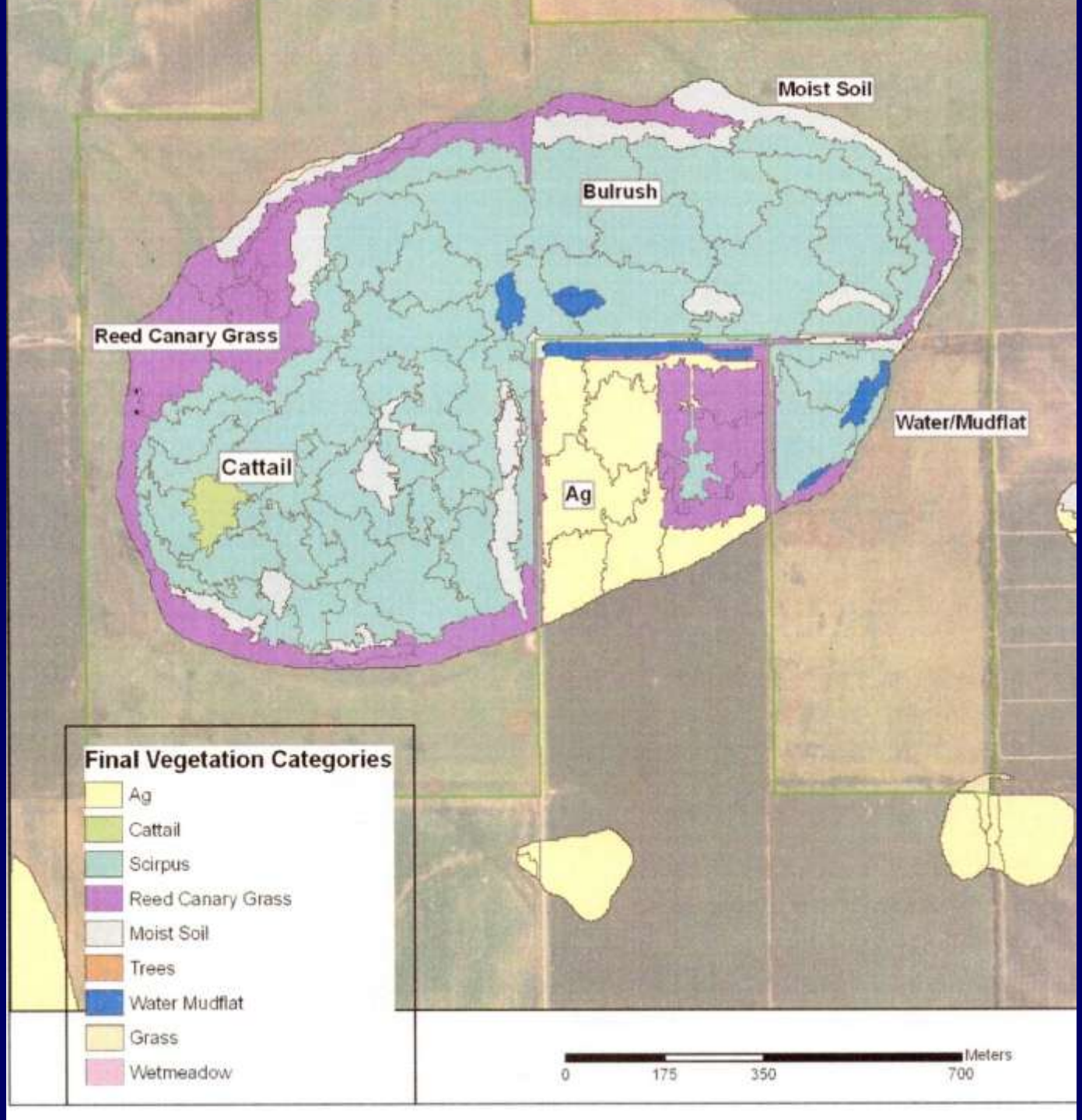
Rainwater Basin Wetland Complex
South Central, Nebraska

