# Appendix C
# Remnant Prairies, Grasslands, and Birds

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# Memo

| | | | |
|---|---|---|---|
| To: | Ms. Angela Piner, Mr. Alec More | | |
| From: | Scott Krych | Project: | Brookings to Hampton Route review |
| cc: | Jonathan Schubbe | | |
| Date: | October 11, 2010 | Job No: | |

**Re: Brookings to Hampton**

On July 15-16, 2008 HDR staff and a biologist subcontracted to HDR conducted a review of remnant native prairies habitats along alternative routes originating in Brookings, South Dakota and terminating near Hampton, Minnesota. The evaluation occurred on alternative routes located between White, South Dakota and Hampton, Minnesota. Native prairie remnants were mapped and ranked according to Minnesota Department of Natural Resources (MDNR) Element Occurrence (EO) ranking criteria within 0.25 mile of publicly accessible rights-of-way. Notes on location and habitat were also taken when sensitive species were noted during the habitat evaluation. The locations of ranked remnant prairie habitat were digitized using a laptop with GIS software in the field.

Several remnant prairies occur along the route (Figure 1). Generally, remnant prairies occurred on lands too wet to farm or on hillsides too steep to plow. Other locations of prairie remnants occur in road ditches or between roads and railroad corridors. Sensitive species observed during the review included Regal Fritillary (*Speyeria idalia*) on sloping prairie remnants at the South Dakota/Minnesota border. The majority of the remaining routes are comprised of agricultural lands planted to row crops.

## Methodology

HDR conducted a cursory review of lands within alternative and preferred route corridors by mapping existing grasslands accessible or observed from publicly owned rights-of-way. Surveys were conducted on July 15 and July 16, 2008. Grassland areas were reviewed from roads using binoculars and GIS software. Areas identified as grasslands were mapped and ranked using Minnesota MDNR EO Ranking Guidelines for Mesic, Dry, and Wet Prairies. Notes on native species composition, abundance of invasive species or rare species observed were noted in the attribute data using ArcMap™ software. Surveys were conducted during acceptable survey dates for several federal and Minnesota listed species such as western-prairie Fringed-orchid (*Platanthera praeclara*), Dakota Skipper (*Hesperia dacotae*), Regal Fritillary (*Speyeria idalia*), and Powesheik Skipper (*Oarisma powesheik*). However, intensive searches were not conducted in suitable habitat due to the tentative nature of routes being reviewed.

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**Results**

Most of the grasslands considered prairie remnants occurred on the western half of the project area and at the South Dakota/ Minnesota border where drainageways and adjacent slopes limited conversion of grassland to crop production (Figure 2). Areas ranked as "C" or higher were considered suitable habitat for several of the butterfly species considered sensitive by the MDNR. Botanical elements were not surveyed due to the lack of access to areas within the potential routes.

Four occurrences of Regal Fritillary (Minnesota – Special Concern) were documented in South Dakota and Minnesota. The regal fritillary is considered a prairie obligate butterfly that has suffered population declines in the Midwest mainly due to the conversion of tallgrass prairies into cropland. Pesticides have also contributed to the species' decline. Large tracts of native prairie that harbor abundant forbs, prairie remnants, or lightly grazed pasture lands containing prairie vegetation are habitats utilized by the regal fritillary. Larval food plants are violets, primarily prairie violet (*Viola pedatifida*), birdsfoot violet (*V. pedata*) and arrowleaf violet (*V. sagittata*). Adults utilize the nectar of numerous forb species including milkweeds, thistle, blazing star, and purple coneflowers. Six different grassland types were evaluated along the routes surveyed. The majority of lands along these routes are characterized as agricultural lands of which the majority is cropped lands. Natural community types evaluated included Mesic Prairie, Dry Hill Prairie, Wet Prairie, and other degraded grassland types. Although some remnant prairie occurs within the survey area, all of these areas have been impacted to some degree by grazing, cropping, road construction or other human uses.

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# North American Breeding Bird Survey

The U.S. Geological Survey's Patuxent Wildlife Research Center website provides the following information on the North American Breeding Bird Survey (BBS):

**What is the North American Breeding Bird Survey (BBS)?**
The BBS is a long-term, large-scale, international avian monitoring program initiated in 1966 to track the status and trends of North American bird populations. The USGS Patuxent Wildlife Research Center and the Canadian Wildlife Service, National Wildlife Research Center jointly coordinate the BBS program.

