MONITORING TO ASSESS HABITAT ENHANCEMENT PRACTICES FOR MIGRATORY BIRDS

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Midwest Coordinated Bird Monitoring Partnership
Outline

• Why Monitor?

• Midwest Landbird Migration Monitoring Network

• Key Considerations for Monitoring

• Monitoring Migratory Bird Use of Stopover Sites

• Evaluating Migratory Habitat Restoration

• Closing Thoughts
Why Monitor Birds?
Why Monitor Birds?

**Aridland Obligates (17)**

![Graph showing percentage change over years for Aridland Obligates](image)

**Wetland Species (139)**

![Graph showing percentage change over years for Wetland Species](image)
Why Monitor Birds?

Katie Koch

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Why Monitor Birds?
Why Monitor Birds?

H1N1
- Nose
- Mouth
- Trachea
- Lungs
- Easily spread
- Rarely fatal

H5N1
- Nose
- Mouth
- Trachea
- Lungs
- Spreads slowly
- Often fatal

Siting Principles and Policy Options for Wind Development on the Great Lakes

Great Lakes Wind Collaboration
Great Lakes Commission
August 2009

U.S. Fish and Wildlife Service
Office of Law Enforcement
Midwest Coordinated Bird Monitoring Partnership

- Integrate monitoring into bird management and conservation

- Broaden scope of monitoring for species most at risk and for which we lack adequate information to make effective decisions

- Coordinate programs among organizations and across spatial scales

- Improve survey design, field methods, and data analysis

- Employ modern data management strategies
Boreal Landbird Migration Routes
Midwest Landbird Migration Monitoring Network

- Determine locations and site characteristics of landbird stopover habitat such that landbirds migrating through the Upper Midwest and Great Lakes region gain rather than lose resources necessary for optimal reproductive success and annual survival.
Midwest Landbird Migration Monitoring Network

- Understand migratory movements through the region in order to effectively **address conservation challenges** posed by proposed wind farms, communication towers, and other developmental migratory obstacles.
Midwest Landbird Migration Monitoring Network

- An **organized network** of research and monitoring capacity that can be mobilized to address priority migration information needs
Midwest Landbird Migration Monitoring Network

• WGLBBO submitted a proposal to hire a term coordinator

• Determine existing capacity and what’s needed to address priority information needs
Key Considerations for Monitoring

- Establish a clear purpose for monitoring (WHY are you conducting a monitoring program)
- Determine whether an existing program or protocol meets your needs
- Assemble a team and make sure to include someone with survey design and analytical expertise
Key Considerations for Monitoring

- What should be done?
- When should it take place?
- How should it be conducted?
- Who should do it?
- Where and how many sites should we sample?
- How much will it cost?
- How will we store and use the data?
- Who needs to use this information?
Midwest Avian Data Center

What is the AKN?

- **Users**: Distribute observations from nodes (e.g., GBIF, ORIN5).
- **Node Partners**: Use node applications and services (e.g., Joint Venture, Fed. Agency, Land Manager).
- **Data Providers**: Contribute observations to nodes—surveys, counts, etc. (e.g., BBO, Bird Observatory, eBird, Researchers).

**Diagram**
- **AKN**
- **Node**
- **WORLDWIDE**
  - **eBird**
  - **Cornell Lab of Ornithology**
- **CALIFORNIA**
  - **CADC**
  - **PRBO Conservation Science**
- **MIDWEST US**
  - **MNADDC**
  - **Midwest Cooperative Bird Monitoring**
- **CANADA**
  - **Nature Counts**
  - **Bird Studies Canada**
The **Midwest Avian Data Center** (MWADC), a regional node of the Avian Knowledge Network (AKN) hosted by the Midwest Coordinated Bird Monitoring Partnership and PRBO Conservation Science, integrates data on birds and ecosystems to improve conservation outcomes today and in the future. [Learn more >>](#)
Midwest Avian Data Center

Map-based access to MWADC Avian Data Summaries - Midwest Avian Data Center - Windows Internet Explorer

