

****Assessment of Sympatric Turtle Populations and Movements in Relation to an Irrigation Barrier on Pryor Creek**

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Habitat loss and fragmentation due to dams is one of the most significant threats to turtles worldwide. Barriers can isolate populations and reduce gene flow, increasing vulnerability to extinction-level events. Pryor Creek (Huntley, Montana) features a sympatric population of spiny softshell turtles (*Apalone spinifera*) and snapping turtles (*Chelydra serpentina*), and a 3-meter tall irrigation barrier. Populations of both species live on either side of the barrier, but connectivity between these populations is unknown. We hypothesized that movements of both species would be restricted by the barrier. We also expected possible differences in population demographic structures of each species above and below the barrier due to habitat differences and population isolation. Mark-recapture and radio-telemetry techniques were used to gather movement data on 150 individual turtles over four years. To date no snapping turtles have been documented bypassing the barrier, but four spiny softshell turtles have passed the barrier. Demographics of both species were found to be significantly different above and below the barrier. No female snapping turtles were caught below the barrier, and no juvenile spiny softshell turtles were caught above the barrier. Mean weight of spiny softshell turtles above and below the dam were significantly different. These differences may indicate differences in survival, reproduction, and possibly food availability. This is the first study looking at the ability of turtles to navigate around an aquatic barrier, which has significant long-term implications for population health and management efforts.