Evaluation of Christmas Bird Counts and Landscape Factors as Indicators of Local Blackbird Winter Roosts

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Outline

- Objectives
- Blackbirds
- Bird Conservation Regions
- Christmas Bird Counts
- Challenges
- Population trends
- Habitat selection
- Acknowledgments

Study Objectives

- Analyze CBC trends of blackbirds in southeastern US

- Identify landscape-level factors influencing winter roost selection

- Evaluate the CBC as an indicator of climate related changes in roost locations

Justification

- Quick identification of roosts sites for routine or emergency management actions
  - Resource protection
  - Disease outbreak

- Baseline data for monitoring changes in roost selection related to climate change

Blackbirds

- Red-winged, Rusty, and Brewer's Blackbirds and Common Grackles
- Most numerous birds in North America
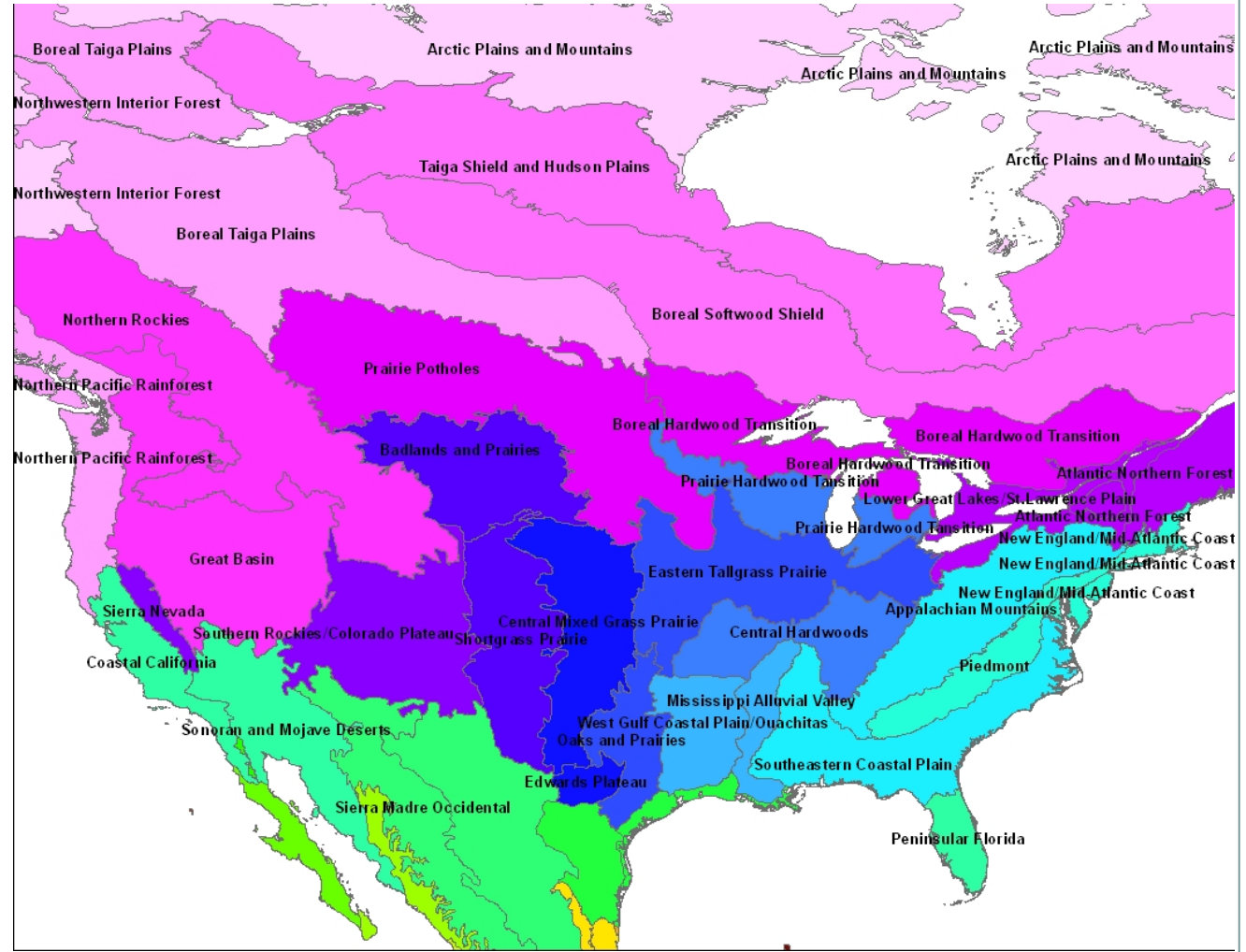- Combined population size > 300 million

