

Refuges - Division of Natural Resources

Regional Project Updates

January 2014

Northern Forest Bird Management

A three-year study was initiated in 2013 to evaluate effects of a broad array of forest management practices on bird communities of the northern coniferous forest. This evaluation will reveal which forest management approaches support intact and productive avian communities, with special emphasis on priority species. This study builds on previous research conducted on northern Maine forest sites.

- Bird communities were surveyed in 110 forest stands.
- > 1800 standardized point counts were conducted from June 1 to August 1, resulting in 19,431 detections.
- Results will inform landscape conservation planning efforts, such as the Designing Sustainable Landscapes project of the North Atlantic LCC
- Cooperators: USFWS-Migratory Birds, University of Maine, and USGS Coop. Fish & Wildlife Unit - ME and WV

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Fall Migratory Landbird Stopover Sites

The migration period is thought to be the most vulnerable time during the annual life cycle of neotropical migrant landbirds. This project updates and expands previous work by using radar weather data along with field surveys of birds and habitats to identify important migratory bird stopover sites during fall in the Northeast.

- Assesses habitat use in relation to food abundance, habitat and landscape features.
- Improves radar-based predictive models with better explanatory variables and ground surveys to validate model predictions.
- Project webpage: <http://www.northatlanticlcc.org/projects/bird-radar-group>
- Cooperators: North Atlantic LCC, Migratory Birds; MD Dept. of Nat. Res.; VA Dept. of Env, Quality; Univ. of DE; Old Dominion Univ.; USGS, NASA, and The Nature Conservancy.

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Tracking Migratory Songbirds in the Gulf of Maine

Bird migration is heavily concentrated in the Gulf of Maine, and National Wildlife Refuges in this region provide critical stopover resources for migratory songbirds. Understanding how migratory passerine populations are using these areas is critical for effectively managing stopover habitats, and for guiding responsible development (e.g., offshore wind turbines). Radiotelemetry is being used to investigate songbird migratory movements.

- Tagged 60 red-eyed vireos and 23 blackpoll warblers with Nano Tag transmitters.
- Deployed automated receiving towers at 13 sites, including ME Coastal Islands, Parker River and Rachel Carson NWRs.
- 1.5 million detections of the tagged birds through end of October 2013; all tagged birds but one were detected at least once.
- Cooperators: Univ. of MA-Amherst, US Forest Service, ME Dept. of Inland Fisheries and Wildlife, Stantec, Univ. of ME, Acadia Univ. and Mt. Allison Univ.

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Phragmites Adaptive Management Study

Control of Phragmites has been costly and reaped mixed results. An adaptive management framework will be developed by December 2014 to address this issue, and will include a set of spatial predictive models, a field monitoring design, database and web-based data entry platform, and software to evaluate decision alternatives and deliver management recommendations.

- Developing two tools for prioritizing patches for treatment: 1) an approach that uses relevant environmental factors related to probability of spread; and 2) a rapid assessment method when GIS layers are unavailable.
- The models will also assist managers with determining the most effective treatments.
- Baseline Phragmites stand conditions will be assessed at pilot refuges in 2014.
- Working with a contractor (Dewberry) to develop and pilot test a remote-sensing method for mapping Phragmites.
- Cooperators: Univ. of GA Coop. Res. Unit; Chicago Botanic Garden, R3 Refuges; Cornell University; Smithsonian Env. Res. Center

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Photo credit: Matt Poole



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Coastal Impoundment Management

Managing coastal freshwater impoundments in light of budget constraints and long-term resilience presents refuges with a unique and complex problem. Effective and cost efficient management may be the overall goal, but competing refuge objectives and management actions must be accounted for concurrently. We are designing a simulation model to predict future utility of management decisions using past and current monitoring for refuge-specific objectives.

- Decision support models will incorporate current Phragmites monitoring efforts, waterfowl movement and resource use, water level options, and other refuge-specific considerations.
- Models use an interactive mapping interface for easy visualization.
- Cooperators: National Wildlife Federation, Conservation Management Institute, Princeton Hydro, New Jersey Audubon.

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Vernal Pool Monitoring

Eleven National Wildlife Refuges in the Northeast have been monitoring approximately 600 vernal pools for spotted salamanders and wood frogs since 2002 as part of a larger USGS study to assess occupancy of vernal pools by amphibians. Dr. Evan Grant of the Patuxent Wildlife Research Center is leading this study in the Northeast, and is expanding the work to examine the affects of multiple stressors on occupancy, including disease (chytrid fungus and ranavirus), hydroperiod, and contaminants.

- An analysis of Amphibian Research & Monitoring Initiative (ARMI) monitoring data found declining trends in amphibian occupancy and underscores the importance of continued long-term monitoring.
- Two manuscripts from this work are in revision, one investigating patterns of amphibian occupancy across the region, and the other relating occupancy dynamics with characteristics of vernal pools and with climatic variables.
- Cooperators: USGS-ARMI, National Park Service

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