

800881

The 1979 Resource Inventory  
for  
Frenchman's Bluff  
Norman County, Minnesota

$N\frac{1}{2}$  of  $S\frac{1}{2}$  of  $SE\frac{1}{4}$ , Section 18  
and  
N 4 Rods of  $S\frac{1}{2}$ ,  $SE\frac{1}{4}$ ,  $SE\frac{1}{4}$   
Township 143 North, Range 43 West  
Flom Quadrangle

Prepared by  
The Scientific and Natural Areas Section  
Division of Parks and Recreation  
Minnesota Department of Natural Resources

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## INTRODUCTION

### Scope and Organization

This report documents the information collected during a 1979 inventory of Frenchman's Bluff. The inventory recorded information on climate, geology, soils, hydrology, plant communities, flora, butterflies, birds, mammals, amphibians, reptiles, and land use history of the natural area. Data supplied by this document will be used by the Minnesota Natural Heritage Program and other evaluators to assess the site as a potential Scientific and Natural Area (SNA). The document can also be used by scientists, educators, and others interested in the area. Should the site be designated an SNA, management plans can be written using this document as a reference.

This report is divided into five sections including: introduction, abiotic, vegetational, and zoological components, and land use history of the site. Methodologies and results are presented for each section.

The inventory of Frenchman's Bluff was part of a larger 1979 effort in which eighteen natural areas in east central, northwest, and southeast Minnesota were surveyed. Inventory team members were: John Borowske, SNA Planning Coordinator; Cherry Keller, Karen Lustig, Deb Schowalter, and Jeff Weigel, Researcher/Writers; Kathy Bolin, Community Specialist; and Nancy Berlin, Tony Busche, Barbara Eikum, Peter Farrell, Joanne Herman, Laura Hill, Susan Ottoson, Deanna Schmidt, Marianne Severson, Angela Tornes, and James Ziegler, Researchers. Gerald Jensen, Coordinator, Scientific and Natural Areas Program, and Mark Heitlinger, Coordinator of Preserve Management, The Nature Conservancy, Minnesota Chapter served

as inventory advisors. Michael Rees, Project Editor, The Nature Conservancy, provided editorial assistance. Other individuals who assisted in the preparation of the inventory are mentioned in the appropriate sections. Their help is gratefully acknowledged.

#### Description of Study Area

Frenchman's Bluff is a 42 acre unit in southeastern Norman County, approximately 36 miles northeast of Moorhead, Minnesota. The area's climate is mid-continental, relatively cool and moist, with warm summers and cold winters. The bluff is a topographically prominent hill of glacial origin, rising over 200 feet above the lowland to the west. The preserve and surrounding area exhibit knob and kettle topography typical of morainal areas. Frenchman's Bluff's well-drained soils formed in sandy, gravelly and loamy parent material under tall prairie grasses. Present vegetation is primarily native prairie. Also present are aspen woods, old field, and scattered shrub thickets.

The flora and fauna of Frenchman's Bluff are mostly typical of native Minnesota grassland. Species observed on the tract include: 165 vascular plants, 26 butterflies, 48 birds, and 7 mammals.

The natural area is located in a small grain, corn, alfalfa, and sunflower production area. All of Frenchman's Bluff was grazed for many years, and parts were plowed, but it was never hayed. Invading weedy plant species are found in disturbed areas. Evidence of use of the site by Indians and early pioneers has been found on this well known local landmark,

## Preliminary Assessment of Significance

This section lists features identified by the Minnesota Natural Heritage Program (MNHP) as potential elements<sup>1</sup>, and identifies other aspects of the preserve believed by the authors to be important components of Minnesota's natural diversity, or which otherwise might qualify the site for SNA designation. Criteria for SNA evaluation are enumerated in "Minnesota Department of Natural Resources Policy Plan for Scientific and Natural Areas", dated July 6, 1979.

Frenchman's Bluff, a topographically prominent morainic deposit, is notable as a tract of native prairie with plant community types and several species more typical of areas farther west. (Wanek and Burgess, 1965, in Shay, 1966.) Four species of national and/or state significance were identified on the site during the 1979 inventory. The Dakota Skipper butterfly (Hesperia dacotae), apparently confined to undisturbed prairie (Howe, 1975), has been proposed for federally threatened status by the U. S. Fish and Wildlife Service. The Minnesota Natural Heritage Program lists Plains Reed Grass (Calamagrostis montanensis), Virginia Creeper (Parthenocissus quinquefolia), the Dakota Skipper, and the Grasshopper Mouse (Onychomys leucogaster) as potential elements of state significance. In addition, the potential plant element Chamaerhodos nuttalli has been previously collected at Frenchman's Bluff (University of Minnesota herbarium records).

The natural area is geologically significant as part of a steep-sided ice-contact deposit of intermixed sands, gravels, and glacial tills called kame (Eng, 1969). Frenchman's Bluff has local relief of over 200 feet above the adjacent Red River valley/Glacial Lake Agassiz basin. The rolling upland topography of the site supports several prairie

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<sup>1</sup> An element is a natural feature of particular interest because it is exemplary, unique, threatened, or endangered on a national or statewide basis.

vegetation types. Two dry prairie types are present, one represented by Needle and Thread Grass (Stipa comata), Prairie Dropseed (Sporobolus heterolepis), and Pasque Flower (Anemone patens), the other including June Grass (Koeleria cristata), Prairie Smoke (Geum triflorum), and Pasque Flower. A third prairie type supports large areas of Big Bluestem (Andropogon gerardi) in slightly moister drainage draws. Hairy Grama (Bouteloua hirsuta) is near the northwesternmost extent of its range at the natural area. A positive nesting record was obtained for the Ruffed Grouse (Bonasa umbellus); this species is at the western edge of its Minnesota range at Frenchman's Bluff (Green & Janssen, 1975).