Adam Bruce

WLE Bird Study Design

**Q:**

**How does bird diversity differ between the woodland edge and core at Purdy Nature Preserve?**

**Methodology:**

* 25m Radii
* Partners, 180 degrees of radius each
* Count inside the forest edge, to exclude the grasslands.
* 2 edge, 2 interior per group
* 8 total edge, 8 interior stations
* 50 meters between center points

**Study Design:**

**1. Primary research question(s)?**

* How does bird diversity differ between the woodland edge and the core at Purdy Nature Preserve.

**2. Study experimental, comparative or both?**

* Comparative, we are comparing forest edge to core that already existed.

**3. What is the spatial and temporal scale of the study?**

* 1-4 PM, at Purdy Nature Preserve over 2 weeks in early spring (April, 2 days per week)

**4. What is the design factor(s)?**

* Distance (Location)

**5. What are the levels of the design factor(s)?**

* Woodland Edge: 25 meters in from the forest edge.
* Interior: greater than 50 meters in from the forest edge.

**6. What was the response unit?**

* The approximately 50 m by 50 m plots containing each point count location (25m radius)

**7. How did we assure that we had true replicates?**

* We had at least approximately 50 meters between sample spots (we had no overlap).
* NOTE: We risk the chance of double counting individual birds! Simultaneous counts would have been preferable to restrict this!
* FOR PAPER:
* We acknowledge that individual birds could move and be double counted within our 10-minute point counts, but we attempted to conduct point counts simultaneously to avoid double counting individual birds.

**8. How did they intersperse the replicate response units among the different levels?**

* Eight response units in the edge ranging from the beginning of the edge to the ending of the edge.
* Eight response units in the core. Interspersed across 4 core trails.

**9. How did the authors address potentially confounding factors? (Randomize, block, restrict? Explain)**

* Restrict Time: 1 to 4 on Tuesdays and Thursdays
* Restrict: weather by sampling across all levels on a single day.
* Could restrict surveyors at each site.
* OTHER POSSIBLE FACTORS:
  + Weather: temp
  + Matrix Type: what type of edge are we surveying? Corn, Prairie, houses? BY INTERSPERSING OUR RESPONSE UNITS ACROSS EDGE TYPES
  + Observer Ability: Randomizing groups
  + Time: Restrict 1 to 4 Tuesdays and Thursdays
  + Human Activity: Made note of point counts interrupted by visitors… Can either exclude or start over these counts? Record people we see during each count and block them?

**10. Response variable.**

* Bird Diversity (counts)
  + Abundance: Number of individual birds
  + Richness: # of species
  + Functional Diversity: (e.g. Diet, Nesting Strategy)
  + Functional Evenness

**11. Evaluation Unit.**

* The 25 m radius circles where point counts were conducted.

**12. What sampling methodology was used?**

* Standard point count techniques

**13. Decide whether to sub-sample of not:**

* OPTION A:
  + 4 Sub-samples per response unit
  + EDGE 1. Having 4 sub-sample days with 4 samples of birds, ADD FOR TOTAL #
* OPTION B:
  + Move to different spots every day.
  + 32 Response Units per level
  + Unique plots each day
  + No Sub-samples
* Option C:
  + 16 response units per level
  + NEXT WEEK, TUESDAY GROUP AND THURSDAY GROUP SWITCH SITES (RANDOMIZE).
  + Two sub-samples per site

Why Subsample?

\*To get more data!