

## Project Highlight – SD State Wildlife Grant

**Project Type**       Habitat survey

**Title**    Estimating conversion of native grassland to cropland in South Dakota: Loss of habitat for grassland-nesting birds

**In a nutshell**       Major reasons for the decline of grassland bird species are conversion of native prairie to cropland and fragmentation of remaining grasslands into smaller pieces. This project focused on developing a prioritization method for grassland protection in the portion of the Missouri Coteau region found in South Dakota. The study area is a critical area for production of wetland and grassland species despite loss and conversion of native habitats for other uses.

### Relevant Species of Greatest Conservation Need

- willet (*Catoptrophorus semipalmatus*)
- Wilson's phalarope (*Phalaropus tricolor*)
- burrowing owl (*Athene cunicularia*)
- Sprague's pipit (*Anthus spragueii*)
- lark bunting (*Calamospiza melanocorys*)
- Baird's sparrow (*Ammodramus bairdii*)
- Le Conte's sparrow (*Ammodramus leconteii*)
- chestnut-collared longspur (*Calcarius ornatus*)

**Relevant Habitats**   native grassland

**Cooperators**        Scott Stephens, Ducks Unlimited (DU)

### Purpose

- Estimate recent rates of conversion of native grassland to cropland in South Dakota.
- Use observed recent conversions to validate predictive models of the probability of conversion of grassland to cropland.
- Develop predictive models of the cost of protection for native grassland.
- Employ probability models to develop a GIS which will enable wildlife managers to assess the conservation priority of grassland habitats and landscapes in South Dakota. Layers in the system will include the potential reproductive success of raptors and shorebirds, the relative risk of conversion, and the cost of protection for a given unit of land.

**Timeframe**   2006 - 2007

**Location**     Missouri Coteau in northcentral South Dakota

### Summary or Important Findings

- Nests were located and monitored for 4 shorebird species; marbled godwit (*Limosa fedoa*), upland sandpiper (*Bartramia longicauda*), willet, and Wilson's phalarope.

- Nests were located and monitored for 2 raptor species; short-eared owl (*Asio flammeus*) and northern harrier (*Circus cyaneus*).
- Data analysis showed a convergence among variables for nest survival, probability of grassland conversion, and cost of protection.
- The authors found that more than 18,000 acres for raptors and more than 9,000 acres for shorebirds with high nest survival probability intersected high risk of grassland conversion and low cost of habitat protection.
- The authors describe the usefulness of this evaluation tool and ways to improve its use with additional data sources.

**Best contact person**      Scott Stephens, DU

**More Information**

Stephens, S.E., J.A. Walker, A.J. Smith, and D.R. Blunck. 2007. Prioritizing grassland conservation on the Missouri Coteau of South Dakota. Final report to the South Dakota Department of Game, Fish and Parks.