Project Report: Emydoidea blandingi Survey within Ramsey Co., MN

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Introduction and Study Area

One priority of the Minnesota's DNR's 1988 Nongame Wildlife Program has been the survey of Blanding's distribution within the Seven-county Metro Area. I selected Ramsey County as an area to investigate partially because of the presence of the U.S. Army Arsenal, a 2400 acre site with relatively undisturbed marsh habitat, and because of occasional, but recent reports of Blanding's in county wetlands which appeared to be "classical" Blanding's habitat (i.e. cattail marsh,shallow water with mucky substrate and abundant vegetation usually associated with upland open areas). The Blanding's, a MN state threatened species, generally occurs (outside of the large known population in Wabasha County) in much smaller numbers than the painted turtle, Chrysemys picta, and the snapping turtle, Chelydra serpentina, the 2 turtle species with which it most frequently shares its habitat. Finding such small, isolated populations (but nevertheless possibly viable) of Blanding's is time consuming,but is greatly aided by choosing optimum field conditions: sunny mornings of late April through mid June when vegetation is less dense and where basking sites are available Higher temperatures and thick vegetation (especially duckweed) of later summer make observing Emydoidea much more difficult and baited traps would then have to be utilized. During nesting season, reports from local residents spotting turtles crossing roads and yards supplemen searching for Blanding's tracks, mammal raided nests, and actual nesting females.

Ramsey County north of 694 freeway, while fast developing, still contains considerable wetland habitat suitable for Emydoidea. Because of limitations of field time, the search for Blanding's concentrated on five areas within the county: eastern section of the U.S. Army Arsenal; a cattail marsh bordered on one side by several housing developments just east of Lexington Avenue and north of Turtle Lake Road in Shoreview; wetlands in proximity to Pleasant Lake and Gilfillan Lake in North Oaks; Grass Lake, a large cattail marsh part of Ramsey County open space bord ering 694 and Gramsie Rd in Shoreview; and, wetlands just south of Birch Lake in White Bear Lake.

Materials and Methods

After checking records from the Minnesota Natural Heritage/Nongame Wildlife Program Database and talking with DNR personnel, topo maps were checked for most suitable wetland areas to be surveyed on foot. A total of 14 field trips within Ramsey County were made between April 29, 1988, and June 25,1988. In April and May, most wetland

Materials and Methods, continued

areas were checked by walking as much of the perimeter as possible and scanning the water surface and potential basking sites with binoculars. When an initial Emydoidea was observed, an attempt was made to capture the animal- in most cases by wading out. A canoe was used on one field trip, but wading and hand capture seemed more efficient for the number of sites to be checked.

Just prior to nesting season (typically, the first three weeks of June), residences bordering wetlands were leafleted with DNR Blanding's information sheets in hopes of increasing the public awareness of female turtles searching for nest sites. When time allowed, sandy roads and high ground close to the wetlands were checked for Blanding's tracks and evidence of dug up turtle nests.

The maximum carapace length of captured Emydoidea was measured with calipers to the nearest mm. Turtles were sexed on the basis that mature males have concave plastrons and longer, thicker tails with the anal opening well posterior to the plastron. Plastrons were also examined for the number of visible growth annuli.

All wetland sites were rechecked on 2 separate field trips. In each setting, areas most likely to be used for nesting were evaluated, with more emphasis on the U.S. Arsenal. Road checks were made late afternoon to almost dark since Emydoidea are known to search for nest sites and nest around dusk (and after dark). Searches on foot along sandy ridges and hillsides, roadsides were done in hopes of finding fresh tracks. Slides were taken of several habitats and captured individuals. Captured turtles were released at point of capture. The shell of the dead Blanding's found at the Arsenal was given to John Moriarity and will be deposited in the Bell Museum.

Results/ Discussion

U.S. Army Arsenal, Arden Hills:

The initial field visit on April 29, 1988, revealed extensive marsh habitat suitable for Emydoidea. Directly west of Marsden Lake marsh and south of the Arsenal's gravel pit there is extensive high ground (900-1000 feet) with a network of sandy roads all of which appears to be excellent potential nesting habitat. Painted turtles of all age classes were observed basking in great numbers throughout Marsden Lake and within 3 small ponds close to the Arsenal's northern border (close to the intersection of Hamline Avenue and County Rd. I.

