Charting the Future for Northern Forest Birds

Workshop Proceedings

April 17–18, 2018

Ashland, Wisconsin

Boreal forest habitat characterized by balsam fir, white spruce, and scattered white pine. Isle Royale National Park, Michigan. PHOTO BY NPS / TED GOSTOMSKI

ON THE COVERS
Front: Black-and-white Warbler. Photo by Scott Giese.
Back: Nashville Warbler. Photo by Amado Demesa / Wikimedia Commons.

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Contents

Thank you to everyone who attended this workshop and contributed their thoughtful ideas about forest bird conservation in the boreal hardwood transition zone. We appreciate our workshop speakers, who presented on a variety of forest bird-related topics that ultimately helped carve out insightful discussions, including the following people (listed alphabetically): Nick Anich, Callie Bertsch, Randy Dettmers, Greg Edge, Andrew Forbes, Bob Howe, Mike Mossman, Colleen Matula, Mark Nelson, Andrew O'Krueg, and Nick Walton. Michelle Copley of the West Wisconsin Land Trust provided tremendous logistical support for this workshop, including running registration, maintaining overall communication, printing, and managing money, for which we are grateful. We appreciate former Northern Forest Birds Working Group Steering Committee members and others who have provided exceptional leadership in carrying this Working Group forward through the years, as well as their insightful ideas and discussions, including the following people: Dave Grosshuesch, Bob Howe, Rachael Pierce, Tom Will, Leakhena Au, Tina Hall, Andrew Forbes, and Mary Maj.

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Bird conservation in the northern forests of Michigan, Minnesota, and Wisconsin has received increasing attention in the last decade. Since 2013, the Northern Forest Birds Working Group has made steady progress towards identifying a shared vision, translating that vision into clear goals, engaging a robust network of partners, and expanding its focus from coordinating monitoring and data management to also integrating science-based needs of forest birds in management activities across the landscape. In addition to expanding our focus, the Working Group has also transitioned from operating within the Midwest Coordinated Bird Monitoring Partnership to serving as a working group within the Upper Mississippi River and Great Lakes Region Joint Venture community. In light of these transitions, the Working Group Steering Committee organized this workshop to achieve the following objectives: 1) re-engage and provide updates to the broader Working Group community, 2) kick-start several projects, and 3) provide training on the Midwest Avian Data Center. Over 50 participants representing 20 organizations, plus a few interested individuals traveled to Ashland, Wisconsin (in spite of a record snowstorm!) for this two-day event.

The opening plenary session oriented participants to the history of the Northern Forest Birds Working Group, provided an introduction to the Upper Mississippi River and Great Lakes Region Joint Venture, and presented the Avian Conservation Assessment Database, a cutting edge tool that highlights the greatest needs for collaborative solutions that advance the conservation of northern forest birds. The plenary was followed by in-depth presentations and discussions led by bird scientists to gather feedback and increase participation on two projects focused on boreal birds and evaluating species' sensitivity to landscape and forest management activities. The final session on Day One initiated a conversation around integrating bird conservation objectives within forest management activities. A team of forestry professionals provided a synthesis of the status and trends of forest habitat types within the region; an overview of silvicultural practices commonly applied to our forests; a case study of applying tools to achieve landscape scale objectives within a pine barrens ecosystem; and descriptions of forest bird communities and conservation initiatives in old growth, managed old growth, and young forest conditions.

The following morning's session featured demonstrations of cutting-edge web tools that can help practitioners put data to work for forest bird conservation: eBird, Breeding Bird Atlases, North American Breeding Bird Survey, and Midwest Avian Data Center. The Working Group's Steering Committee then facilitated an in-depth discussion, synthesizing the main points and key questions from the workshop; finding agreement on the topics most ripe for coordinated action; describing products or tools that could help deliver and integrate bird information into decision processes; and strengthening our network through enhanced communication and networking.

Our northern forests provide important nesting and migratory habitat for a diverse assemblage of birds. Populations of many forest birds in this region are stable, while others show steady to alarming declines. We have the unique opportunity to come together, ensure our forests remain on the landscape, and continue to improve habitat quality for diverse assemblages of bird species. This workshop allowed us to take a solid step towards that desired future!

Katie Koch and
Erin Gnass Giese
Co-Chairs, Northern Forest Birds Working Group

Scarlet Tanager. PHOTO BY SCOTT GIESE

Vision and Goals of the Northern Forest Birds Working Group

Our coordinated leadership in monitoring, research, and management actions ensures thriving, diverse northern forest bird communities across Bird Conservation Region (BCR) 12. We actively share information, coordinate and collaborate, use the best available science, and inform/evaluate management practices for northern forest birds.

Workshop Objectives

1. Re-engage the broader Northern Forest Birds (BCR 12) Working Group (WG) community and provide updates from the BCR 12 WG Steering Committee.

2. Kick start several BCR 12-related projects.

3. Train workshop participants on how to use the Midwest Avian Data Center.
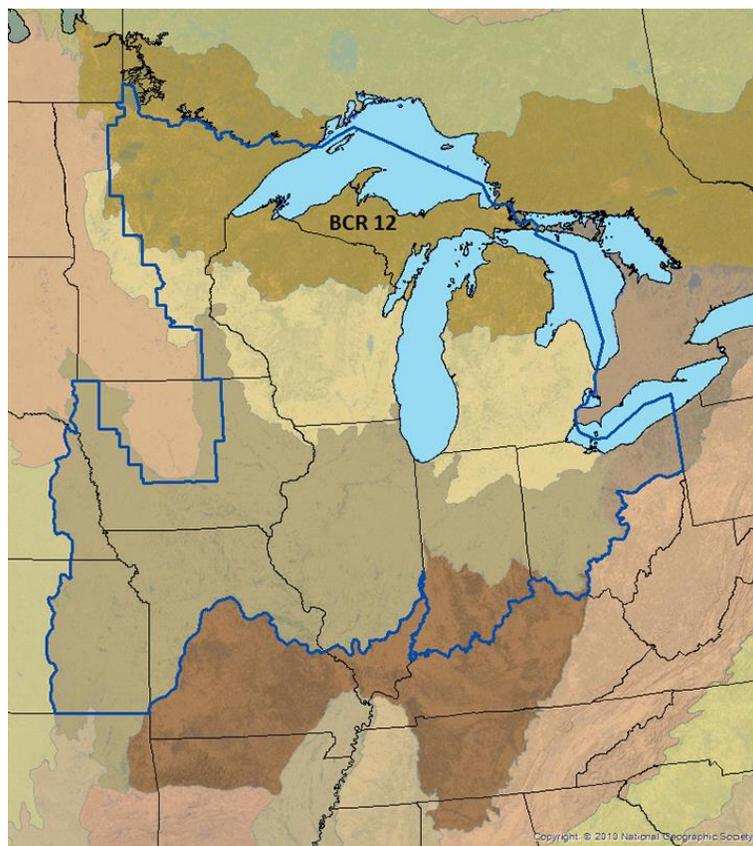
BCR 12 (the Boreal Hardwood Transition Zone) within the boundaries of the Upper Mississippi River-Great Lakes Region Joint Venture (indicated by blue line).

