Using monitoring and assessment information to inform wildlife conservation and restoration planning and activities

Presenter- Ted LaGrange

What is the Goal?

GUIDE TO NEBRASKA'S WETLANDS and their conservation needs

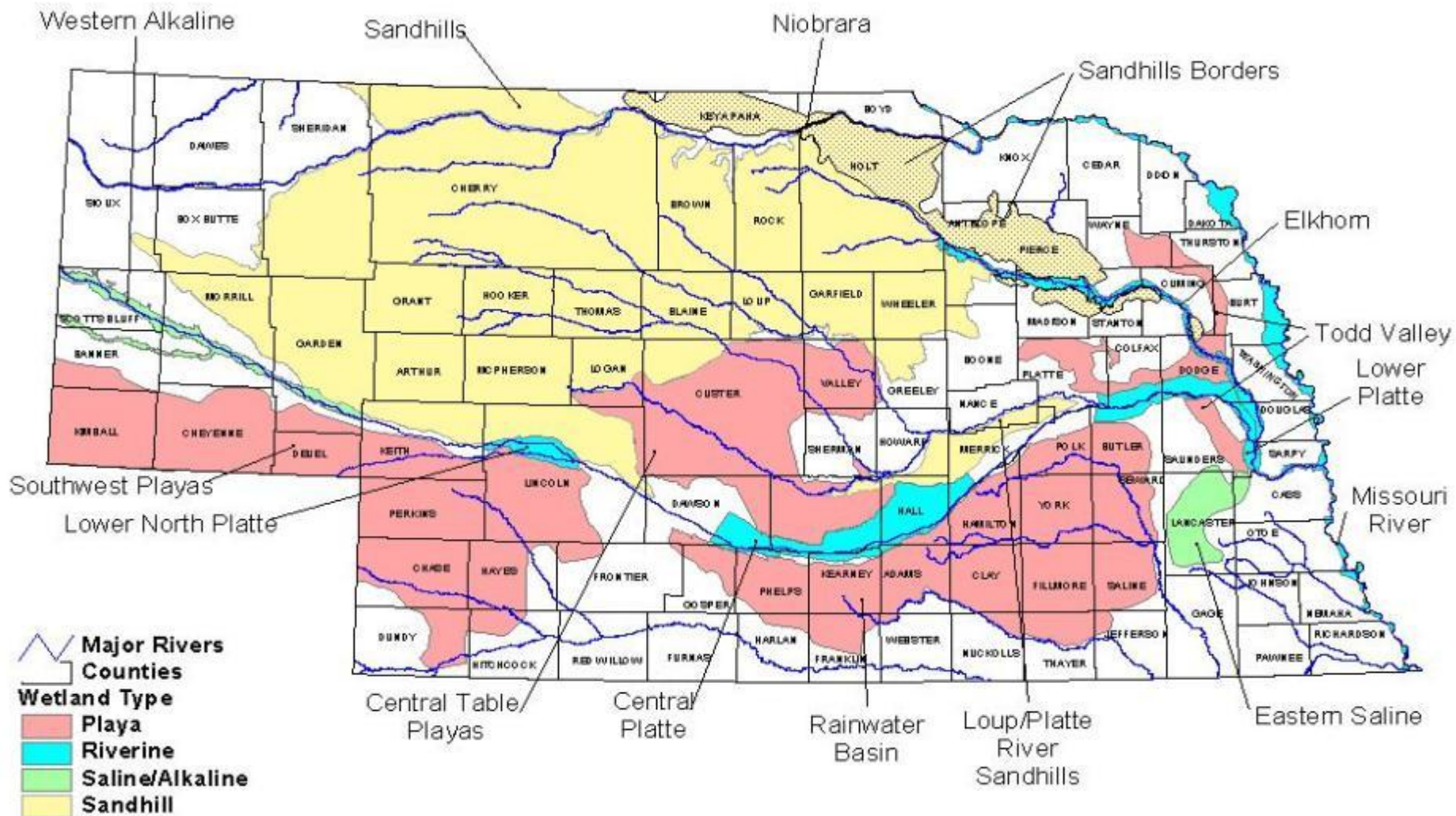The Nebraska Natural Legacy Project

Nebraska Natural Legacy Project

State Wildlife Action Plan
2nd edition
2011

Implementation Plan for the Conservation of Nebraska's Eastern Saline Wetlands
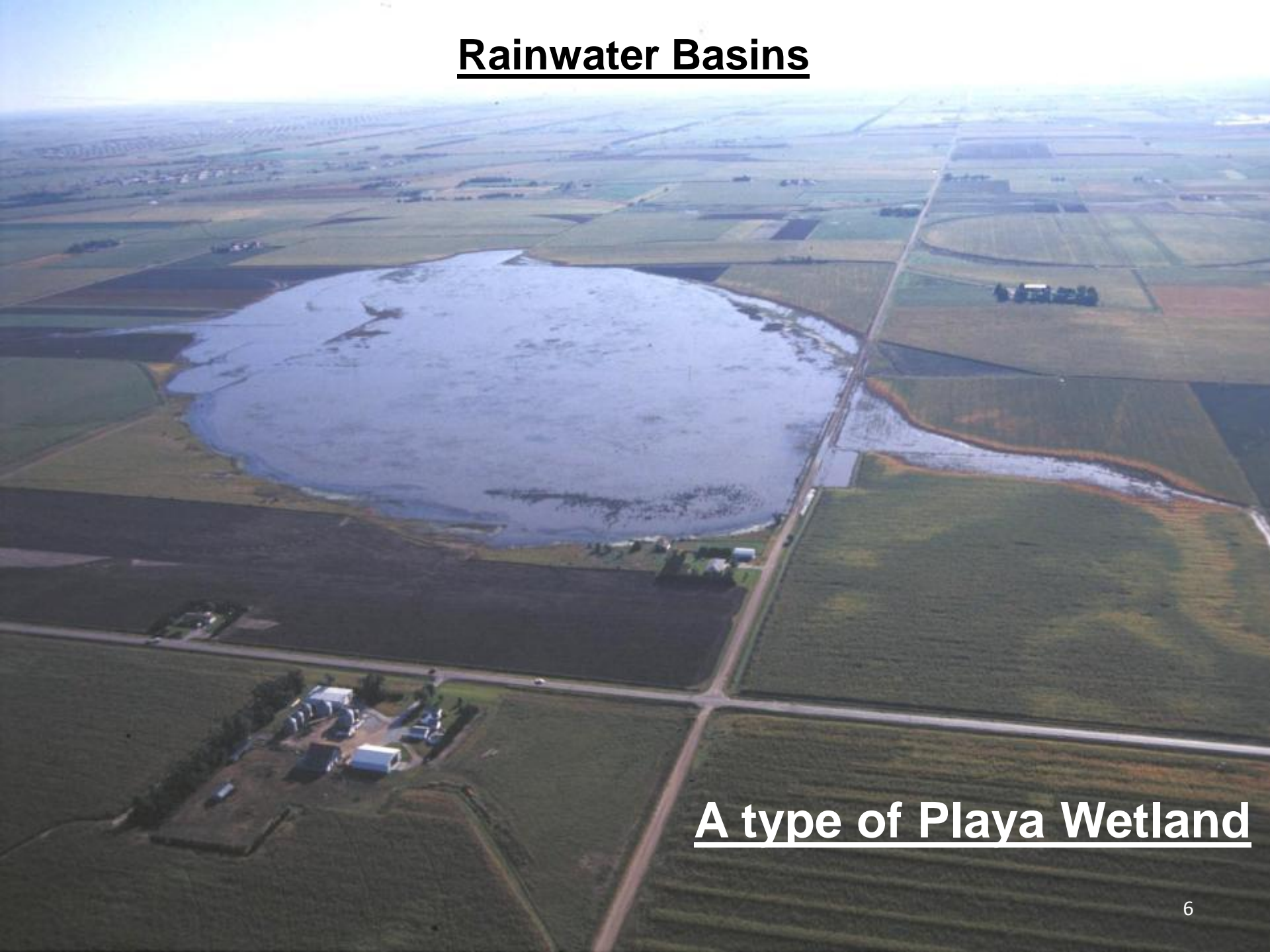
Nebraska's Wetland Complexes

Western Alkaline
Sandhills
Niobrara
Sandhills Borders
Elkhorn
Todd Valley
Lower Platte
Missouri River
Eastern Saline
Loup/Platte River Sandhills
Rainwater Basin
Central Platte
Central Table Playas
Lower North Platte
Southwest Playas

Major Rivers
Counties
Wetland Type
- Playa
- Riverine
- Saline/Alkaline
- Sandhill

Nebraska Game and Parks Commission 2005

Example from spreadsheet *Wetland Complex_BUL_HGM sublasses_Community*

| Wetland Type	Wetland Complex[1]	Biologically Unique Landscape (BUL)[1]	HGM Subclass	Natural Community to sample	NWI Cowardin Class	Soil Map Unit Name	Soil Map Unit Symbol
