

**Bio:**

**Olivia** graduated from Purdue University with a degree in Wildlife in 2013 and held several field technician jobs before becoming a full-time DNR employee in 2015 as the Environmental Review Biologist. In 2016, she became Indiana DNR's Assistant Deer Biologist through which she contributes to the management of Indiana's wild white-tailed deer herd. A few of Olivia's duties include evaluating harvest data, surveying hunters and the public, conducting disease surveillance, and analyzing deer-vehicle collisions.

**Joe** earned his M.S. and Ph.D. from Utah State University in Wildlife Biology in 2000. Since then, Joe worked for USDA Wildlife Services in various locations, including 8 years in Indiana, addressing issues related to damage caused by deer and other wildlife species. In 2013, Joe left Indiana to teach and conduct research in the field of wildlife management at Murray State University. In 2016, Joe returned to Indiana as the State Deer Research Biologist where he conducts research into management of the state white-tailed deer herd.



**Abstract:**

The Indiana Department of Natural Resources, Division of Fish and Wildlife, Deer Research Program is responsible for managing the statewide deer population in Indiana. We manage for deer and the varying interest of Indiana's citizens by recommending harvest regulation changes; conducting disease surveillance; surveying hunters, landowners, and the general public; and addressing human-deer conflicts. Geographic Information Systems (GIS) software is an essential tool for accomplishing our management goals.

For example, part of the data set used in understanding deer populations is land use data to understand how deer habitats are distributed across the state and to create a basic habitat model to inform recommendations for bonus antlerless quotas in each county. Another commonly used data set is the locations of hunter-harvested deer used in monitoring the distribution of disease surveillance samples from throughout the state. This allows us to target under represented areas, as well as to target high risk areas that need additional surveillance. To address human-deer conflicts, we routinely use statewide deer-vehicle collision data obtained from the Indiana Department of Transportation (INDOT). We conducted hotspot analysis on the data to determine areas with collision rates higher than random chance. We then incorporated the results into determining new Deer Reduction Zones and Corridors across the state to address high collision rates.

The Deer Program has increased our use of GIS immensely over the last two years, but there is still huge potential to expand our knowledge through GIS analyses to better manage deer across the state. GIS provides the ability to guide future management strategies.