

Biodiversity in Selected Natural Communities Related to Global Climate Change



Funding

- **Wisconsin Focus on Energy**



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- **Endangered Resources Fund**



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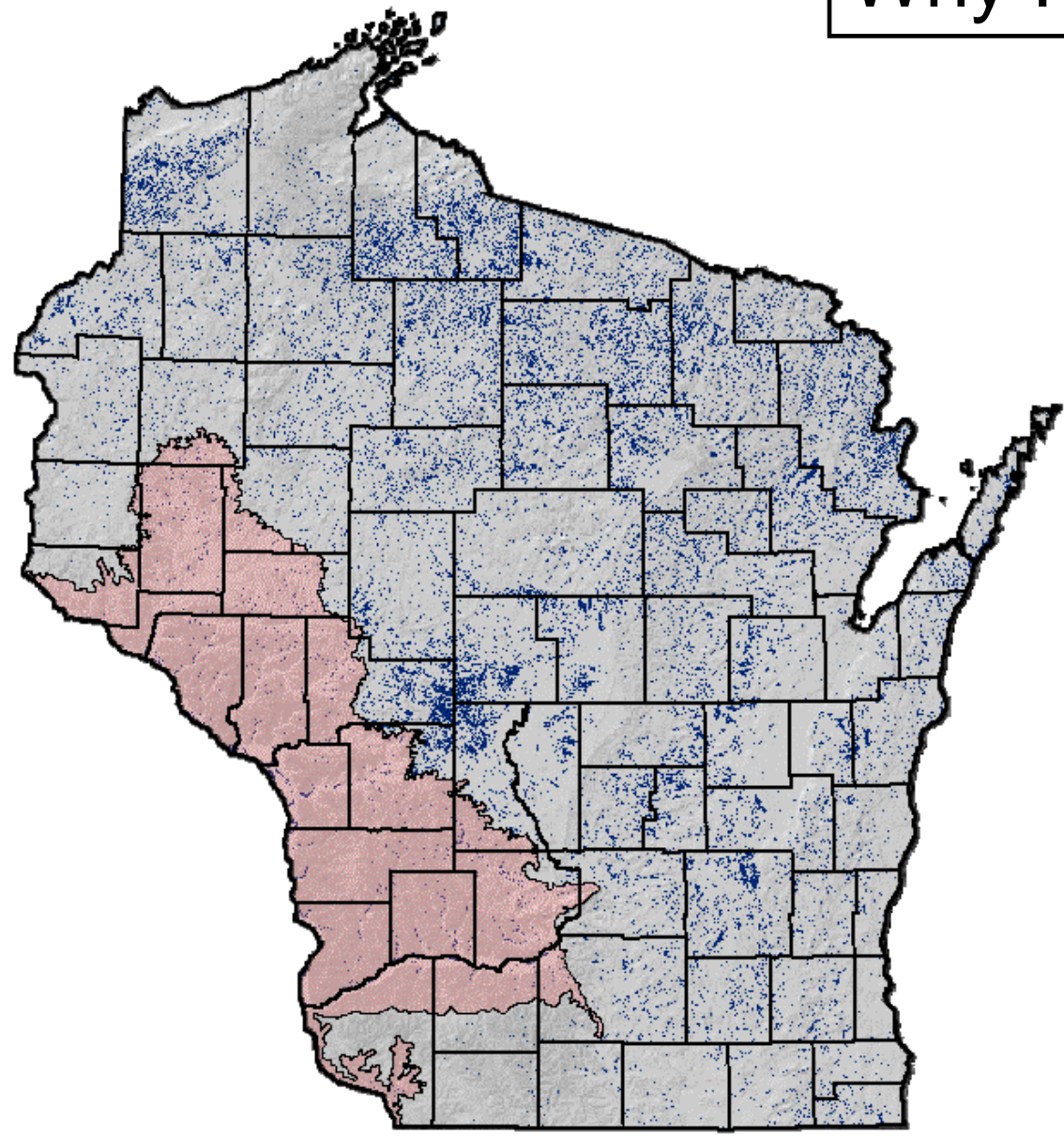
Project goals

- Obtain baseline data on presence, abundance, and distribution of selected taxon groups associated with peatlands
- Document selected biotic and abiotic variables that could influence the organisms being studied
- Determine status of selected peatland obligate animals and plants
- Replicable such that it can be repeated in 10-20 years

Why Peatlands?