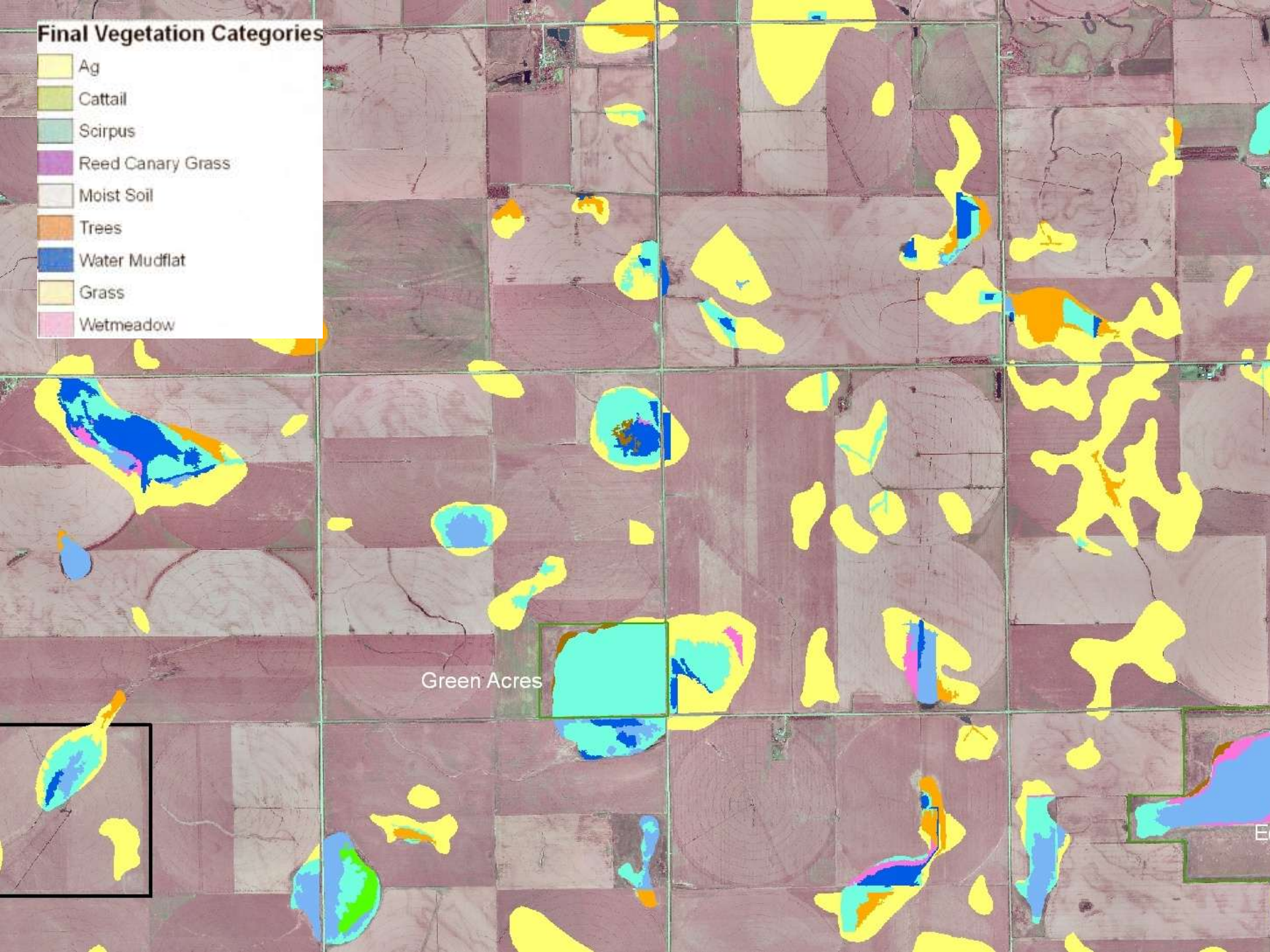
2007 Imagery Acquisition

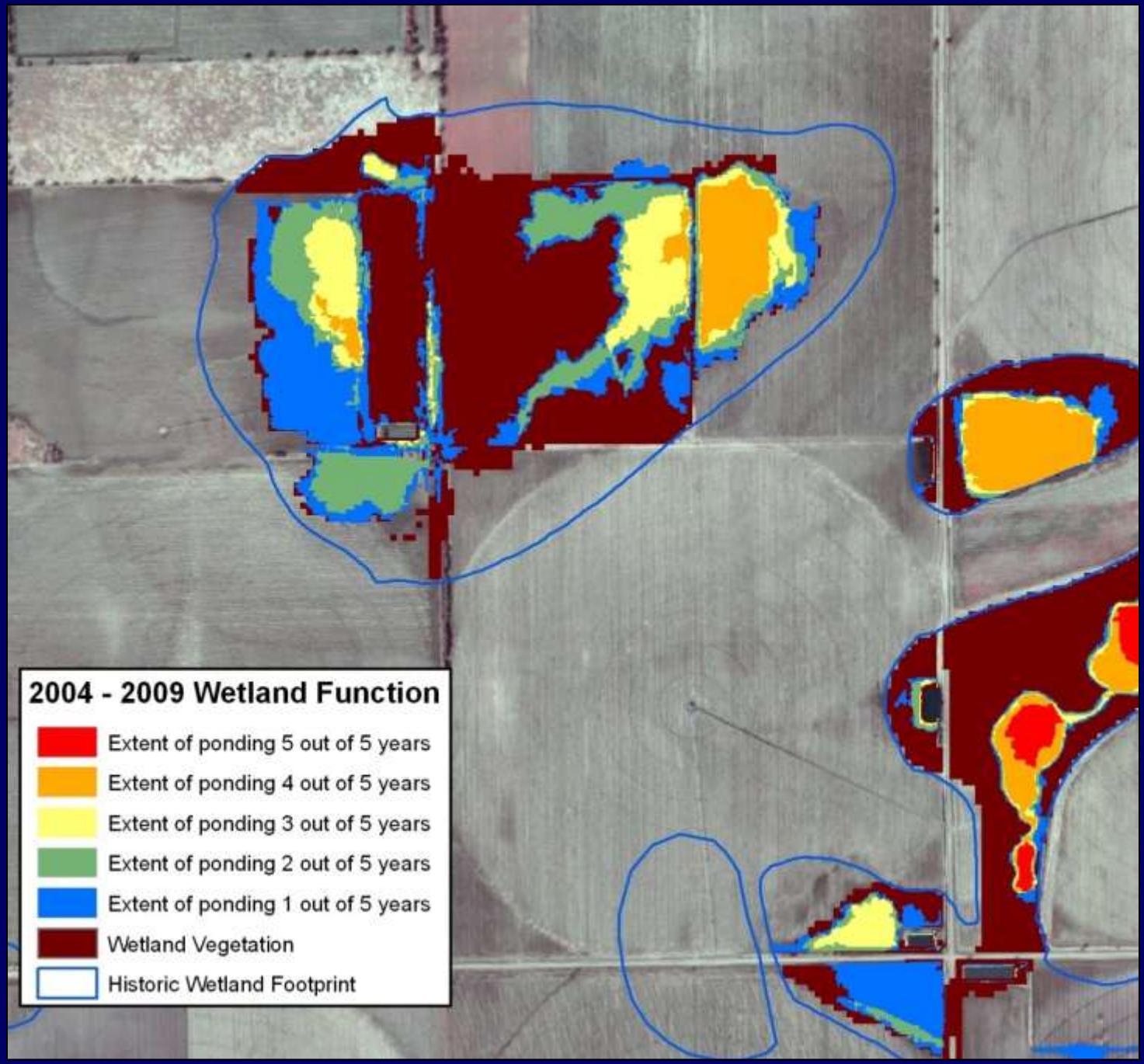


50
Miles
50
Kilometers

Level 3 Assessment of vegetation communities

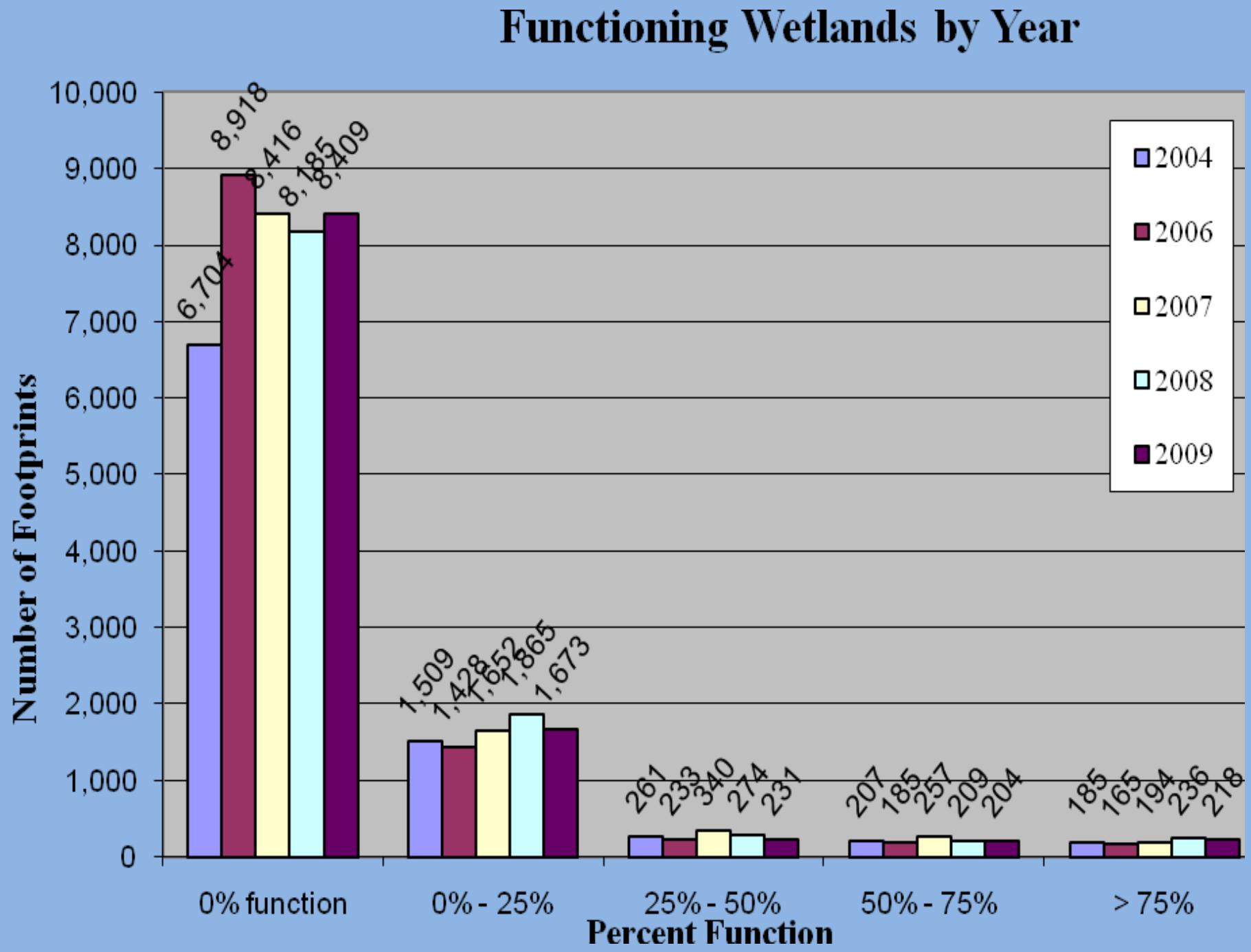

Moist Soil
Bulrush
Reed Canary Grass
Water/Mudflat
Cattail
Ag
Final Vegetation Categories
Ag
Cattail
Scirpus
Reed Canary Grass
Moist Soil
Trees
Water Mudflat
Grass
Wetmeadow
Meters
0
175
350
700


Final Vegetation Categories
Ag
Cattail
Scirpus
Reed Canary Grass
Moist Soil
Trees
Water Mudflat
Grass
Wetmeadow
Green Acres


2004 - 2009 Wetland Function
Extent of ponding 5 out of 5 years
Extent of ponding 4 out of 5 years
Extent of ponding 3 out of 5 years
Extent of ponding 2 out of 5 years
Extent of ponding 1 out of 5 years
Wetland Vegetation
Historic Wetland Footprint

20% - 22% of historic wetlands (12,100 – 13,400 ha) were functioning by having hydric vegetation and/or ponded water.

Ponded water was present on only 1 – 8% (900 – 4,860 ha) of the historic wetland acres.

