

Prairie Massasauga mark-recapture study, Prairie Massasauga Snake Fungal Disease Surveillance, and Crayfish Burrow Geospatial Distribution and Use

This spring, the grant money from MWPARC helped cover travel costs to and from Loess Bluffs National Wildlife Refuge where I aided in projects surrounding the Missouri State Endangered Prairie Massasauga Rattlesnake (*Sistrurus tergeminus tergeminus*). Researchers I helped include Loess Bluffs NWR Biologist Darrin Welchert, Dr. Mark Mills of Missouri Western State University, and Dr. Carissa Ganong of Missouri Western State University. Titles of the projects include Prairie Massasauga Mark Recapture Study, Prairie Massasauga Snake Fungal Disease Surveillance, and Crayfish Burrow Geospatial Distribution and Use.

These projects are all performed during the spring emergence of Prairie Massasaugas on Loess Bluffs NWR. Spring emergence at Loess Bluffs NWR takes place during late March and April. The low vegetation left from spring burn season makes conditions ideal to carry out projects that rely on visual surveillance such as these. Prairie Massasauga mark-recapture involves the direct handling and PIT-tagging of individuals. Size, health and demographics information is also recorded for each snake. Captured snakes are also examined for visual signs of Snake Fungal Disease. Swabs and tissue samples are taken from specimens exhibiting symptoms. Crayfish burrows are visually surveyed in areas where complementary Massasauga survey data of the same year is available. Burrows entrances were counted, not entire burrows. Physical dimensions and usage of burrow entrances were points of emphasis. Data for each of these studies is collected in the same areas, and large survey efforts were able to perform field work for all three projects simultaneously.

The Prairie Massasauga mark recapture and Snake Fungal Disease surveillance studies performed are important to evaluate the effectiveness and impacts of habitat management practices. For continued success in keeping these populations healthy, land managers must know parameters such as distribution, density, demographics, and disease distribution. As a future land manager, working on these projects has given me an arsenal of ways to describe populations and communities of animals to aid in their conservation. Studying Crayfish Burrow Geospatial Distribution and Use aims to draw correlations that can help understand habitat use by Massasaugas and other species during the most environmentally stressful times of the year when snakes retreat to these burrows. Helping with this project teaches the idea of managing for a keystone species in an ecosystem as a way to reach larger or multiple goals.