Day One

10:00 a.m. – 10:15 a.m.: **Check-in + Registration**

10:15 a.m. – 10:30 a.m.: **Welcome + Introductions**

10:30 a.m. – 12:00 p.m.: **Plenary Session**

- *Overview, History, and Update on BCR 12 Working Group*

- *Mission of and Integration with the Upper Mississippi River-Great Lakes Region (UMRGLR) Joint Venture*

- *Avian Conservation Assessment Database (ACAD): A Tool for Bird Conservation and Highlighting Needs for Collaborative Investigation*

12:00 p.m. – 12:15 p.m.: **BREAK** – distribute lunches

12:15 p.m. – 12:45 p.m.: **Collaborative Study of Boreal Birds Throughout BCR 12**
This session will provide an overview of a new study in Wisconsin to estimate populations of lesser-known boreal birds and investigate how landscape and climate modifications may affect them. Similar efforts in Minnesota and Michigan will be discussed, as well as the potential to expand the Wisconsin study throughout BCR 12.

12:45 p.m. – 1:15 p.m.: **Identifying Sensitive Species in BCR 12**
This session will introduce a new analysis that evaluates bird species' sensitivities to landscape activities and forest management activities. Participants will be asked to provide input on the proposed model, identify additional variables to consider, and list potential data sources to contact for a more robust, BCR 12-scale analysis.

1:15 p.m. – 4:30 p.m.: **Integrating Active Forest Management and Bird Conservation**
This session will provide a broad overview of the state of forestry within BCR 12. An FIA-based (Forest Inventory and Analysis Program of the U.S. Forest Service) synthesis of regional forest types will be followed by a summary of silvicultural practices by forest type. It will conclude with several case studies exemplifying successful integration of landscape scale bird conservation objectives with stand-level forest management.

4:30 p.m. – 5:00 p.m.: **BREAK**

5:00 p.m. – 6:00 p.m.: **Evening Social + Poster Session**

History, Overview, and Update on BCR 12 Working Group

Katie Koch, U.S. Fish and Wildlife Service, Migratory Bird Program
Erin Giese, University of Wisconsin–Green Bay, Cofrin Center for Biodiversity

Katie Koch talks about the relevance of this workshop in the broader context of the Northern Forest Birds Working Group. PHOTO BY ERIN GIESE / UNIVERSITY OF WISCONSIN-GREEN BAY

Slides from each of the following presentations are available for download at www.wisconsinbirds.org/northern-forest-birds/. Summary notes below were taken by E. Giese, T. Gostomski, and R. Brady.

History

- 2009: BCR 12 Strategic Plan published.

- 2011, 2012: U.S. Forest Service hosts meetings in Michigan, Wisconsin, and Minnesota to evaluate bird monitoring and management objectives.

- 2013: Scoping Document and initial Vision Statement created for BCR 12 Working Group.

- 2013–2014: Survey taken of monitoring programs going on in the BCR. Webinar held in 2014 to share survey results.

- March 2015: First BCR 12 Working Group workshop held in Marquette, Michigan. Identified priorities for coordinated projects and a need for focused leadership.

- Fall of 2015: Steering Committee meeting to come up with goals for the group.

- May 2016: Coordinated Bird Monitoring group began to function like Joint Venture but was disconnected from those efforts. Proposed merger with Joint Venture.

- Scanned all the regional bird conservation plans, at all scales, and reviewed northern forest bird information in the ACAD (Avian Conservation Assessment Database).

- Beginning in 2018, this group will reside under the Upper Mississippi River-Great Lakes Region Joint Venture (UMRGLR JV). Looking to take the information we have gathered and put it into projects and concrete actions.

Vision for BCR 12 Working Group

Four Goal Statements:

1. Northern forest bird conservation and research organizations **actively share information** about the biology, ecology, and status of northern forest birds.

2. Northern forest bird conservation organizations **coordinate and collaborate** to ensure that the conservation needs of northern forest birds are addressed.

3. The **best available science is used** to assess the status and productivity of northern forest birds.

4. Monitoring and research data are used to **inform and evaluate management practices**, which are used to deliver conservation actions that benefit northern forest birds

Putting This Workshop Into Context

- We are moving from planning to implementation.

- We are launching collaborative monitoring projects.

- We are building an effective network for northern forest bird conservation.

Gray Jay. Photo by NPS / Kent Miller

Mission of and Integration with the Upper Mississippi River and Great Lakes Region Joint Venture (UMRGLR JV)

Andrew Forbes, U.S. Fish and Wildlife Service, Migratory Bird Program

PHOTO BY ERIN GIESE

Background

- Established in 1986 (product of North American Waterfowl Management Plan). There were originally eight Joint Ventures (JV), centered on key waterfowl geographies. U.S. Fish and Wildlife Service (USFWS) funds administration of JV partnerships.

- Started with waterfowl, then national strategies developed for waterbirds, shorebirds, and landbirds. Rather than build new JVs, the focus expanded to include conservation of priority species from all guilds — "All-Bird JV."

- JVs are partnerships of organizations interested in bird conservation at regional scales. Administered by management board. Provide assistance in coordination, planning, implementation, outreach, and research/monitoring.

- UMRGLR JV established in 1993. Encompass parts of BCRs 12, 23, 22, and 24. Management Board members from 10 state agencies (just added NPS), six federal agencies, and five NGOs. Four staff (two in Bloomington, Minnesota, and two in East Lansing, Michigan).

What the JV Does

- Assist with North American Wetland Conservation Act (NAWCA) proposals and other projects.

- Work with partners to identify shared research/monitoring and protection/restoration priorities and objectives.

- Administer two grant programs—Great Lakes Restoration Initiative-JV and JV Science. Develop decision support tools.

- JV Science Team—waterfowl, waterbird, shorebird, and landbird groups. Technical committee.

Tools

- State-by-BCR Assessments—Stepped-down lists of JV focal species, assessments of land cover changes, population and habitat objectives, and management implications at a more local scale.

- JV implementation plans and habitat conservation strategies.

- Habitat Decision Support Models.

- Priority bird species—breeding (Kirtland's Warbler, Golden-winged Warbler, Henslow's Sparrow, Red-headed Woodpecker, and Black-billed Cuckoo) and nonbreeding (Short-eared Owl, Northern Shrike, Rusty Blackbird).

What's Next?

- Work with the JV Management Board and conservation partners to step-down Waterfowl and Waterbird Habitat Conservation Strategies (HCS) in Wisconsin and Ohio.

- Use habitat conservation strategies to inform decision-making process for grant ranking (e.g., NAWCA).

- Think ahead to updating JV decision support tools.

- Reach out to conservation community to find out what needs are and to develop tools based on feedback and Board input.

- Keep communication open. Make requests for information from JV the start of a conversation.

