

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 Modeling
- 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
 - ▣ Airport hazards
- 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



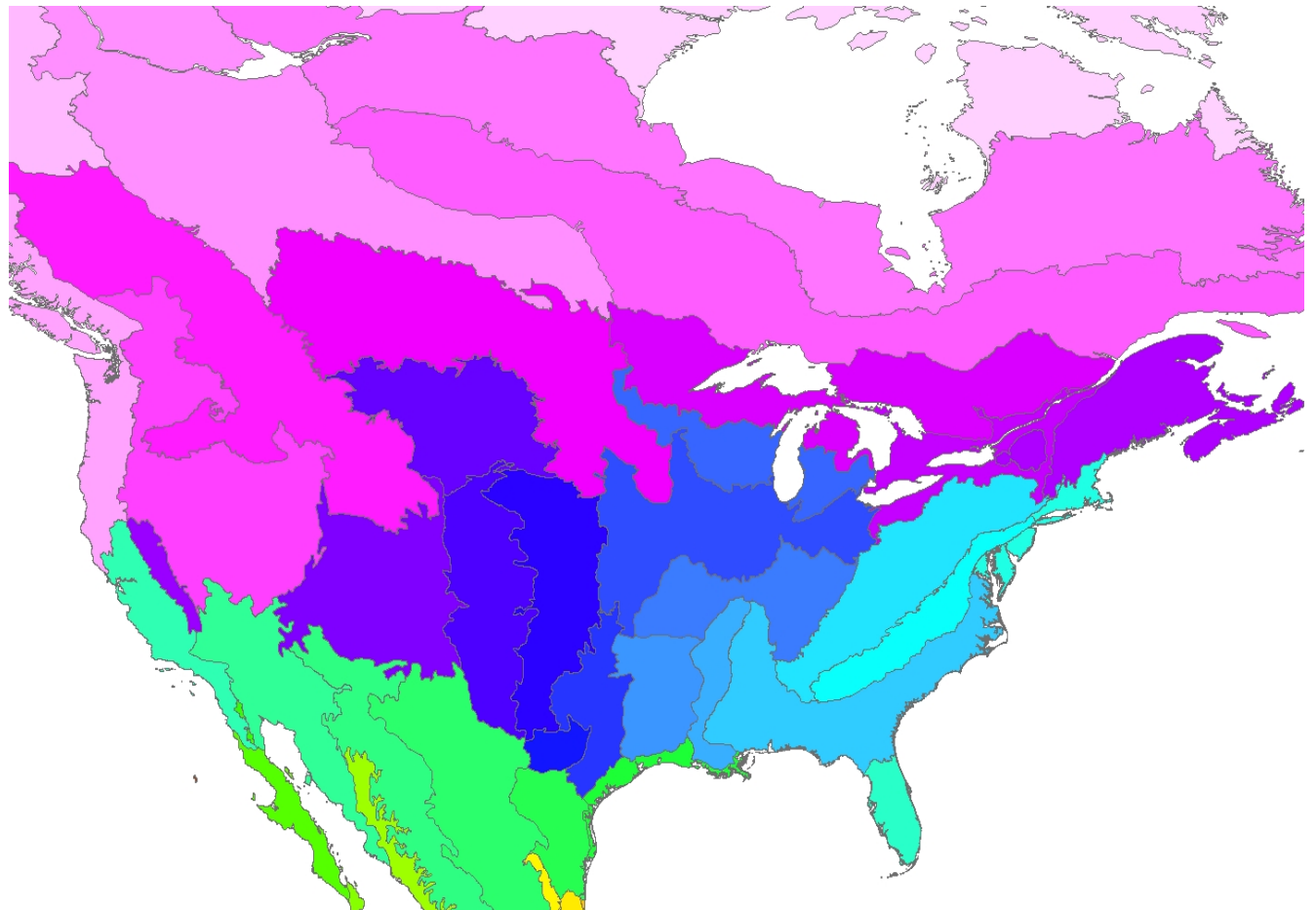
- Habitat types vary during the breeding and wintering seasons.
- Birds form large mixed-species flocks during winter.
- Some species are severe agricultural pests.
- Birds can harbor parasites and pathogens.
- Large roosts can be a hazard to aircraft.

