Final Report for Illinois Wildlife Preservation Fund Small Grants Project:

A Survey of the Amphibians and Reptiles of Middle Fork State Fish and Wildlife Area

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Introduction

Over the past several years, interesting herpetological records have been reported from the Middle Fork State Fish and Wildlife Area (MFSFWA) in Vermilion County. These include the (state threatened) four-toed salamander, *Hemidactylium scutatum* (Phillips, 1991) and Blanding's Turtle, *Emydoidea blandingii* (R. Szafoni, pers. comm.). The latter is a "Watch List" species in Illinois and a Category 2 candidate for listing at the Federal level. Except for the sightings, which were both limited to one individual, no data have been collected for these species at the wildlife area. It is important that the status of these populations be investigated and monitored so that management decisions at MFSFWA can take these species into account.

The purpose of this study was to document whether these two species still exist at the wildlife area, establish baseline population data, explore the property for other state listed amphibians and reptiles, and compile a species list for all amphibians and reptiles of this area.

Study Area & Methods

The study area is located at the north end of the MFSFWA, approximately 1.5 miles northeast of Collison in central Vermilion County, Illinois (see enclosed map). The legal description is: Pilot Township; 2nd Principal Meridian; Township 21 North, Range 13 West, section 35, NE/4. The site is bounded on the north by County Road 2600N, on the northwest by the Chicago & Eastern Illinois railroad tracks, on the east by cropland and old fields adjacent to the Middle Fork of the Vermilion River, and on the south mainly by the Collison Branch and old fields.

The site is characterized by low-lying floodplain forest and marshes surrounded by a ridge of upland forest on the north, a railroad embankment on the northwest and croplands on the east and southeast. The floodplain forest is dominated by silver maple (*Acer saccharinum*), cottonwood (*Populus deltoides*), box elder (*Acer negundo*), and green ash (*Fraxinus pennsylvanica*). The largest marsh (the area of the original Blanding's turtle sighting, hereafter referred to as the Reed Canary Marsh), located at the north end of the site along the ridge, is dominated by reed canary grass (*Phalaris arundaceae*) and cattails (*Typha latifolia*). A smaller marsh (hereafter referred to as Sweet Flag Marsh), located in the northwest corner of the site adjacent to the railroad embankment, contains a mixture of cattails, reed canary grass and sweet flag (*Acorus calamus*). A small pond (the site of the original four-toed salamander sighting, hereafter referred to as Four-toed Pond) is immediately adjacent to Sweet Flag Marsh. The dominant vegetation is buttonbush (*Cephalanthus occidentalis*) and a moss of the genus *Hypnum* is found in thick mats adjacent to the pond margin. An intermittent stream flows from immediately north of Four-toed Pond to Reed canary Marsh.

Reed Canary Marsh and, to a lesser extent, Sweet Flag Marsh, are significantly affected by beaver activity. The water level in Reed Canary Marsh is controlled almost entirely by beaver dams.

I visited the site approximately 20 times between March and July, 1995. During each visit, a visual encounter survey was conducted and the number and location of all species of amphibians and reptile observed was recorded. From March through June, two small sections of drift fence with pitfall traps were in place along the margin of Four-toed Pond. The traps were checked during each visit to the site during this period. Twice during the survey, Four-toed Pond was seined and dipped netted. From 19 April through the end of June, six turtle traps baited with pieces of fish, chicken liver, crayfish, or smelt were in place in Reed Canary Marsh. These traps were checked and the bait was replaced during each visit to the site during this period. In addition, I spent several hours observing basking turtles at Reed Canary Marsh using binoculars or a spotting scope.

Results and Discussion

I first visited the site for the purposes of this project on September 7, 1994. I scouted for potential turtle trapping locations at Reed Canary Marsh and recorded the water level in Four-toed Pond. The pond was dry during this first visit but subsequently filled even though other ponds in the area were dry all winter. The actual survey started on 6 March, 1995 with the installation of the drift fence at Four-toed Pond.

Four-toed Salamander

One gravid female was intercepted at the drift fence at Four-toed Pond on 17 March, 1995. Unfortunately, the salamander was dead, probably a result of the pitfall trap filling with water during the previous rain. The specimen has been vouchered in the herpetology collection at the Illinois Natural History Survey (INHS # 11712). No other four-toed salamanders were encountered during this survey even though considerable effort was expended; the drift fence and pitfall traps were kept open for another 3 months (and continued to intercept other salamanders and frogs), the pond was seined and dip-netted thoroughly, and the area adjacent to the pond margin was searched by hand on five different occasions. The discovery of the single individual is proof that a population of *Hemidactylium scutatum* still exists and is probably breeding in the pond. However, it suggests that the population level is not as high as at other Illinois *Hemidactylium* sites were several to many adults have been encountered in one visit. It should be noted that the efficiency of my search of the pond margin was limited by my desire to not destroy any potential nesting sites (under rotting logs and clumps of moss). This may partially explain why more adults were not found at this site.

Blanding's Turtle

No Blanding's turtles were trapped or observed at Reed Canary Marsh even though several hours of observation and over 5,000 trap hours were logged at the site. Two other species of turtle were observed and trapped (see below) suggesting that my methods were not at fault. In fact, the same trapping methods were successful in capturing Blanding's turtles in DuPage County, Illinois during the same time period (M. Redmer, pers. comm.). It is possible that Blanding's turtles numbers are so low at Reed Canary Marsh that they are not detectable by trapping.

Other State Listed Species

No other state listed species were encountered at MFSFWA during this survey. However, wood frogs, *Rana sylvatica*, and spotted salamanders, *Ambystoma maculatum*, were

observed breeding at four-toed pond. Although these species are not listed as threatened or endangered in Illinois, they usually only breed in relatively undisturbed natural areas. Their presence at Four-toed Pond suggests that this area has high natural quality.

Species List

Appendix I lists the species encountered at the site along with a brief description of location and an estimate of their abundance. Twenty species were encountered, most of which can be considered very common at this site and in most floodplain forests in central Illinois. These include some of the most common reptiles and amphibians in Illinois; the common snapping and painted turtles, the green, bull, and chorus frogs, the spring peeper, and the American toad. In addition, I have previously recorded the following common species from the study site: the marbled salamander, *Ambystoma opacum*; the two-lined salamander, *Eurycea cirrigera*; the leopard frog, *Rana pipiens*; the eastern box turtle, *Terrapene carolina*; and the fox snake, *Elaphe vulpina*; and the garter snake, *Thamnophis sirtalis*.

The following species have been recorded from the general vicinity of the study site but were not detected during the present study. The common musk turtle, *Sternotherus odoratus*; the black rat snake, *Elaphe obsoleta*; the great plains garter snake, *Thamnophis radix*; and the milk snake, *Lampropeltis triangulum*.

Conclusions and Management Suggestions

The most significant result of this survey is the confirmation of the continued presence of the four-toed salamander at the site. No accurate population size estimates can be made because only one individual was encountered. However, the fact that it was a gravid female suggests that at least a small population exists at the site and that some reproduction is occurring.

Four-toed pond usually fills with water in early winter, even in dry years, so no special management of the pond is required. It is, however, important to keep traffic away from the pond margin, especially in late winter and early spring when females are nesting under logs, moss, and in clumps of grass. This includes human traffic and especially horses or off-road vehicles.

From a herpetological standpoint, the study area is a high quality wetland complex offering aquatic breeding sites for 10-15 amphibian species and foraging areas for 5-10 reptile species. The herpetological diversity is comparable to that found in some southern Illinois wetland communities. I consider this site an outstanding natural resource.

Literature Cited

Phillips, C.A. 1991. Geographic distribution. *Hemidactylium scutatum* (four-toed salamander). Herpetological Review 22(4):133.

Appendix I. Species List for Middle Fork State Fish and Wildlife Area

Ambystoma maculatum

spotted salamander

March-May 1994-5

One adult was found under a log on ridge top in deciduous forest on 4 September, 1994. 20-30 adults were found at Four-toed Pond drift fence and in minnow traps in March and April. Larvae were seined from Four-toed Pond in May and June. **Common**

Ambystoma texanum

small-mouth salamander

March-May 1994-5

20-30 adults were found at Four-toed Pond drift fence and in minnow traps in March and April. Larvae were seined from Four-toed Pond and Sweet Flag Marsh in May and June.
Common

Hemidactylium scutatum

four-toed Salamander

17 March 1995

Found dead in pitfall trap at drift fence on west side of Four-toed Pond.
Rare

Plethodon cinereus

redback salamander

1994-5

Four adults were found under logs on steep north facing hillside near Sweet Flag Marsh on 7 September, 1994. Several adults were also found under railroad ties near the Chicago & Eastern Illinois tracks in April, 1995.
Common

