

800879

The 1979 Resource Inventory  
for  
Clay County Bicentennial Prairie  
Clay County, Minnesota

SW $\frac{1}{4}$  Section 5,  
Township 141 North, Range 45 West  
Ulen SW Quadrangle

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

December 1979 Draft

TABLE OF CONTENTS

INTRODUCTION

Scope and Organization . . . . .  
Description of Study Area . . . . .  
Preliminary Assessment of Significance . . . . .

ABIOTIC FACTORS

Climate . . . . .  
Geology . . . . .  
Soils . . . . .  
Hydrology . . . . .

VEGETATIONAL COMPONENTS

Vegetative Communities . . . . .  
Flora . . . . .

ZOOLOGICAL COMPONENTS

Butterflies . . . . .  
Birds . . . . .  
Mammals . . . . .  
Amphibians and Reptiles . . . . .

LAND USE HISTORY

## INTRODUCTION

### Scope and Organization

This report documents the information collected during a 1979 inventory of Clay County Bicentennial Prairie. 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 Clay County Bicentennial Prairie 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 Area

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

Clay County Bicentennial Prairie is a 160 acre unit in northeastern Clay County, approximately 23 miles northeast of Moorhead, Minnesota. The area's climate is mid-continental, relatively cool and moist, with warm summers and cold winters. A wave deposited beach ridge of Glacial Lake Agassiz crosses the site. The tract's topography is flat to gently rolling, though the natural area is prominently elevated above the lowland basin to the west. Fairly deep, very poorly to excessively drained soils formed on the tract in sand and gravel parent material under tall prairie grasses. Present vegetation is primarily native prairie with several small aspen clones.

The flora and fauna of Clay County Bicentennial Prairie are mostly typical of native Minnesota grassland. Species observed on the tract include: 146 vascular plants, 27 butterflies, 47 birds, 8 mammals, 3 amphibians and 1 reptile. Ten plants not native to Minnesota occur on the tract.

Clay County Prairie is in a small grain, potato, sunflower, legume seed, and hay production area. It has never been plowed or grazed, but was hayed annually prior to preservation. Evidence of Indian use of the natural area has been found.

### 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.

Clay County Bicentennial Prairie is notable as a tract of native prairie located within a beach ridge complex of Glacial Lake Agassiz. Six plant and animal species of national and/or state significance were identified on the site during the 1979 inventory. The White Fringed Prairie Orchid (Habenaria leucophaea; Platanthera l. Fernald, 1950), a species with restricted habitat requirements, has been proposed for federally threatened status by the Smithsonian Institute (Ayense & DeFilipps, 1978). The Dakota Skipper butterfly (Hesperia dacotae), apparently confined to undisturbed prairie (Howe, 1975), has been proposed as a federally threatened species by the U. S. Fish & Wildlife Service. The Minnesota Natural Heritage Program lists the White Fringed Prairie Orchid, the Dakota Skipper, the Greater Prairie Chicken (Tympanuchus cupido), the Marbled Godwit (Limosa fedoa), the Prairie Vole (Microtus ochrogaster), and the White-tailed Jack Rabbit (Lepus townsendi) as potential elements of state significance. In addition to

---

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

sightings on the tract, Greater Prairie Chickens were observed booming on adjacent cultivated fields.

The Baird's Sparrow (Ammodramus bairdii), the Chestnut-collared Longspur (Calcarius ornatus), and the Sprague's Pipit (Anthus spragueii) are also listed as elements of state significance by the Heritage Program. Although they were not observed on Clay County Bicentennial Prairie during the 1979 inventory, these birds have all been sighted in the vicinity within the last two years. This part of Clay County has been the most consistently recorded Minnesota locality for these species in recent years. However, because their breeding distribution in the state is relatively unknown, they may occur on other tracts of native prairie in western Minnesota.

A feature of geological significance at Clay County Bicentennial Prairie is a Glacial Lake Agassiz beach ridge. Although Lake Agassiz beach ridges are common topographic feature in the Red River Valley, many have been cultivated or destroyed by graveling operations. The natural area's beach ridge and interbeach area are significant as topographically undisturbed landforms supporting native vegetation. Vegetation types on Clay County Bicentennial Prairie are representative of varying moisture conditions. Low, wet areas are dominated by Cord Grass (Spartina pectinata) and Canada Anemone (Anemone canadensis); drier sites are dominated by Little Bluestem (Andropogon scoparius). Two bird species observed on the site in 1979, the American Woodcock (Philohela minor), and the Yellow-bellied Flycatcher (Empidonax flaviventris) are found at the western edge of their ranges at Clay County Bicentennial Prairie.