Why Peatlands?



Species groups

- Breeding passerine birds
- Small mammals
- Amphibians
- Selected invertebrates
- Selected rare birds & amphibians
- Rare vascular plants
- Natural Communities

Inventory Intensity

A photograph of a field of tall grasses with several purple flower spikes in the foreground. The background is a soft-focus field of green grass. A semi-transparent white box is overlaid in the center, containing the text 'Inventory Intensity'.



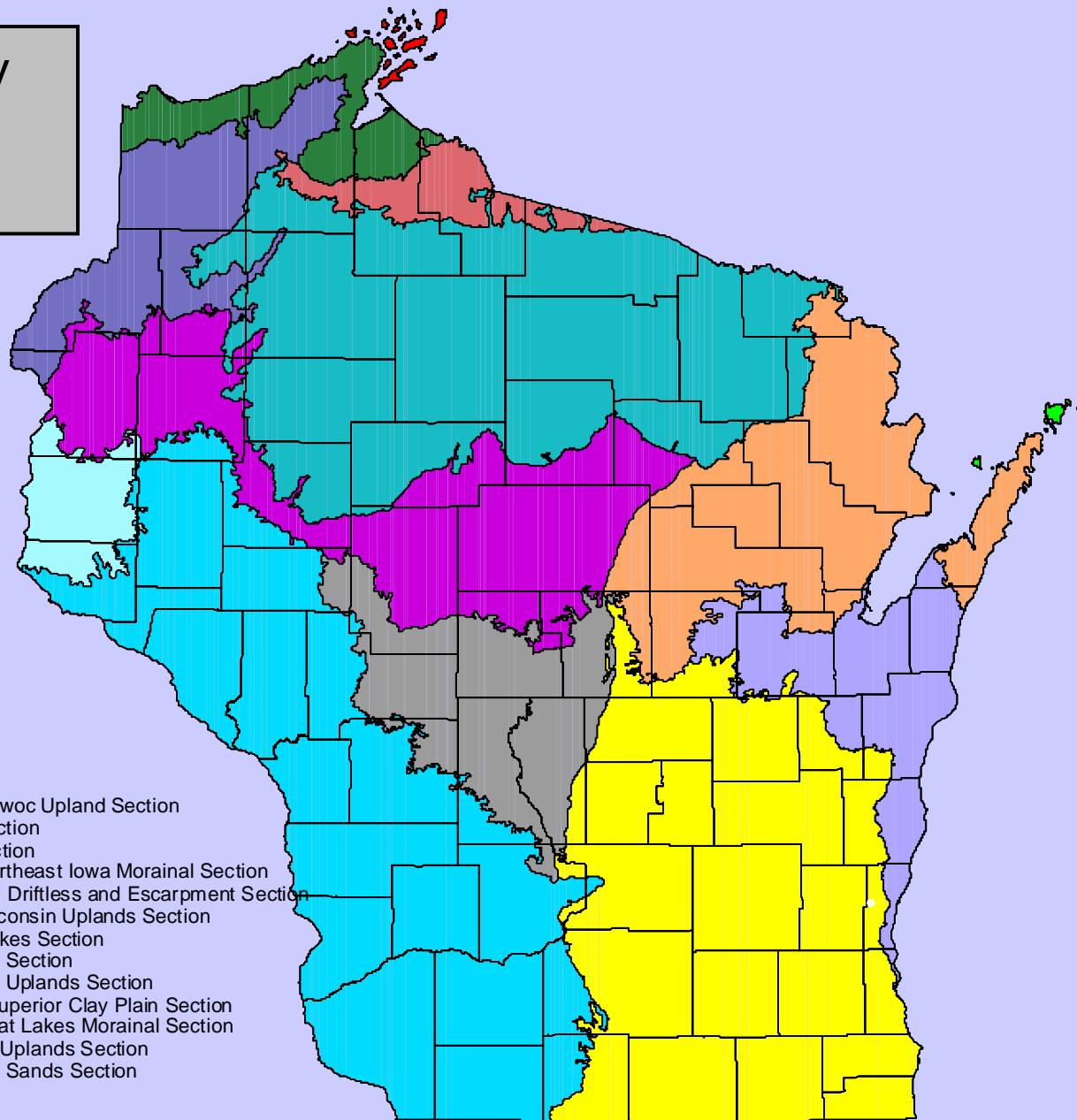
The two levels of intensity will provide:

