

## **Annual Report: Natural Resource Program Center Funded Projects**

### **Fiscal Year Project First Funded: 2013**

#### **Project Name:**

Bird communities of coniferous forests in the Acadian region: their responses to management and habitat associations

#### **Project Manager/Primary Contact:**

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#### **Project Location:**

University of Maine, Orono, Maine 04469; Study site locations are in Northeastern Vermont, Northern New Hampshire, Eastern and Northern Maine.

#### **Project Goal:**

The goal of the project is to examine effects of forest harvest practices used in northern coniferous-dominated and mixed coniferous/deciduous stands across the Northern Forest region on diversity and abundance of the bird community, with an emphasis on selected species of conservation interest. The study will quantify bird communities in manipulated stands compared to reference stands and within the larger landscape context.

#### **Expected Conservation Outcome of the Project:**

The Northern Forest (Eastern Spruce –Hardwood Forest physiographic area) supports numerous USFWS avian species of high conservation concern including bay-breasted warbler, Cape May warbler, blackburnian warbler, Canada warbler and rusty blackbird, as well as, LCC representative species ( blackburnian warbler, blackpoll warbler, northern waterthrush, chestnut-sided warbler, wood thrush and ovenbird). The study will relate avian diversity and abundance to stand vegetation structure and composition in forests that have been harvested with a range of intensities along a temporal gradient within multiple landscapes across the Northern Forest region. These relationships will inform efforts to assess regional habitat capacity for forest birds in the Northern Forest region and will inform descriptions of suitable forest conditions for sustaining priority species at desired population levels. It will also assess the role that refuges in the Northern Forest region can play in providing habitat for priority forest birds and serve as demonstration areas for forest management practices that benefit these species.

#### **Project Measureable Objectives (Year 1):**

1. Inventory bird communities in 110 forest stands in Maine, New Hampshire, and Vermont

**Project Measureable Objectives (Long -term):**

1. Relate avian diversity and abundance to stand quality (indicated by stand vegetation structure and composition) in forests that have been harvested with a range of intensities along a temporal gradient within multiple landscapes across the Northern Forest region. These relationships will inform efforts to assess regional habitat capacity for forest birds in the Northern Forest region and will inform descriptions of suitable forest conditions for sustaining priority species at desired population levels.
2. Quantify relationship between avian community composition and forest harvest pattern in the landscape. These relationships will inform efforts to assess regional habitat capacity for forest birds in the Northern Forest region based on landscape-level habitat components and patterns.
3. Examine trends in regional and national surveys of USFWS priority bird species and relationships observed between avian species and forest conditions documented during this study to assess the degree to which forest conditions might be limiting habitat availability for these birds.
4. Assess the role that refuges in the Northern Forest region can play in providing habitat for priority forest birds and serve as demonstration areas for forest management practices that benefit these species.

**Assessment of Short-term Performance (Year 1):**

- 90% or more conservation objective achieved

**Assessment of Long-term Performance this year:**

- Less than 70% conservation objective achieved – This is a multi-year project with long term objective successes expected in 2016

**Project Status:**

Sites were located within the Acadian Forest Region. Survey points were established in the North Maine Woods (Clayton Lake and Telos), Baxter State Park, and four National Wildlife Refuges (Nulhegan Basin Division of Silvio Conte NWR, Umbagog NWR, Moosehorn NWR, and Aroostook NWR). We surveyed 110 forest stands with approximately 3 to 8 survey locations per stand for a total of 610 sampling points. For each stand, we included one hard edge and one soft edge survey point along with as many core points as could be independently distributed within a stand (typically 3-8 points). We used >1800 standardized point count surveys to count all bird species during the breeding season from 1 June to 1 August. We navigated to preselected locations, and counted the number of individuals of each bird species that were audibly and visually detected for 10 minutes. We returned to each location for a total of three repeated surveys.

**Final Report Summary (when applicable):**

No final report. Final report scheduled for 2016. Annual report results include:

Across all study areas, we recorded 19,431 detections of 123 species. In addition to birds, we recorded detections of Red Squirrel (*Tamiasciurus hudsonicus*), because they are known nest predators of many passerines in New England.