Blackbirds

- Habitats vary during the breeding and wintering seasons.
- Birds form large mixed-species flocks.
- Some species are severe agricultural pests.
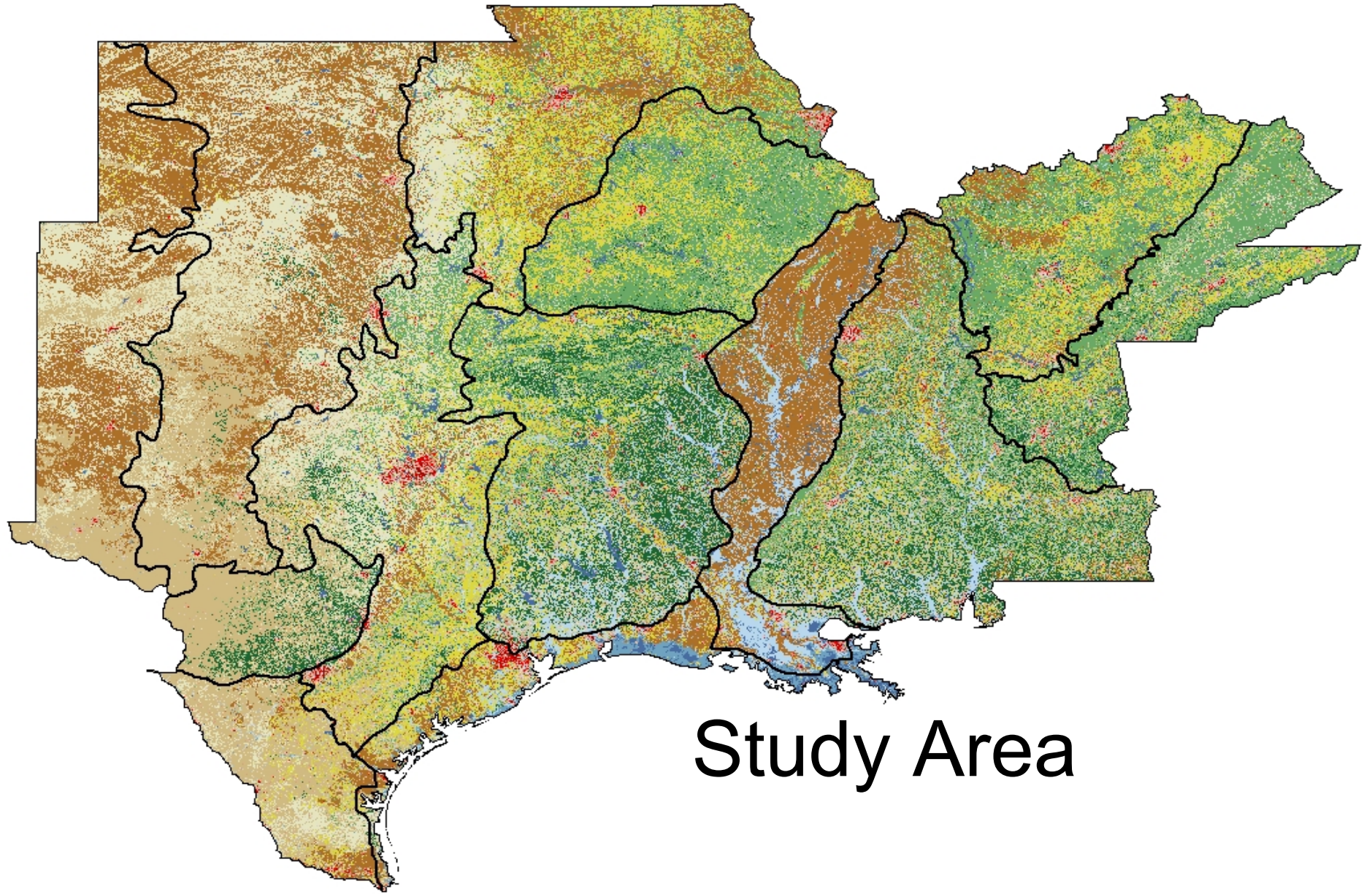- Birds can harbor parasites and pathogens.