**Why was the BBS created?**
In the mid-twentieth century, the success of DDT as a pesticide ushered in a new era of synthetic chemical pest control. As pesticide use grew, concerns, as epitomized by Rachel Carson in *Silent Spring*, regarding their effects on wildlife began to surface. Local studies had attributed some bird kills to pesticides, but it was unclear how, or if, bird populations were being affected at regional or national levels. Responding to this concern, Chandler Robbins and colleagues at the Patuxent Wildlife Research Center developed the North American Breeding Bird Survey to monitor bird populations over large geographic areas.

Although most concerns over pesticide use in North America have subsided in recent decades, bird populations continue to be subjected to numerous widespread threats including habitat loss, habitat fragmentation, land-use changes, and other chemical contaminants. Today, the BBS continues to monitor bird populations across North America and informs researchers and wildlife managers of significant changes in bird population levels. If significant declines are detected, their causes can then be identified and appropriate actions taken to reverse them before populations reach critically low levels.

**How does the BBS work?**
Each year during the height of the avian breeding season, June for most of the U.S. and Canada, participants skilled in avian identification collect bird population data along roadside survey routes. Each survey route is 24.5 miles long with stops at 0.5-mile intervals. At each stop, a 3-minute point count is conducted. During the count, every bird seen within a 0.25-mile radius or heard is recorded. Surveys start one-half hour before local sunrise and take about 5 hours to complete. Over 4100 survey routes are located across the continental U.S. and Canada.

Once analyzed, BBS data provide an index of population abundance that can be used to estimate population trends and relative abundances at various geographic scales. Trend estimates for more than 420 bird species and all raw data are currently available via the BBS web site.

## North American Breeding Bird Survey Results
## (Tyler, Minnesota Survey Location)

| Species | 2000 | 2001 | 2002 | 2003 | 2004 | Total |
|---|---|---|---|---|---|---|
| Canada Goose | 0 | 0 | 0 | 0 | 0 | 0 |
| Wood Duck | 0 | 0 | 0 | 0 | 0 | 0 |
| Mallard | 6 | 8 | 11 | 3 | 2 | 30 |
| Blue-winged Teal | 0 | 6 | 10 | 3 | 2 | 21 |
| Northern Shoveler | 0 | 0 | 0 | 0 | 0 | 0 |
| Northern Pintail | 0 | 2 | 0 | 0 | 0 | 2 |
| Gray Partridge | 2 | 3 | 0 | 0 | 1 | 6 |
| Ring-necked Pheasant | 21 | 26 | 36 | 36 | 14 | 133 |
| Wild Turkey | 17 | 2 | 5 | 12 | 13 | 49 |
| Pied-billed Grebe | 0 | 0 | 0 | 0 | 0 | 0 |
| American White Pelican | 0 | 0 | 0 | 0 | 0 | 0 |
| American Bittern | 0 | 1 | 0 | 0 | 1 | 2 |
| Great Blue Heron | 2 | 3 | 2 | 0 | 0 | 7 |
| Northern Harrier | 1 | 0 | 1 | 1 | 0 | 3 |
| Red-tailed Hawk | 0 | 1 | 0 | 1 | 0 | 2 |
| American Kestrel | 1 | 0 | 1 | 0 | 0 | 2 |
| American Coot | 0 | 2 | 2 | 0 | 0 | 4 |
| Killdeer | 3 | 2 | 2 | 0 | 0 | 7 |
| Upland Sandpiper | 0 | 1 | 0 | 1 | 0 | 2 |
| Franklin's Gull | 0 | 0 | 0 | 0 | 0 | 0 |
| Herring Gull | 0 | 0 | 0 | 0 | 0 | 0 |
| Forser's Tern | 0 | 0 | 0 | 0 | 0 | 0 |
| Black Tern | 0 | 0 | 2 | 0 | 0 | 2 |
| Rock Pigeon | 0 | 0 | 3 | 0 | 0 | 3 |
| Mourning Dove | 24 | 22 | 28 | 20 | 25 | 119 |
| Black-billed Cuckoo | 1 | 0 | 0 | 0 | 0 | 1 |
| Yellow-billed Cuckoo | 0 | 1 | 1 | 0 | 0 | 2 |
| Great Horned Owl | 0 | 0 | 0 | 1 | 0 | 1 |
| Common Nighthawk | 0 | 0 | 0 | 0 | 0 | 0 |
| Red-headed Woodpecker | 1 | 1 | 0 | 0 | 1 | 3 |
| Northern Flicker | 1 | 0 | 0 | 1 | 0 | 2 |
| Western Kingbird | 0 | 0 | 0 | 0 | 0 | 0 |
| Eastern Kingbird | 1 | 1 | 0 | 0 | 0 | 2 |
| Warbling Vireo | 0 | 0 | 0 | 0 | 0 | 0 |
| Blue Jay | 0 | 1 | 0 | 0 | 0 | 1 |
| American Crow | 27 | 14 | 16 | 17 | 4 | 78 |
| Purple Martin | 0 | 0 | 0 | 0 | 0 | 0 |
| Tree Swallow | 2 | 2 | 0 | 0 | 0 | 4 |