Northern hardwood forest. North Manitou Island, Sleeping Bear Dunes National Lakeshore, Michigan.
PHOTO BY NPS / TED GOSTOMSKI

Avian Conservation Assessment Database (ACAD): A Tool for Bird Conservation and Highlighting Needs for Collaborative Investigation

Randy Dettmers, U.S. Fish and Wildlife Service, Northeast Region

Background

- Data for standardized status assessments.

- All birds, Canada to Panama.

- Global and regional scale assessments.

- Updated regularly (data-driven plus expert input).

- Peer-reviewed methods.

- Structure and framework for tracking additional conservation-related data (e.g., population estimates, objectives).

Assessment Factors

- Six vulnerability measures—Population Size, Breeding Distribution, Non-breeding Distribution, Threats to Breeding, Threats to Non-breeding, and Population Trend.

- Two area importance measures (for BCRs/regions) — Relative Density and Percent of Population.

- All factors scored on same basic scale of vulnerability: 1 (low) to 5 (high).

- Use these scores to identify priority species for conservation (continental and regional levels).

- Where to find: http://pif.birdconservancy.org/ACAD/

Status

- Currently covers 719 species in Canada and the United States.

- Covers 1,049 species in Mexico and 1,155 species in Central America.

- Global assessments updated 2016/2017.

- Regional breeding assessments under review 2017/2018.

- Regional non-breeding score review planned for 2018/2019.

Opportunities for Collaboration with Northeastern Forest Partners

- Shared priority species: Evening Grosbeak, Cape May Warbler, Canada Warbler, Bay-breasted Warbler, Blue-winged Warbler, Least Flycatcher, and Black-billed Cuckoo.

- Effects of forest management on birds of concern.

- Filling information gaps — threats, limiting factors for aerial insectivores, owls, Least Flycatcher, Blue-winged Warbler; population trends and relative density: Spruce Grouse, owls.

Collaborative Study of Boreal Birds Throughout BCR 12

Erin Giese, University of Wisconsin–Green Bay, Cofrin Center for Biodiversity

Project is led by staff at UW-Green Bay (Erin Giese, Amy Wolf, and Bob Howe), the Wisconsin Chapter of The Nature Conservancy (Mike Grimm and Nick Miller), and the U.S. Forest Service (Nicole Shutt and Linda Parker).

Objectives

- Track breeding populations of target boreal bird species in Wisconsin (and hopefully BCR 12).

- Identify boreal bird hotspots.

- Investigate how landscape modifications, climate change, and other factors affect them.

How is Wisconsin Breeding Bird Atlas II Being Incorporated Into This Project?

WBBA II includes point counts using Knutson et al. protocol[1], but these are located along roads (not necessarily in the interior habitat). Atlasers may pick up boreal species incidentally.

Boreal Bird Survey Experiences (Nick Anich and Brian Bogaczyk)

- Nick suggested early spring surveys track peak breeding/calling for Gray Jay and Spruce Grouse.

  - Erin's study site is a good location for Boreal Chickadee surveys.

  - Supports adding Ruby-crowned Kinglet as another focal species.

  - Black-backed Woodpeckers are unpredictable in terms of detectability (Nick used silent and playback).

  - Make the effort to get out in the habitat, use multiple sampling events, and be ready to deal with low detectability for most species.

  - Be clear on objectives (estimating populations vs. trends).

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[1] Knutson, M.G., N.P. Danz, T.W. Sutherland, and B.R. Gray. 2008. Landbird monitoring protocol for the U.S. Fish and Wildlife Service, Midwest and Northeast Regions, version 1. Biological Monitoring Team Technical Report BMT2008-01. U.S. Fish and Wildlife Service, La Crosse, Wisconsin. Available at: http://ecos.fws.gov/ServCatFiles/Reference/Holding/15132.

- Brian interested in collaborating with Erin on her project. Could look through historical data to select study sites. Would be willing to use Erin's protocol (switch from limited to unlimited radius).

Rolling Together Datasets to Produce a General "State of Boreal Birds" in BCR 12

- Erin referenced the General Technical Report[2] as a starting point.

- Really low detectability is going to be problematic for combining datasets — they are not getting picked up during atlasing.

- The Wisconsin Department of Natural Resources (WDNR) would have interest in collaborating on Erin's study, especially after WBBA II winds down.

- Carly also talked about WDNR's desire to incorporate bird monitoring into State Natural Areas—follow up with questions.

Recommendations?

- Nick Anich will follow up with Erin.

- Ryan Brady—because these are 20-minutes in length and off-road, fewer counts can be completed in a single morning.

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[2] Niemi, G.J., R.W. Howe, B.R. Sturtevant, L.R. Parker, A.R. Grinde, N.P. Danz, M.D. Nelson, E.J. Zlonis, N.G. Walton, E.E. Gnass Giese, and S.M. Lietz. 2016. Analysis of long-term forest bird monitoring data from national forests of the western Great Lakes region. General Technical Report NRS-159. U.S. Forest Service, Northern Research Station, St. Paul, Minnesota. Available at: https://www.fs.fed.us/nrs/pubs/gtr/gtr_nrs159.pdf.

Identifying Sensitive Species in BCR 12

Bob Howe, University of Wisconsin–Green Bay, Cofrin Center for Biodiversity

"A Noble Application of Big Data" — Birds are good indicators of our ecosystem. We want relevant measurements with some indication of their significance.

Wild Rivers Legacy Forest — assess forest health by surveying species present.

We had a subjective sense of which species were sensitive to degradation, but we wanted to quantify that. Also incorporated land cover, housing density, population density, [and other metrics] into a single "human footprint" gradient. Developed bird biotic response functions by plotting bird frequencies (presence/absence) across the "human footprint" gradient.

What Can We Do With These Numbers?

- Set conservation targets, identify priorities, assess outcomes, protect critical sites, and promote sustainable resource use.

- With big data from breeding bird atlas point counts and other projects, we can start to map the quality of our northern forest landscapes.

Discussion

Can we infer what stand-level metrics indicate a degraded forest?
Not yet. They are working with remotely sensed data and would like to acquire stand-level information to go along with the gradient.

This analysis defines "degraded" from a human view, but not necessarily from the point of view for birds. It points to the need to set up an additional gradient that incorporates microhabitat conditions.

Dave Fehringer: We need to coordinate bird monitoring with FIA plots to correlate forest bird populations with stand-level data. This will encourage a better connection with forest managers.

Wild Rivers Legacy Forest.

WISCONSIN DNR PHOTO

https://dnr.wi.gov/topic/lands/wildrivers/pinepopple/

Integrating Active Forest Management and Bird Conservation

One thing the organizers were keen to do with this workshop was to open a conversation with foresters about how bird conservation can be integrated with forest management. As birders, we talk a lot about how ensuring appropriate habitat—and enough of it—is an important part of any conservation plan. But not all birders are foresters, and foresters are the ones doing the most on-the-ground habitat management. So we need help from our forester colleagues and thought this might be a way to start that dialogue.

For this session, Craig Thompson (Wisconsin Department of Natural Resources) brought in foresters and researchers to share information about forest types, common silvicultural practices, and what sort of management and conservation is currently being carried out.