Bird Conservation Regions

BCRs – 67

Serve as consistent spatial framework

Divide continent into discrete ecological units
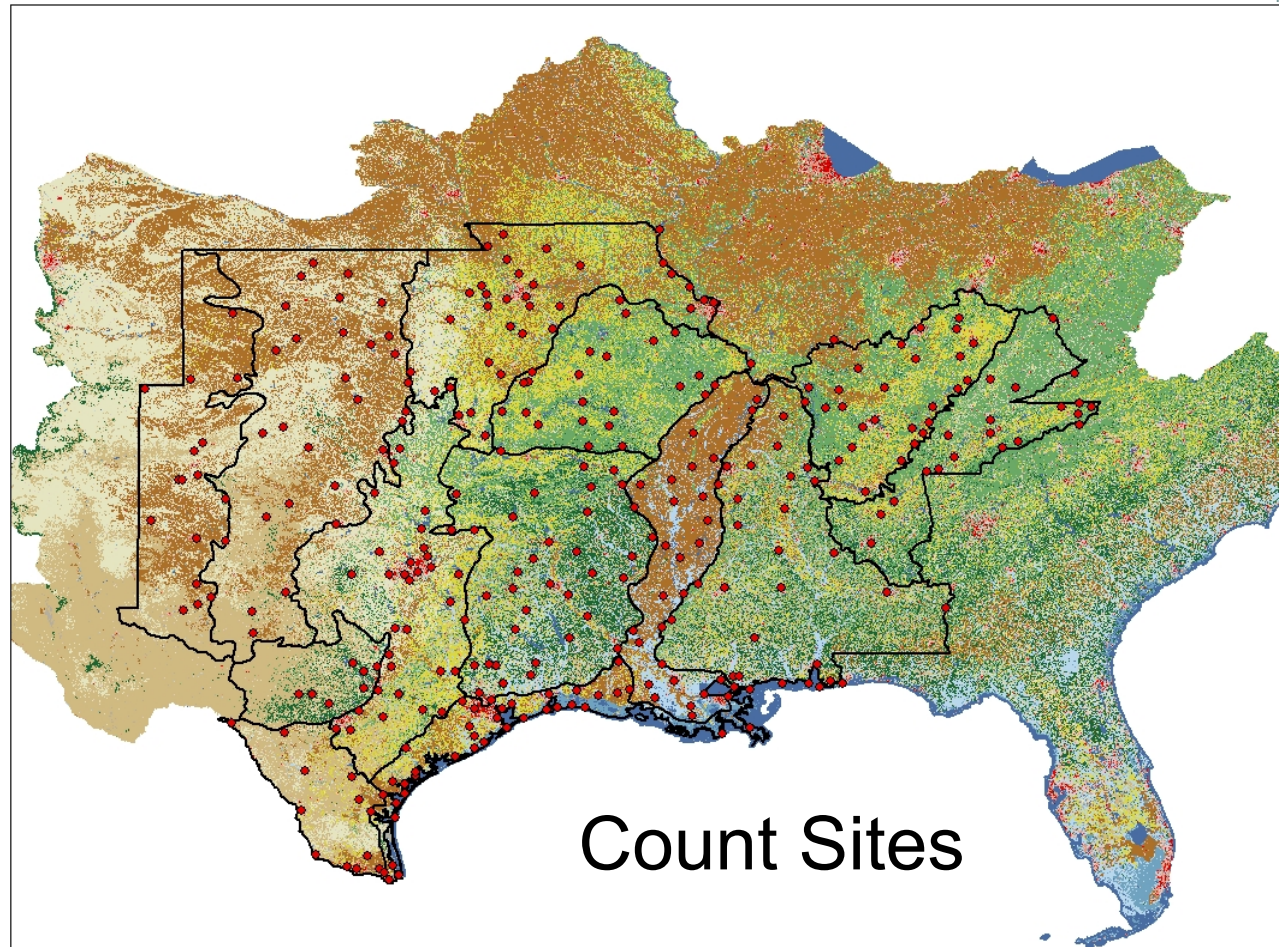
Study Area