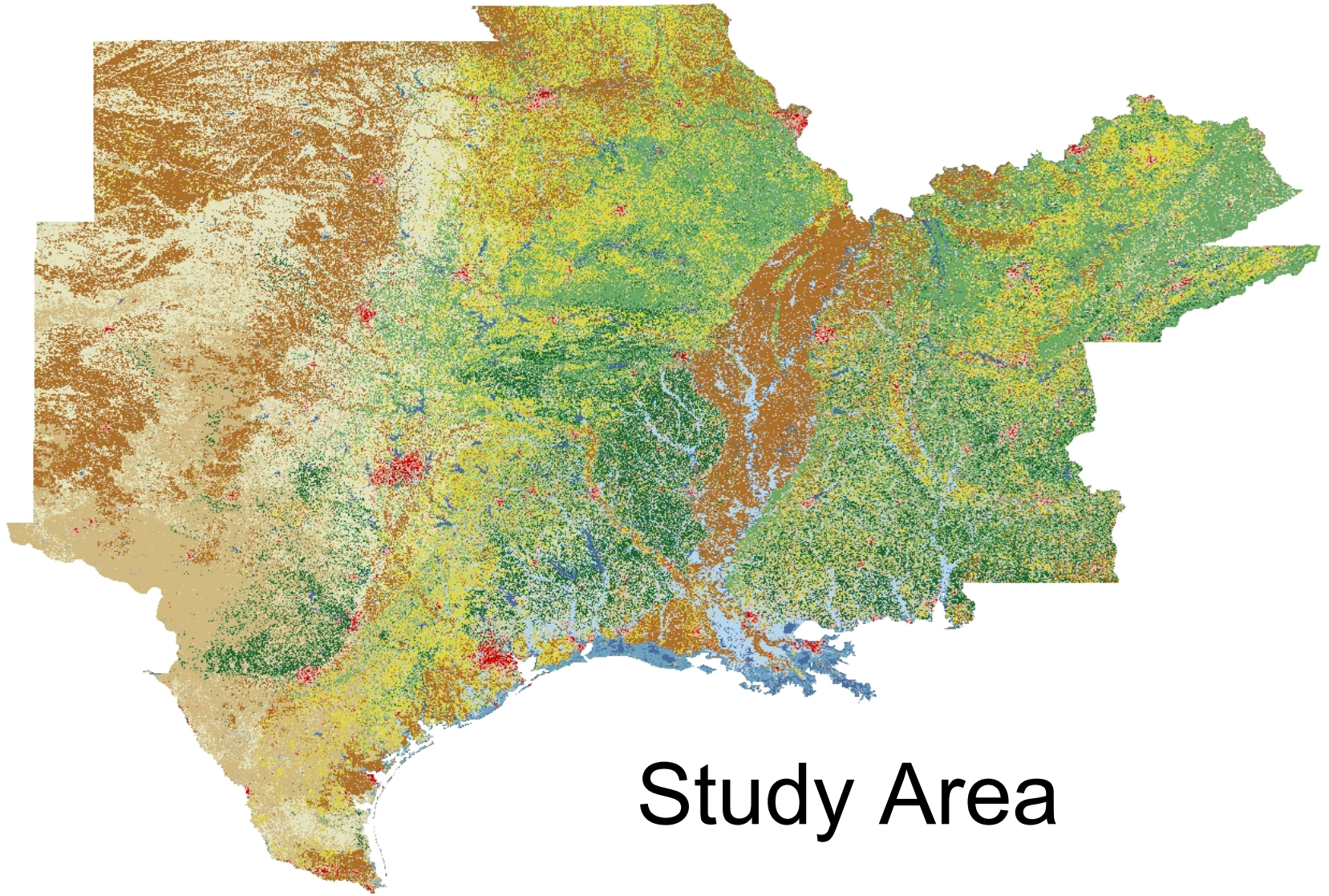
Bird Conservation Regions

BCRs – 67

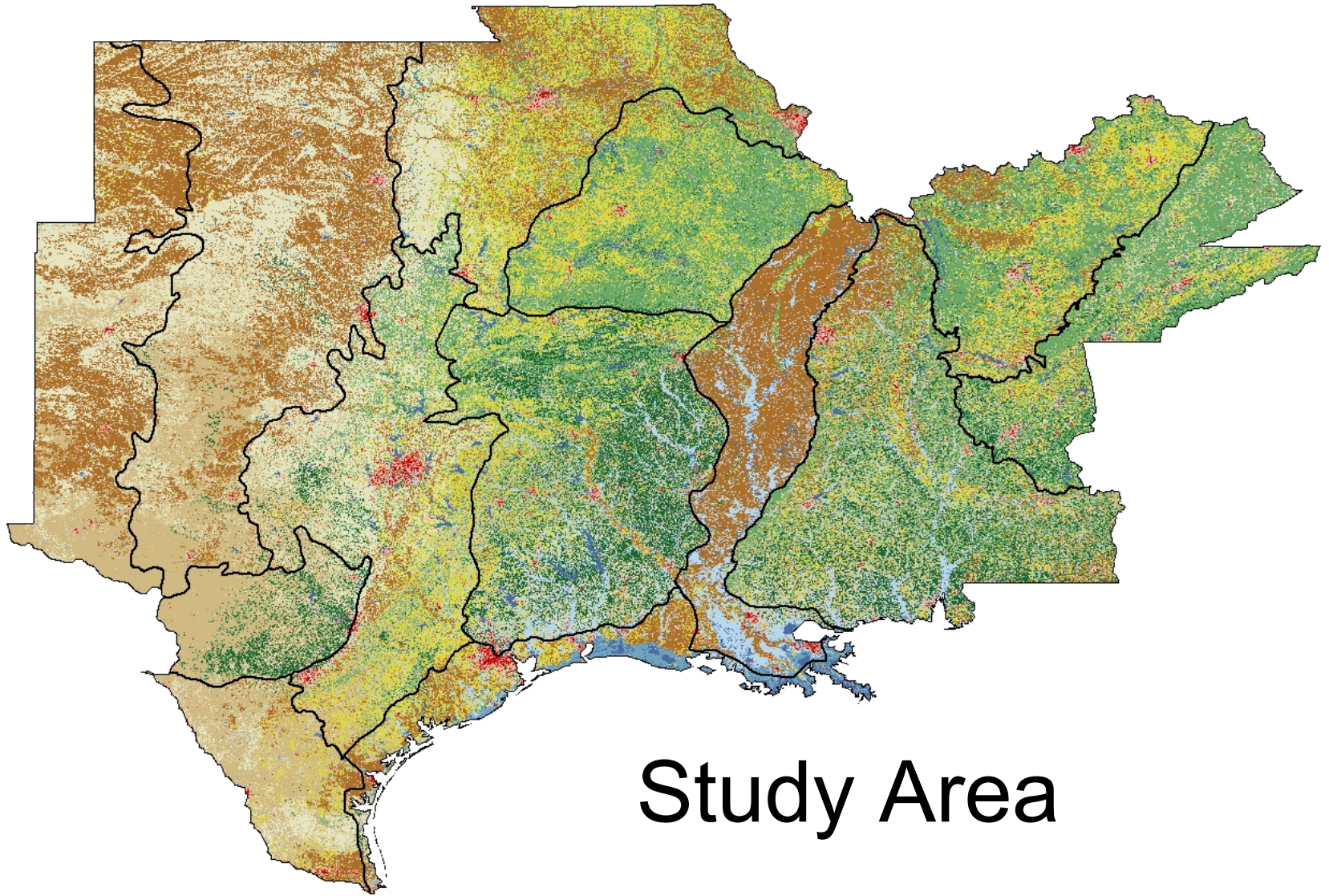
Serve as
consistent
spatial
framework

Divide
continent
into discrete
ecological
units





Study Area



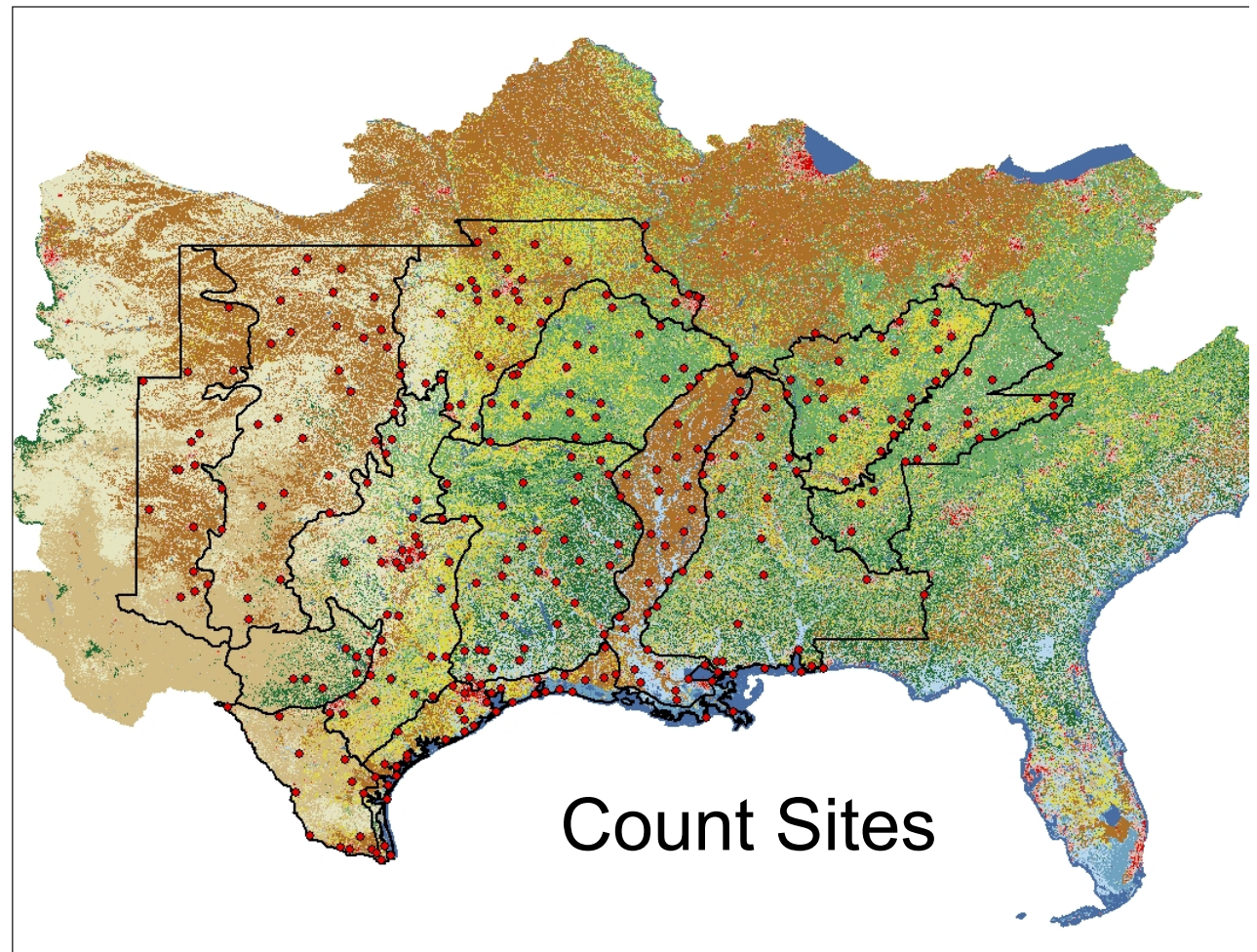
Study Area

