SURVEYS FOR THE DAKOTA SKIPPER IN MINNESOTA

FINAL REPORT

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by

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SURVEYS FOR THE DAKOTA SKIPPER (Hesperia dacotae) IN MINNESOTA

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ABSTRACT

This project was undertaken to determine the presence of the Dakota Skipper (Hesperia dacotae) in three areas in Minnesota; the upper Minnesota River Valley, the area around Glacial Lakes State Park in Pope County and the area around Chandler in Murray County. The survey was conducted during the adult flight period in early July of 1997. Two surveyors covered parts of 138 sections. Three other prairie obligate species (Oarisma poweshiek, Atrytone arogos, Speyeria idalia) were noted in the study. In the Minnesota River valley there were 119 sections and no Dakota Skippers were found.

The Pope County sites were on 8 sections surrounding Glacial Lakes State Park and 77 Dakota skippers were on 11 sites. The Chanarambie Creek area had 7 Dakota Skippers on 3 sites,

INTRODUCTION

The purpose of this project was to determine the presence of the Dakota Skipper (Hesperia dacotae) in three areas in Minnesota; the upper Minnesota River Valley, the area around Glacial Lakes State Park in Pope County and the area around Chandler in Murray County. This survey was conducted during the adult flight period in early July of 1997. Two surveyors covered parts of 138 sections. Three other prairie obligate species (Oarisma poweshiek, Atrytone arogos, Speyeria idalia) were noted in the study.

MATERIALS AND METHODS

This survey was conducted between July 1, which is a date by which the skipper should have emerged (Schlicht, 1997; Dana, 1991) and July 15, 1997, by which time specimens were well worn, indicating the end of the flight and the unreliability of further surveys.

The sites that were provided by Minnesota DNR staff were located and checked for the presence of prairie habitat. Sites which were destroyed of severely altered from prairie were not further surveyed for butterflies. These included golf courses, automobile salvage yards, mines, areas stripped for road construction, tree plantations, overgrazed and herbicide treated pastures, areas overgrown with cedar or sumac and plowed fields.

Survey Protocol

Each site was selected by DNR staff (Baker and Dana) as possible native prairie which might harbor the target species. The sites were visited during the flight period for the adult skippers and within the parameters described below. Sites where permission was granted were surveyed for prairie habitat and if they were of any quality, for skippers. Transects were conducted on these sites with time and placement recorded.

Transects were walked at a steady pace of 1-2 mph. Time was noted at the start and end of each transect. "On the clock" stops were taken for any of the three methods of verification: (1) visual identification through close-focus binoculars, (2) capture, identification, and release, and (3) capture and vouchering of specimens (Panzer 1988). Total time on the transect was recorded so that it might be related to the number of butterflies counted (Table 2) . Transect counts were continuous, even when crossing ravines or other areas of poor habitat quality.

The "window" of observation encompassed an area up to 5 meters ahead, 5 meters to each side of the observer and 5 meters above the ground. This follows the design of Selby (1990), but deviates from the design of Pollard (1977) due to the open nature of the survey area. (Pollard was working along trails in clearings bounded by trees and shrubs.)

Surveying was conducted within the following parameters:
1. between the hours of 900 to 1800 (Central Standard Time)
2. cloud cover of up to 90%, as long as the temperature was warm (80+ F.) and the cloud cover was thin
3. temperatures between 70 F and 95 F
4. wind speeds of less than 15 mph, as determined by a Dwyer wind meter.

Field notes taken during the surveying included the following data: (1) species and number observed; (2) condition of individuals of the target species; (3) cloud cover and type; (4) temperature; (5) wind direction and speed; (6) prairie type; (7) dominant plants; (8) recent land use.

RESULTS

A total of 138 partial sections were evaluated and/or surveyed for this investigation. In the Minnesota River valley there were 119 sections and no Dakota Skippers were found. Only about a dozen were of such quality that they did or might now support prairie obligate butterflies, which were actually found on 9 sites. The Poweshiek Skipperling (Oarisma poweshiek) was found on 4 sites and the Regal Fritillary (Speyeria idalia) was found on 5 sites.

The Pope County sites were on 8 sections surrounding Glacial Lakes State Park. Dakota skippers (77) were on 11 individual sites, with 23 on the Evenson property (Barsness Twp. Sec. 30). Poweshiek Skipperlings (57) were found on 10 sites. Regal Fritillaries were found on 7 sites.

The Chanarambie Creek area had Dakota Skippers (7) on 3 sites, Poweshiek Skipperlings (30) on 5 sites, Regal Fritillaries (52) on 9 sites and Arogos Skippers (5) on 2 sites. See Table 1.

