

Evening Grosbeak



***Road to Recovery Pilot Species Project
Progress Report – September 2023***

Acknowledgments to key funders, supporters and collaborators: This work *quite literally* would not be happening without the Road to Recovery group and process, funding from Knobloch Family Foundation and the core collaborators.

Funding and Supporting Organizations:

KNOBLOCH
FAMILY FOUNDATION



Collaborators:



Other Partner Organizations:

Pennsylvania Game Commission

Friends of Sax-Zim Bog

Wild Excellence Films

Willistown Conservation Trust & Northeast Motus Collaborative

United States Geological Survey – Bird Banding Lab

United States Fish and Wildlife Service

Oregon State University

University of California-Davis

St. Lawrence University

Vermont Center for Ecostudies

Birds Canada: Project Feederwatch

Cover Photo: David Yeany II, WPC-PNHP

Road to Recovery Pilot Species Project
Continental Connectivity of the Evening Grosbeak
Oct 2021-Sept 2023

Core Project Team

David Yeany II – Pennsylvania Natural Heritage Program, Western Pennsylvania Conservancy (WPC-PNHP)
Matthew A. Young – Finch Research Network (FiRN)
Lucas DeGroot – Powdermill Avian Research Center, Carnegie Museum of Natural History (CMNH-PARC)

Executive Summary:

It is only through the support of the Road to Recovery initiative (R2R) and funding from the Knobloch Family Foundation (KFF) that a joint continental conservation effort for the Evening Grosbeak (*Coccothraustes vespertinus*) was launched in 2021. This joint effort, with a core team of scientists from the Western Pennsylvania Conservancy's Pennsylvania Natural Heritage Program (WPC-PNHP), Finch Research Network (FiRN) and Carnegie Museum of Natural History's Powdermill Avian Research Center (CMNH-PARC), focuses on addressing the concerns surrounding the species. The Evening Grosbeak is a species that has lost more than 90% of its North American population since 1970 and which has about half its breeding range population in Canada and half in the United States. In 2016, Evening Grosbeak was listed in Canada as a Special Concern species under the Species at Risk Act (SARA). At the same time, it was recognized by Partners in Flight as there being an urgent need to learn more about causes of the species decline and to begin developing conservation strategies. Since then, it has been included on several major bird conservation lists and is currently identified by scientists at R2R as a Yellow-Alert Tipping Point Species, having "long-term population loss \geq 50%, but short-term (3-generation) decline $<$ 10%, or increasing."

As one of four R2R pilot species projects, our work-to-date has focused on forming an international Evening Grosbeak Working Group to assess threats, fill-in knowledge gaps and form conservation strategies. A primary component of this work is expanding full annual cycle research from WPC-PNHP's and CMNH-PARC's tracking collaborations on Pennsylvania's winter population to encompass a migratory connectivity study across the Evening Grosbeak continental range. With KFF funding we are now using cutting edge satellite tracking technology – for the first time on a forest songbird – to follow individual Evening Grosbeaks from different winter populations across the Midwest and Northeast United States. These data will allow us to link Evening Grosbeak populations across their annual cycle as never before and fill-in knowledge gaps when combined with our Motus Wildlife Tracking System tagging and tracking efforts.

The Evening Grosbeak Working Group continues to grow as we seek and add diverse members from both the United States and Canada. We now have over 60 group members including students, professional biologists, conservation practitioners, artists, federal and state agency staff, community scientists, concerned backyard bird feeders and academic researchers. The group has been working with R2R social scientists to implement co-production by developing ways to better engage with diverse community members and partners through dynamic collaboration from the ground level up. Collaborators at the Finch Research Network have been establishing community science projects related to finch food assessments and student projects assessing Evening Grosbeak diet and population dynamics. We have been communicating our work widely through social media, new organizational web pages, blog posts and in-person meetings – raising awareness of the Evening Grosbeak's conservation needs and our goal to find the best partners to join our group to put this species on the road to recovery.

This report provides details on project work since the KFF grant award in October 2021 through September 2023. It also outlines some of our proposed next steps for the Evening Grosbeak Working Group and our continental migratory connectivity research.

Deliverables

- 1. Deploy at least 30 satellite transmitters and 30 radio transmitters on Evening Grosbeaks at sites within three to five major regions of the species' winter range in the United States: Upper Northeast, Lower Northeast, Midwest, Interior West and Northwest.**

This deliverable is a direct effort to learn more about the Evening Grosbeak's migratory connectivity across wintering, migratory, and breeding areas; and across different geographic populations. This work aims to fill-in gaps in our knowledge of the species' annual cycle and shed light on factors related to its steep decline. Our project is the first ever tracking study of Evening Grosbeaks, and funding from KFF has allowed us to expand this work in ways we never could have before, all while using cutting edge tracking technologies for songbirds.