We hope this will be the first step in building a common language about forest management and bird conservation that will benefit both in the years to come.

Kingston Plains. Lake Superior State Forest, Michigan. PHOTO BY TED GOSTOMSKI

Status and Trends in Forest Habitat Types of the Boreal Hardwood Transition

Mark Nelson, U.S. Forest Service, Northern Research Station

This analysis of forest habitat types in includes Minnesota, Wisconsin, and Michigan counties that fall within the U.S. portion of the BCR 12 region.

BCR 12 boundaries have changed recently and that we need to be consistent with the boundaries.

Habitat types look at composition and structure as well as important features.

Conservation Filters

Coarse at the ecosystem level, mesofilters for many species and habitat features, and fine filters for single species.

Forest Inventory and Analysis (FIA): To Enhance the Understanding of Forest Resources

The FIA is implemented at four regional programs. BCR 12 is located within the Northern Region, which includes most of the Midwestern and northeastern parts of the U.S.

FIA product lines include:

1. Bio-physical (tree/forest type, volume)

2. Economic (timber products output)

3. Social (National Woodland Owner Survey)

FIA is based on a rigorous probability design using a hexagonal array (2,400 ha in size), with a randomly choose a single plot within a hexagon.

Data from FIA are put together into easy-to-use products available online to the public, though actual plot locations are not publically available.

- FIA EVALIDator Tool is available online: www.fs.usda.gov/ccrc/tools/fido-evalidator

- FIA has been conducted in Minnesota, Wisconsin, and Michigan since the late 1970s or early 1980s, though basic forestry data were collected in the early 1930s.

- They produce reports by state once every 5 years.

- FIA is scaled by coarse, meso-, and fine filters (though not often for fine filters).

Today, FIA has estimates of major land uses, timberland (ownership, size class, type-group, and standing dead trees), geographic variation, trends, cutting and disturbance, and other products. Mark presented multiple bar graphs and pie charts summarizing these estimates across states and habitat types in BCR 12.

- In BCR 12, 66% of major land uses are timberland. Mark presented pie graphs showing differences in major land use types by state in BCR 12: Minnesota, Wisconsin, and upper and lower Michigan.

- In BCR 12, timberland area has been increasing slightly since 1980. He presented bar graphs looking at differences in size and type-group of habitats by year.

- Most dominant habitat types by state: Aspen-birch dominates the landscape across BCR 12. Other federal (non-national forest) lands have the most standing dead trees (i.e., snags).

American Woodcock

How do trends of American Woodcock overlap with trends of early successional habitat?

- Presented a graph showing the average annual cutting or disturbance across years within BCR 12.

- Looked at annual wind or fire events in BCR 12 timberland, at the patch size of a particular forest type, and percentage of core area across age classes.

Summary of FIA Data in BCR 12

- Timberland predominates and is increasing in area.

- Increasing early successional and late successional forest.

- Decreasing mid-successional forest.

- Size distributions differ among forest type-groups.

- Harvest has decreased on USFS lands but increasing on state and county lands.

- Check out their website for many of these results, summaries, and tools: www.nrs.fs.fed.us/fia

Common Silvicultural Practices in the Boreal Hardwood Transition Zone

Greg Edge, Wisconsin Department of Natural Resources

Silviculture (defined)

The practice of controlling forest composition, structure, and growth to maintain and enhance the forest's utility for any purpose. Can include harvesting, but also prescribed fire, invasive species control, and other tools.

- Silvicultural System: A planned program of vegetation treatment during the entire life of a stand; typically named after the stand age class structure and the regeneration method (e.g., even-aged uniform shelterwood system). Has three components: tending, harvesting, and regeneration.

Intermediate Treatment

- Silvicultural treatment occurring after the establishment of regeneration and prior to final harvest. Also known as tending or timber stand improvement.

- Designed to improve composition, structure, growth, health, and quality.

Natural Regeneration Methods = A Stand of Trees is Established by Natural Reproduction

Aspen (aspen-birch group)
- Most common forest type in BCR 12.

- Intermediate treatment: thinning is uncommon.

- Regeneration methods: even-aged systems, simple coppice, coppice with standards (or reserves), and natural conversion.

- He also showed some nice photographs demonstrating the differences in age classes and treatments of aspen (e.g., even-aged coppice, coppice with standards [i.e., while leaving seed trees untouched]).

Birch (aspen-birch group)
- Intermediate treatment: thinning is uncommon, risk of root damage.

- Typical regeneration methods include even-aged systems, shelterwood, seed tree, clearcut (with standards, strip), scarification (mechanical, prescription fire).

Northern Hardwoods (maple/beech/birch group)

- Second most common forest type in BCR 12.

- Intermediate treatments: thinning is uncommon, thinning combined with regeneration in uneven-aged systems.

- Regeneration methods include even-aged and uneven-aged systems, single tree selection (one of the most common techniques in northern hardwood forests; favors sugar maple), group selection, shelterwood, overstory removal, and multi-cohort.

- There are differences in forest openings in the state of Wisconsin, which include gap (<0.04 ha), group (0.04–0.20 ha), or patch (0.20–0.80 ha).

Spruce/Fir

- Third most common forest type in BCR 12.

- Intermediate treatments: thinning is common.

- Regeneration methods include mostly even-aged, sometimes uneven-aged systems, shelterwood, clearcut (uniform, strip), overstory removal, seed tree, direct seeding, and single tree/group selection.

White/Red/Jack Pine Group

- Intermediate treatments: thinning is common in white and red pine.

- Regeneration methods include mostly even-aged, sometimes uneven-aged systems; scarification is also used; remaining methods vary depending on whether it is white, red, or jack pine; red pine is extremely widespread.

Oak/Hickory Group

- Intermediate treatments: thinning is very common.

- Regeneration methods include even-aged systems, shelterwood, coppice, overstory removal, patch selection, and scarification (mechanical, prescription fire).

Bottomland/Swamp Hardwoods (elm/ash/cottonwood group)

- Intermediate treatments: thinning is common, combined with regeneration in uneven-aged systems.

- Regeneration methods include even-aged and uneven-aged systems, shelterwood, seed tree, coppice, overstory removal, group and patch selection, and hydrology issues are critical, especially in the context of emerald ash borer.

- He also highlighted the importance of tree retention, which is a part of the natural regime.

