TITLE: Quantifying Individual and Population-Level Responses of Black Bears to Baiting in Michigan

MANAGEMENT NEED AND APPLICATION: Concentrations of anthropogenic foods such as garbage, agriculture crops, introduced fruit-bearing trees, and bait sites can attract numerous wildlife species, including black bears. Intentional food subsidies for wildlife such as baiting occur extensively and can have important effects on species behavior, space use, and demography. Being opportunistic omnivores, black bears readily use baits placed by hunters to attract both bear and white-tailed deer. In a portion of northern Wisconsin, bear and deer baits provided more than 40% of the assimilated diet of bears. Previous research has shown that supplemental feeding enhances the physiological condition of bears which in turn can improve reproductive performance. This finding suggests that the predictable and easily obtainable bait in northern Wisconsin was at least partially responsible for the high black bear densities observed in that area. There is also evidence that areas with increased abundance of bears accustomed to eating anthropogenic foods can experience increase human-bear conflicts. As intentional feeding has resulted in both positive and negative effects on bear populations, it is an important issue for our bear management program.

Baiting black bears for hunting is a long-standing tradition in Michigan and many other jurisdictions in North America. During the past several regulations cycles there has been persistent interest by some hunters to expand bear baiting opportunities. Hunters have also recently proposed using diversionary feeding to manage bear-human conflicts in place of] the traditional approach of managing conflicts by reducing bear numbers. In addition, a proposed ban on deer baiting in the LP, if implemented, has the potential to influence bear demographics and bear-human conflicts in this region.

The goal of this work is to understand the impact of intentional food subsidies, and potential changes in those subsidies, on UP and NLP bear populations and to develop management recommendations for our bear harvest and conflict management programs.

Understanding the contribution of bait to black bear diets and how it potentially contributes to reproduction is important as it relates to the species ecology, population trends, and harvestable surpluses relative to population goals. A second benefit is to understand the effects of the deer baiting ban in the LP in response to chronic wasting disease beginning in 2019 on black bear populations. If baiting is as beneficial to black bear populations in Michigan as suggested for Wisconsin, the ban on deer baiting could influence black bear populations in the LP. Understanding the magnitude of this effect is important for long-term population monitoring and harvest management of bears in this region. A third benefit is to understand dynamics in bear-human conflicts relative to baiting. The loss of a consistent and high-quality food source (deer bait) in the LP during late summer and fall when bears consume the most food, could result in an increase in bear-human conflicts as a consequence of bears seeking alternative foods. Understanding the cause and mechanisms of change in bear-human conflicts is important for management.

Although this project was identified as an important need by DNR-Wildlife Division, no new research projects were funded in FY2019 and 2020.

PARTNERS: MDNR and State University of New York College of Environmental Science and Forestry (SUNY ESF).

TIMELINE AND BUDGET: This research will span 5 fiscal years beginning FY19 at an estimated total cost of $416,300. No funds are requested from SCI-MIC for this project in FY2020.