Christmas Bird Counts

Initiated in the
early 20th century

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

50,000 volunteers



Christmas Bird Count



- Count circles are ≈ 24 km (15 mi) in diameter.
- Observers follow an assigned route.
- Counts are held between 14 December and 5 January.

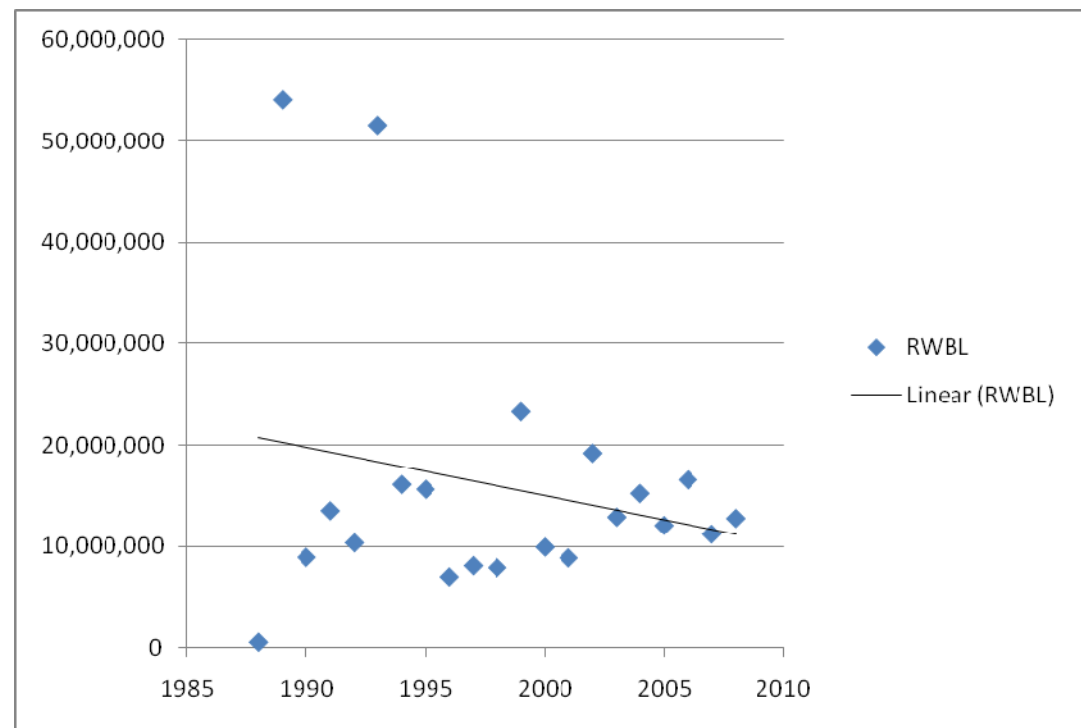
Challenges



- Number of circles and observers change every year.
- Experience of observers can influence numbers and species recorded.
- Effort varies by year and count circle.
- Count circle locations are non-random.

