

Department of Natural Resources

SCI-MIC Supported Research Projects

2016 Progress Reports

American Woodcock Nesting Research

American woodcock breeding population indices in Michigan, the Central Management Unit, and range-wide suggest a long-term decline in woodcock abundance since 1968. Management responses to declining woodcock abundance included restricting harvest opportunities (i.e., reduce season lengths and daily limits) and promoting habitat management to increase early successional forests that benefit woodcock and other wildlife species associated with these habitats (e.g., ruffed grouse and golden-winged warbler). Although many biologists believe that loss of breeding habitat quality and quantity was responsible for woodcock population declines, there are many uncertainties that may affect woodcock management efficiency and effectiveness; at a continental scale, there is need to “improve understanding of migration, breeding, and wintering habitat quality for American woodcock”. Existing habitat models for breeding woodcock rely on correlates between presence/absence or abundance of animals on the landscape and these models may fail to capture important processes underlying declines in reproductive rates. We believe that the highest priority information needed to improve management of woodcock in the Great Lakes Region is better understanding the relation between woodcock breeding habitat characteristics and 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.

Available demographic information for woodcock supports the idea that declines in reproductive rates associated with changes in landscape-scale habitat characteristics have contributed to declining woodcock abundance. MDNR’s volunteer woodcock banding program has provided long-term estimates of woodcock survival with adult and juvenile survival being relatively stable while woodcock abundance was declining. Woodcock wings from a sample of hunters have been collected by the U.S. Fish and Wildlife Service (USFWS) since 1963 and an index to reproductive success derived from this sample (juveniles per adult females) suggest long-term decline in harvest age ratios. However, the relations between harvest age ratios and more direct measures of reproductive success (e.g., nesting success and brood survival) have not been tested. Woodcock nest early in spring and survival of nests have generally been high (43-67% nest success) and although survival of nests and young can be affected by weather, most nest losses result from predation. The degree to which predation rates and nesting success have changed and are tied to landscape characteristics is relatively unstudied; however, changes in landscape-scale habitat characteristics on breeding areas appear to have affected woodcock demographics as woodcock population trajectories varied among broad ecosystem types (i.e., bird conservation regions: BCR’s) with relative population stability in the Boreal Hardwood Transition compared to declines in the Prairie Hardwood Transition and other ecosystems.

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OBJECTIVES

- Estimate nesting density, nesting success and fledgling survival for woodcock in 2 distinct Michigan landscapes over a 3-year period.
- Identify predators responsible for predation of woodcock nests and young.
- Link woodcock reproductive rates to vegetative and physical characteristics near nest sites and surrounding landscapes
- Make recommendations on landscape-dependent habitat management practices that efficiently target improvement in woodcock reproductive rates.

This project was initiated in the spring of 2015, but field work was delayed a year. A graduate student (Allie Shoffner) has been hired. Allie is in the process of conducting literature reviews and designing field work that will begin this spring (2017). The project is now scheduled to continue through 2019.

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

Time Line and Budget: This project was initiated in the spring of 2015 and is scheduled to continue through 2019. Total project costs will exceed \$489,000 (including over \$170,000 in matching funds from Michigan State University).