

Summary of "A Herpetofaunal Survey of the River Bend Forest Preserve"

Small Wildlife Preservation Fund Grant #03-044W

**Presented to:
Illinois Department of Natural Resources**

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Overview

The Champaign County Forest Preserve District's River Bend Forest Preserve in Mahomet, Illinois was the site for a reptile and amphibian survey in 2002 and 2003. This preserve is unique in many ways. First, a significant portion of the north edge of the preserve borders the Sangamon River and is enrolled in the Illinois Nature Preserves Commission Land and Water Reserve program. Second, this site owns harbors the largest lake in Champaign County. These two factors alone make it ideal habitat for amphibians and reptiles. Third, most of the sampling area is an operational sand and gravel mining operation. Long and short-term impacts on the herpetofauna from the mining operation are unknown. Therefore, we had two main objectives for this study. The first objective was to collect current biodiversity data in order to determine if species of special concern occur at the site, to establish new geographic distributions, and to provide baseline data for future studies. The second objective was to find and map biologically important areas for reptiles and amphibians in order to make sound future management decisions.

Materials and Methods

The majority of our sampling occurred in the spring and early summer of 2003. We sampled all habitat types at River Bend including lentic and lotic water systems, woodland and fallow agriculture field. We used five capture methods during the study. We used hoop nets for the capture of aquatic turtles and smaller bait nets for the capture of larval amphibians, dip nets for capturing adult amphibians, frog call surveys, visual encounter surveys for all species, and artificial cover objects for the capture of snakes. All individuals were measured, weighed, and marked (except brown snakes (*Storeria dekayi*) with a unique mark for future identification, and released immediately back at the point of capture. In addition, each capture was examined for morphological anomalies.

Results

We captured a total of 8 species of reptile and 8 species of amphibian during the survey (Table 1). We did not capture any species of special concern (i.e. threatened or endangered).

Table 1 – Reptile and amphibian species captured at the River Bend Forest Preserve in Champaign County Illinois in 2002 – 2003.

ANURANS	American Toad	<i>Bufo americanus</i>
	Fowler's Toad	<i>Bufo w. fowleri</i>
	Bullfrog	<i>Rana catesbeiana</i>
	Cricket Frog	<i>Acris crepitans</i>
	Southern Leopard Frog	<i>Rana sphenoccephala</i>
	Plains Leopard Frog	<i>Rana blairi</i>
	Western Chorus Frog	<i>Pseudacris triseriata</i>
	Spring Peeper	<i>Hyla crucifer</i>

TESTUDINES	Common Snapping Turtle	Chelydra serpentina
	Painted Turtle	Chrysemys picta
	Slider	Trachemys scripta
	Spiny Softshell	Apalone spinifera
SERPENTES	Fox Snake	Elaphe vulpine
	Common Garter Snake	Thamnophis sirtalis
	Northern Water Snake	Nerodia sipedon
	Brown Snake	Storeria dekayi

The amount of trapping effort per individual captured was relatively high. Table 2 demonstrates the catch per unit effort for some of the capture methods.

Table 2 – Captures per unit effort for three different trapping methods at the River Bend Forest Preserve District in Champaign County Illinois in 2003.

Trap Type	Animals Captured	Captures per trap hour or panel check
Small Bait Traps (aquatic)	Tadpoles	0.18
Hoop Nets	Aquatic Turtles	0.05
Artificial Cover Objects	Snakes	0.41

There were very few areas at the preserve where we found singing frogs. Frog call surveys were concentrated on the east edge of the preserve. This one particular area was ideal for ephemeral pool and permanent water breeders because it was one of very few areas that had habitat for breeding.

Discussion

Although the River Bend Forest Preserve District is 280 acres in size, there were very few areas of breeding activity. Also, suitable nesting and living habitat for reptiles seems to be at a minimum. For example when we used hoop nets and visual encounter surveys along the steep banks, we rarely captured or identified any species. This was very different from when we sampled areas that had gently sloping banks and mud flat shorelines. The majority of our captures came from the areas with gently sloping banks. Although we found several ephemeral pools for breeding, most of these were along the Sangamon River floodplain and species such as western chorus frogs avoided these areas. Those pools that were in upland areas were found to be used by several species of ephemeral and permanent pool breeders.

We concentrated much of our capture effort for snakes in the old field areas. These fields have been out of row-crop agricultural production only one year. We were glad to find that three snake species readily recolonized those areas in less than 1 year post production.

There were three species that surprisingly were not found during the survey. The smallmouth salamander (*Ambystoma texanum*) is a hardy ephemeral pool breeder. We

did not capture any adults or larvae, nor did we see any egg masses of this salamander. We also did not find any adults or remains of the eastern box turtle (*Terrapene carolina*). This species has seen a decline in recent years in central Illinois, and we are convinced that they have been extirpated from this site. The gray treefrog (*Hyla versicolor*) was also not detected at the site. River Bend has suitable habitat for this hardy species, but no adults were detected visually or by call surveys. We believe that the smallmouth salamander and the gray treefrog may be present, but were not detected due to their nocturnal and fossorial nature. Further sampling specifically for these two species is warranted.

In general the reptile and amphibian populations at the River Bend Forest Preserve District are successfully breeding and have minimal human impact. The District has only owned the site for two years and has been working towards restoring much of the habitat that once dominated the area. Major areas of reforestation are underway and programs are being put in place to help protect the natural resources of the area. It will be necessary to monitor the area as restoration efforts mature.

We were glad to announce that the Champaign County Forest Preserve District is allowing this survey to continue for at least one more year. This will help us to determine if there are yearly trends in amphibian populations, and to determine if there are any further species not detected on the initial survey.

Acknowledgements

I would like to thank the Champaign County Forest Preserve District and the Illinois Nature Preserves Commission for allowing access to this site. I also greatly appreciate the financial support from the Illinois Department of Natural Resources Small Wildlife Preservation Fund. I also thank Kristina Hubert, Kim Cambron, Tony Ranvestel, Mike Daab, and Laura Mitzel for volunteering time to help with the survey.

Reimbursement Request Summary

Per Diem

15 days at \$28 / day \$ 420.00

Travel

600 miles at \$0.34 / mi. \$ 204.00

Commodities

Seine Twine 1 roll (tarred twine on receipt) \$ 5.43

4 packs rope for traps @ \$7.96 each \$ 31.84

Equipment

4 Hoop Nets @ \$41.25 each (Turtle Nets on receipt) \$ 165.00

1 Dip Net \$ 45.20

1 Dip Net \$ 43.20

6 Minnow Traps @ \$9.50 each \$ 57.00

Tax, Shipping and Handling on above items \$ 30.00

Total of Funds Requested \$ 1001.67

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1.00	FISHING	CMT11 MINNOW TRAP 6 PER CARTON	57.00	57.00
1.00	FISHING	TNT 21 TARRD TWINE	5.43	5.43
1.00	FISHING	HDDNR DIP NET	45.20	45.20
1.00	FISHING	HDDNSF DIP NET	43.20	43.20
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INVOICE 13476 TOTAL:	53.41
BALANCE DUE:	53.41

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