Christmas Bird Counts

Initiated in the early 20th century

2,500 survey sites distributed across North America and some Pacific islands

50,000 volunteers

Count Sites

Christmas Bird Count

- Count circles are ≈24 km (15 mi) in diameter.

- Volunteers follow an assigned route.

- Counts are held between December 14 and January 5.
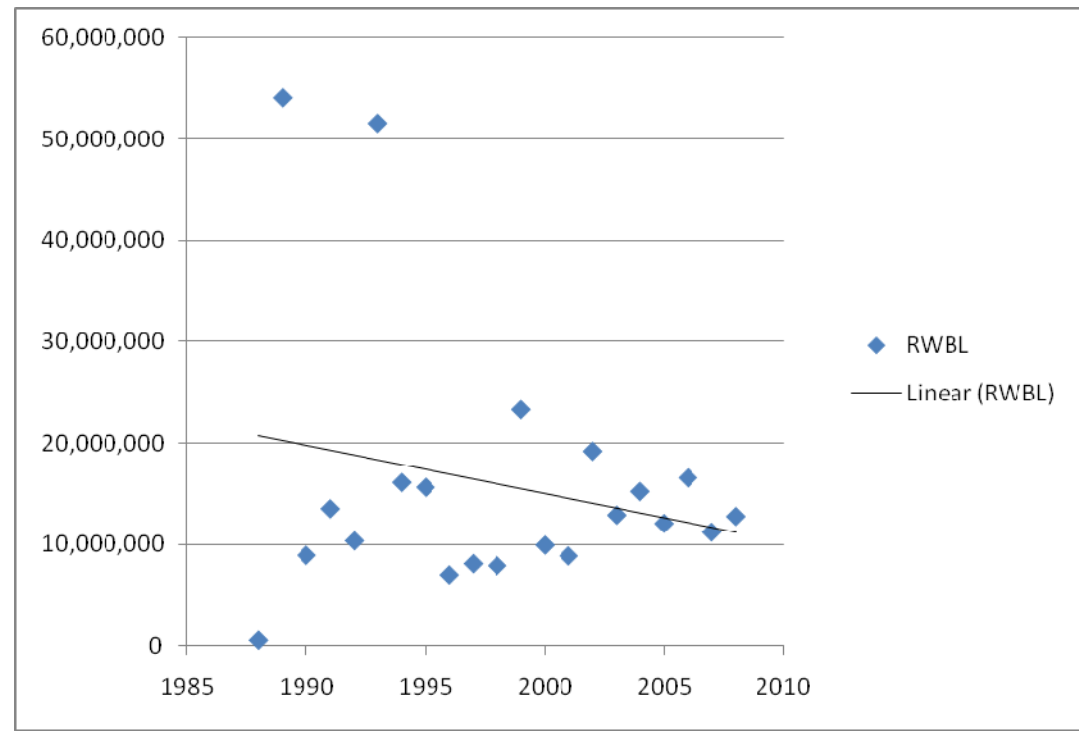
Challenges