Playa	Central Table Playas	Central Loess Hills	Playa Depressions	Wheatgrass Playa Grassland	PEMA, PEMC	Scott silty clay loam, frequently ponded	3912
Playa	Central Table Playas	Central Loess Hills	Playa Depressions	Wheatgrass Playa Grassland	PEMA, PEMC	Scott soils, frequently ponded	3914
Riverine	Central Platte	Central Platte River	Riverine Floodplain Rapid Permeability, w/minimal out of bank flooding	Northern Cordgrass Wet Prairie	PEMA, PEMC	Barney complex, channeled, frequently flooded	6310
Riverine	Central Platte	Central Platte River	Riverine Floodplain Rapid Permeability, w/minimal out of bank flooding	Northern Cordgrass Wet Prairie	PEMA, PEMC	Barney loam, frequently flooded	6312
Riverine	Missouri (downstream from the Platte River)	Missouri River	Riverine Floodplain Moderate to Slow Permeability, w/regular out of bank flooding	Eastern Riparian Forest/Eastern Cottonwood-Dogwood Riparian Woodland	PFOA, PFOC, PSSA, PSSC	Albaton silty clay, occasionally flooded	7710
Saline/Alkaline	Eastern Saline	Saline Wetlands	Saline Depressions	Eastern Saline Meadow	PEMA, PEMC	Salmo silty clay loam, channeled, frequently flooded	7016
Sandhills	Sandhills	Cherry County Wetlands	Mineral Soil Flats	Sandhills Wet Meadow	PEMA, PEMC	Tryon fine sandy loam, frequently ponded	4743

