

REPORT ON THE STATUS OF  
ILLINOIS ENDANGERED, THREATENED, AND RARE  
VASCULAR PLANT SPECIES AT THE  
SAVANNA ARMY DEPOT  
CARROLL CO. & JO DAVIES CO., IL

by

Marlin Bowles & Michael Jones

Morton Arboretum  
Rt 35  
Lisle, IL 60532

July 1991

## INTRODUCTION

The Savanna Army Depot, Carroll Co. and Jo Daviess Co., IL, contains about 4000 acres of sand prairie. This site was first studied by Henry Allan Gleason<sup>1</sup>, who reported such rare species as *Besseyia bullii*, *Boutelous gracilis* (collected and apparently seen only by H.S. Pepon in 1908) *Ceanothus ovatus*, *Hudsonia tomentosa*, *Opuntia fragilis*, and *Talinum rugospermum*. Since that time, conversion of the site to an Army Ammunition Depot has limited biological survey work. Most of the site has been compartmentalized by a series of over 40 parallel east-west roads (about 500 feet apart) that provide access to bunkers and storage buildings. The site is now managed under a grazing contract, which has resulted in degradation of the sand prairie community.

Preliminary surveys by the Illinois Department of Conservation have found at least seven endangered or threatened vascular species (Table 1) at the Savanna Army Depot. Under a Non-game contract with the Department, the authors have continued survey work on rare plant locations. This document reports on the results of a two-year survey for additional locations of known species, and for additional rare species at the Depot.

## METHODS

The survey was initiated in 1990, but was interrupted by closing of the Depot security area during the "Desert Storm" offensive in 1990. Surveys were completed in 1991. Field searches were conducted by systematic searches from the road system, which provides access throughout the Depot. All habitats that appeared likely to support rare species were searched on foot and species locations marked on topographic maps.

---

<sup>1</sup>Gleason, H.A. 1910. The vegetation of the inland sand deposits of Illinois. Bulletin of the Illinois State laboratory of Natural History. Volume IX, Article III.

## Significant Depot Areas

Dry-mesic sand savanna - NE1/4 Sec 15, SE1/4 Sec 11. This appears to be the highest quality sand savanna in the depot area. Past disturbances have included road and bunker construction, and although the area is currently grazed, it contains a relatively high species diversity. *Quercus velutina* is the dominant woody species, common graminoid species include *Andropogon scoparius*, *Koeleria cristata*, *Carex muhlenbergii*, and *Cyperus schweinitzii*. At least four rare species occur in this area, primarily in blowouts and open sand. *Cyperus grayoides* is restricted to a single blowout in this area. *Hudsonia tomentosa*, *Talinum rugospermum*, and *Cristatella jamesii* occur throughout the area in blowout and open sand savanna habitat.

Dry-mesic sand prairie - NE1/4 Sec 24 and adjacent S1/2 S1/2 Sec 13. This area represents one of the larger tracts of sand prairie that remains undisturbed from road and bunker construction. It has been over grazed and is dominated by *Andropogon scoparius*, *Panicum depauperatum*, *Cyperus schweinitzii*, *Aristida tuberculosa*, *Tephrosia virginiana*, *Selaginella rupestris*, *Ambrosia psilostachya*, and the endangered *Opuntia fragilis*. Past over grazing may have lead to dominance by *O. fragilis*, which reaches densities of over 60 plants/m<sup>2</sup>.

Dry-mesic sand prairie and sand savanna - N1/2 N1/2 S1/2 NE1/4 Sec 24. This area of dry mesic sand prairie extends for about 1/2 mile along the north edge of a east-west road. It is dominated by *Quercus velutina*, *Carex muhlenbergia*, *Aristida tuberculosa*, and *Tephrosia virginiana*. Endangered species present include a large population of *Paspalum bushii*, a local colony of *Agropyron subsecundum*, and a reported population of *Salvia pitcheri*.

Dry sand savanna - Examples of this community occur in two areas: NW1/4 NE1/4 Sec 25 and SE1/4 NW1/4 SE1/4 Sec 14. Both sites have been relatively over-grazed, but contain small populations of the species *Besseyia bullii*, *Cyperus grayoides*, and *Cristatella jamesii*.

Dry sand prairie - NE1/4 SW1/4 Sec 30, and the adjacent NW1/4 NW1/4 SE1/4 Sec 30. This area includes the largest contiguous populations of *Cyperus grayoides* and *Hudsonia tomentosa* on depot property. These plants are dominant along with *Cyperus schweinitzii* and *Aristida tuberculosa* over 10 acres of open blowout conditions.

Table 1. Endangered, threatened, or rare vascular plants of the Savanna Army Depot.

\* = found new during 1990-1991.

---

\* *Agropyron subsecundum*

\* *Besseyia bullii*

*Bouteloua gracilis* (not relocated)

\* *Carex tonsa*

*Ceanothus ovatus*

*Cristatella jamesii*

*Cyperus grayoides*

*Hudsonia tomentosa*

*Mirabilis hirsuta*

*Opuntia fragilis*

\* *Paspalum bushii*

*Salvia pitcheri*

\* *Talinum rugospermum*

Appendix I. Species locations. Each "x" corresponds to a mapped a species occurrence by number.

SPECIES	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34			
<u>Agropyron subsecundum</u>																									X												
<u>Besseya bullii</u>																									X												
<u>Carex tonsa</u>					X								X					X																			
<u>Ceanothus ovatus</u>					X	X				X	X	X	X										X			X											
<u>Cristatella jamesii</u>	X	X	X	X		X	X	X	X	X			X						X	X	X	X	X	X		X		X	X		X	X	X	X			
<u>Cyperus grayoides</u>																				X	X				X		X										
<u>Hudsonia tomentosa</u>					X						X		X	X	X	X	X	X	X	X	X	X	X		X		X	X		X	X		X	X			
<u>Opuntia fragilis</u>					X		X			X																											
<u>Paspalum bushii</u>					X																						X										
<u>Salvia pitcheri</u>																									X												
<u>Talinum rugospermum</u>											X																						X	X	X	X	X