The 1979 Resource Inventory for Santee Prairie Mahnomen County, Minnesota

Section 6, 7,
Township 145 North, Range 41 West
Bejou 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 Santee Prairie. The inventory recorded information on climate, geology, soils, hydrology, plant communities, flora, 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 Santee 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 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

Santee Prairie is a 448 acre unit in northwestern Mahnomen County, approximately 40 miles southeast of Crookston, Minnesota. The area's climate is mid-continental, relatively cool and moist, with warm summers and cold winter The topographic features of the tract are part of a larger area of undulating to nearly level ground moraine with numerous wet depressions. Fairly uniform silt deposits overlie loamy glacial till on the natural area. Naturally poor drainage patterns have been extensively altered by man-made ditches on the site. Moderately well to poorly drained silt loam soils formed under tall prairie grasses and wetland vegetation on Santee Prairie. Present vegetation is primarily native prairie, marsh, and sedge meadow, with scattered aspen woods and willow thickets.

The flora and fauna of Santee Prairie are mostly typical of native Minnesota grassland. Species observed on the tract include: 172 vascular plants, 65 birds, 12 mammals, 4 amphibians, and 2 reptiles. Many large mima mounds, found primarily by mammalian fossorial activity, are found on this prairie.

Santee Prairie lies in a small grain, sunflower, and hay production area. It has probably never been plowed or grazed, but was hayed extensively prior to preservation. Numerous invading plant species are present on spoil banks created by ditching.

Preliminary Assessment of Significance

This section lists features identified by the Minnesota Natural Heritage Program (MNHP) as potential elements[1], 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.

Santee Prairie is notable as a tract of native prairie located within the Red River Valley, but outside of the former Glacial Lake Agassiz basin. Five species of national and/or state significance were identified on the site during the 1979 inventory. The White Lady-Slipper (Cypripedium candidum), specific to wet prairie-calcareous soil habitats, has been proposed for federally threatened status by the Smithsonian Institute (Ayense & De Filipps, 1978). The Minnesota Natural Heritage Program lists the White Lady-Slipper, the Greater Prairie Chicken (Tympanuchus cupido), the Marbled Godwit (Limosa fedoa), the Sandhill Crane (Grus canadensis), and the White-tailed Jack Rabbit (Lepus townsendi) as potential elements of state significance. In addition to sightings on the tract, Greater Prairie Chickens were observed booming on adjacent cultivated fields.

The natural area is noteworthy geologically as part of a large depressional area within a till plain (University of Minnesota, 1978). Although it is outside the Glacial Lake Agassiz basin, the preserve may

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

have been affected by sedimentation processes similar to those occurring in Lake Agassiz. Silty sediments of probable lacustrine origin overlie glacial till at Santee Prairie. These sediments formed the parent material for the distinctive silty soils on the site. Several types of prairie vegetation are present at Santee Prairie, represented by species such as Sedges (Carex sp.) in wet areas, Big Bluestem (Andropogon gerardi), Indian Grass (Sorghastrum nutans), and Mat Muhly (Muhlenbergia richardsonis) on mesic sites, and Porcupine Grass (Stipa spartea) and Little Bluestem (Andropogon scoparius) in driest areas. In addition, mima mounds on the site support vegetation characteristic of such disturbed sites. The mounds themselves are noteworthy, as they are common on the natural area, and some are quite large.