FINAL REPORT- July 5,2006 Ascertaining the Presence of *Heterodon nasicus* at Bureau and Henry County Sand Prairies in Northcentral Illinois

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This project was a 19 day interval from May 17 to June 29, 2006.

Project Objective:

Reptile species were surveyed employing cover board arrays, drift fence trapping and visual surveys in the Mc Cune Sand Prairie in Bureau County and Mineral Marsh Nature Preserve in Henry County. The conservation status of species associated with these open sand prairie communities was assessed.

Completed Project Description:

Two 25 foot long drift fences made of window screening 3 foot wide was trenched in below grade to a depth of 6 inches. Wooden support stakes were hammered in at 4 foot intervals. Funnel traps were set 3 inches below grade along the middle on both sides as well as at both ends of each fence(Photographs). Morning and afternoon the funnel traps were checked for captures. Also, 37 cover boards of 1.25 cm thick chipboard 0.6m x 0.6m were placed in a pattern of 4, 5, 6, 7, 6, 5, and 4 between the two drift fences. These boards were placed 10m apart creating a circular area with a radius of 30m(Figure 1). These arrays were checked mornings and afternoons by walking from #1 to #37 lifting each board to check underneath. The space between shelter boards was also searched during these walks. Finally, visual surveys of border regions with respect to the drift fences and cover board arrays were completed mornings and afternoons. Searches were conducted limiting visits as much as possible so as to minimize human disturbance of the reptile populations. Snakes captured were marked by scale clipping and released once measurements and sexing were completed. Similarly, other reptiles were released after data was collected.

Summary of Project Accomplishments:

Populational data on reptiles in the McCune Sand Prairie located in Bureau County is sparse. The Mineral Marsh Nature Preserve in Henry County has been monitored to a greater extent. These sand prairies represent two remnants of what had been established over time following the retreat of the last glacier. One indication of the impact of deterioration and loss of habitat is evident by the listing in Illinois of the

western hognose snake, *Heterodon nasicus*. Reasons for the precarious condition of *Heterodon nasicus* likely involve the small amount of available habitat and the quality of what remains in existence under protection.

These two sanctuaries of remaining sand prairie in Bureau and Henry County were examined for evidence of viable populations of this species(Maps 1a-2b). It was determined *Heterodon nasicus* has not been eliminated. During the time interval of this project, i.e. May and June of 2006, six western hognose snakes were encountered in the Mineral Marsh Nature Preserve in Henry County while three snakes were found in the McCune Sand Prairie in Bureau County(Tables 1a-1b). These findings demonstrate that at least a small population exists at both sites that were studied.

In addition, a few other reptile species were found or some sign of their presence was noted. Additional snake species included *Coluber constrictor(* blue racer) and *Thamnophis sirtalis*(Eastern garter snake) that were seen at both sites. A shed skin of *Elaphe vulpina*(fox snake) was discovered at the McCune site. Three *Terrapene ornate*(ornate box turtles) were found there as well. *Cnemidophorus sexlineatus*(six-lined racerunner lizards) were abundant at both sites(Tables 1a-1b). These species lists indicate an estimate of the reptile diversity still present at these sand prairies(Table 2).

Discussion:

The findings of this study indicate habitat suitable not only to generally encountered reptiles but also to *Heterodon nasicus,* a species of concern. A small population of *Heterodon nasicus* was determined to exist at both sand prairie sites. Habitat

enhancement is warranted to further protect this threatened species as well as to ensure the survival of other reptiles in the areas surveyed.

Along the northern edge of the Mineral Marsh study area considerable vegetation native to this prairie has been reintroduced in the recent past. This could allow corridors of migration for successful proliferation of these reptile populations over time. An ongoing concern with respect to both the Mineral Marsh site and the McCune site is the encroachment of woody plant species and pasture grass. Both of these types of vegetation extend roots that interfere with the subterranean movements of the western hognose snake. These animals swim through the sand and it is possible that encounters with extensive root systems cause them to spend more time exposed at the surface where they are vulnerable to predation. Trees may also provide perch sites for raptors that would otherwise have to soar over the prairie in search of these hognose snakes. It was noted that girdling of woody species has been undertaken at the Mineral Marsh Nature Preserve. This practice could provide similar habitat improvement at the McCune site. The invading grass continues to represent a problem at both study areas. This is a management challenge that persists.

References cited:

Brown, W. S. and W. S. Parker. 1976. A ventral scale clipping system for permanently marking snakes. J. Herpetology 10:247-249.

Horger, Timothy V. 2002. Using Arrays of Artificial Refuges to Survey for Reptiles in Shortgrass Steppe, Weld County, Colorado. Colorado State University SGS-LTER Project. 11 October 2002. 9p.

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Table 1a - Reptile encounters during May – June 2006 at the McCune Sand Prairie.

Abundant												racerunner llizards		racerunner lizards			racerunner lizards			racerunner lizards			racerunner lizards			racerunner lizards			racerunner lizards		
3																							hognose snakes								
1		fox snake												garter snake		blue racer			box turtle		box turtle					box turtle					
17	18			22	23							1	2	3		7	8			13	14		16		19	20		23	24		27	28	29
May												June																					

Table 1b - Reptile encounters during May – June 2006 at the Mineral Marsh Sand Prairie.

Abundant												racerunner llizards		racerunner lizards			racerunner lizards			racerunner lizards			racerunner lizards			racerunner lizards			racerunner lizards		
3																							hognose snakes								
1													blue racer				hognose snake		garter snake		hognose snake								hognose snake		
17	18			22	23							1	2	3		7	8			13	14		16		19	20					27	28	29
May												June																					

Table 2 - Species list for McCune Sand Prairie and Mineral Marsh Nature Preserve.

McCune Sand Prairie	Mineral Marsh Nature Preserve
Fox snake (shed skin)	
Blue racer (capture)	Blue racer (sighted)
Six-lined racerunner lizards (captures & sightings)	Six-lined racerunner lizards (captures & sightings)
Eastern garter snake (sighted)	Eastern garter snake (capture)
Western Hognose snake (3 captures)	Western Hognose snakes (6 captures)
Ornate box turtle (3 captures)	

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Figure 1. 37 cover boards in rows spaced 10 meters apart in a hexagonal pattern make up each of 2 separate arrays.

Photographs: