

MEMORANDUM

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ATTN: Barb Traeger

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DATE: Friday, 15 June 2007

SUBJECT: US 41/ ILL 137
Proposed North Chicago Wetland Mitigation Bank Site
Lake County, Illinois
Job No.

INTRODUCTION

In a transmittal dated 11 September 2006 the Illinois Department of Transportation's Bureau of Design and Environment tasked the Illinois Natural History Survey to conduct surveys amphibians and reptiles focusing on the state-threatened Blanding's Turtle (*Emydoidea blandingii*) and any associated habitat in the above referenced project area. This memorandum gives the results of surveys of this project area.

PROJECT AREA

The project area is located in Township 44 North; Range 12 East; Sections 7 and 13.

NATURAL HISTORY OF THE BLANDING'S TURTLE

The Blanding's Turtle, *Emydoidea blandingii*, was described from the Fox River in Illinois by Holbrook in 1838. Blanding's Turtles are distinguishable from other North American species by its hinged plastron and bright yellow chin, throat and neck (Ernst, et al. 1994). The species is long lived and individuals over 77 years old have been documented in the field (Congdon 2001). Females typically mature between 14 and 20 years of age (Congdon, et al. 1983; Ross 1989). Blanding's turtles in northern Illinois are active from late March through October (Rowe and Moll 1991; Kuhns, et al. 2007a) with the greatest trapping success occurring from May through mid-July (Benda, et al. 2007). Females lay only one clutch of eggs per year but may not nest annually. Throughout their range *E. blandingii* occupy eutrophic habitats with clear water and abundant aquatic vegetation with adjacent uplands available for nesting (Ernst, et al. 1994). Within Illinois, *E. blandingii* was historically present in the extensive marsh systems of the northern half of the state (Kennicott 1855). Habitat loss from agriculture and urbanization has resulted in a dramatic loss of natural wetland communities and *E. blandingii* now occur only in isolated remnant wetland patches (Smith 1961). Northern Illinois populations of *E. blandingii* used wetlands 10 to 100 cm deep with sedge clumps, cattails, and grasses (Rowe and Moll 1991; Kuhns, et al. 2007a). In the region of this study site, marsh habitats, characterized as having abundant cattails (*Typha* ssp.) and organic substrates are the preferred habitat of Blanding's Turtles, although retention ponds are used during drought conditions (Kuhns, et al. 2007a). Females can travel considerable distances (1620 m) from their activity areas to nest and nests are often considerable distances from water (Congdon, et al. 1983; Ross and Anderson 1990; Joyal, et al. 2001; Kuhns, et al. 2006). Nests are laid in sand or sandy loam soils with good drainage and low canopy cover (Ross and Anderson 1990; Kuhns, et al. 2007a).

BLANDING'S TURTLE RECORDS IN THE VICINITY OF THE PROJECT AREA

One Blanding's Turtle was observed in 1993 by Ken Meirzwa near Middlefork Savanna Nature Preserve located approximately 4.4 km southwest of the project site. Subsequent surveys have failed to document Blanding's Turtles at Middlefork Savanna (Kuhns, et al. 2004; Kuhns, et al. 2007b).

METHODS

Aerial photographs were consulted to determine the locations of suitable wetland sites. The site was visited to determine if habitat suitable for the Blanding's Turtle is present. Wetlands that were deep enough to submerge the trap throats were sampled with Legler-style baited hoop traps (Legler 1960) baited with sardines in oil. Wetlands that were not deep enough to trap were searched using Visual Encounter Surveys.

RESULTS

The project area was visited on 09 May 2007. Suitable habitat for *E. blandingii* exists in the form of cattail wetlands through the southern three quarters of the site. A total of five wetlands were considered suitable and trapped; three open water wetlands (labeled NCWMB 1, NCWMB 2, and NCWMB 3) were trapped along the eastern boundary of the property from 30 May 2007 through 03 June 2007. Four traps were placed in each of the three open water habitats for a total of 12 trapping locations (Figure 1; Plates a - c). Two of these wetlands are outside of the project boundary but were directly connected to shallower wetlands originating within the site. Heavy rainfall after this trapping session filled wetlands along the southern boundary of the project site and allowed us to set seven additional traps in two wetlands (NCWMB 4 & NCWMB 5) from 11 June 2007 through 14 June 2007. (Figure 1; Plates d and e). We recorded 23 captures of Snapping Turtles, *Chelydra serpentina*, and 57 captures of Painted Turtles, *Chrysemys picta*, in 1614 trap hours (Table 1). Visual encounter surveys were conducted during an initial site visit and on the way to and back from traps for a total of approximately 12 man hours. We observed the following amphibian and reptile species during our surveys: Bullfrog (*Rana catesbeiana*); Northern Leopard Frog (*Rana pipiens*), Green frog (*Rana clamitans*), American toad (*Bufo americanus*), Garter snake (*Thamnophis sirtalis*), and Painted Turtle (*Chrysemys picta*). No Blanding's Turtles were captured or observed.

SUMMARY

The North Chicago Wetland Mitigation Bank located at in Township 44 North; Range 12 East; Sections 7 and 13 provides suitable habitat for Blanding's Turtles in the form of cattail wetlands with clear water, but visual surveys and 1614 hours of trapping failed to document the presence of Blanding's turtles at the site. Because the habitat is suitable and there are recent records in the vicinity of the wetland, it must be assumed that Blanding's Turtles inhabit this site.

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Figure 1. Aerial photograph indicating locations of wetlands trapped during this survey.

Plate 1. Photographs of wetlands trapped for the presence of Blanding's Turtles during this survey. **a.** NCWMB wetland 1; **b.** NCWMB wetland 2; **c.** NCWMB wetland 3; **d.** NCWMB wetland 4; **e.** NCWMB wetland 5.



Table 1. Trap results for the survey of the proposed North Chicago Wetland Mitigation Bank.

Site	Dates trapped	Captures		
		<i>C. serpentina</i>	<i>C. picta</i>	<i>E. blandingii</i>
NCWMB wetland 1	5/30/07 to 6/3/07	6	1	0
NCWMB wetland 2	5/30/07 to 6/3/07	8	24	0
NCWMB wetland 3	5/30/07 to 6/3/07	5	21	0
NCWMB wetland 4	6/11/2007 to 6/14/2007	4	11	0
NCWMB wetland 5	6/11/2007 to 6/14/2007	0	0	0
Totals	1614 trap hours	23	57	0