During the first field visit, an adult Emydoidea was sighted basking on a clump of vegetation approximately 7 meters from shore (on west side of marsh along Hamline Ave. where there is greater accessibility to the marsh). An attempt to collect the individual

Results, continued

with a canoe failed. 2 subsequent visits in May revealed other basking Emydoidea within the cattail mats and on a log. One adult male (carapace length=252mm; 20+ annuli) was hand captured in one of the smaller ponds along the Arsenal's northern border(and just west of Hamline Ave). Thereafter, in June, 3 other field visits were made with the goal of locating nesting locations. A June 11 search for evidence of nesting was not especially fruitful: Only 2 sets of fresh painted turtle tracks and one still wet female painted were found on the sandy road west of the marsh. One very fresh set of Emydoidea tracks were found along the sandy road bordering the east side of the marsh, but the tracks were soon lost in the vegetation outside of the Arsenal security fence (which has frequent gaps under which a turtle could easily move). The temperature was 93 degrees at 5 PM and the soil condition extremely dry. Under normal moisture conditions , I would expect numerous painted turtle tracks leaving the wetland areas. Security persons driving the sandy roads at half hour intervals mentioned that they had not seen any "sun" turtles on the roads as they had seen in past years.After searching an hour on foot, I was only able to locate one raided painted turtle nest which appeared to be at least 1 week old.

On June 15,1988, there was an extremely light rain shower with cooler temperatures (circa 75 degrees). Several fresh sets of painted tracks and 3 painted turtles (one digging a nest hole) were observed on the sandy roads bordering the marsh's west side. 1 fresh Emydoidea track was observed heading west, but lost in the vegetation as it headed up the grassy slope west of Hamline Ave. Finally, a very fresh Emydoidea track was seen heading east of the Marsden marsh towards Lexinton Avenue. I then decided to make a road check on Lexington Ave and found a freshly hit Emydoidea. The female was still alive and its carapace measured 237 mm. The turtle was taken to the home of John Moriarity where 17 eggs were saved. The eggs will be incubated at Moriarity's home and any hatchlings which result will be released into the Arsenal in the fall.

Sunfish Lake, in the extreme southeast corner of the Arsenal property was checked briefly for Emydoidea. While no Emydoidea were observed, the northeastern corner of the lake is marshy and could very well contain Blanding's with more thorough checking.

A final check for nesting turtles was made in the Arsenal on June 25, 1988. The soils were again extremely dry. Despite several hours of walking in the areas of higher elevation and along side the gravel pit, no evidence of turtle nesting was found. Arsenal security personnel and U. of M. Deer Study students were given Blanding's flyers at the end of May in hopes they could report turtle sightings on the roads. It seems that this particular nesting season was especially quiet; Minnesota's severe drought conditions most likely impacted several species of fresh water turtles which travel a distance from their home wetland to nest.

Results, continued

Grass Lake, Shoreview:

The initial field check of Grass Lake showed excellent Blanding's habitat. An immature Blanding's (in 5th growing season; carapace length= 134 mm) was observed basking close to shore on a sedge and was hand captured. Numerous painted turtles were seen. Scanning efforts were concentrated in the eastern section of Grass Lake, but western sections looked suitable for Blanding's as well. High elevation (900feet) to the northeast could serve as nesting habitat, but a later field check did not turn up signs of nesting. However, on June 5, 1988, a reliable report was given to the DNR Nongame program of a Blanding's sitting on a sandy path in this a More intensive searching during basking season and/or trapping would most likely turn up more Blanding's. The immature Blanding's collected was a large size for its age and appeared vigorous. The wetland and its surrounding upland area are protected under Ramsey County open space. A housing development off Gramsie Rd., on the north border of the uplands, was leafleted with Blanding's information sheets.

Shoreview, cattail marsh east of Royal Oaks housing development (north of Turtle Lake Rd; just east of Lexington Ave.):

This wetland was brought to the DNR's attention in the fall of 1987, when a live hatchling Blanding's was found by a resident in his backyard. During May, 1988, I waded the perimeter of the marsh and found it to look like a "typical" Blanding's habitat. However, after two field checks, I only saw one Blanding's head, and failed to capture it. Once again, several more days of intensive field searching would probably turn up more individuals. Many of the new homes were leafleted; most of the homes were built on the higher elevation with extremely sandy soils. However, except for a few "waste" places, the lawns were of rolled sod--not conducive to turtle nesting. Many of the residents seemed interested to hear of the Blanding's; one neighbor called in a reliable report of a Blanding's on her patio and another of one on a bike path across from the marsh. I checked McCullough Park (a Shoreview Park) which runs along the east side of the marsh; some sandy, higher ground is available there, although planted pines have taken over a large area. There is still some rural land on County Rd. J which crosses a drainage ditch running directly into the marsh. I checked for road kills along County Rd. J, but found none.