Between March 2022 and April 2023, our team deployed 46 Lotek Sunbird satellite transmitters on Evening Grosbeaks in three major regions of the United States winter range: Upper Northeast (Maine), Lower Northeast (New York and Pennsylvania), and Midwest (Minnesota). We also deployed 85 Lotek nanotag transmitters on grosbeaks in Maine, New York and Pennsylvania, where the Motus Wildlife Tracking System has a substantial network of detection stations. Additionally, inclusive of all tagged birds, we color-banded 272 Evening Grosbeaks to enable re-sighting by field observers, backyard bird-watchers and community scientists, adding valuable re-sighting locations to species tracking data and involving the birding community at-large in this project. Table 1 below shows our marking efforts of nearly 400 Evening Grosbeaks since 2017, including 206 tagged birds. Thanks to KFF funding we were able to more than double our number of birds banded across the previous five years in just 2022-23, with 272 grosbeaks color-banded. Even more significantly, we were able to more than double the number of grosbeaks outfitted with transmitters, increasing our project total by 64%.



Photo 1. Female Evening Grosbeak with Lotek Sunbird satellite tag just before release.

Table 1. Summary of all Evening Grosbeak banding and tagging totals since 2017, including efforts under funding from Knobloch Family Foundation and R2R.

Year	Location	Color-band	Radio tag	Satellite tag	Total Marked
2017-23	Pennsylvania	211	104	20	211
2017-21	Pennsylvania	118	75	--	118
2023	Pennsylvania	93	29	20	93
2022	Maine	57	30	11	57
2022-23	Minnesota	59	--	10	59
2022	Minnesota	5	--	2	5
2023	Minnesota	54	--	8	54
2023	New York	63	26	5	63
Total (2022-23)		272	85	46	272
Total (2017-23)		390	160	46	390

2. **Collect detailed full annual cycle data on Evening Grosbeaks for three to four call type winter populations across the United States. Mapping Evening Grosbeak local and widescale use of the landscape and habitats will help provide linkages between winter populations and breeding populations.**

Through our deployments of Sunbird satellite tags, radio nanotags and color-banding, we are collecting detailed spatial information of individual Evening Grosbeaks throughout their annual cycle. In this current phase of the project we are collecting data from three major winter populations in the United States: Upper Northeast, Lower Northeast and the Midwest.

Sunbird Satellite Tags

Through early September 2023 the 46 Sunbird tagged grosbeaks have produced more than 10,000 total positions. Among these are 4,542 “high accuracy” positions

which represent grosbeak locations with 1.5km to <250m accuracy. All together these satellite tag positions have provided connecting tracks, from wintering areas to likely breeding areas, for at least 16 Evening Grosbeaks (ME – 5, MN – 6, NY – 1, PA – 6). From August 1st to September 13th, we have 12 active Sunbird tags still sending positions. This includes one male tagged in Maine in April 2022, which we have dubbed “Champ”, that is still going at nearly 17 months later!



Photo 2. Mallory Sarver (CMNH-PARC) and David Yeany (WPC-PNHP) process a male Evening Grosbeak, color-band it, and outfit it with a Sunbird satellite tag at Sax-Zim Bog, Minnesota in February 2023.