Choose a Data Collection
- Breeding Bird Survey
- eBird
- MAPS Stations
- Bird Conservation Network
- Important Bird Areas of Minnesota Monitoring

Choose a Map Overlay
- States
- Bird Conservation Regions
- Counties
- Audubon Important Bird Areas
- Watersheds
- US Fish and Wildlife Service
- US Protected Areas Database
- Marine Protected Areas
- NREL Wind Energy Potential
- Map Labels
- Choose a Species
- All Species

Filter Species Periodically by Month
Jan

Draw a Custom Polygon

Collections: 'bbs-mw', 'ebird-mw', 'ibp-mw'
Months: 1 - 12
(Myrtle Warbler) Yellow-rumped Warbler (408)
(und. race) Dark-eyed Junco (2045)
(Yellow-shafted Flicker) Northern Flicker (93)
Acadian Flycatcher (4)
Alder Flycatcher (138)
American Avocet (6)
American Bittern (38)
American Black Duck (6851)
American Black Duck x Mallard (hybrid) (4)
American Cool (2031)
American Crow (10927)
American Golden-Plover (68)
American Goldfinch (10533)
American Kestrel (240)
American Pipit (31)
American Redstart (2072)
American Robin (9286)
American Tree Sparrow (621)
American White Pelican (9591)
American Wigeon (418)
American Woodcock (50)
Arctic Tern (1)
Aythya sp. (1000)
Monitoring Migratory Birds

- Understanding and predicting bird migration
  - Timing of migration and daytime surveys (radar, acoustic monitoring)
  - Understanding weather patterns associated with migration
Monitoring Migratory Birds

- Determining which species are present (and in which habitats)

- Estimating Relative Abundance (how many)

- Determining consistency of use for a site during spring and fall migration
Monitoring Migratory Birds

- Try the following methods:
  - Daily List (eBird)
  - Point Count (http://www.ibamonitoring.org/about/methods.aspx)
  - Transect Surveys
Monitoring Migratory Birds

- Monitoring Demography
  - Banding (constant effort mist nets)
Monitoring Migratory Birds

- Monitoring Demography
  - Banding (constant effort mist nets)
  - Body Condition
Monitoring Migratory Birds

- Monitoring Demography
  - Banding (constant effort mist nets)
  - Body Condition
  - Age and Sex Ratios of Population
Monitoring Migratory Birds

- Monitoring Demography
  - Banding (constant effort mist nets)
    - Body Condition
    - Age and Sex Ratios of Population
  - Connectivity Among Populations

Bridget Stutchberry

Eastern Bluebird
Sialia sialis
n = 72
(1931 - 2011)

Pete Marra
Evaluating Habitat Restoration (local)

• What resources are available to birds at my site?
• Important to monitor before and after management actions occur

Site before treatment included many Bush Honeysuckle plants

Site after treatment
Evaluating Habitat Restoration (local)

• What to monitor?
  • Food or Insect Availability
Evaluating Habitat Restoration (local)

- What to monitor?
  - Food or Insect Availability
  - Changes in phenology (plants, timing of migration)

Fig. 3. Estimated leafout at Hubbard Brook Forest (253 m asl)
Evaluating Habitat Restoration (local)

- What to monitor?
  - Food or Insect Availability
  - Changes in phenology (plants, timing of migration)
  - Predator Populations
Closing Thoughts

• Coordinate locally and regionally

• Monitor with a Purpose (and design)

• Use the Midwest Avian Data Center

• Think About Bird Needs During Migration

• Thank You for Your Commitment to Stopover Habitat Enhancement Along Lake Michigan!
Thank You

- US Fish and Wildlife Service
- US Geological Survey
- Black Swamp Bird Observatory
- Kalamazoo Valley Bird Observatory
- Missouri River Bird Observatory
- Western Great Lakes Bird and Bat Observatory
- Audubon Chicago Region/Bird Conservation Network
- Central Michigan University
- The Nature Conservancy
- Avian Knowledge Network
- PRBO Conservation Science
Midwest Coordinated Bird Monitoring Partnership
Monitoring to Conserve Midwestern Birds

For more information or to get involved TODAY, contact:

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