



## Effects of forest management practices in the Acadian northern forest region on forest bird communities, with emphasis on species of regional conservation priority and concern

1. Quantify and define the composition and forest associations of coniferous bird communities in several silvicultural treatments including: regenerating, mature, overstory removal, precommercially thinned, selection, and shelterwood harvest.
2. Model the influences of silvicultural practices and vegetative attributes on coniferous forest bird communities.
3. Model factors influencing the abundance, occupancy, and distribution of focal species. This analysis will take a multi-scale approach and use both USGS Breeding Bird Surveys along with surveys that will be conducted 2013-2015.

To test for effects from forestry on bird densities, we conducted multi-species point count surveys in 2013 through 2015 during the breeding season of most passerine species (June through August) in the silvicultural treatments listed above. Our surveys recorded the number of birds present for each species along with variables that may influence their probabilities of detection. We measured vegetation at each survey location in 2014. Stand attributes will be used to assess habitat selection on focal species and communities. Additionally, we surveyed Bay-breasted Warbler reproductive success and spruce budworm adult moths (prey) in 2015. These data will be supplemented with USGS Breeding Bird Survey data to address large-scale questions, temporal trends, and the influence of budworm outbreaks. We will model habitat selection by birds to make inference about their responses to silvicultural management. We thank the U.S.F.W.S. Migratory Bird Division; U.S.F.W.S. National Wildlife Refuge System; UMaine Cooperative Forestry Research Unit; UMaine Department of Wildlife, Fisheries, and Conservation Biology; Maine Cooperative Fish and Wildlife Research Unit; and Baxter State Park for access to sites, project support, and funding.

We established sampling protocols for birds and vegetation and collected multi-species bird data at five areas throughout the Acadian forest region: Nulhegan NWR (VT), Umbagog NWR (NH), North Maine Woods (ME), Baxter State Park (ME), Aroostook NWR (ME), and Moosehorn NWR (ME) using standardized point count surveys. A total of 6,163 bird surveys were conducted during the summer of 2013, 2014, and 2015, and 65,760 detections of birds were collected during surveys at 657 point count locations within 117 forest stands. Vegetation surveys were completed at all sites during 2014. Reproductive success and eastern spruce budworm data were collected in 2015. All field data collection was completed in 2015. Statistical analysis and reporting of results are underway, with project completion anticipated in mid 2018.

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