5

Rainwater Basins

A type of Playa Wetland

Legend

NWI

SSUGO Soil Survey (hydric), 1981

Historic Soil Survey (hydric), 1927
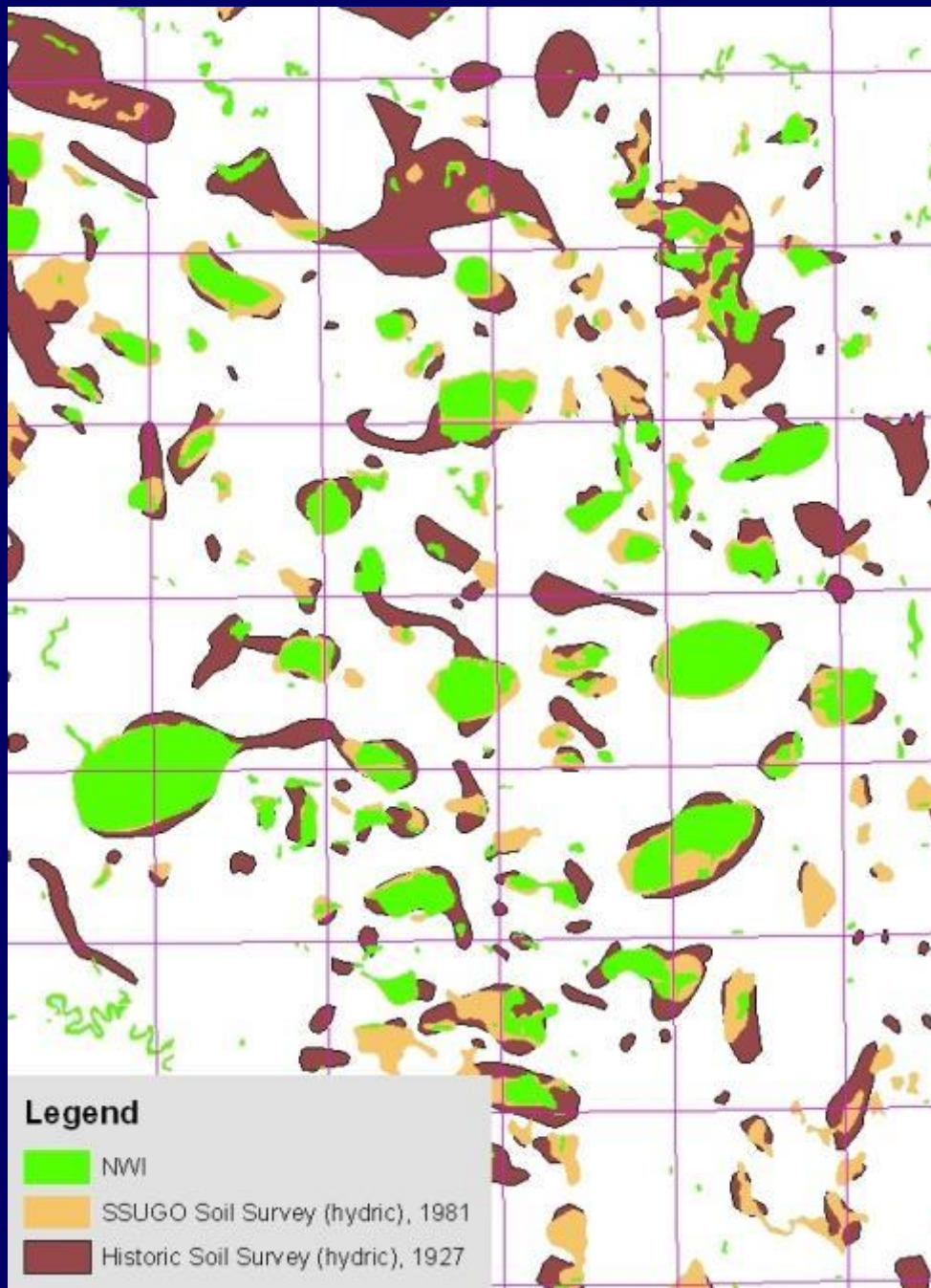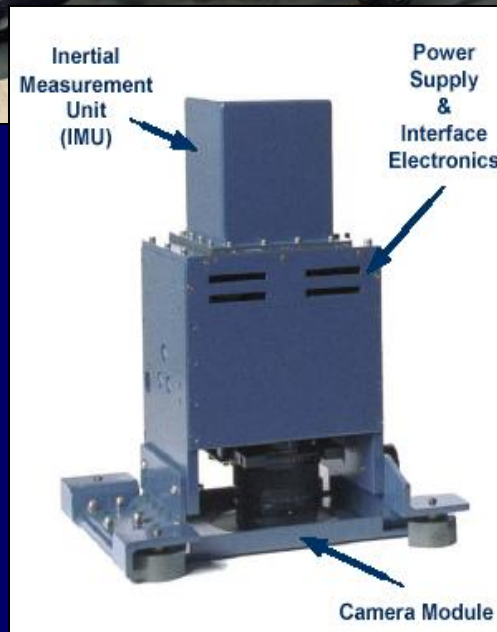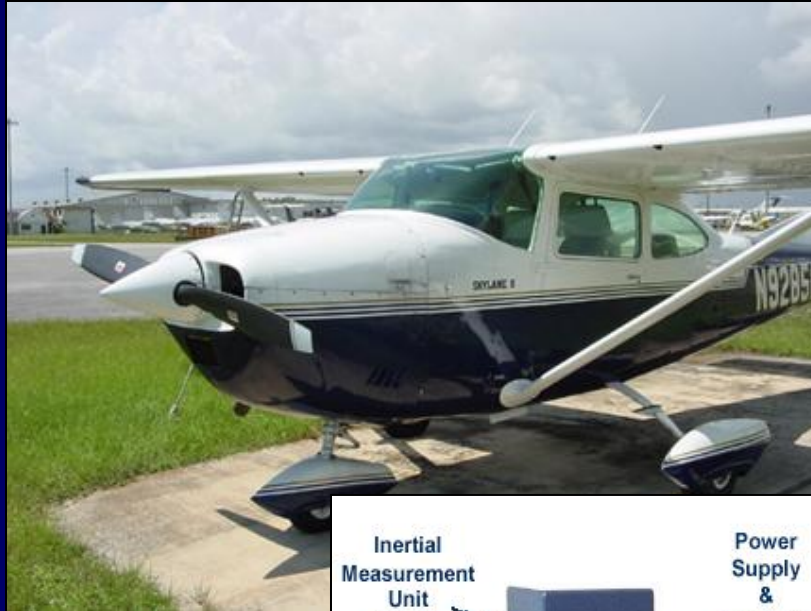
One meter resolution CIR aerial imagery was collected during peak waterfowl migration in spring, 2004-2013