Forest Structure and Bird Assemblages in Old Growth and Managed Hemlock-Hardwood Forests of the Western Great Lakes

Mike Mossman, Wisconsin Department of Natural Resources (retired)

This bird study took place in the early 1990s. Other collaborators included Bob Howe and Nick Anich.
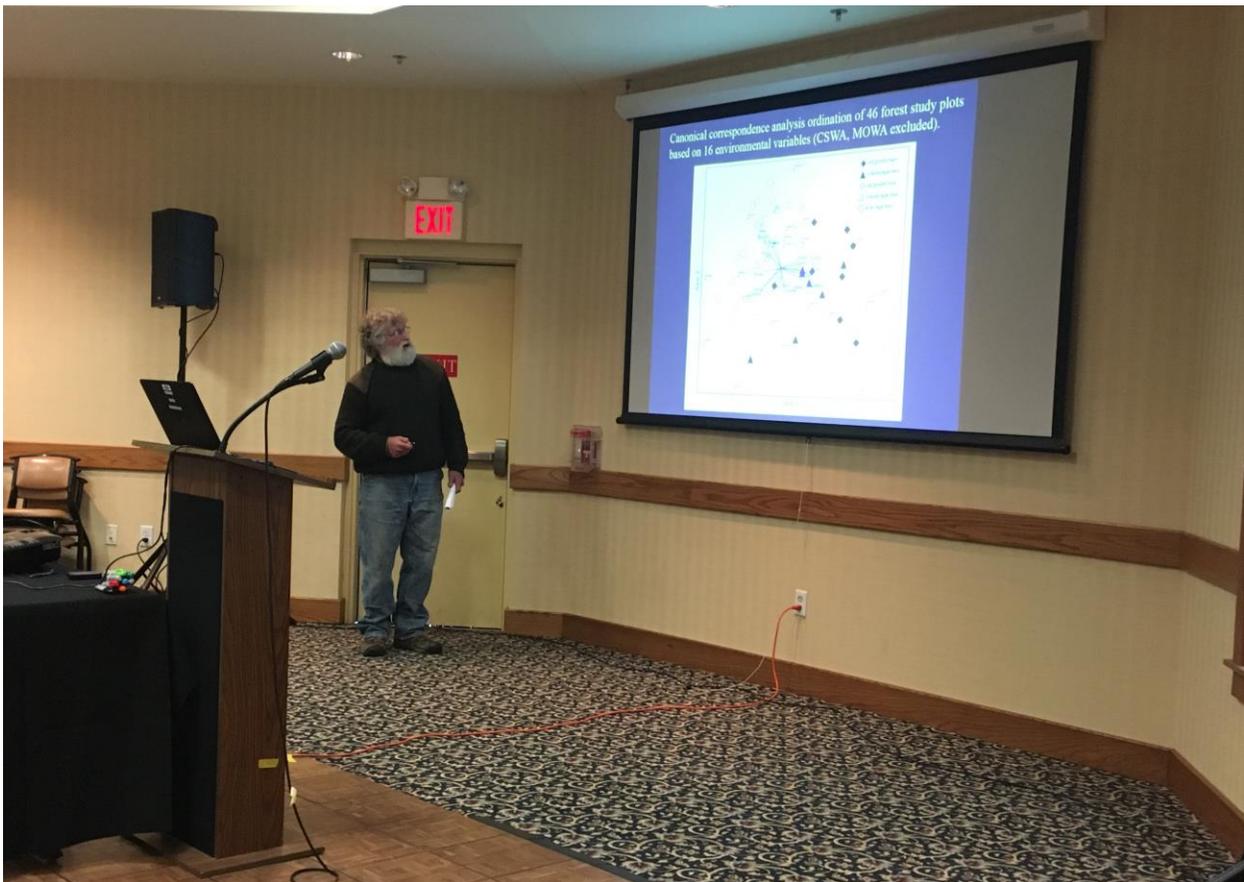
Study Sites

In Michigan, old growth forest in Porcupine Mountains, Huron Mountains, and Sylvania Wilderness Area (Ottawa National Forest). In Wisconsin, State Natural Areas, Menominee Reservation, Chequamegon-Nicolet National Forest, and other areas.

Surveyed 46 sites across six treatments: northern hardwoods (Sylvania old growth, uneven-aged managed, even-aged managed) and hemlock (Sylvania old growth, Research Natural Area old growth, and uneven-aged managed).

Bird Sampling

Sampled by point counts and spot maps at 250×250-meter plots. Three annual visits across two years.

Vegetation Sampling

Timber cruise methods; woody understory stems by species and four height classes; Snags, loose bark plates, canopy gaps, and down woody debris.

Also calculated landscape variables (e.g., distance to nearest road)

Results

Various graphs highlighted the differences in dominant trees by each of the six treatments (e.g., even-aged managed, old growth-hemlock) as well as percent gap cover, down woody debris, and other variables.

Most common bird species found in hardwoods (from most to least frequently detected species):

> *Sylvania Old Growth:* Red-eyed Vireo, Ovenbird, Black-throated Green Warbler, Least Flycatcher, Winter Wren, Eastern Wood-Pewee, Blackburnian Warbler, Hermit Thrush, Brown Creeper, Black-capped Chickadee.

> *Research Natural Area Old Growth:* Red-eyed Vireo, Black-throated Green Warbler, Ovenbird, Least Flycatcher, Black-throated Blue Warbler, Black-capped Chickadee, Veery, Rose-breasted Grosbeak, Brown Creeper, Eastern Wood-Pewee.

> *Even-Aged:* Red-eyed Vireo, Black-throated Green Warbler, Ovenbird, Least Flycatcher, Black-throated Blue Warbler, Brown Creeper, Hermit Thrush, Yellow-bellied Sapsucker, Rose-breasted Grosbeak, Chestnut-sided Warbler.

Most common bird species in hemlocks (from most to least frequently detected species):

> *Old Growth:* Black-throated Green Warbler, Red-eyed Vireo, Ovenbird, Blackburnian Warbler, Brown Creeper, Winter Wren, Black-capped Chickadee, Northern Parula, Hermit Thrush, Yellow-rumped Warbler.

Uneven-Aged: Black-throated Green Warbler, Blackburnian Warbler, Ovenbird, Red-eyed Vireo, Winter Wren, Black-capped Chickadee, Hermit Thrush, Northern Parula, Golden-crowned Kinglet, Yellow-rumped Warbler.

Managed: Black-throated Green Warbler, Red-eyed Vireo, Ovenbird, Least Flycatcher, Blackburnian Warbler, Black-capped Chickadee, Hermit Thrush, Winter Wren, Veery, Brown Creeper.

Percent Perfect Indication (PPI) values for each of the species groups (e.g., canopy-nesting foliage gleaners, cavity nesters, ground nester/forager, raptor, etc.) by each of the six treatments (old growth/managed forests etc.).

Conducted canonical correspondence analysis (CCA) ordinations of the 46 forest study plots based on 16 environmental variables (Chestnut-sided Warbler and Mourning Warbler excluded).

Comments/Questions

Katie Koch—What if we distilled all that we know about birds and habitat connections and then put a product together, perhaps Best Management Practices?

Hemlock-hardwood forest. NATIONAL PARK SERVICE PHOTO

Northwest Barrens Management: Applied Tools for Forestry and Birds

Colleen Matula, Wisconsin Department of Natural Resources
Andrew O'Krueg, Bayfield County Forestry and Parks

PHOTO BY ERIN GIESE

Background

The Northwest Sands Ecological Landscape in northwestern Wisconsin encompasses 506,601 hectares (1.2 million acres). This landscape has changed a lot since presettlement times. Historically, there used to be a lot of jack pine, but now the landscape is dominated by forested uplands.

