

# A Landscape Approach to Grassland Bird Conservation in the Prairie Pothole Region of Iowa and Minnesota

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## Goals and Objectives:

- Assess local and landscape factors affecting grassland bird use in the Prairie Pothole Region (PPR) of MN and IA.
  - Develop species-specific habitat models for grassland-bird species of conservation priority. These models will enable us to take information garnered from individual study sites and expand to a regional scale.
  - Apply species-specific habitat models in a GIS context to identify priority grassland-bird landscapes throughout the PPR of IA and MN.
  - Examine how the detectability of grassland birds varies as a function of distance from an observer. Use program DISTANCE to evaluate variation in species behavior and observer performance during point transects.
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## Progress:

This study will determine the best remaining segments of habitat for an array of declining obligate grassland-bird species in the PPR. We surveyed birds in the Prairie Pothole Region (PPR) in Iowa and Minnesota, using the same methods as those being used by our collaborators at the University of Montana in the mixed-grass part of the PPR in Montana, North Dakota, and South Dakota. We randomly allocated 440 point-count sites to specific grassland locations identified on Geographic Information System coverages provided by the USFWS HAPET offices, as described in the FY 2003 annual report (Volume 68). The data collected in 2003 and 2004 in Iowa and Minnesota were provided to the collaborators at the University of Montana, thus satisfying the contractual obligation. The assessment of local and landscape factors, as well as development of habitat models, is being done at the University of Montana.

At each site, we surveyed birds for 10 minutes within 100m fixed-radius point counts from sunrise to 10:00 a.m.. For each grassland bird detected within a count circle, we recorded time of detection, distance from bird to observer, land-cover type utilized, and sex when identifiable. By utilizing a single-visit approach across a broad area, our study also provided a unique opportunity to examine detectability of grassland birds. With data collected by multiple observers in both the mixed-grass and tallgrass portions of the PPR, we used program DISTANCE to generate detection functions for territorial males detected during point transects. Within each region, we examined variation among observers (separately for each species) and species (pooled among observers for each species). As expected, detectability varied noticeably with regard to both observer and species. We reached similar conclusions via DISTANCE analyses from our 2003 data set. Furthermore, we evaluated year-to-year differences in observer performance with DISTANCE results from three counters who sampled in 2003 and 2004. Preparation of manuscripts reporting these results is ongoing.

## Conclusions and Recommendations:

Geographically specific recommendations will await analyses being conducted at the University of Montana. From the DISTANCE analyses, it is apparent that even trained observers have different abilities to detect birds. Investigators have long suspected that this is the case and have incorporated counts by multiple observers at any one point. In our study, for the most part, counts were done only once. We recommend that analyses in single-count studies incorporate DISTANCE to account for these among-observer differences.