Inertial Measurement Unit (IMU)
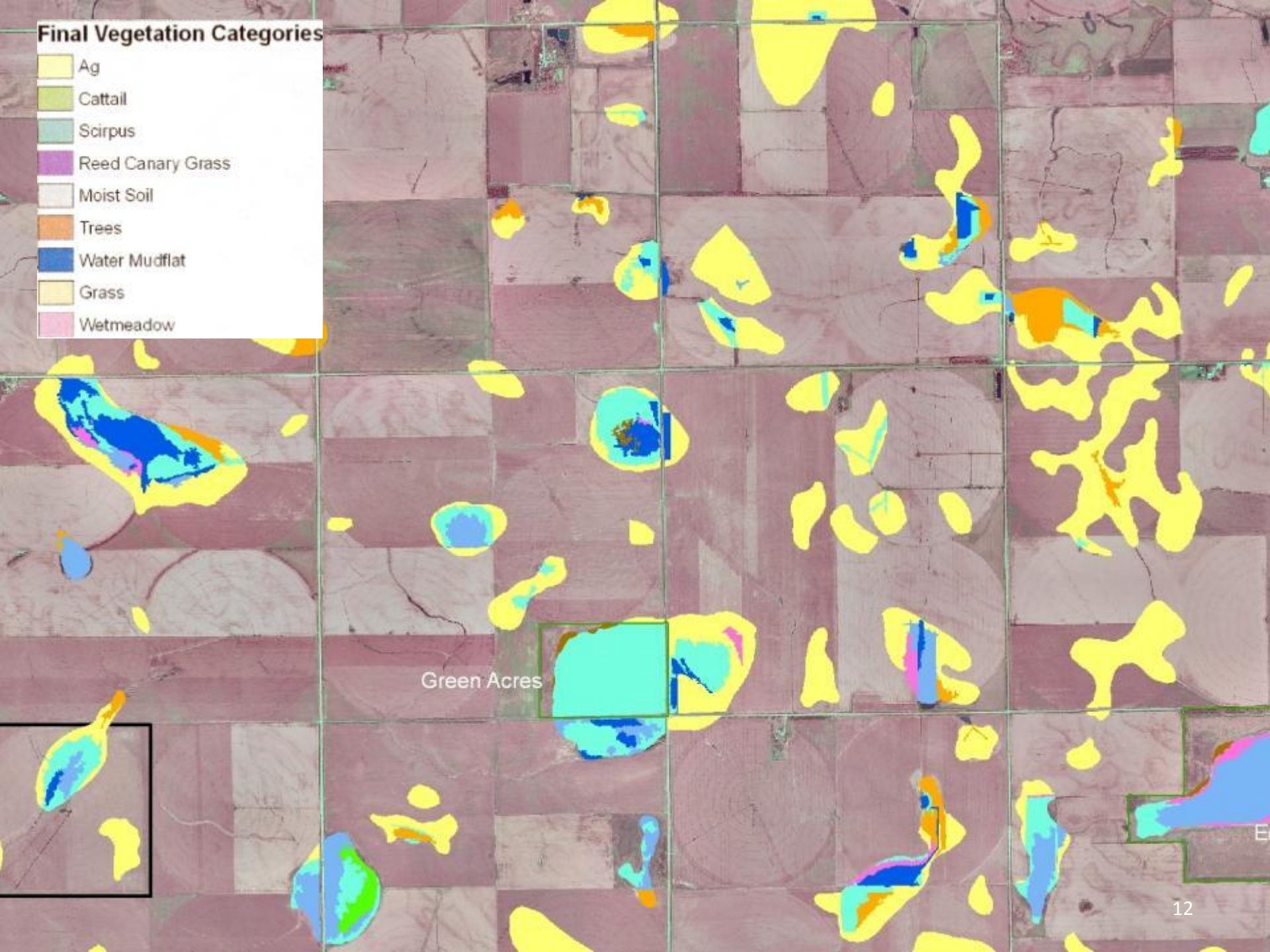
Power Supply & Interface Electronics