There are at least 75 publications and data on this landscape. What should we do today, given all of the work that has already been done? There is a handbook, wildlife action plan, a 2009 jack pine symposium, other master plans, etc.

Currently manage for rare pine and oak barren communities. Manage barrens and dry forests at larger scales, emulate fire, and support the critical wetland marshes. Now looking at how to integrate forestry into these areas.

What tree species are we talking about in jack pine? Jack pine, scrub oak, paper birch, red/white pine, black cherry, aspen.

Potential silvicultural techniques and considerations:

1. Regeneration harvest (e.g., clearcut, seed tree, shelterwood)

2. Biomass harvesting

3. Stocking – planting

4. Opening maintenance (<0.80 ha [2 ac] openings)

5. Prescribed burning

Wisconsin's Northwest Sands Ecological Landscape encompasses 1,956 square miles (506,601 hectares) in parts of six counties.

The "rolling barren" concept:

1. Research has identified genetic isolation and lack of corridors in northwest barrens.

2. Open barrens grow from upland birch to young forest, middle-aged, and then ultimately mature forest.

Future needs: Monitoring, information sharing, landowner incentives, manage invasive species, consider chemical management vs. mechanical and prescribed fire.

Barnes Barrens Management Project in Bayfield County

Kirtland's Warblers began nesting on this site in 2016, with five young fledging.

Male Sharp-tailed Grouse also used this landscape and have been transplanted here from Minnesota.

They have many "species of greatest conservation need" (as identified in the state's wildlife action plan) using this landscape including Brown Thrasher, Connecticut Warbler, Field Sparrow, Golden-

winged Warbler, Red-headed Woodpecker, Sharp-tailed Grouse, Upland Sandpiper, and Vesper Sparrow.

A video showing some of the management projects is available at https://vimeo.com/240744552.

Questions

What else have you monitored besides birds in these recently opened areas?
They are limited with staff time.

Sharp-tailed Grouse. PHOTO BY RYAN BRADY

Wisconsin's Young Forest Initiative: Diverse Healthy Forests to Benefit the Greatest Diversity of Bird Species

Callie Bertsch, American Bird Conservancy

The partnership includes the National Fish and Wildlife Foundation, Natural Resource Conservation Service's Young Forest Initiative, Sustainable Forestry Initiative, Drummer Funds, Regional Conservation Partnership Program, and the USFWS Partners Program. We conduct outreach and site visits with landowners.

Focal Species of Young Forests

American Woodcock and Golden-winged Warbler have both declined over the last 40 years.

Habitat Requirements

Golden-winged Warblers need a dynamic mosaic of slightly different habitats based on whether they are nesting (young forest and mature forest edge) or have fledged young (mature northern hardwoods and aspen with vertical structure). Golden-winged Warbler habitat is very similar to the needs of American Woodcock.

The American Bird Conservancy (ABC) works with landowners and identifies areas that could be managed for young forest. Also try to manage for upland shrub habitat.

Once management treatments are conducted, they conduct bird surveys.

Results, Monitoring, and Success

Created >526 hectares (1,300 acres) of "young forest" habitat, with a total of 1,011 ha (2,500 acres) contracted in Wisconsin alone. Have worked with >300 landowners.

Amber Roth and Jeff Larkin are leading great bird monitoring projects.

Questions

How long does it take tag alder to regenerate to suitable breeding habitat for birds?
Generally around 3–8 years.

Golden-winged Warbler. Photo by USFWS / Alan Schmierer

Day Two: *Putting Data to Work for Forest Bird Conservation*

8:00 a.m. – 12:00 p.m.

How to Use Large Bird Data Sets

This session will provide an overview on how participants can use large bird data sets (e.g., breeding bird atlases and eBird) to improve local bird conservation decisions and to provide guidance to land and forest managers.

Midwest Avian Data Center (MWADC) Interactive Workshop

This session will demonstrate the importance of good data (and metadata) management practices and the power of aggregating data through an online portal, offer hands-on training of MWADC tools to partners, and incentivize greater collaboration and sharing of data.

12:00 p.m. – 1:00 p.m.: **LUNCH**

1:00 p.m. – 2:45 p.m.: **Where to From Here?**

This session will present and seek feedback on a road map of practical next steps for this initiative (e.g., when and how to meet as a group, other topics in need of discussion and collaborative work, and identifying the best ways to provide information to forest managers).

2:45 pm: **Adjourn**

Hermit Thrush. PHOTO BY USFWS / DAVE MENKE

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How to Use Large Bird Data Sets

Nick Walton, Alexis Grinde, University of Minnesota–Duluth, Natural Resources Research Institute
Nick Anich, Wisconsin Department of Natural Resources

Demonstrations of the Wisconsin Breeding Bird Atlas, eBird, Minnesota Breeding Bird Atlas, and North American Breeding Bird Survey websites.

Michigan Breeding Bird Atlas II
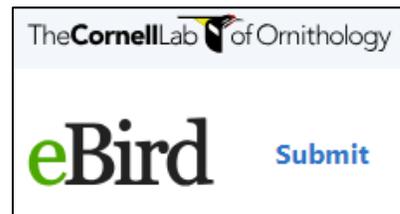
eBird

Minnesota Breeding Bird Atlas

Midwest Avian Data Center

Wisconsin Breeding Bird Atlas II

North American Breeding Bird Survey

Discussion

Is there a link between eBird and state natural heritage databases?

Rich Staffen, Wisconsin's Natural Heritage Inventory (NHI) coordinator, gets eBird alerts for "working list" species and integrates those records into the NHI database, but not in real-time. Data from Wisconsin Breeding Bird Atlas II are also integrated annually into the NHI database.

Is there a way to hide a given species on a single checklist?

Only if you make it its own checklist. You can also hide an entire checklist when you submit it. Some species are also hidden globally at fine resolutions.

QA/QC of eBird data

Each state has regional editors and filters to flag records that seem out of the ordinary. It is a citizen science project, and there is some degree of error in it, but the checks are in place to keep errors to a minimum.

How is the Wisconsin Breeding Bird Atlas being funded?

Wisconsin DNR provides funding for staff. Donations are made by other organizations.

Is eBird making atlas protocols available in perpetuity?

Yes.

Can birders in Minnesota just keep atlasing now that their first atlas is over?

Yes. In regular eBird you can enter breeding codes but you will not find the data in any other outputs like block summary statistics or species maps.

How do Minnesota atlas point counts compare to Wisconsin atlas points?

Wisconsin is surveying more points across more blocks; how the points were selected is somewhat different, too; both are roadside surveys and have fairly similar collection protocols.