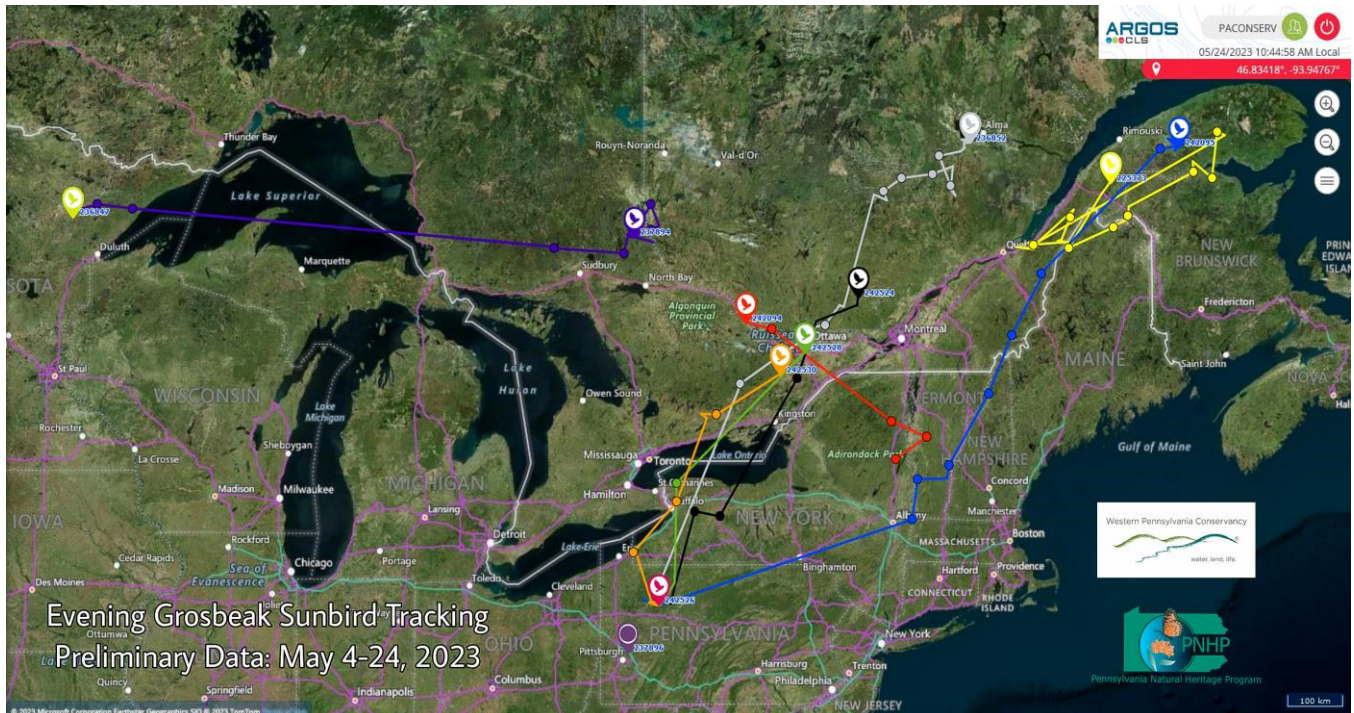


Figure 1. Evening Grosbeak Sunbird satellite tracking data showing migration routes from wintering areas to breeding areas for 10 grosbeaks during May 4-24, 2023. Pins symbolize the most recent location of each bird during this period.

The use of cutting-edge technology can be challenging, especially with miniaturized tracking technology for songbirds like the Lotek Sunbird satellite tags. Our team worked tirelessly with Lotek to ensure as much success

as possible for all tag deployments. Through this work we were given ten free “goodwill” Sunbird tags from Lotek for deployment in winter 2022 and 2023. These tags, valued at \$20,000, augmented those which were purchased. Due to additional challenges with these tags over the course of 2023, Lotek will be providing an additional 15 “goodwill” Sunbird tags for deployment on Evening Grosbeaks in the upcoming 2024 winter season.

Motus Tracking with Radio Nanotags

During the grant period, 85 Lotek solar-powered nanotags were deployed on Evening Grosbeaks in Pennsylvania, Maine and New York – where these tags are permitted for use due to the extensive network of Motus Wildlife Tracking System stations. With these tag deployments we were able to increase our total number of grosbeaks with Motus nanotags from 75 (2017-2021) to 160, further increasing our ability to make full annual cycle linkages.