- volume of data and repetition over time on intensive sites
- broad scale spatial resolution through extensive site surveys
- wide taxonomic resolution through a combination of intensive and extensive surveys

Intensive Site Selection Criteria

Distributed by Ecological Sections

- Counties
- Ecological sections
- Green Bay-Manitowoc Upland Section
 - Lake Michigan Section
 - Lake Superior Section
 - Minnesota and Northeast Iowa Morainal Section
 - North Central U.S. Driftless and Escarpment Section
 - North Central Wisconsin Uplands Section
 - Northern Great Lakes Section
 - Northern Highland Section
 - Southern Superior Uplands Section
 - Southwest Lake Superior Clay Plain Section
 - Southwestern Great Lakes Morainal Section
 - Western Superior Uplands Section
 - Wisconsin Central Sands Section



Protection

BIBON SWAMP

State Natural Area

Est. 1978

Disturbance

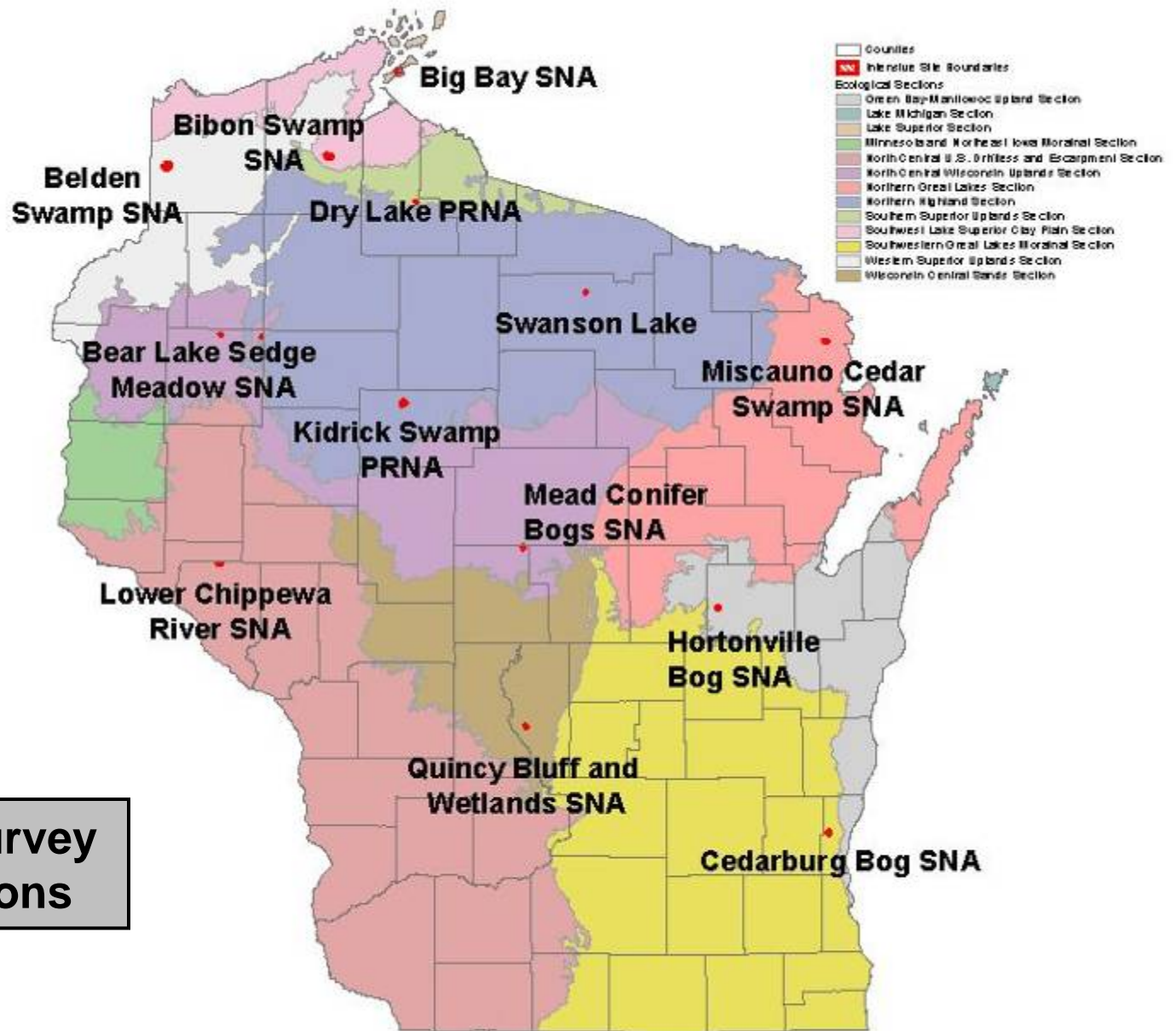




Landscape context



Community types



Extensive Site Selection

Criteria

- Exclude Intensive Sites.
- No special degree of protection
- ≥ 40 acres of contiguous peat
- within ≥ 100 acres of contiguous wetland
- Open, closed, or both

Grid Block Evaluation

- Potentially suitable habitat was assessed using GIS layers & other data.
- All biologists worked within a core area.

