Annual Report: Connecticut River Pilot - Modeling Migratory Landbird Stopover Habitat Using Nanotags

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Project Name: Connecticut River Pilot - Modeling Migratory Landbird Stopover Habitat Using Nanotags

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Project Location: Hampshire Co. MA, Franklin Co. MA, Windham Co. VT, Cheshire Co. NH.

Project Goal:

> This project will identify, document and model important habitat in the Connecticut River Watershed (CRW) as part of a broader Conservation Design Pilot Project led by the NALCC. This project uses an SHC approach to: 1) Collaboratively prioritize places, strategies and actions to conserve ecosystems, fish, wildlife and plants within the CRW; and 2) Establish a process for landscape scale conservation design that can be applied elsewhere in the region. Nanotag technology allows for bird (surrogate species) recapture rates of over 90 percent. Capture and tagging 75 birds per season, over two consecutive years will allow for modeling of surrogate species movement and residence time in the CRW.

Expected Conservation Outcome of the Project:

> Develop, document and report on a suite of surrogate species in the Connecticut River Watershed (CRW) to assess the importance of migratory landbird stopover habitat within the watershed and on Silvio O. Conte NFWR. This will be accomplished by evaluating movement and residence times of selected surrogate species tagged with NanoTag transmitters and tracked with stationary telemetry receivers. Principal investigators and USFWS collaborators will use project results to develop a predictive statistical model that identifies important migratory bird stopover habitat for a suite of surrogate species within the CRW, and informs management at Silvio O. Conte NFWR. .

Project Measureable Objectives (Year 1):

> How are objectives measured: Objectives will be measured in terms of the completion of field activities required to collect data needed to generate estimates of bird stopover and movement metrics. These will include number of receivers deployed, number of birds tagged and tracked with nanotags, and the number of locations.

Project Measureable Objectives (Long -term)

How are objectives measured: Long-term objectives will be measured in terms of generation of estimates for bird stopover and movement metrics needed to characterize the quality of habitat within the study area for migrant birds. These estimates will include body condition, stopover duration, departure date, flight speed and orientation.

Assessment of <u>Short-term</u> Performance (Year 1):

- o 70 – 79% conservation objective achieved

Assessment of <u>Long-term</u> Performance this year:

- o Less than 70% conservation objective achieved

Project Status:

We have deployed nine telemetry receivers on promontories and fire towers between the Fort River unit of the Conte NWR and southern Vermont. Receivers were deployed along each side of the Connecticut River Valley at distance intervals corresponding to minimum anticipated detection distances, based on the use of this technology in the Gulf of Maine.

Ten mistnets were operated at the Fort River unit of the Conte NWR during May – June and September – October, 2015. We captured 1,264 birds and fitted 84 birds of 11 species with Nano Tags. Species fitted with Nano Tags included Surrogate Species and other species of conservation interest that were known to not breed at the banding site, as well as several individual species that were included because their physiological state (body fat) indicated they were transients and not breeding at the site.

Additional support for supplementary surveys was furnished by Regional I&M. Using these funds we surveyed 102 sample points with point counts at 11 sites within the study area between late April through May, with points equally distributed among forest, forest edge and shrubland. The sites selected were essentially an exhaustive list of those within the study area that encompassed all three target habitats. An effort was made to include a representative selection of types of shrubland present regionally, and sites along a gradient of distances to the Connecticut River. We detected 4,389 individuals of 121 bird species during the point count surveys.

Data from datasheets have been entered into a digital format where applicable and preliminary analyses have been undertaken on species composition of bird captures, estimates for stopover duration, and orientation both within our array of receivers, as well as across the broader Motus system (http://motus-wts.org/) containing data from other nanotag projects in Canada and the U.S. These preliminary results provide initial indications of the value of habitats within the study area as well as its importance as a corridor for migrating birds.