Midwest Avian Data Center (MWADC) Interactive Workshop

Katie Koch, U.S. Fish and Wildlife Service, Migratory Bird Program
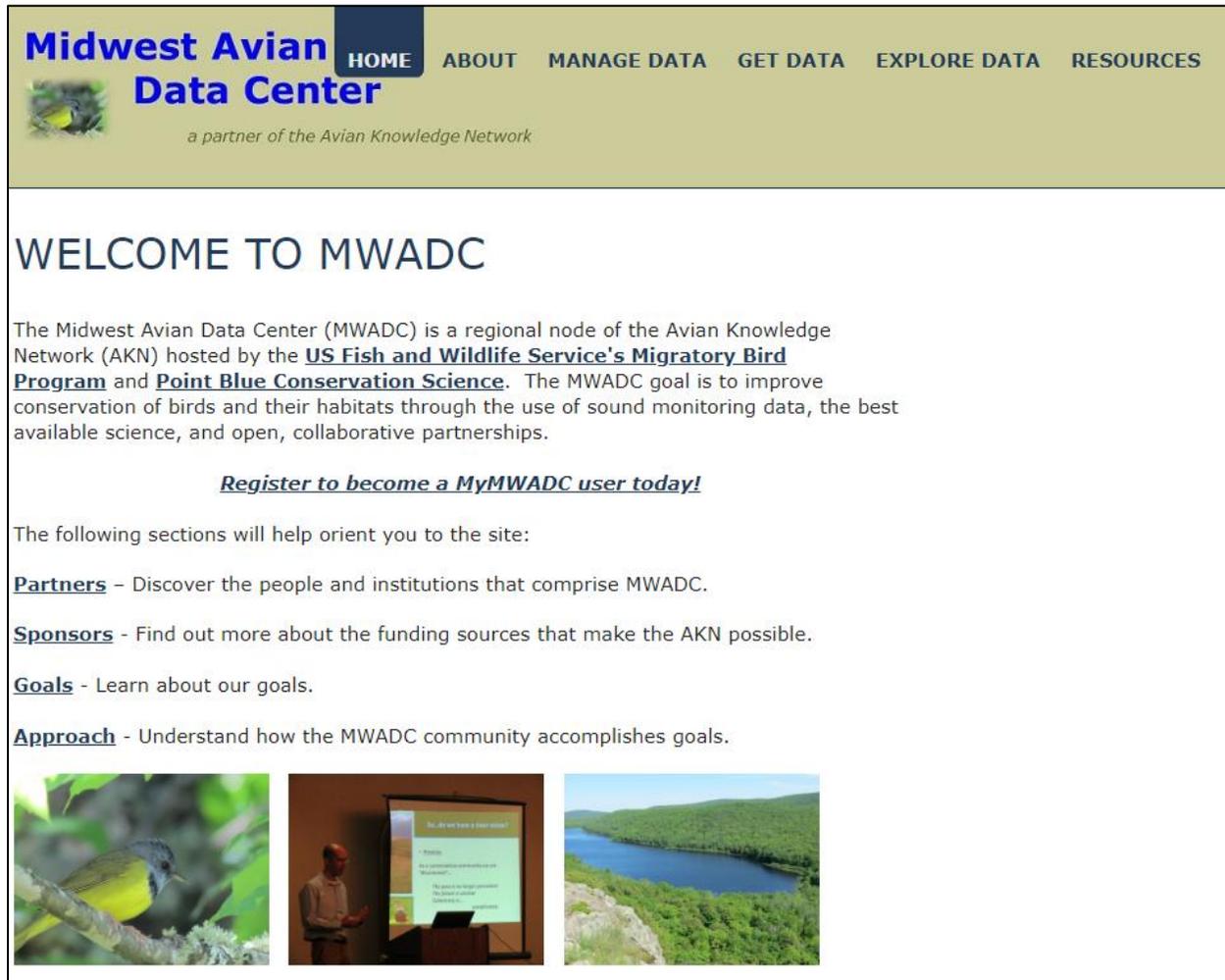
The Midwest Avian Data Center website (https://data.pointblue.org/partners/mwadc/)

Avian Knowledge Network

Working to make connection with Patuxent and integrate bird banding data with the Avian Knowledge Network (AKN) data (observations, weather, and vegetation).

48 states (excluding Hawaii and Alaska) will have an AKN node by the end of 2018. There are some specialized/topical nodes, such as waterbirds, Pacific Flyway Shorebird Migration, and national AKN node.

Google Chrome is the best platform for using MWADC. There are issues with both Internet Explorer and Firefox.

Analytical tools in MWADC run on R (R-Avian, a.k.a. Ravian).

Midwest Avian Data Center (MWADC)

Internet failed, so session was not interactive. Instead, usefulness was demonstrated from the podium after everyone else logged off.

MWADC Explore Data > Map Tool

IPaC (Information, Planning, and Consultation)—planning tool to identify birds of conservation concern that have been recorded in the area of interest so that project planners can assess what species might be negatively affected or would benefit from whatever action is being considered.

Group Feedback on MWADC

- Add chronology curves (histograms) using eBird data.

- Have another training with reliable internet connection.

- As a practitioner, looking for data and not entering it, this is a very helpful tool. Would probably still be using other tools along with it.

Where to From Here?

Ryan Brady, Wisconsin Department of Natural Resources
Ted Gostomski, National Park Service, Great Lakes Inventory and Monitoring Network

Ryan provided a summary of the workshop thus far:

- History of this working group, including transition from monitoring focus to conservation focus.

- Upper Mississippi River and Great Lakes Region Joint Venture a great asset — platform for collaboration, guidance for priorities, and tools to do good work for birds and habitats.

- ACAD — identify priority species and drill into threats, vulnerability, and stewardship responsibility.

- Boreal bird study coming soon! A plea/invitation to collaborate.

- Identifying species sensitive to landscape disturbance.

- We have a lot of bird data and several ways to access those data.

- Forest bird habitat management:

  1. FIA as resource to link bird data with forest habitat data.
  2. Silvicultural techniques — which apply to priority species and bird conservation objectives.
  3. More specifically, what can you do to manage habitat better for birds? Workshop and other products to use? What is the best way to integrate these with your work?

Insights

- Lots of forest and reasonably diverse. Important nesting and migratory habitat for forest birds.

- Many species are doing well (maturing forests, although some species showing declines), while some are not (young forest and barrens).

- Protect what we have and improve habitat quality — what a great starting point!

  Boreal — southern edge of range, climate change threat.

  Pine barrens — globally rare, multiple Species of Greatest Conservation need = high stewardship!

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>   **Young forest** — how much, where?

- What other threats exist during the breeding season?

    1. Invasives, cats, windows (collisions).

    2. Full life cycle conservation (migratory stopover sites, migration monitoring, threats).

    3. Wintering ground issues.

    4. BCR 12 is assumed to be a demographic source, but generally, productivity is poorly assessed.

How Do We Best Conserve Birds in BCR 12?

We need to think about:

- Which species?

    o No endemics, but Kirtland's Warbler, Golden-winged Warbler, Black-billed Cuckoo, and other high stewardship species.

    o Many plans/tools for identifying priority species; how do we consolidate them for everyday use?

- What habitats at the landscape scale?

    o How much? Where? How close to each other (connectivity)?

- What stand-level habitat attributes?

    o Plant species, ages, understory condition, and woody debris.

