

NOTES

RIVER OTTERS USE AGRICULTURAL FIELD ALONG THE TURTLE RIVER IN EASTERN NORTH DAKOTA AS CROSSOVER AND LATRINE AREA—

Recently, the Nearctic river otter (*Lontra canadensis*) has been re-colonizing portions of eastern North Dakota (Serfass et al. 2010). The landscape in eastern North Dakota is dominated by agricultural fields and pastures, habitats which have received little research attention related to otter habitat use. During 2008, we searched shorelines to detect otter latrines, which is a common method for determining otter presence (Clark et al. 1987, Shackelford and Whitaker 1997, Melquist et al. 2003). Generally, latrines are locations along bodies of water where otters deposit scats, urine, and glandular secretions for olfactory communication, and groom, wrestle, and play, which may mat vegetation (Melquist and Hornocker 1983, Carpenter 2001, Mills 2004, Ben-David et al. 2005, Stevens and Serfass 2008). In the northeastern United States, inland riverine system studies have shown latrines to be associated with prominent features along river shorelines (e.g., conifer trees, rock formations, and American beaver [*Castor canadensis*] activity) and forest cover (Newman and Griffen 1994, Swimley et al. 1998); however, otters will establish latrines in coastal and other areas where tree cover is limited (Mowbray et al. 1976). Further, latrines sometimes are associated with (on or near) overland trails (“crossovers”; Gorman et al. 2006a), which are used as connections between adjacent aquatic systems or between meanders

within a riverine system. In 2008 and 2009, we surveyed river shorelines in northeastern North Dakota to determine the re-establishing otter population’s distribution and monitor unique otter behavior. We report the occurrence of otters establishing and repeatedly using a crossover and latrine area in an agricultural field.

To detect otter latrines in summer 2008, we completed sign surveys along both shorelines of a 10.6 km section of the Turtle River, a northern tributary of the Red River in North Dakota (Fig. 1). Agricultural fields often extend to the edge of the Turtle River and the forested areas are mostly limited to narrow riparian strips interspersed or bordered by agricultural fields. The shoreline surveyed was approximately 20.1% (10.8 ha) forested and the mean width of the forest was 69.5 m (± 25.3 SE). On 28 June 2008, we detected 13 latrine areas, one of which was associated with a 70-m crossover trail (Figs. 1 and 2). The middle section of the trail (~25 m in length) crossed a field planted in wheat, which was approximately 1-m tall (Fig. 3). In the center of the trail (~35 m from either shoreline), the otters matted the wheat creating 2 circular areas (~1.9 and 2.8 m diameter), 2 oval areas (~2.1 and 3.1 m wide \times 3.2 m long), and 3 connecting trails (~3.1, 3.7, and 4.6 m long). Within this latrine area, we counted 21 scats: 5 in each of the circular areas; 5 in 1 of the oval areas; and 6 (3 in each) in 2 of the connecting trails.

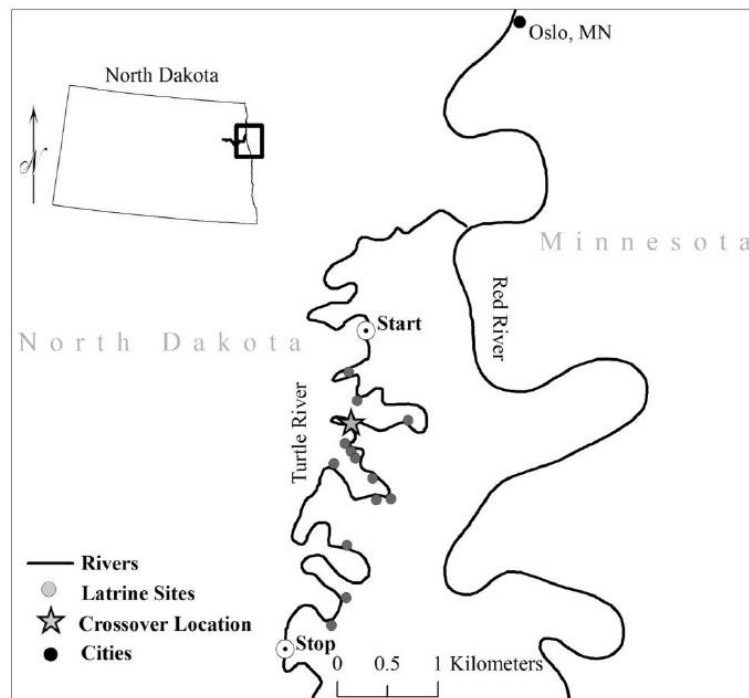


Figure 1. Section of the Turtle River in eastern North Dakota where a river otter survey was conducted on 28 June 2008. The star indicates the location of a latrine associated with a crossover trail crossing an agricultural field.

