

WHY DID THE TURTLE CROSS THE ROAD? CONSEQUENCES OF HABITAT FRAGMENTATION ON A PAINTED TURTLE POPULATION ^{TWS}

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Human-induced fragmentation of landscapes is a major threat to species conservation. Highways and other road systems can affect wildlife populations directly through highway mortality and indirectly through habitat loss and decreasing habitat connectivity. Semi-aquatic turtles are especially vulnerable to this type of fragmentation because they use terrestrial landscapes for nesting and seasonal movements but have limited abilities to move effectively across the landscape. Although it is widely believed that freshwater turtles have declined in abundance due to habitat loss and fragmentation, few quantitative studies have documented such a relationship. I'm studying the effect of human-induced fragmentation on a population of western painted turtles (*Chrysemys picta bellii*) in a wetland ecosystem in the Mission Valley, Montana. Fragmentation is likely to increase given pending reconstruction of U.S. Highway 93, which bisects this network of wetlands. Current effects of the highway on turtle population demography and connectivity are unknown. I characterized demographics of the turtle population by estimating pond-specific abundance, sex ratios, and stage-class structure. To gain an understanding of the level of connectivity, movement patterns and road mortality rates will also be examined. Summarizing all 3 yrs of fieldwork (2002-2004), I marked a total of 2302 individuals and have recorded >10,200 captures. All individuals were

measured, weighed, tagged, and released into the original pond of capture. I've recorded 841 males, 783 females, and 678 juveniles (sex undetermined). Preliminary results of the road mortality data indicated 1 043 turtles were killed during the study.