Population Modeling

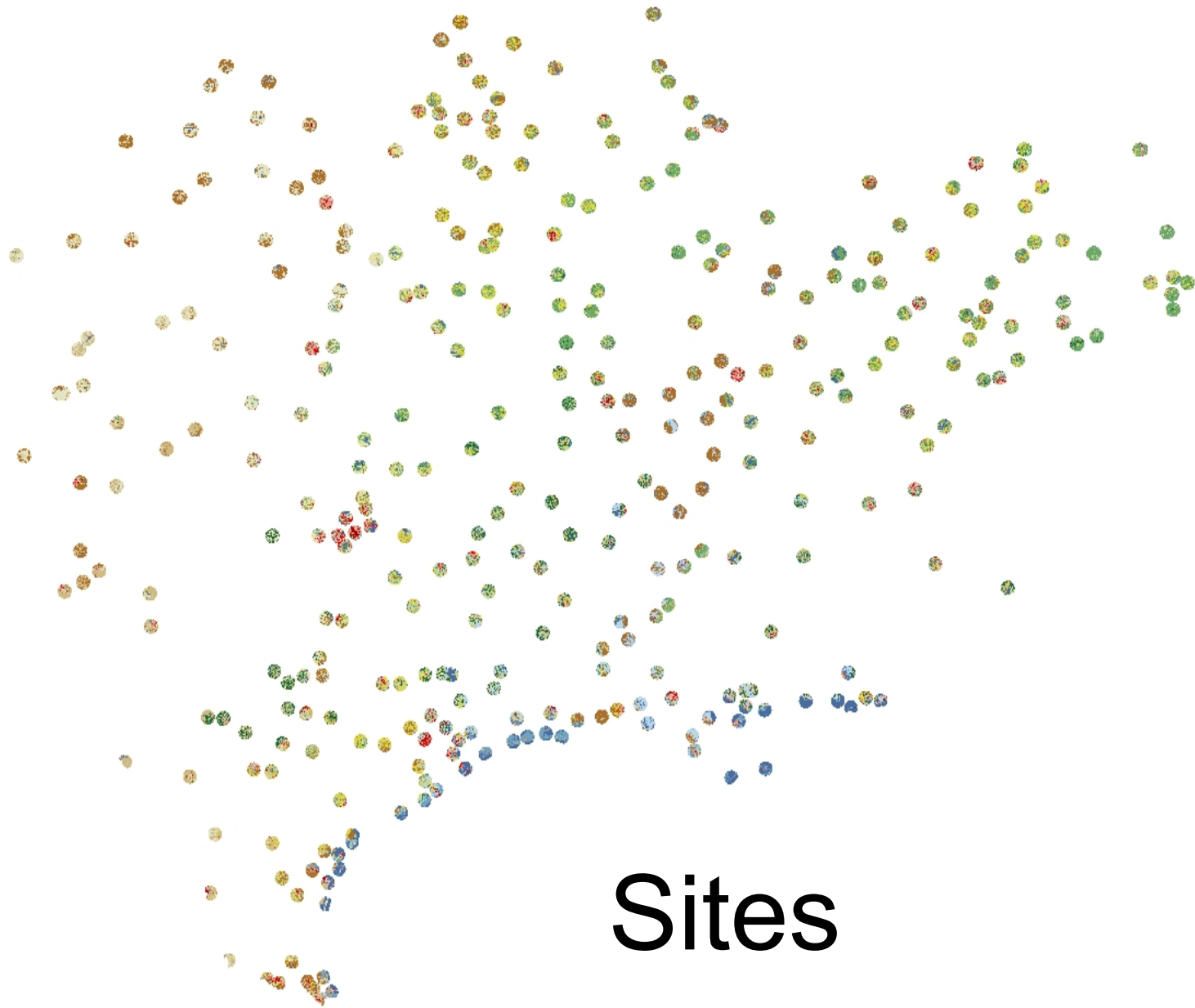
- Trends between 1988 and 2008 will be analyzed.
 - Species within BCRs
 - Hierarchical modeling approach with a Bayesian framework



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 the USDI Geological Survey in 1992 and 2001.



Sites

Acknowledgments

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