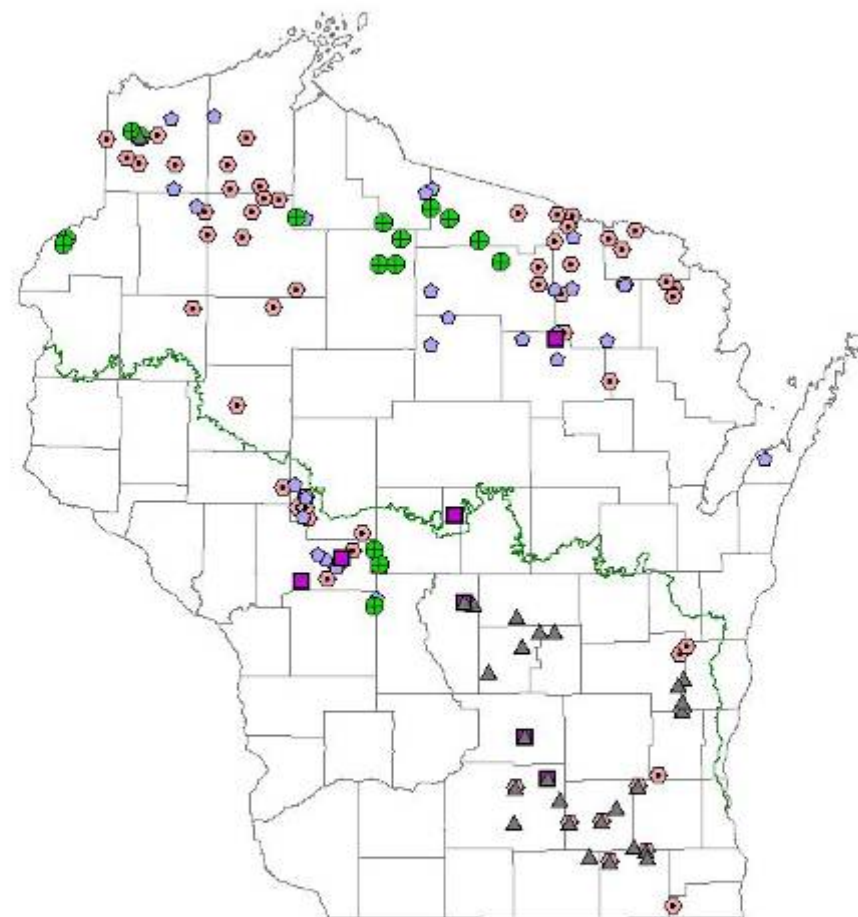
Site Field Evaluation



Surveys & Results



