

MDNR 2015 Research Project Progress Reports

Assessment of Deer Populations Following EHD Event - NO FURTHER MIC SUPPORT REQUESTED FOR 2016

This collaborative project with Michigan State University is evaluating the time required for local deer populations to recover from a major mortality event, and was initiated following Michigan's significant 2012 outbreak of Epizootic Hemorrhagic Disease (EHD). Two study sites are involved, one in proximity to an area with significant reports of EHD (Maple River) and an area of similar landscape composition around which no mortalities were detected (Cass River). Although the Maple River deer population size prior to the EHD outbreak was unknown, the time required for deer abundance at this site to approach that at the Cass River site will be used to infer the time required for population recovery.

Because sources of EHD outbreaks occur in proximity to wetlands and visibility of deer can also vary by habitat types, we estimated different detection functions and population estimates for 4 strata: 1 – disease impacted agricultural habitats (Maple River area), 2 - disease impacted riparian habitats (Maple River area), 3 - disease-free agricultural habitats (Cass River area), and 4 – disease-free riparian habitats (Cass River area). . Abundance estimates will continue for 2 more years (5 years total for Maple River, 4 years for Cass River) for population trend and dynamics analyses relative to local population recovery.

This year, we completed our third season of ground-based distance sampling in the Maple River study area and our second season of sampling in the Cass River study area. Six replicates for each of the four Cass River area transects were completed, eight replicates for transects 1 and 4 in the Maple River area were completed, and 10 replicates for transects 2 and 3 in the Maple River area were completed. These replicates are important to maintain high levels of precision and to ensure use of robust methods for estimating local deer abundance for our research. Volunteers were contacted from local hunting organizations, wildlife departments at state universities, and MDNR, and played a pivotal role in collection of data throughout the survey process.

Further, we have developed winter aerial surveys to evaluate our ground-based population estimates and compare our methods with another independent estimate of relative deer abundance. By using winter aerial surveys with a distance sampling approach, we will provide a baseline estimate of relative abundance post-harvest to compare to ground based distance sampling that occurs in the summer. This type of sampling effort will allow us to obtain precise estimates of deer abundance and population recovery in the study area over time while further evaluating sources of bias. Aerial surveys were conducted at Maple River in February 2014 and Cass River in February-March 2015. If weather conditions and DNR operational budgets allow, we will complete one additional aerial survey at each study site prior to project completion.

Partners: Lansing Chapter of Safari Club International, Safari Club International-MIC, and Michigan State University.

Time Line and Budget: This project was initiated in the spring of 2013 and is scheduled to continue through 2018. Total project costs exceed \$380,000 (including nearly \$135,000 of matching funds from Michigan State University and \$5,000 provided by Lansing Chapter of Safari Club International).