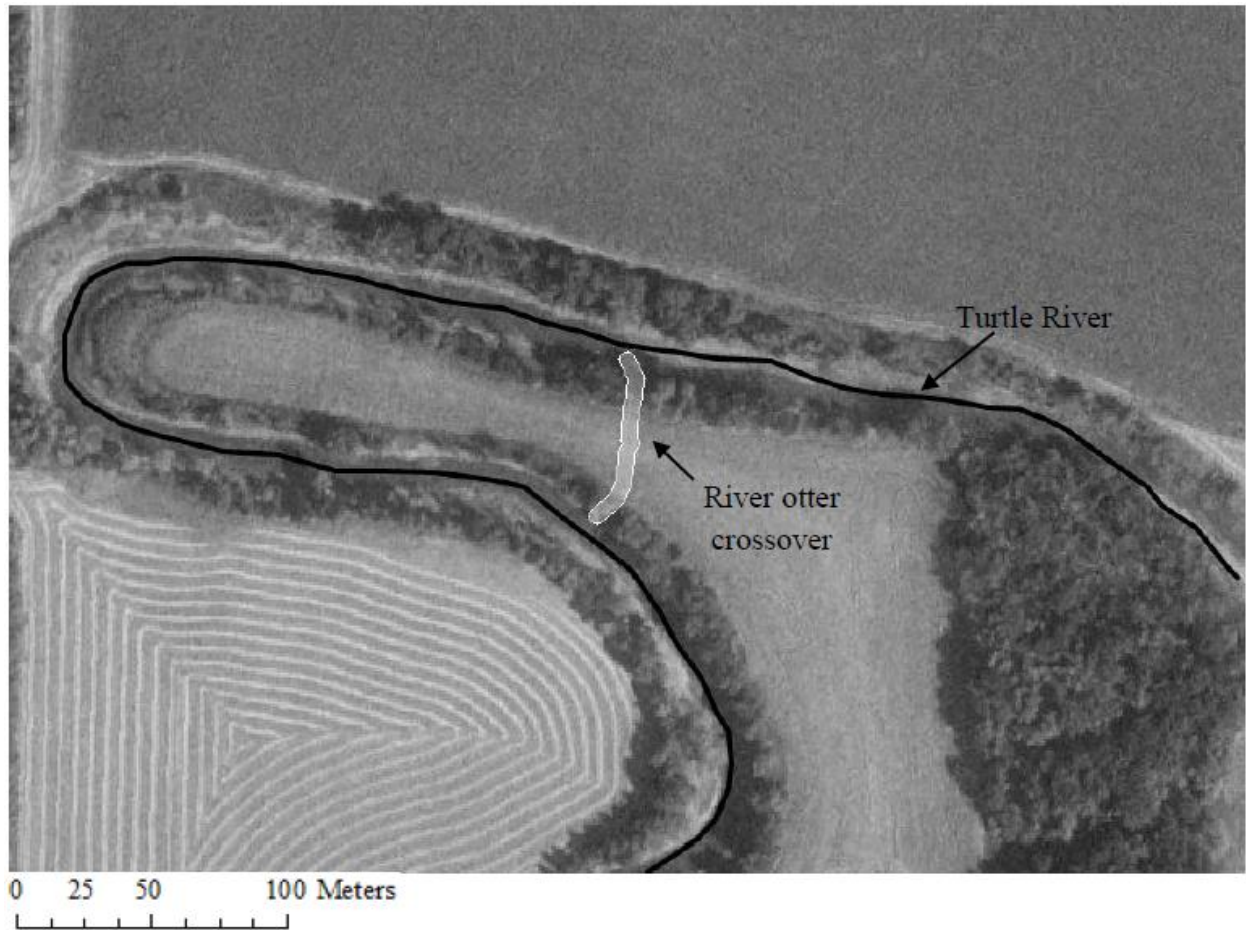


Figure 2. Location of a river otter crossover trail along the Turtle River in eastern North Dakota, June 2008–August 2009.