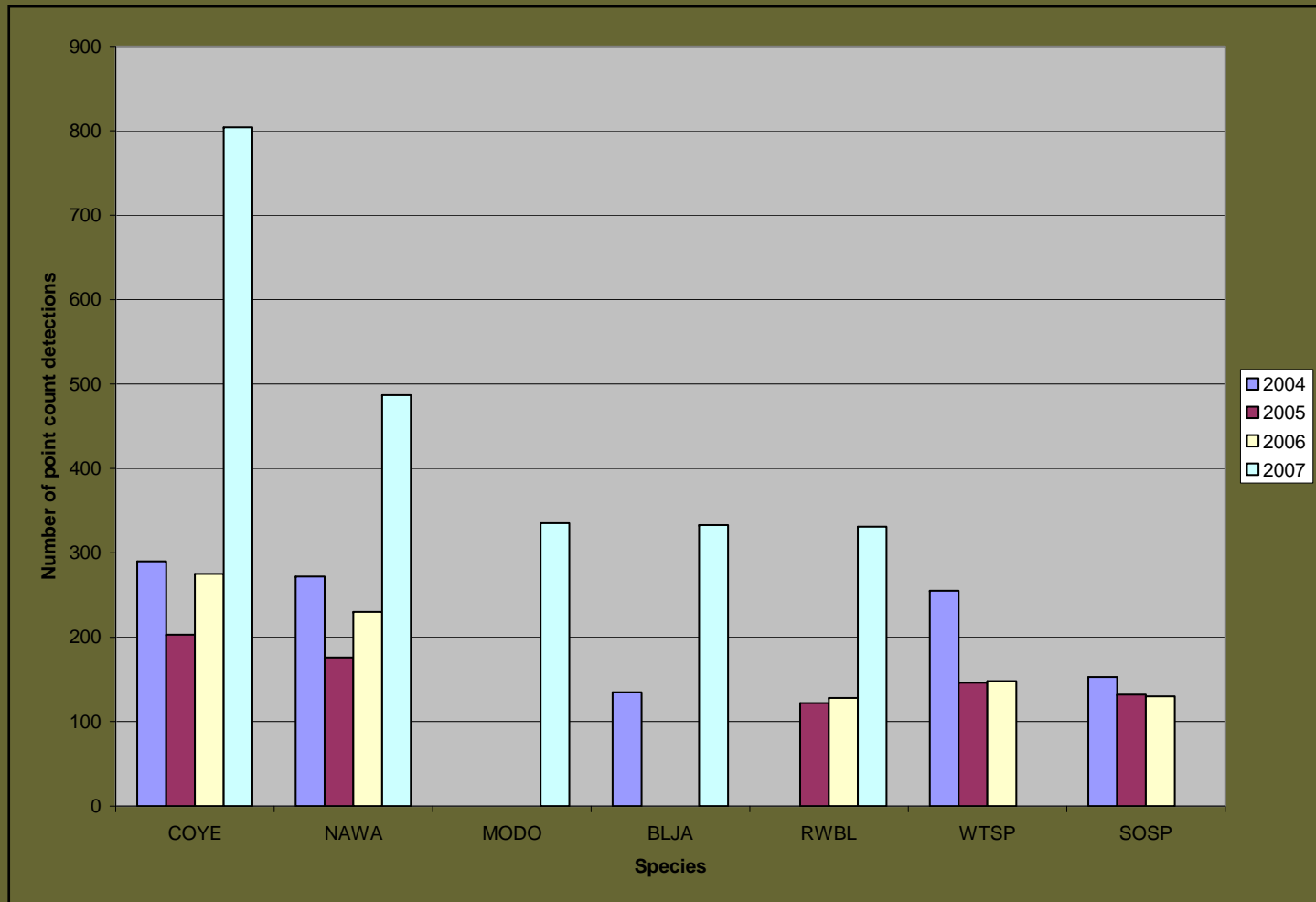
Extensive Sites surveyed for one or more groups during 2006.