Discussion: Where To From Here?

- As public land managers, we manage the land and have many suggestions on what to do in the future using multiple use objectives. We would like to make land management more interactive and iterative — here is what we are doing and how can we tweak it? For example: Retention guidelines for Minnesota. Little tweaks can make a big difference, as can removing conflicts and being inundated with requests.

- Bird conservation is more of a broad landscape scale issue. How do we translate to stand-level management decisions — and how to roll back up to landscape-scale management and conservation planning.

- Climate change vulnerability assessments. There are several resources available:

    1. **Northern Institute for Applied Climate Science** (www.nrs.fs.fed.us/niacs/) for northern Wisconsin and the western Upper Peninsula of Michigan.

2. **Wisconsin Initiative on Climate Change Impacts** (www.wicci.wisc.edu/)

3. **The Audubon Society Climate Initiative** (www.audubon.org/conservation/climate-initiative), and especially their recent Birds and Climate Change Report (http://climate.audubon.org/).

4. **U.S. Forest Service Climate Change Tree and Bird Atlases** www.nrs.fs.fed.us/atlas/tree/tree_atlas.html

   www.nrs.fs.fed.us/atlas/bird/index.html#

We need to link with climate change resources and integrate the science into our discussions and planning. Take a more holistic look and synthesize this information for the U.S. portion of BCR 12. We also need to step-down climate science to more localized levels.

- How can we boil this down to a stand level and integrate the bird conservation community with the forestry community?

   1. Start by taking a look at the scientific information out there to summarize stand-level information and techniques. Has anyone looked across the literature to boil it down?

   2. Survey forest managers and wildlife biologists to produce some guidance or publication that can complement bird-friendly workshops like the one taking place in Minnesota in June (*see image below*). What practices are they using today to help illuminate possible tweaks to include in future forest management prescriptions?

- How well do we condense the wealth of knowledge into a package that helps land trusts manage their lands by example to serve as demonstration areas? Connect with the users of the forest — use birds as a gateway to landowners. We need to translate/distill the wealth of data that are useful for private landowners and land trusts.

- How do we engage landscaping and plant nurseries to help stem the tide of invasives and encourage them to plant native species? We need to know what plants are more beneficial to birds. Which plants should we promote to make the habitat good again?

- Surprised to not hear more about climate change and invasives — emerald ash borer,

oak wilt, tamarack case borer, hemlock wooly adelgid. Things are changing. How can we more proactively stem off or mitigate these changes to create diverse, resilient forests that can adapt to these changes?

- Partners in Forestry Land Cooperative in Vilas County, Wisconsin, utilizes landowner cooperatives, which are modeled after lake associations (e.g., meetings, newsletters, meetings with foresters, grants for forest work). Is this a tool for engaging private landowners? How do we connect with these groups? We need to get information to them and help implement actions on the landscape. Workshops are helpful for information sharing.

- Geographically speaking, where are the data gaps? How do people get to information, and how do we package it in such a way that it can be readily used?

- Integrate with agroforestry landowners.

What tools do you need?
- Literature review of silvicultural practices and impacts on birds.

- Survey of forest habitat managers to find out what they need to do better work for birds.

- Pocket guide or app for field use — BMPs for benefitting the wildlife community and groups of species. Forestry for the Birds from Vermont and Maine Audubon chapters — free download and PDF (move away from paper publications). A grant has been submitted to start work on this.

From Maine Audubon's Forestry for Maine Birds project
www.maineaudubon.org/projects/forestry-for-maine-birds/

> *Forestry for Maine Birds: A Guidebook for Foresters Managing Woodlots "With Birds in Mind"*
> www.maineaudubon.org/wp-content/uploads/2017/12/FFMB-2017.pdf

From Audubon Vermont's Forest Bird Initiative
http://vt.audubon.org/conservation/working-lands/forest-bird-initiative-1

> *Birds with Silviculture in Mind: Birder's Dozen Pocket Guide for Vermont Foresters*
> http://vt.audubon.org/sites/g/files/amh751/f/bird-guide.pdf

> *Silviculture with Birds in Mind: Options for Integrating Timber and Songbird Habitat Management in Northern Hardwood Stands in Vermont*
> http://vt.audubon.org/sites/g/files/amh751/f/silviculture-options_0.pdf

> *Forest Bird Habitat Assessment: A Guide to Integrating Bird Habitat Data into a Vermont Forest Inventory*
> http://vt.audubon.org/sites/g/files/amh751/f/assessment-guide.pdf

- Partners in Forestry, like a lakes association, could be a model for partnerships and outreach.

- Field trips and workshops.

- What are the objectives (protection, restoration, and enhancement)? What models do we need to get there? And what data do we need to develop these models?

- Obtain new tools to apply to work (from data).

- Why isn't this group more connected with Wisconsin Stopover Initiative?

How do we stay in touch? Community of practice?
- BCR 12 is a very obscure, insular name. Use "Northern Forest Birds Working Group" for now. Look for relevant meetings near you and attend to spread the word.

- Louder, and better prepared information gets the attention of managers.

- Communication network — for our group and to extend out.

- Include universities — find students looking for research projects.

- Upcoming calendar of events.

- Shared information should reinforce/bolster work already happening and ultimately be woven into future proposals.

- Use the working group to identify a few overarching goals within which we would nest projects to make progress.

- Maintain an email distribution list and send out monthly e-newsletters, which might include grant announcements, meetings, webinars, news releases, new websites, tools, and spotlights on people or projects.

- Also consider a listserv function that allows for people to reply to each other and ask questions?

- Website? Consider functionality first and determine if we need it.

- Millennials want to see demonstrations, such as how to implement on-the-ground demonstration tours and YouTube videos.

- Cross-pollinate Society of American Forests with The Wildlife Society — SAFers want wildlife training.

- Interest in knowing what other groups are out there, main points-of-contact, and being able to cross-promote their work.

- Use as many methods as you can — reach multiple ages and audiences.

- Alternatives to manage habitat for agencies who can't cut trees (e.g., National Park Service).

Next opportunity for meeting? What would be the most useful topics to discuss?
- Every table works on a priority species, sifts through the data, and identifies BMPs, thresholds, etc. to identify conservation goals. It would be a working meeting — species, habitats, etc. Identify bird population goals, habitat goals, and how to get there.

- Would this be for everyone in the Northern Forest Birds Working Group, or would we target a select specialty? We would want integrated groups, including researchers, land managers, foresters, wildlife biologists, and private landowners.

- Select priority species — decide and agree on goals and criteria for determining them.

- Connect with private landowners on a sub-geography basis. Send mailings.

- How much, where, and which types of young forest do we really need in BCR 12? Need a scientific basis for this.

- Adaptive management climate change strategies — which trees and birds should we be managing for?

- Combing bird datasets with FIA data, look at landscape disturbance, and try to answer how much, where, etc. Need to tie in with universities.

- Prioritize habitat types — most at-risk — focus there initially to develop recommendations and BMPs at a landscape scale.

Workshop Participants

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