We have collected and prepared the following voucher specimens:
Hesperia dacotae: 15 males, 9 females
Oarisma poweshiek: 11
Atrytone arogos: 2 females
Speyeria idalia: 5 males
All will be deposited at the University of Minnesota at St. Paul.

DISCUSSION

It is apparent that the sites in the Minnesota River valley below Montevideo, where the bluffed valley is manifest, are not suitable prairie habitats for Dakota Skipper. They may not have been suitable originally and with the current land use and successional development they are not now. The granite based prairies within the valley are currently in worse condition than the bluffs, most were flooded during the spring of 1997. The general condition of the valley and bluff sites is so bad that at times a good pasture

was not seen in a day. Several of the sites however were good, and with some attention could be brought back as prairie preserves.

In the Pope County sites the Dakota Skipper is thriving under a light grazing regimen on the hundreds of acres owned by Anderson in sections 28, 29, 33 (and possibly 32, although that was not on the list to survey and is lowland). It does not appear to be present on Vogoe's land, which appears not be grazed anymore. It exists in greater density on grazed prairie than on burned areas in Glacial Lakes State park. It is also thriving on Evenson's which does not appear to be currently grazed.

On July 14, on a grazed prairie Orwig observed more Dakota skippers during one hour than he had during three years of surveying on over two dozen southeastern North Dakota sites. This was a density of as high as 24 per hour.

The Chanarambie Creek sites had Dakotas in low numbers, but were far better than all but about 5 areas I have surveyed in the state. None of this area is under any preservation status except for the private efforts of Leon Carney. Several sites are neglected and therefor preserved but for the most part extensive overgrazing is the norm. Most of the acreage is lawn short with a distinct absence of forbs. Pasture herbicide spraying probably a common practice. The Church Camp site has real possibilities for habitat improvement. Seed might be harvested from several good prairies in the area and used to replace the brome. The Chandler site is slowly being consumed by housing.

Recommendations

In the data from the Minnesota River valley are several new prairies not previously marked on the maps. These should be studied further for prairie quality and preserved. Several sites are marked in the data sheets as candidates for purchase. The Peterson property is especially urgent due to the death of the owner. The bluff next to the Sandberg cemetery (Sparta 13) is excellent but becoming overgrown and needs preservation. Its' association with this historic cemetery makes it interesting from a historical preservation standpoint. Cedar Rock WMA, which has several good prairie elements, is poorly managed for anything but cedar trees. Where the prairie has been managed it is poorer than a nearby pasture.

The area around Glacial Lakes S.P. should be controlled with easements to slow grazing to a less destructive level. Controlled grazing is important for Dakota. The mining operations need to be moved to less critical areas (including the State pit at the Park) using land exchanges. Areas covered with tree plantations should also be cleared and controlled. State and Federal agencies should be discouraged, even prohibited, from involvement with tree plantings in Dakota habitat.

The Chanarambie Creek area has no preserve at the core of the

population. Preservation of prairies in a core area like Leon Carney has done is essential. The west Chandler site, with the Sankee pasture (which is still fallow) and the pasture to its west would be a good start. Grazing control easements are also important to preserve Dakota in this area.

Conclusions
1. Except for areas around Appleton and west I believe we can drop the Minnesota River valley prairies as lost or without Dakota.
2. The area in Pope County needs to be expanded and managed with light grazing, hand work, and small fires.
3. A core area with grazing control easements needs to be started in the Chandler area or that mega-population will soon be reduced to a few hilltops.

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Appendix (Schlicht, 1997)