- ▲ Terrestrial & Macroinvertebrates
- Secretive Marsh Birds, Toads, Frogs
- Breeding Passerine Birds
- ⬠ Butterflies & Grasshoppers
- ⊗ Rare Plants
- Counties
- ▭ Ecological Provinces

Breeding Passerine Bird Surveys

- Determine passerine bird relative abundance.
- Determine the relationship between habitat structure & composition and bird species relative abundance.



Amphibian Objectives

To obtain information on the presence, species composition and richness, local and regional distribution, and habitat associations of amphibians.

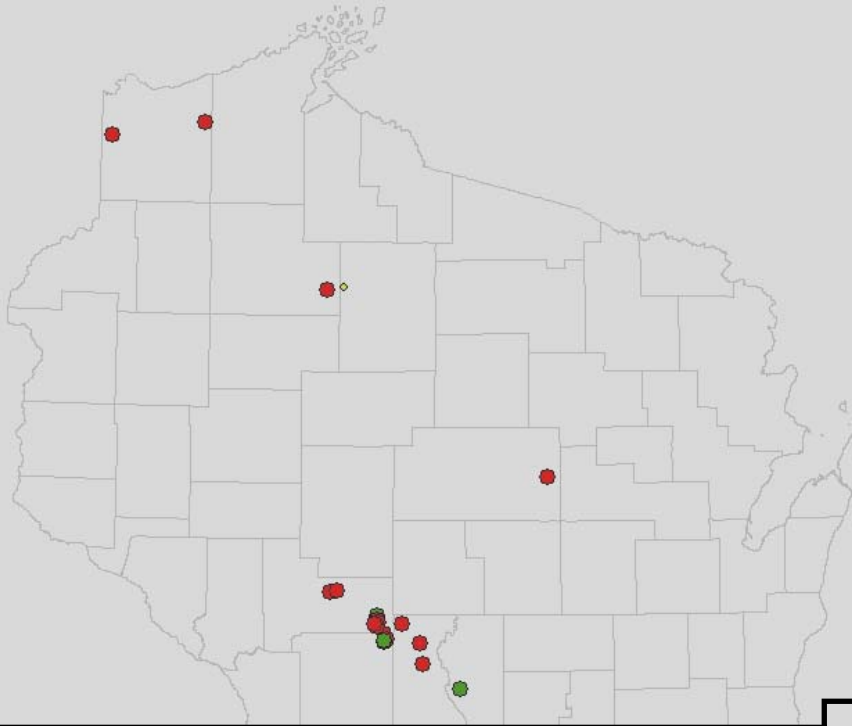


Small Mammal Objectives

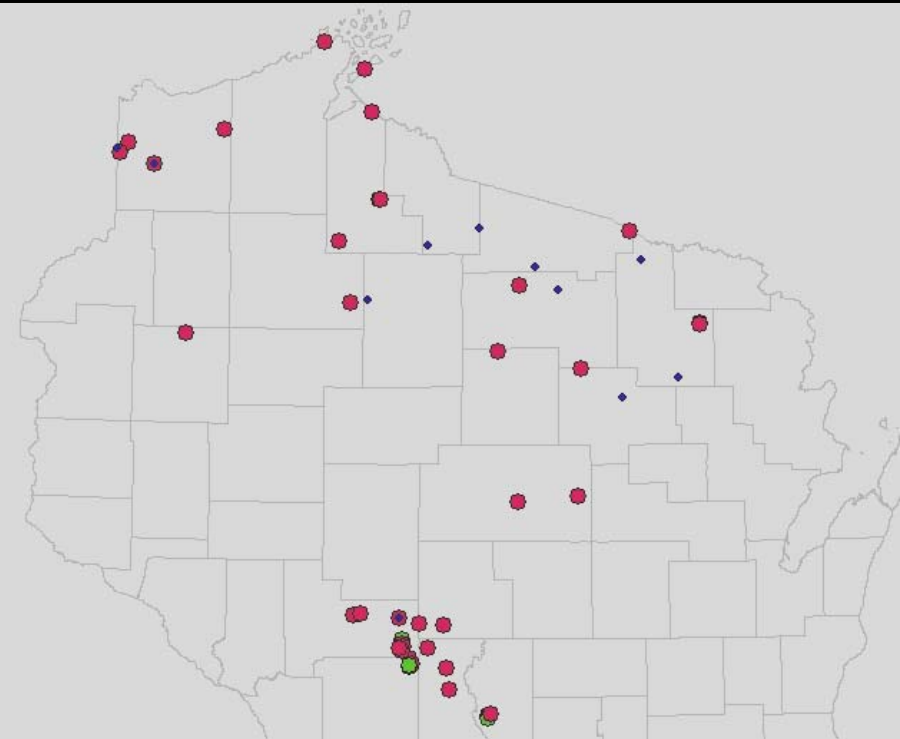
- Determine species composition, relative abundance, phenology, and breeding success.
- Determine the relationship between habitat structure & composition and small mammal species relative abundance.



Williamsonia Records Before Project



Williamsonia Records as of
2007



A person wearing a red and white plaid shirt is walking away from the camera through a field of tall, green grass. In the background, there is a dense line of trees under a sky with scattered white and grey clouds. The overall scene is a natural, outdoor setting.

Secretive Marsh Bird, Frog, and Toad Surveys

Rare Bird Surveys



Washington DC Library
USFWS

Target species:

- Yellow rail
- American bittern
- LeConte's sparrow
- Nelson's sharp-tailed sparrow