Camera Module

Level 3 Assessment of vegetation communities

Final Vegetation Categories

- Ag
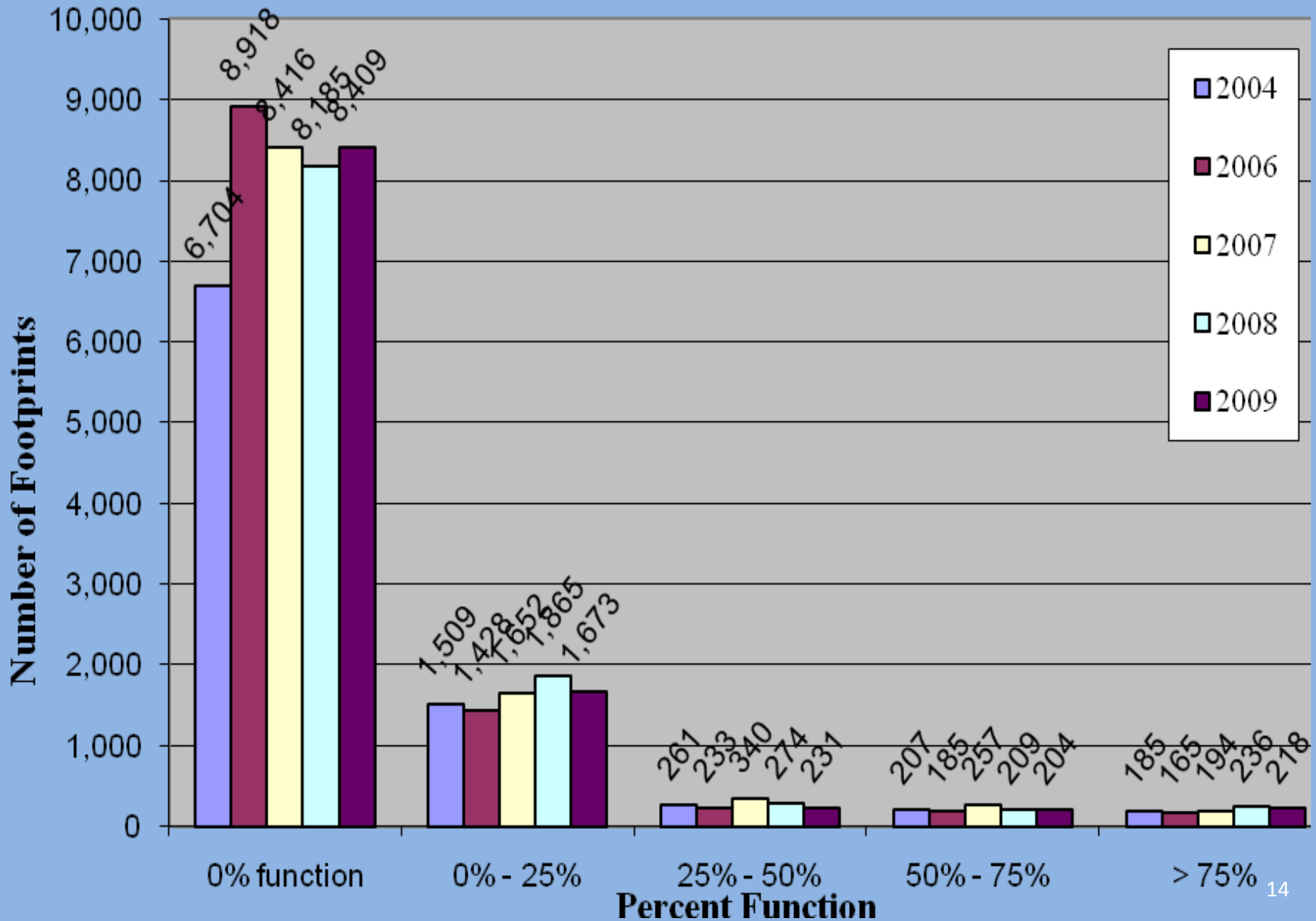- Cattail
- Scirpus
- Reed Canary Grass
- Moist Soil
- Trees
- Water Mudflat
- Grass
- Wetmeadow

