

# Herpetofaunal Survey of Salt Lick Point Land and Water Reserve and Luella Schaefer Memorial Hill Prairie

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## Project Objective

The purpose of this project was to determine the presence or absence of several species of herpetofauna on the sites of Slat Lick Point Land and Water Reserve and the Luella Schaefer Memorial Hill Prairie Land and Water Reserve in Monroe County. Salt Lick Point Land and Water Reserve comprises 450 acres and the Luella Schaefer Memorial Hill Prairie Land and Water Reserve encompasses 134 acres. Both sites are located in the Northern Section of the Ozark Natural Division and Illinois's Karst/Cave Resource Rich Area, as well as the Sinkhole Plain Ecosystem Partnership area. This survey was needed due to the dearth of knowledge on the herptiles present at these sites. These sites represent territory that contains numerous hill prairies, with Monroe County containing more hill prairies than any other county in the state. These hill prairies are unique habitats that harbor unique species of reptiles and amphibians. These sites represent important habitat of the limestone bluff corridor that is likely to harbor several rare species, including the timber rattlesnake (*Crotalus horridus*), the coachwhip (*Masticophis flagellum*), Great Plains Rat Snake (*Elaphe guttata emoryi*), and the flathead snake (*Tantilla gracilis*). This study will supplement herpetofaunal records documented by Mr. Hugh Gilbert during the period of the mid 1970's to mid 1990's. This study will provide important baseline data on the unique herpetofauna of these land and water reserves. Of Illinois's 102 species of herpetofauna, over half are found in the bluff corridor of Monroe County. The results of this survey would allow appropriate management plans to be made for the sites.

## Introduction

The bluff corridor of Illinois represents a unique habitat that houses a diverse biological community of plants and animals. The most fragile and unique aspect of this biotope is the hill prairie. The hill prairies are home to a large number of reptiles and amphibians, including the threatened timber rattlesnake, *Crotalus horridus*, and the endangered coachwhip, *Masticophis flagellum*. The two sites of this study both contain hill prairies. Salt Lick Point Land and Water Reserve contains several hill prairies, though all are in need of extensive management if they are to persist. The Luella Schaefer Memorial Hill Prairie Land and Water Reserve contains two large hill prairies that are in excellent condition.

These two sites are biologically important regions and can be considered hotspots for herpetological biodiversity in Illinois. Prior to this study no survey work had been done for these sites. An observational herpetofauna study was conducted by Mr. Hugh Gilbert along the roads in the area around the two sites in the mid 1970's through the mid 1990's. The information gathered in this study supplements Mr. Gilbert's data for the region and provides baseline data for future surveys of the two sites.

## Materials and Methods

The two study sites for this survey were Salt Lick Point Land and Water Reserve, and the Luella Schaefer Memorial Hill Prairie Land and Water Reserve. They encompass 450 and 134 acres, respectively. The sites were visited during the warm season when ectothermic reptiles and amphibians were active, from March to October 2006. Surveys conducted at these sites were incidental observation only. No traps or drift fences were set. Areas of the study site were walked and reptiles and amphibians searched for visually. Cover objects such as rocks and scraps of tin were lifted to check for hiding animals. When possible, animals were captured by hand or snake hook and briefly examined physically. A snake hook was used to handle venomous snakes. Most of the survey trips were undertaken by two searchers. Four were conducted by the author alone. Two surveys were conducted with three searchers.

## Results

A total of 16 species of reptiles and amphibians were observed during this survey. This number does not represent all the species whose ranges include the study sites. Many species believed to be present were not observed. This includes many common species such as *Elaphe obsoleta*, *Lampropeltis getula*, and *Eumeces laticeps*. Most observed animals were encountered in the morning hours between 8:00 am and 11:00 am. Surveys conducted in afternoon and early evening were not as successful as morning surveys. Almost no reptiles were observed during the latter half of July and the first half of August, when temperatures regularly approached or exceeded 100 degrees Fahrenheit. Most sightings occurred in the months of May and June. The latter half of September and most of the month of October proved colder than normal for the region, and no herptiles were observed after September 17.

## Discussion

The results of this herpetofaunal survey are encouraging. One of the most frequently encountered animals was the threatened timber rattlesnake, *Crotalus horridus*. Rattlesnakes observed ranged in size from a small juvenile to a very large adult. This is an encouraging sign, indicating that the snakes are reproducing and surviving well into adulthood. I recommend that the herpetofauna of these sites continue to be monitored for several years. It will take time to document all of the species that occur on these sites. Given that they are large areas of relatively homogeneous forest, it is difficult to encounter species by simply walking through the areas. Most species encountered in this survey were observed in limited prairie habitat that was easy to search. The small size, rarity, and high quality of the hill prairie portions of these sites seemed to draw and concentrate herpetofauna. Excursions were made through the much larger forested portions of each site, but animals were encountered rarely, if at all, and for efficiency most of the time for this survey was spent in hill prairie habitat and the adjoining forested areas and remnant habitats. These sites continually yielded the highest number of herptile sightings throughout the length of the study.