WDNR

Rare Amphibian Surveys



Dan Nedrelo

Rare Plant Surveys



2004 – 65 sites surveyed

- Rare species: 23

2005 - 64 sites surveyed

- Rare species: 40

2006 - 62 sites surveyed

- Rare species: 27

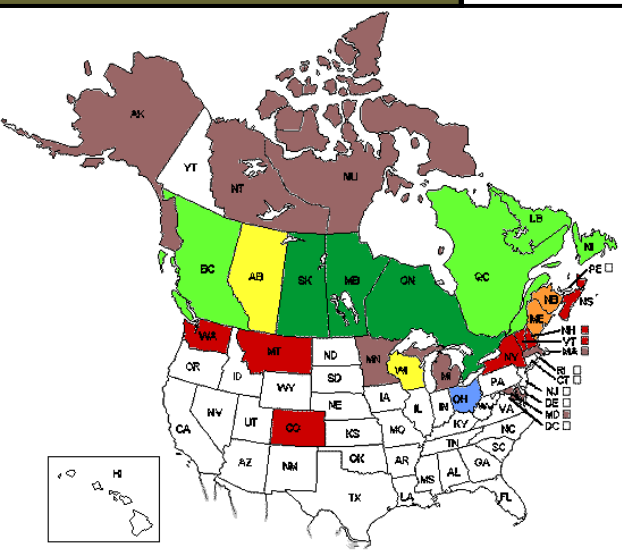
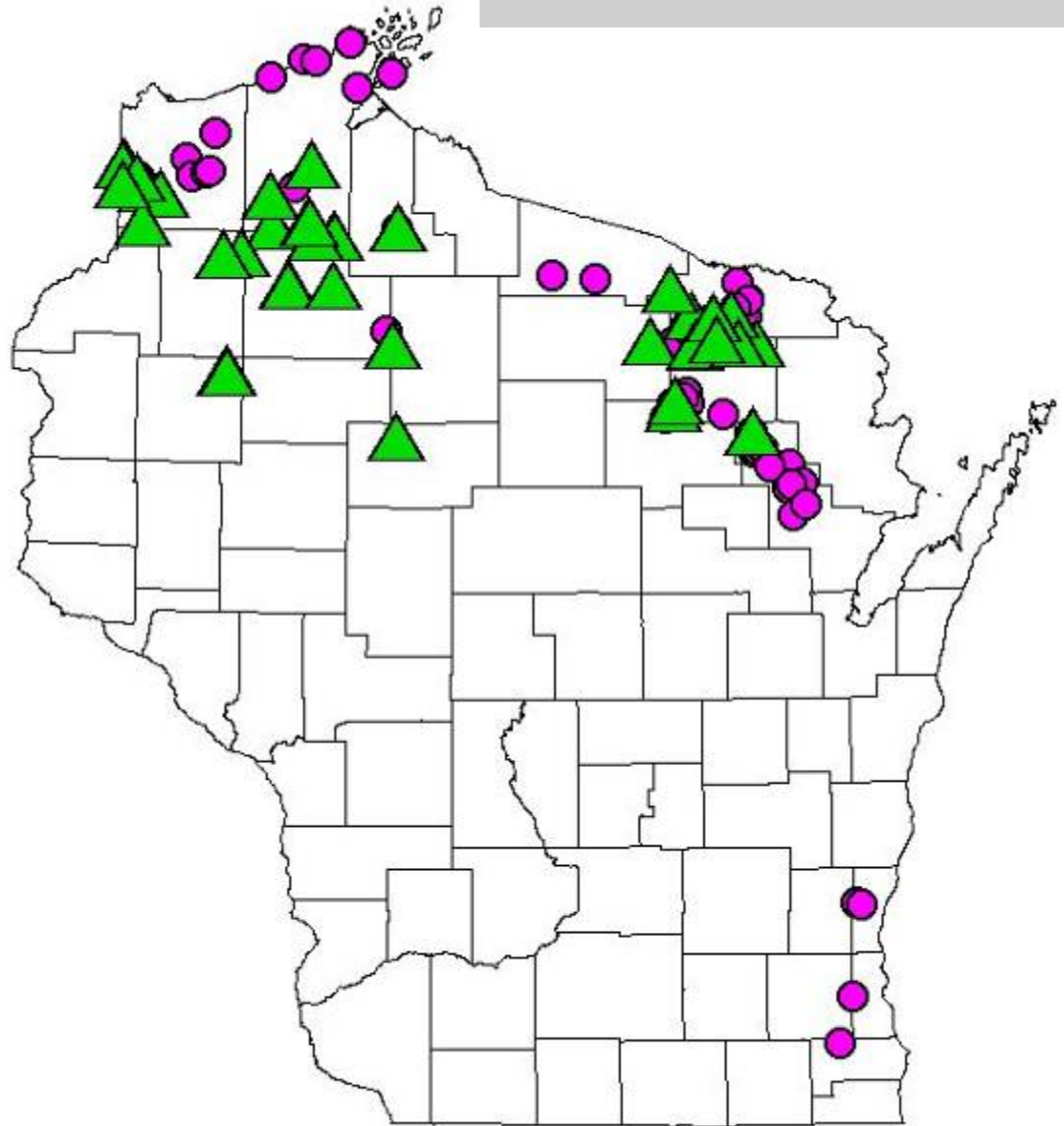
Analysis



Carex tenuiflora



WDNR



Products

- A replicable set of baseline data
- New records for databases
- NHI working list revisions
- Development & population of a site database
- Species distribution and abundance information
- Contribution to the revision of Mammals of Wisconsin
- Development of a passerine bird habitat model



WDNR