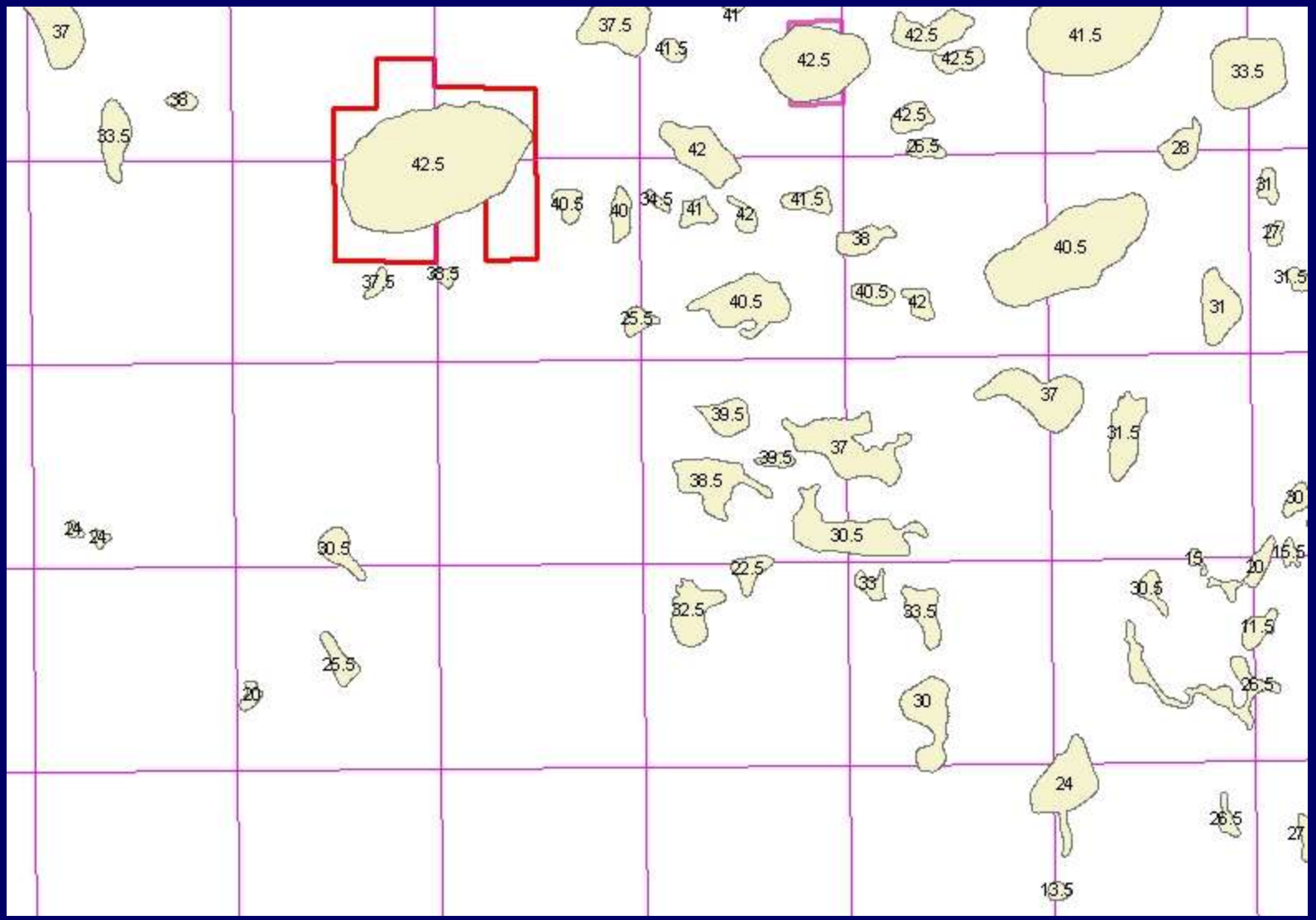

Functioning Wetlands by Year
Number of Footprints
10,000
9,000
8,000
7,000
6,000
5,000
4,000
3,000
2,000
1,000
0
2004
2006
2007
2008
2009
6,704
8,918
8,416
8,185
8,409
1,509
1,428
1,652
1,865
1,673
261
233
340
274
231
207
185
257
209
204
185
165
194
236
218
0% function
0% - 25%
25% - 50%
50% - 75%
> 75%
Percent Function

The estimated seed production from ponded acres provided 4 million to 1.9 billion kilocalories of forage for migrating waterfowl.

This is significantly below the estimated 5.2 billion kilocalories from wetland seeds needed to support the target spring migrating waterfowl population.

	New Acres	Total Acres	% Energy	% of Landscape
Private Lands No Agreements	0	12,362	14	0.31
Private Lands Term Agreements	7,582	9,498	11	0.24
Private Lands Secured	11,590	14,400	25	0.37
Public Lands Secured	8,740	26,807	50	0.68
TOTAL WETLANDS	27,912	63,067		1.60
Stock Ponds	0	23,858		0.61
Associated Uplands	6,566	25,021		0.64

A GIS model was developed to prioritize each wetland footprint based on its potential to provide waterfowl habitat



A Restorable Wetland Index is being developed using the data on function from the Annual Habitat Survey and new detailed data on topography collected using LiDAR.