- Number of circles and counters change over time
- Experience of volunteers can influence numbers and species recorded
- Effort varies by year and count circle
- Count circle locations are non-random
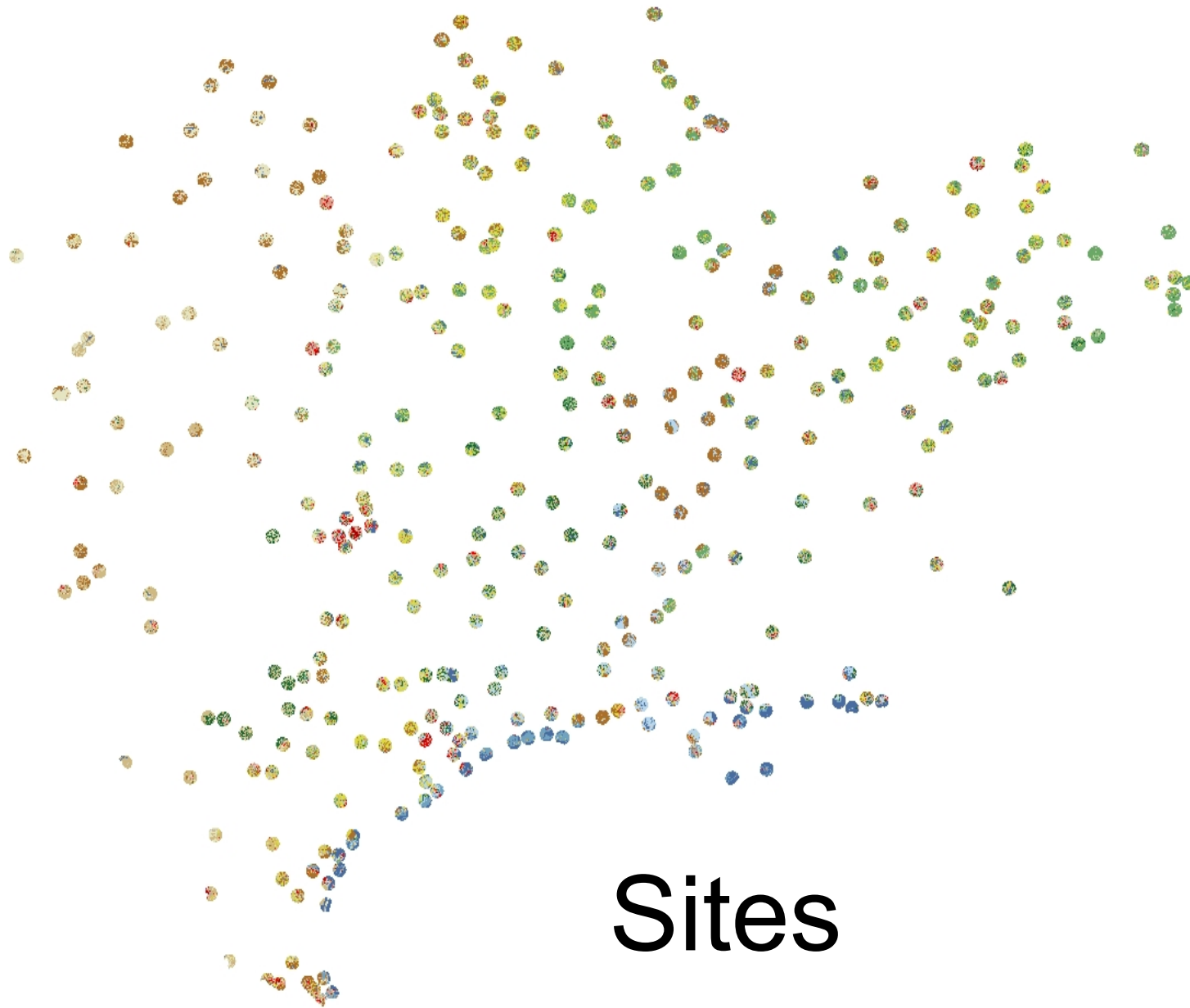
Population Trends

- Trends between 1988 and 2008 will be analyzed
  - Species within BCRs
  - Hierarchal modeling approach with a Bayesian framework

Habitat Selection

- CBC data will be merged with land-use data

- Each CBC site will be quantified using land cover spatial data

- Land use data have been obtained from USDI Geological Survey 1992 and 2001

Sites

Acknowledgments

• People
Greg Forcey
Wayne Thogmartin
Peter Oduor

• Organizations
NDSU
USDA
Audubon Society