Given the results of this survey, the hill prairies seem to be the most heavily used habitat types at both of the study sites. Every snake species except for *Thamnophis sirtalis* were encountered in hill prairie habitat. The hill prairie at Luella Schaefer Memorial Hill Prairie Land and Water Reserve is large and seems to be in good condition. Past management practices by the Illinois Department of Natural Resources included the cutting of cedar trees on the prairie, and woody encroachment is now at a minimum. Periodic cutting may be needed to maintain the quality of this area, but as of this study, the prairie was in excellent condition and boasted a wide variety of plants and animals.

The hill prairies at Salt Lick Point Land and Water Reserve are in desperate need of management. Encroachment of woody plant species, particularly cedar trees, has already overtaken much of the prairies, and threatens to overtake a possible den site for *Crotalus horridus*. The main prairie at this site is heavily fragmented by cedars and appears to have once been much larger in area, based on the small size of the trees surrounding it and the rocky soil type. A glade that appears on maps only a few years old appeared to have been almost completely taken over by ash and cedar trees when visited, and no herptiles were observed there. Small fragments of grasses are all that remain of the open glade; the majority of the area is heavily shaded by woody growth.

While not all of the target species were observed, such as *Tantilla gracilis* and *Elaphe guttata emoryi*, many species were documented, including two state threatened and endangered species. The sighting of a coachwhip, *Masticophis flagellum*, at Luella Schaefer Memorial Hill Prairie Land and Water Reserve represents important documentation for an endangered species that is found only in Monroe County. This survey should be used as baseline data for further surveys for these two important sites. Ideally, such herpetological surveys should be undertaken on an annual basis to acquire the most complete documentation of all the species of reptiles and amphibians present, and to track population status and trends.

## Species Accounts

### *Agkistrodon contortrix*

Four specimens of this species were encountered on three separate occasions. All specimens were encountered beneath rocks in open prairie at the Luella Schaefer Memorial Hill Prairie (LSHP). All specimens were small adults approximately eighteen to twenty-four inches in length. Two specimens were found on one day at opposite ends of the prairie. (June 8, 9:10 am, 9:40 am, under rocks). Another specimen was found under a rock on June 29 at 9:10 am. The fourth individual was located under a rock at 10:00 am on July 7.

### *Bufo fowleri*

This species was encountered in forested areas of the Salt Lick Point Land and Water Reserve (SLP). This species was found on three separate occasions, always near a trail. (June 9, 9:10 am; June 12, 8:55 am; June 22, 8:30 am).

### *Cnemidophorus sexlineatus*

This species was observed at both sites, though more individuals were encountered at LSHP. These lizards were found on or near rocky outcroppings in open, sunny areas. These were common in hill prairies, especially the larger hill prairie at LSHP. Both adults and juveniles were seen. (June 5, 11:40 am, SLP; June 8, 10:05 am, LSHP; June 9, 8:30 am, SLP; July 7, 10:40 am, LSHP; September 4, 8:25 am, SLP).

### *Crotalus horridus*

This was the most commonly encountered snake during this survey. One individual was found at LSHP and four were found at SLP. The lone rattlesnake encountered was a very large, aggressive snake approximately five feet in length. (May 26, 10:00 am, open grass near rocks). Another smaller individual, approximately 3 feet in length, was encountered at SLP in open prairie near a rock shelf. (June 12, 10:30 am). Two adults were found together at SLP underneath a south facing rock shelf, which may constitute a rookery or den site. Both snakes were between three and four feet in length. (July 7, 11:15 am). A young individual was found at SLP under a rock. This snake was approximately eighteen inches in length, and possessed the button rattle characteristic of juveniles. (August 16, 8:45 am). All the rattlesnakes found at SLP were encountered in the same small hill prairie.

### *Diadophis punctatus*

Two specimens were found near one another on the same occasion. Both were found hiding under rocks south and downhill of a hill prairie at SLP. Both were adults approximately 7 to 10 inches in length. They were encountered on June 9 at 10:00 am.

*Eumeces fasciatus*

One specimen of this lizard was encountered at LSHP. It was found near the edge of the forest at the bottom of a hill near a scrap heap on July 19 at 8:45 am.

*Hyla chrysoscelis*

This species was heard calling at SLP on April 9. The calls were heard several times from 12:00 pm till 2:00 pm while in upland forest.

*Hyla versicolor*

This species was heard calling at LSHP on May 26 between 8:00 and 11:00 am. The calls were heard coming from the woods while in the hill prairie.

*Lampropeltis triangulum*

One individual of this species was encountered on April 9 at SLP. The specimen was an adult 2 to 3 feet in length. It was found in a hill prairie under a rock at 3:00 pm.

*Masticophis flagellum*

Only one specimen of this endangered snake was encountered during this survey. The individual was found coiled in grass in open prairie at LSHP. It was seen on May 26 at 9:00 am and was approximately four feet in length. It was completely black except for light braiding on its posterior end.