Wetlands in North Oaks area:

Several wetlands along East Oaks Rd., northeast of Gilfillan Lake looked to be good Blanding's habitat. While the land is developed in this area, house lots are large with upland sections of fields. Traffic, however, seemed quite heavy and 2 D.O.R. painteds and 1 D.O.R. snapper were found on East Oaks Rd. between 2 wetlands. Once again, numerous painted turtles were seen basking everywhere; Blanding's were not sighted; temperatures had been close to the 90's, perhaps the unusual early heat was keeping them from basking (Painteds, in contrast, will bask in extremely hot weather as well as

Results, continued

late into the fall). Additional suitable Blanding's habitat was found along the northwest section of Pleasant Lake, accessible from Island Rd. (off W. Pleasant Lake Rd.) Residences along the wetlands were leafleted with the DNR Blanding's sheets and several DNR posters were placed on community bulletin boards. A June, 1988, reporting to the DNR of a female Blanding's just north of Pleasant Lake, but on the Anoka County line, suggests that Blanding's are found here.

Birch Lake area, White Bear Lake:

Because of a reliable report given to the DNR of a Blanding's sighting south of South Birch Lake Rd, the marsh called by local residents as Rice Lake was checked for Blanding's. The marsh, which looked to have much lower than normal water level, appeared to be classic Blanding's habitat. I spent the morning of 5/28/88 walking the southeastern perimeter of the marsh; numerous painteds were seen, but once again, by 11 AM, the temperature was up near 90 degrees. While Blanding's were not observed, it would be very likely that there is a population there. The south side of the marsh has considerable sandy, upland soil (where Parkridge meets Oakmeade) where, unfortunately, new homes were being surveyed. However, there were several sandy roads leading to the Burlington Northern Railroad line and then onto a golf course which could all possibly serve as possible nesting areas. A quick check of the area did not turn up any turtles, but it would be an accessible area for a volunteer to check during nesting season. Homes on the southwest border of the marsh were leafleted.

General Recommendations

One area of northern Ramsey County which I had hoped to check, but did not have time to is the group of wetlands between Otter Lake and Bald Eagle Lake. Sites need to be rechecked and the exceptionally hot weather seemed to limit effective field time. Utilizing trapping (which I have done in July and August in Massachusetts) might have given more results than searching for basking turtles during this unusual spring.

The U.S. Arsenal most likely has a sizable population of Blanding's which would require a much greater effort in order to estimate. There has been some plan regarding the building of a new Army Reserve Center in the southeastern corner of the Arsenal; if this plan were to involve Sunfish Lake, it could impact Blanding's. Obviously, some Blanding's are heading out of the Arsenal in search of nest sites (maybe the lawns on Lexington Ave are being watered and the turtles could sense it!) Ideally, it would be good for the Blanding's if the U.S. Army could fix the gaps in the fence.

In general, the obvious problem in the metro area is the development of upland areas bordering marshes home to Blanding's. Judging from public response to the DNR's call for Blanding's sightings, many homeowners are interested in the turtle's welfare

and enjoy having this uncommon turtle in their neighborhood. Several residents I spoke to in Shoreview were excited about the possibility of a Blanding's nesting in their yard. Traffic in the smaller neighborhoods is not much of a problem. Perhaps with continued public education, much like planting one's backyard for wildlife and putting up bluebird boxes, residents of these newly developed areas could be convinced to leave "wild" areas--even vegetable gardens might work (at Weaver Dunes and Concord, Mass., Emydoidea have been observed nesting in plowed fields) However, convincing the developers to leave open, unmanicured sections among new homes may be totally unrealistic and too much of an obstacle. It will be interesting to see, with the recent DNR publicity, if more reports of hatchling Blanding's come in from people's yards in the fall. Nevertheless, the question remains whether much effort should be put into preserving the smaller, more urban populations of Blanding's. Northern Ramsey still has undeveloped areas and county open space program can be a crucial part of protecting Blanding's nesting habitat (as open space has probably greatly benefited the Grass Lake Blanding's population)