VOUCHER SPECIMENS

MB #	Name	Sex	Date	Site	Location
144	Oarisma poweshiek		7/13	Evenson	T124N,R38N,Sec30 N of NE
144	Oarisma poweshiek		7/13	Pope Co.HwyPit	T124N,R38N,Sec29 SW,NW
144	Oarisma poweshiek		7/13	Knutson East	T124N,R38N,Sec29 NW,NW
144	Oarisma poweshiek		7/14	Anderson 28	T124N,R38N,Sec28 W of SW
144	Oarisma poweshiek		7/14	Vogoe	T124N,R38N,Sec28 NW
144	Oarisma poweshiek		7/14	Anderson 29	T124N,R38N,Sec29 S of NE
144	Oarisma poweshiek		7/14	Thompson NW	T124N,R38N,Sec33 N of NW
144	Oarisma poweshiek		7/14	Thompson NW	T124N,R38N,Sec33 N of NW
144	Oarisma poweshiek		7/14	Swartz	T124N,R38N,Sec33 S of NW
144	Oarisma poweshiek		7/15	Masselink's	T105N,R43N,Sec18
144	Oarisma poweshiek		7/15	Edgerton NE	T105N,R43N,Sec17 NE,NE
169	Hesperia dacotae	m	7/13	Evenson	T124N,R38N,Sec30 N of NE
169	Hesperia dacotae	m	7/13	Evenson	T124N,R38N,Sec30 N of NE
169	Hesperia dacotae	m	7/13	Evenson	T124N,R38N,Sec30 N of NE
169	Hesperia dacotae	f	7/13	Evenson	T124N,R38N,Sec30 N of NE
169	Hesperia dacotae	f	7/13	Evenson	T124N,R38N,Sec30 N of NE
169	Hesperia dacotae	m	7/13	Knutson West	T124N,R38N,Sec29 NW, NW
169	Hesperia dacotae	m	7/13	Pope Co.HwyPit	T124N,R38N,Sec29 SW, NW
169	Hesperia dacotae	m	7/13	Wedum Pasture	T124N,R38N,Sec29 NE,NW
169	Hesperia dacotae	f	7/13	Wedum Pasture	T124N,R38N,Sec29 NE,NW
169	Hesperia dacotae	m	7/13	Anderson 29	T124N,R38N,Sec29 NE
169	Hesperia dacotae	m	7/14	Anderson 28	T124N,R38N,Sec28 W of SW
169	Hesperia dacotae	f	7/14	Anderson 28	T124N,R38N,Sec28 W of SW
169	Hesperia dacotae	f	7/14	Dodd	T124N,R38N,Sec28 SE, SW
169	Hesperia dacotae	m	7/14	Anderson 29	T124N,R38N,Sec29 S of NE
169	Hesperia dacotae	m	7/14	Thompson NW	T124N,R38N,Sec33 N of NW
169	Hesperia dacotae	m	7/14	Thompson NW	T124N,R38N,Sec33 N of NW
169	Hesperia dacotae	m	7/14	Swartz	T124N,R38N,Sec33 S of NW
169	Hesperia dacotae	f	7/15	Edgerton NE	T105N,R43N,Sec17 NE,NE
169	Hesperia dacotae	f	7/15	Christian Camp	T105N,R43N,Sec2 SW,NW
169	Hesperia dacotae	f	7/15	Carney	T105N,R43N,Sec32 SW,SE
169	Hesperia dacotae	m	7/15	Carney	T105N,R43N,Sec32 SW,SE
179	Polites themistocles	m	7/11	Hawk Creek	T115N,R38W,Sec30 SE
180	Polites origenes	m	7/9	Sandberg Cem.	T116N,R40W,Sec13 SE,NE
180	Polites origenes	f	7/9	Sandberg Cem.	T116N,R40W,Sec13 SE,NE
180	Polites origenes	m	7/9	Granite Falls	T116N,R39W,Sec20 NE,SE
181	Polites mystic	m	7/1	Appleton 21-	T120N,R43W,Sec27 W
181	P. mystic	f	7/6	Appleton 28-27	T120N,R43W,Sec27 W
185	Wallengrenia egeremet	m	7/3	LacQuiParle1-	T118N,R42W,Sec2 SE,SW
188	Atrytone arogos	f	7/15	Moulton 1	T105N,R43W,Sec1 SE,NW
188	Atrytone arogos	f	7/15	Christian Camp	T105N,R43W,Sec2 SE,NW
189	Atrytone logan	m	7/9	Sandberg Cem	T116N,R40W,Sec13 SE,NE
189	Atrytone logan	m	7/15	Christian Camp	T105N,R43W,Sec2 SE,NW
217	Euphyes ruricola	m	7/15	Johnson's Past	T105N,R43W,Sec1 SW,NW
503	Everes comyntas	f	7/9	Granite Falls	T116N,R40W,Sec20 NE,SE
567	Speyeria idalia		7/14	Anderson 28	T124N,R38W,Sec28 W of SW
567	Speyeria idalia		7/14	Vogoe	T124N,R38W,Sec28 NW
567	Speyeria idalia		7/15	Van Essen Past	T105N,R44W,Sec13 SW
567	Speyeria idalia		7/15	Menning Pasture	T105N,R44W,Sec13 S ofSE

567	Speyeria idalia		7/15	Lotterman Past	T105N,R43W,Sec9 or 8
606	Charadrias nycteis	m	7/10	Minn Falls 10	T115N,R39W,Sec10 S of NW

MB # - Miller Brown, 1981