



## Patuxent Wildlife Research Center Science Brief for Resource Managers

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## Phylogeography and Mating System of American woodcock (*Scolopax minor*)

### Description:

Phylogeography is the study of the geographic distribution of genetic lineages. Phylogeographic studies of several species of birds, including shorebirds, have found population structure in some species but not in others. The American Woodcock (*Scolopax minor*) is an unusual shorebird that inhabits early successional forests and fields rather than the shore. Woodcock are a popular game species and are distributed throughout the eastern United States and Canada. Based on band recovery information, woodcock use two relatively distinct migration routes between breeding and wintering areas and are managed as separate populations. An understanding of where specific breeding populations migrate and overwinter may help identify factors affecting their annual survival. Banding of individuals has provided some data on individual movements and migration routes, but normally on a small fraction of marked birds is recovered. If birds are highly phylopatric, identification of population-specific molecular markers can provide an alternative to large-scale population monitoring and these data can have important implications for determining biologically significant management units.

### Progress to Date:

Field and lab work have been completed. DNA was isolated from feathers or muscle tissues of wings from birds shot near breeding areas throughout the geographical range of the species and from wintering areas in Georgia and Louisiana. Sequences from the mitochondrial DNA control region were compared among populations. All territorial males and as many females as possible within a small region of industrial forest were captured with mist nets on arrival in spring. Birds were individually marked with color bands and behavioral observations made of displaying males and their interactions with females and other males. The number of female visiting

signing territories and copulating with territorial males was recorded. Later in the season, females and their broods in the vicinity of focal males were located with a trained dog and captured by hand. Small blood samples were taken from the brachial vein of all birds captured. A Master of Science thesis has been submitted by Ms. Heather Ziel and accepted by the Graduate School of University of Maine, Orono. We are preparing 2 manuscripts for submission for peer review in professional journals.

### Management Implications

If woodcock can be separated geographically using DNA analyses into two populations then states and provinces can determine the affiliation and origin of their birds and manage accordingly.

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