On 20 July 2009, we returned to check for otter activity at the previous crossover site. The site was planted with soybeans and again contained a crossover with latrines. The crossover followed virtually the same trail and scats were deposited at similar locations as in 2008. We placed a remote camera (Cuddeback Excite[®], Non Typical, Inc., Green Bay, Wisconsin, USA) at the site from 20 July – 18 August. We obtained photos and videos on 11 occasions during 8 different days with the number of otters ranging from 1 to 4 individuals. New scats were present during each visit to set up and monitor the camera.

Our observations indicated that otters regularly followed a crossover through an agricultural field and actively used the central portion of the trail (~ 35 m from the river) for normal behavioral activities such as scent marking. The establishment and ongoing use of crossovers through planted agricultural fields has not been reported previously. The only comparable report was by Gorman et al. (2006b), who located a natal den that was >700 m from the water and situated along a fence row of an agricultural field within the Mississippi River watershed in southeastern Minnesota.

Also, otters used the crossover and associated latrines during both 2008 and 2009, demonstrating ongoing use of an area with limited riparian tree cover and a surrounding landscape dominated by intensive agriculture.

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Figure 3. Crossover trail created by river otters through a wheat field along the Turtle River in eastern North Dakota, 28 June 2008.

LITERATURE CITED

- Ben-David, M., Blundell, G. M., J. W. Kern, J. A. K. Maier, E. D. Brown, and S. C. Jewett. 2005. Communication in river otters: creation of variable resource sheds for terrestrial communities. *Ecology* 86:1331–1345.
- Carpenter, C. P. 2001. Scat marking and the use of latrine sites by river otters along Tionesta Creek, northwestern Pennsylvania. Thesis, Frostburg State University, Frostburg, Maryland, USA.
- Clark, J. D., T. Hon, K. D. Ware, and J. H. Jenkins. 1987. Methods for evaluating abundance and distribution of river otters in Georgia. *Proceedings of the Annual Conference of the Southeast Association of Fish and Wildlife Agencies* 41:358–364.
- Gorman, T. A., J. D. Erb, B. R. McMillan, and D. J. Martin. 2006a. Space use and sociality of river otters (*Lontra canadensis*) in Minnesota. *Journal of Mammalogy* 87:740–747.
- Gorman, T. A., J. D. Erb, B. R. McMillan, D. J. Martin, and J. A. Homyack. 2006b. Site characteristics of river otter (*Lontra canadensis*) natal dens in Minnesota. *American Midland Naturalist* 156:109–117.
- Melquist, W. E., and M. G. Hornocker. 1983. Ecology of river otters in west central Idaho. *Wildlife Monographs* 83:1–60.
- Melquist, W., E., P. J. Polechla, Jr., and D. Towell. 2003. River otter. Pages 708–734 in G. A. Feldhammer, B. C. Thompson, and J. A. Chapman, editors. *Wild mammals of North America: biology, management, and conservation*, second edition. John Hopkins University Press, Baltimore, Maryland, USA.
- Mills, M. A. 2004. Scat-marking by river otters in Pennsylvania and Maryland. Thesis, Frostburg State University, Frostburg, Maryland, USA.
- Mowbray, E. E., Jr., J. A. Chapman, and J. R. Goldsberry. 1976. Preliminary observations on otter distribution and habitat preferences in Maryland

- with descriptions otter field sign. Northeast Fish and Wildlife Conference 33:125–131.
- Newman, D. G., and C. R. Griffen. 1994. Wetland use by river otters in Massachusetts. *Journal of Wildlife Management* 58:18–23.
- Serfass, T. L., C. Stearns, S. C. Loughry, M. D. Triska, J. Brandt, F. K. Ammer, B. Newton, Z. Olsen, A. Bagherian, and R. P. Brooks. 2010. Evaluating the distribution and abundance of river otters and other meso-carnivores in eastern North Dakota drainage: applications of GIS, genetic and digital technologies for conservation planning. North Dakota Game and Fish Department, Bismarck, USA.
- Shackelford, J. and J. Whitaker. 1997. Relative abundance of the northern river otter, *Lutra canadensis*, in three drainage basins of southeastern Oklahoma. *Proceedings of the Oklahoma Academy of Science* 77:93–98.
- Stevens, S. S., and T. L. Serfass. 2008. Visitation patterns and behavior of nearctic river otters (*Lontra canadensis*) at latrines. *Northeastern Naturalist* 15:1–12.
- Swimley, T. J., T. L. Serfass, R. P. Brooks, and W. M. Tzilkowski. 1998. Predicting river otter latrine sites in Pennsylvania. *Wildlife Society Bulletin* 26:836–845.
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