Please note that all location information has been removed from this document to protect the Blanding's turtle populations.

Jaime Edwards, Ecological Services, Nongame Program, 2300 Silver Creek Rd. SE
CFMS Contract Number: 2001-2

Preliminary Field Report, April-June 2001 Weaver Dunes Blanding's Turtle Project

Dr. Jeffrey W. Lang, Biology, U.North Dakota,Grand Forks, ND 58201; jeff_lang@und.nodak.edu
mailing address: 806 Chestnut St, Grand Forks, ND 58201; ph 701 772 0227

Fieldwork was conducted by J.W. Lang, J. Levell, and R. Palmersheim during April-June 2001. The objectives this season were (1) to continue to identify seasonal habitats and activities of various size/age turtles, (2) to monitor nesting effort in 2001 via drift fences and road patrols for comparison with previous years, and (3) to continue to identify and assess activities likely to affect this population. This field report briefly describes the research activities and summarizes preliminary results.

Cool, wet spring weather delayed emergence from overwintering sites, relative to the emergence pattern (early March) observed in 2000. In early April, turtles were still emerging from overwintering and remained at or near these sites by mid April. A near record April flood created extensive new wetlands, and monitored turtles quickly moved into these temporary wetlands and/or remained near traditional overwintering areas through early May. During this period, trapping efforts were less effective than in previous years. Despite lower capture rates overall, in most overwintering areas where traps were concentrated, the recapture rates of previously marked turtles was high (>50%) relative to previous years.

This season, a concerted effort was made to locate telemetered turtles along the eastern edge of the study area, the and associated wetlands in the adjacent areas. A number of previously unrecorded overwintering sites were located in these areas, particularly along the east edge of the , and in the river bottomlands. Typically, these were small, wetland depressions in the ridge of dunes along the river. Juvenile and subadults were among those captured. These captures suggest that suitable habitats for younger size/age classes are available along the east edge of the study area, and that recruitment occurs in these areas.

Blanding's turtles responded to high water in existing wetlands created by flooding by remaining in these wetlands and/or moving into newly-created flooded habitats. In contrast to the previous spring (2000), when most turtles in a small overwintering pothole moved in early spring to adjacent river bottoms, this spring (2001) these same individuals remained in flooded, protected habitats, adjacent to , but separate from, river bottoms. In particular, extensive movements along river bottoms, seen in previous years, were not evident during the spring flooding.

In addition to high water, ambient temperatures were markedly lower during late April and throughout May. Few sunny days limited basking opportunities. Trapping success was low during this period, despite the continued presence of telemetered animals in these areas. Presumably, low water temperatures and reduced sunshine curtailed feeding and/or the increased food availability in flooded wetlands resulted in relatively few trap captures. Many of the telemetered turtles were caught by hand during this period, to recover radios and data loggers. Selected individuals were refit with new transmitters and loggers. Courtship and mating was observed on a number of occasions throughout May, including the last week of May.

In mid May, a series of drift fences were set up to intercept turtles, particularly females moving to nesting areas. One fence was set up along the west side of to surround the eastern side of , from the in the south to in the north (2500' in length). A secondary fence was set up behind the (northwest corner) to intercept turtles moving eastward into from the wetlands to the west (600' in length). Another fence was set up along the west side of from driveway north to yard (1800' in length). Fences were outfitted with capture pools and shading. Release pools were installed on the east side of for the fence, and a natural pond on the east side of

was used opposite the fence. Fences were in place by 1 June; no nesting females were noted prior to 5 June.

Between 6 June and 29 June, a total of 1115 turtles were captured along drift fences and on roads throughout the movement corridors and in the nesting areas. In contrast to previous years, nesting was delayed by a week and tended to be more synchronous, with more females moving on peak days. Nesting movements peaked on 13 June when 216 turtles were captured, measured, marked, and released. Between 10 June and 18 June, a total of 915 nesting females were recorded. Nesting continued until 29 June. After 26 June, fewer than 10 animals were encountered on fences and/or on roads. In comparison with nesting effort in 2000 when 1091 nesting females were monitored, overall nesting effort was nearly equivalent, 1115 turtles, in 2001.

Of 1115 nesting females captured in 2001, two thirds were previously marked, either during 1999-2000 (53%) or in 1974-80 (11%) and in 1988-89 (3%). Many of the unmarked females were captured on the drift fence, where no fence was used last year. At , where a drift fence was used in both seasons, recapture rates were higher (>75%). Road patrols and/or opportunistic collecting of nesting females throughout the study area yielded comparably high percentages (67% to 75%) of marked vs. unmarked individuals. Many of the females recaptured at were recorded nesting in three successive years, in 1999, in 2000, and again in 2001. The large repeat sample of nesting females suggests that most of the adult females (>75%) nest every year in this population. A subsample of reproductive turtles were x-rayed, particularly old females (marked by Pappas and Brecke and/or by M. Linck) and those x-rayed previously in 1999/2000. Further analyses will indicate more specific details on reproductive effort in this population.

Walking surveys in the nesting dunes were made periodically during the nesting period to locate nesting females and their nests, and also to map the frequency and location of predated nests. At the conclusion of nesting, a comprehensive map was made of the 2001 nest locations and predated nests, for comparison with the same survey data collected during the 2000 nesting season. Overall, in the areas surveyed, fewer predated nests (<100) were located, but the locations of predated nests in both years were very similar. Females tended to nest on the rims of exisiting dune depressions, particularly along eastern, northern, and western exposures. Relatively few turtles appear to nest in the bowl-shaped dune depressions, nor in the dense vegetation on the north sides of dunes. Locations of females from known movement corridors suggest that the pattern of nest location relative to the marsh of origin for a female is similar from year to year. In addition to nests located primarily in , made by females moving eastward across , a number of nesting females were located at or near nest sites along the eastern edge of the study area. Females moved northward and westward from river bottoms and adjacent wetlands into the and to the south and north.

Road mortality was observed, particularly during the last week of nesting. Between 22 June and 29 June, three road killed females were collected from , two near the south entrance to , and one at driveway. Road signs were installed on 3 June, just prior to nesting, and removed on 28 June, at the end of nesting. This year, no signs were stolen.

Activities that may affect nesting turtles and/or eggs and hatchlings in the near term at Weaver Dunes include a road pavement project scheduled for August 2001 along , and a proposed "emergency exit" road for a possible development on the property. Conversation with Corey , Wabasha County Engineer, indicated road pavement is likely to begin 6 August along , commencing at bridge near residence and proceeding northward to . If the project is on schedule, it should be completed to the West Newton Road by early September, and should have minimal negative effects on hatchlings. Most hatchlings are likely to cross south of after the scheduled repaving.

In contrast, the proposed "emergency exit" road for the development will likely have a major detrimental effect on the Weaver Blanding's turtle population because this road upgrade will cross directly through the nesting area. Construction in this area will alter the topography and a road upgrade will likely increase traffic through this area, as well as facilitate off-road access to the surrounding dunes. If this upgrade were approved, road access should be restricted, and used for emergency use only. In any event, a road upgrade would

decrease hatchling recruitment and increase adult mortality. Taken together, these two impacts would pose a serious threat to the health of the Weaver Dune turtle population.

Fieldwork on this project was completed by 30 June. John Levell and Rachel Palmersheim did excellent work on all phases of the project, and are recommended enthusiastically for future field projects.