

Department of Natural Resources SCI-MIC Supported Research Projects 2017 Progress Reports

American Woodcock Nesting Project

American woodcock (*Scolopax minor*) breeding populations have been undergoing a long-term decline since 1968 (Cooper and Rau 2012). Existing habitat models for breeding woodcock may fail to capture important processes underlying declines in reproductive rates. Better understanding the relation between habitat/landscape attributes and reproductive success would assist managers in targeting habitat treatments to improve woodcock reproductive success. During 2017, the following work by objective was conducted towards achieving the study outcomes:

Objective 1. Reproductive success - Estimate nesting density, nesting success and fledgling survival for woodcock in 2 distinct Michigan landscapes over a 3-year period.

The first season of fieldwork occurred during March - September 2017. During this period, we located 28 nests. We monitored 19 nests with trail cameras and six nests with temperature-sensing iButtons. We captured 71 birds; of these, we placed transmitters on and monitored survival of 44 (9 hens and 35 chicks). Work was conducted in nine Michigan counties that span our two regions of interest: Arenac, Clare, Gratiot, Grand Traverse, Mason, Montcalm, Osceola, Roscommon, and Wexford.

We added Ms. Ashley Huinker to the project as a M.S. student. She assisted with the first field season. We estimated survival for woodcock chicks using a Kaplan-Meier model with staggered entry in Program MARK.

Objective 2. Predator identification - Identify predators responsible for predation of woodcock nests and young.

We used trail cameras on 19 nests to identify nest predators. We obtained photos of white-tailed deer, turkeys, coyotes, raccoons, chipmunks, songbirds, a dog, a porcupine, an opossum, and a goshawk in the immediate vicinity of nests; however, no direct nest predation was observed. One nest was partially destroyed by a dog and the hen subsequently abandoned the nest. We also observed a raccoon take eggs from a nest that had already been abandoned by the hen. Thirteen birds (12 chicks and 1 hen) with transmitters died throughout the summer. Necropsies determined that predation was the cause of mortality for all of these birds. Avian predators were determined to have killed six of the chicks; the remaining six chicks and one hen were killed by mammalian predators. An additional two chicks without transmitters were also found dead by avian predation.

Objective 3. Linking reproductive rates to habitat - Link woodcock reproductive rates to vegetative and physical characteristics near nest sites and surrounding landscapes.

Preliminary habitat measurements were conducted around 12 nest sites. These measurements included distance to the nearest clearing, type of nearest clearing, distance to nearest tree or shrub, species of nearest tree or shrub, and basal area at the nest site. We calculated preliminary landscape metrics (300m radius) around each nest using ArcGIS. We are in the process of evaluating the degree to which those landscapes differ from the surrounding landscape.

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Objective 4. Management recommendations - Make recommendations on landscape-dependent habitat management practices that efficiently target improvement in woodcock reproductive rates.

Graduate student, Allie Shoffner, presented preliminary findings in a talk titled “American Woodcock Reproductive Rates in Relation to Forest Structure at Local and Landscape Scales” at the annual meeting of The Wildlife Society in Albuquerque, New Mexico.

Partners: Safari Club International-MIC, Michigan State University. Timeframe and budget:

Time Line and Budget: This project started in 2016 and is scheduled to run through 2020. Total project cost is \$490,000.