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

13
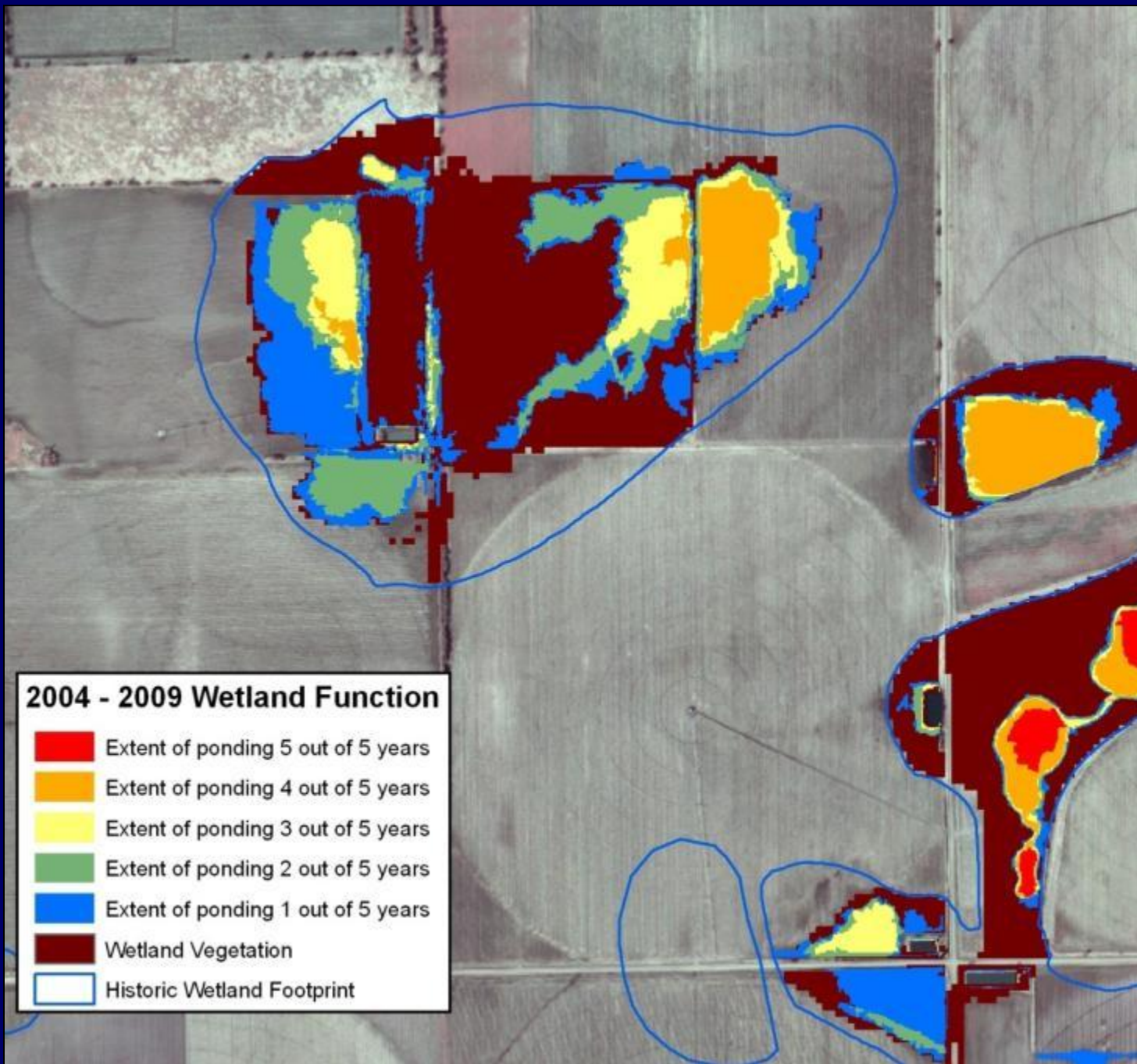
Functioning Wetlands by Year

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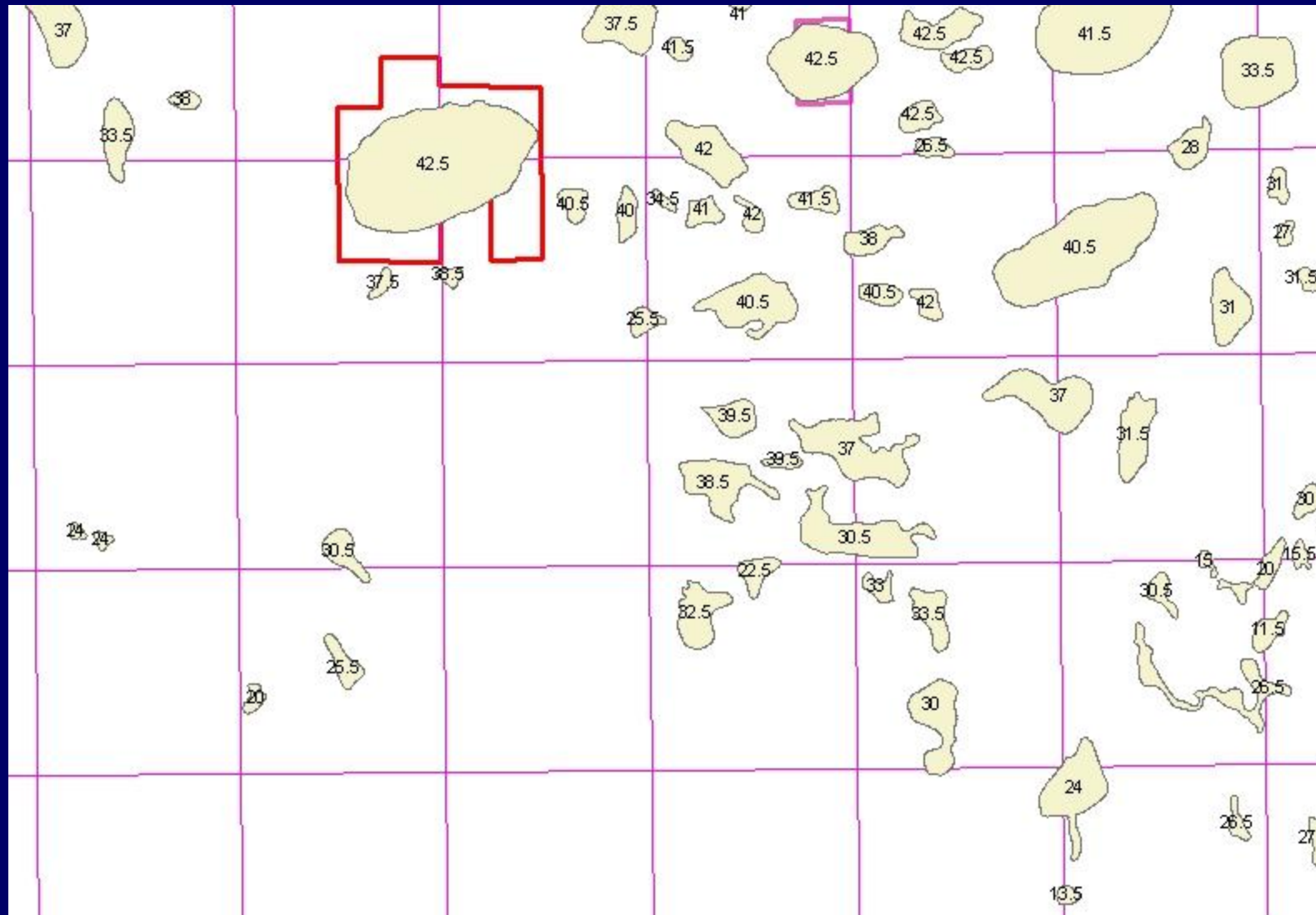
A Restorable Wetland Index has been developed using the data on function from the Annual Habitat Survey and new detailed data on topography collected using LiDAR.

http://www.pljv.org/playa-dss/nebraska

Google

Favorites   Private Lands Database - Lo...   Suggested Sites   e-mail Outlook Web Access   Lincoln Weather Forecast a...   NPR radio   CNN.com - Breaking News

Lincoln Weather F...   Citrix Online   Nebraska Play...   Home   Feeds (J)   Read Mail   Print   Page   Safety   Tools

PLAYA LAKES
JOINT VENTURE

Home   About Us   Playa Conservation   For Landowners   For Habitat Partners   For Industry   News   Contact Us