*Plethodon glutinosus*

Two adult specimens of this salamander were found at SLP under logs in a forested low area near a dry creek bed. They were found on June 9 at 10:23 am approximately 30 feet apart. A third adult was found at LSHP on September 17 at 1:35 pm.

*Sceloporus undulatus*

This was by far the most commonly encountered animal during this survey. This lizard was seen in both closed canopy forest and open prairie, on rock outcroppings and among leaf litter. Numerous individuals were encountered basking on the same rocks at times, though usually the lizards appeared solitarily.

*Scincella lateralis*

One individual of this species was encountered on September 17, near the edge of the forest at the bottom of a hill at LSHP. It was found at 12:45 pm.

*Terrapene carolina carolina*

Five specimens of this turtle were found during the survey. Two were found at SLP and three at LSHP. The first specimen encountered was a carapace from a deceased turtle at SLP, found on May 23 at 3:05 pm. The second specimen encountered was an adult female at SLP found on an old logging road in the forest. The turtle was found at 10:55 am. The third turtle was a hatchling found at LSHP on June 29 at 10:30 am. Two

large adult males were found at LSHP on June 30 approximately 100 feet apart. The first was found at 9:30 am on a steep hillside amidst a thick grove of mature sugar maple trees. The second male was found at the bottom of the same hill at 9:45 am in a thick grove of papaw trees.

*Thamnophis sirtalis*

One specimen was found at SLP on May 23 in a dry, rocky creek bed at 5:00 pm. It was a juvenile approximately eighteen inches in length.

*Virginia valeriae*

One specimen of this snake was encountered at SLP on June 9. The snake was an adult found hiding under a rock in a hill prairie at 9:36 am.

<b>Date</b>	<b>Site visited</b>	<b>Weather Conditions</b>	<b>Species Encountered</b>	<b>Time of Day</b>
15-Mar	Luella Schaefer Mem. HP	Sunny. 60-70 deg. F	<i>Sceloporus undulatus</i>	Early afternoon
15-Mar	Salt Lick Point	Sunny. 60-70 deg. F	none	Mid-late afternoon
9-Apr	Salt Lick Point	Sunny. 60-70 deg. F	<i>Hyla chrysoscelis, Lampropeltis triangulum</i>	Morning to late afternoon
23-May	Salt Lick Point	Sunny. Humid, 80-90 deg F.	<i>Terrapene carolina, Thamnophis sirtalis</i>	Early afternoon-early evening
26-May	Luella Schaefer Mem. HP	Sunny. 70-mid 80's deg. F	<i>Crotalus horridus, Hyla versicolor, Masticophis flagellum, S. undulatus</i>	Morning
5-Jun	Salt Lick Point	Sunny. mid 80's deg. F	<i>Cnemidophorus sexlineatus, S. undulatus</i>	Late morning
8-Jun	Luella Schaefer Mem. HP	Sunny. mid 80's deg. F	<i>Agkistrodon contortrix, C. sexlineatus</i>	Morning
9-Jun	Salt Lick Point	Sunny. 70-85 deg. F	<i>Bufo fowleri, C. sexlineatus, Diadophis punctatus, Plethodon glutinosus, T. carolina, Virginia valeriae</i>	Morning to early afternoon
12-Jun	Salt Lick Point	Sunny. 70-85 deg. F	<i>B. fowleri, C. horridus, S. undulatus</i>	Morning to early afternoon
22-Jun	Salt Lick Point	Sunny. 90-100 deg. F	<i>B. fowleri</i>	Morning
29-Jun	Luella Schaefer Mem. HP	Sunny. Rain previous night. 70-80 deg. F	<i>A. contortrix, T. carolina</i>	Morning
30-Jun	Luella Schaefer Mem. HP	Cloudy. mid 80's deg. F	<i>T. carolina</i>	Morning to early afternoon
7-Jul	Luella Schaefer Mem. HP	Sunny. 80-90 deg. F	<i>A. contortrix, C. sexlineatus</i>	Morning
7-Jul	Salt Lick Point	Sunny. 80-90 deg. F	<i>C. horridus</i>	Morning to afternoon
19-Jul	Luella Schaefer Mem. HP	Light rain. ~80 deg. F	<i>Eumeces fasciatus</i>	Morning
20-Jul	Luella Schaefer Mem. HP	Sunny. 90-95 deg F	none	Morning to afternoon
16-Aug	Salt Lick Point	Sunny. 80-90 deg. F	<i>C. horridus</i>	Morning to afternoon
4-Sep	Salt Lick Point	Sunny. ~90 deg. F	<i>C. sexlineatus, S. undulatus</i>	Morning to early afternoon
17-Sep	Luella Schaefer Mem. HP	Raining. mid 70's deg. F	<i>P. glutinosus, Scincella lateralis</i>	Morning to afternoon
1-Oct	Salt Lick Point	Sunny. 60-70 deg F	none	Morning to afternoon