| Species | 2000 | 2001 | 2002 | 2003 | 2004 | Total |
|---|---|---|---|---|---|---|
| Northern Rough-winged Swallow | 0 | 0 | 0 | 64 | 2 | 66 |
| Bank Swallow | 0 | 0 | 0 | 2 | 0 | 2 |
| Cliff Swallow | 15 | 10 | 67 | 0 | 0 | 92 |
| Barn Swallow | 17 | 6 | 4 | 9 | 7 | 43 |
| House Wren | 0 | 0 | 0 | 1 | 1 | 2 |
| Marsh Wren | 0 | 0 | 0 | 0 | 0 | 0 |
| Eastern Bluebird | 0 | 0 | 0 | 0 | 0 | 0 |
| American Robin | 23 | 14 | 18 | 11 | 7 | 73 |
| Gray Catbird | 0 | 0 | 0 | 0 | 0 | 0 |
| Brown Thrasher | 2 | 1 | 1 | 1 | 0 | 5 |
| European Starling | 24 | 25 | 4 | 9 | 7 | 69 |
| Yellow Warbler | 0 | 1 | 0 | 2 | 0 | 3 |
| Ovenbird | 0 | 0 | 0 | 0 | 0 | 0 |
| Common Yellowthroat | 0 | 0 | 0 | 0 | 0 | 0 |
| Chipping Sparrow | 0 | 0 | 0 | 0 | 0 | 0 |
| Clay-colored Sparrow | 2 | 3 | 0 | 1 | 0 | 6 |
| Field Sparrow | 3 | 3 | 4 | 4 | 1 | 15 |
| Vesper Sparrow | 0 | 1 | 0 | 0 | 0 | 1 |
| Song Sparrow | 0 | 1 | 1 | 0 | 0 | 2 |
| Swamp Sparrow | 0 | 0 | 1 | 0 | 0 | 1 |
| Rose-breasted Grosbeak | 0 | 0 | 0 | 0 | 0 | 0 |
| Dickcissel | 1 | 1 | 0 | 0 | 0 | 2 |
| Bobolink | 1 | 3 | 1 | 0 | 1 | 6 |
| Red-winged Blackbird | 176 | 199 | 156 | 173 | 79 | 783 |
| Western Meadowlark | 39 | 33 | 23 | 31 | 13 | 139 |
| Yellow-headed Blackbird | 0 | 0 | 16 | 0 | 0 | 16 |
| Brewer's Blackbird | 0 | 0 | 0 | 0 | 0 | 0 |
| Common Grackle | 123 | 54 | 114 | 122 | 50 | 463 |
| Brown-headed Cowbird | 1 | 0 | 0 | 0 | 0 | 1 |
| Baltimore Oriole | 0 | 0 | 0 | 0 | 0 | 0 |
| American Goldfinch | 1 | 0 | 0 | 0 | 0 | 1 |
| House Sparrow | 2 | 6 | 0 | 1 | 9 | 18 |
| All Observations | | | | | | 2297 |

*Source: North American Breeding Bird Survey, Patuxent Wildlife Research Center, Biological Resources Division, U.S. Geological Survey, 2010*

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