Home » Playa Decision Support System » Nebraska Playa DSS

Photo: Aerial of Playas in Irrigation

An aerial photo shows playas in center pivot irrigation in Keith County, Nebraska.
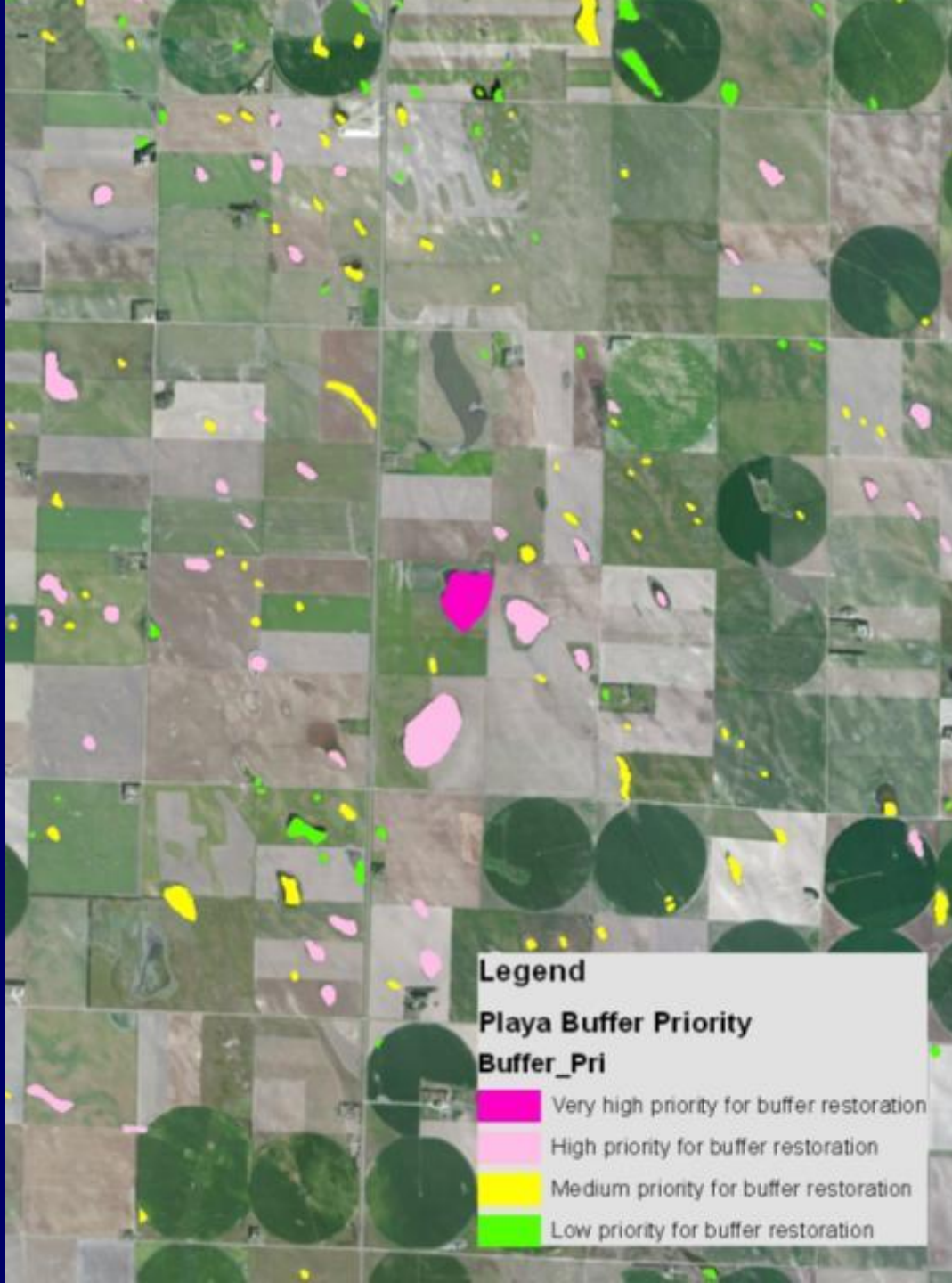
Playa Decision Support Tools for Nebraska

This page features Playa Decision Support Tools (DSTs) for Nebraska that are part of a bigger **Playa Decisi** **Support System** for the entire PLJV region. These tools are intended for use by multiple stakeholder groups including natural resource professionals, land managers and developers—providing them with spatially expl data, maps, and written guidance that can inform decisions that may impact playas and their associated

Prioritization for Restoration

Table 11. Methods used to calculate priority scores for restoration in Nebraska. The Nebraska working group used two different prioritizations for each playa, one for hydrologic restoration, and one for buffer restoration.

Factor	Criteria	Description	Score (Buffer)	Weight (Buffer)	Score (Hydro)	Weight (Hydro)
Dominant land cover (within 2000m)	Cropland	Any crop type	100	0.15	40	0.05
	CRP	CRP grass	80		60	
	Pasture	Pasture	60		80	
	Rangeland	Native grass/shrub	40		100	
	Urban	Urban	0		0	
Playa size	Large	>12 acres	100	0.215	100	0.24
	Medium	>1 - <12	60		60	
	Small	<=1	30		30	
Road/Railroad Impact	No	>50 m from road or railroad	100	0.09	100	0.1
	Yes	<50 m from road or railroad	0		0	
Vertical structures	No	No vertical structures within	100	0.09	100	0.1
	Yes	Vertical structures within 1000	0		0	
Connectivity	High	In cluster	100	0.215	100	0.24
	Low	Not in cluster	50		50	
Whooping crane	Yes	In Whooping crane corridor		0.15		0.17
	75%		100		100	
	80%		90		90	
	85%		80		80	
	90%		70		70	
	95%		60		60	
	No	Outside Whooping crane	50		50	
Wetland Drainage	No		100	.09	0	0.1
	Yes		0		100	

Legend

Playa Buffer Priority

Buffer_Pri

- Very high priority for buffer restoration
- High priority for buffer restoration
- Medium priority for buffer restoration
- Low priority for buffer restoration

21

Nebraska Intensification Project

2011-2013

Reference network

Benefits of long-term monitoring

- **Quantify habitat quality to estimate wildlife use**

- **Provide data to inform restoration and management**

- **Track invasive species**

- **Track land use changes**

- **Track effects of climate change**

Think of how valuable it would be to have data collected 50 or 100 years ago!