Acris crepitans

northern cricket frog

May-July 1995

Numerous adults and juveniles were found in Reed Canary Marsh and adults were heard calling from throughout the site.
Very Common

Bufo americanus

American toad

May-July 1995

Numerous adults and juveniles were found along railroad tracks, near marshes and in floodplain forest.
Very Common

Bufo woodhousii fowleri

Fowler's toad

May-July 1995

10 juveniles were found along railroad tracks, near marshes and along creeks.
Common

Hyla versicolor

gray treefrog

May-June 1995

Several were heard calling from Sweet Flag Marsh and surrounding forest from May through June.
Very Common

Pseudacris crucifer

spring peeper

March-April 1995

Adults found at Four-toed Pond and heard calling from Four-toed Pond, Sweet Flag Marsh and surrounding forest from March to April.
Very Common

Pseudacris triseriata

striped chorus frog

March-May 1995

Several were heard calling from Sweet Flag Marsh and surrounding forest from March through May.
Very Common

Rana catesbeiana

bullfrog

May-July 1995

Adults heard calling from Reed Canary Marsh from May to July, juveniles found all along creeks in area.

Very Common

Rana clamitans

green frog

April-July 1995

Numerous adults were found in seepage areas, creeks, and marshes.

Very Common

Rana sylvatica

wood frog

March 1995

One adult, caught in Four-toed Pond. Others were observed in Four-toed Pond and were heard calling from Reed Canary Marsh.

Common

Chelydra serpentina

snapping turtle

June - July 1995

Several were observed basking at surface and trapped at Reed Canary Marsh.

Common

Chrysemys picta

painted turtle

March-July 1995

Saw 10-15 basking on logs in Reed Canary Marsh, several trapped in same place.

Common

Coluber constrictor

racer

7 May 1995

One adult was found under along the Chicago & Eastern Illinois railroad tracks

Rare

Heterodon platirhinos

eastern hognose snake

7 May 1995

One adult was found under along the shore of Reed Canary Marsh at the base of the ridge on 7 May

Rare

Nerodia sipedon

northern water snake

15 May 1995

One juvenile was found in Four-toed Pond.

Common

Storeria dekayi

brown snake

May-June 1995

One juvenile was found under a piece of bark in Reed Canary Marsh on 22 May and one adult was found sunning on reed canary grass in Reed Canary Marsh on 5 June.

Common

Appendix II. Specimens Collected During Survey at Middle Fork State Fish and Wildlife Area.

Ambystoma maculatum
spotted salamander
7 March 1995
INHS 11699
Collector(s) C.A. Phillips
Remarks Caught in minnow trap at Four-toed Pond

Ambystoma maculatum
spotted salamander
7 March 1995
INHS 11700
Collector(s) C.A. Phillips
Remarks Caught in minnow trap at Four-toed Pond

Ambystoma texanum
small-mouth salamander
7 March 1995
INHS 11701
Collector(s) C.A. Phillips
Remarks Caught in minnow trap at Four-toed Pond

Ambystoma texanum
small-mouth salamander
7 March 1995
INHS 11702
Collector(s) C.A. Phillips
Remarks Caught in minnow trap at Four-toed Pond

Hemidactylium scutatum
four-toed Salamander
17 March 1995
INHS 11712
Collector(s) C.A. Phillips & M. Redmer
Remarks Found dead in pitfall trap at drift fence on west side of Four-toed Pond.

Rana sylvatica
wood frog
17 March 1995
INHS 11714
Collector(s) C.A. Phillips & M. Redmer
Remarks One adult, caught in Four-toed Pond.

Rana catesbeiana
bullfrog
15 May 1995
INHS 11939
Collector(s) C.A. Phillips & J.M. Serb
Remarks Juvenile found in creek leading into Reed Canary Marsh.

Rana clamitans
green frog
15 May 1995
INHS 11940
Collector(s) C.A. Phillips & J.M. Serb
Remarks Adult found in creek leading into Reed Canary Marsh.

Pseudacris crucifer
spring peeper
17 March 1995
INHS 11713
Collector(s) C.A. Phillips & M. Redmer
Remarks Found at Four-toed Pond.

Storeria dekayi
brown snake
5 June 1995
INHS 12005
Collector(s) C.A. Phillips & J.M. Serb
Remarks Adult found sunning on reed canary grass in Reed Canary Marsh