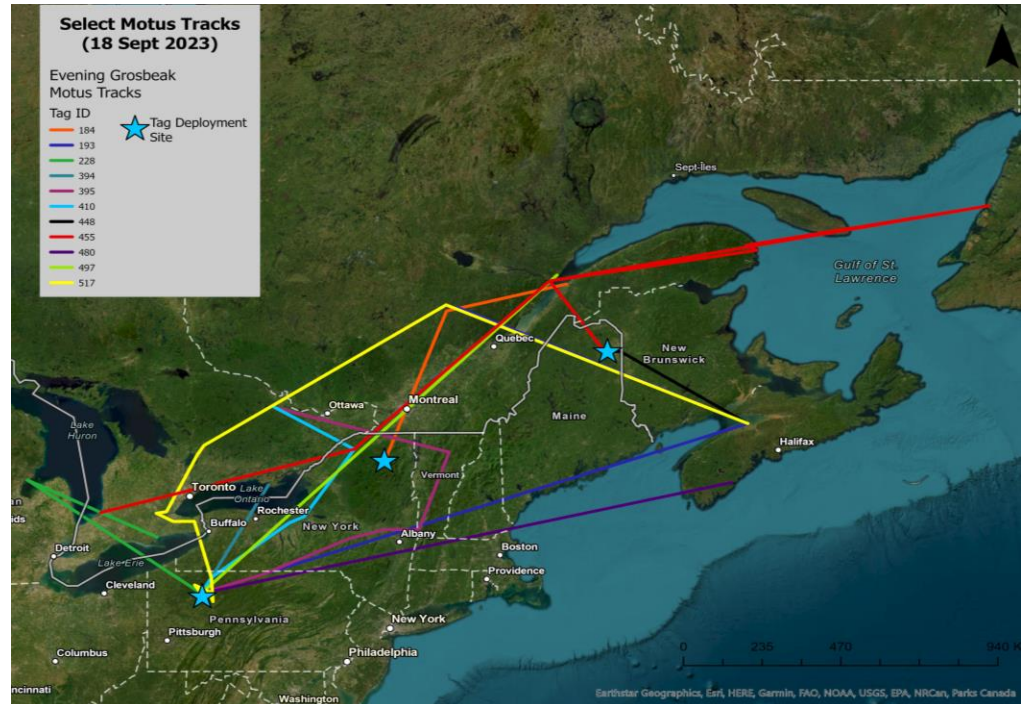


Figure 2. Evening Grosbeak tracks for 11 selected birds detected via the Motus Wildlife Tracking System (2018-2023). Deployments sites include Pennsylvania, New York and Maine.

Since 2017, we have collected detections from Motus stations away from the immediate tagging site for 105 Evening Grosbeaks or about 65% of all radio tagged grosbeaks. During the grant period we had Motus detections for 71 Evening Grosbeaks away from immediate tagging sites in Pennsylvania, Maine and New York. Based on preliminary data, we have potential linkage tracks for 41 birds out of all Evening Grosbeaks tracked with Motus since 2017. This includes Motus linkage tracks for 33 birds detected during the grant period. This accounts for about 80% of all useable Motus tracks for assessing migratory connectivity and filling in critical annual cycle knowledge gaps to advance Evening Grosbeak toward recovery.

Color-banding and Community Re-sightings

Since December 2018, we have received reports of at least 93 re-sightings of our color-banded Evening Grosbeaks. This include 18 re-sightings submitted during the grant period from Pennsylvania, New York, Minnesota, Michigan and Ontario. We also collected tail feather samples for future isotopic analysis and analysis by the Bird Genoscape Project. These samples will enable further data to be collected toward the goal of learning more about Evening Grosbeak migratory connectivity and limiting factors.

Migratory Connectivity Data

Examining all tracks since 2017 from both Sunbird satellite tags and Motus radio nanotags, we have the following number of potential connectivity tracks from each deployment geography: Maine – 19, Minnesota – 6, New York – 3, Pennsylvania – 31. Evening Grosbeaks from Pennsylvania winter populations show links to Manitoba (more data evaluation needed), Michigan, New Hampshire, Nova Scotia, Ontario and Quebec. Grosbeaks from New York show connectivity with areas in Ontario and Quebec. Grosbeaks from Maine were

linked to breeding areas in Maine, Manitoba (more data evaluation needed), Newfoundland, Nova Scotia, Ontario and Quebec. While all Evening Grosbeak tracking to-date provides 59 potential connectivity tracks from winter to migration/breeding areas, not all tracks will provide enough information to use in analyses and more linkages are still needed from areas within the Northeast, Midwest and of course, the western United States (see Next Steps). Nevertheless, R2R and KFF funding have allowed us to take a huge step forward in filling in knowledge gaps surrounding the annual cycle of this mysterious and irruptive migrant with high conservation concern.

3. Share data with Movebank, Migratory Connectivity Project (e.g. Atlas of Migratory Connectivity), Motus database, and other stakeholders for use in further developing conservation strategies for Evening Grosbeak to move it up the pyramid of recovery.

All data collected from nanotagged Evening Grosbeaks since 2017 exist in the Motus Wildlife Tracking System database. As noted above, feather samples are being shared with the Bird Genoscape Project. Following data collection from grosbeaks tagged during winter 2024, we will aim to begin analysis of movement data and will prepare to share satellite tracking data with databases such as Movebank and Atlas of Migratory Connectivity. We are developing an ArcGIS StoryMap with partners to share annual cycle stories about individual tagged grosbeaks, such as “Champ.”

4. Collaborate with partners to produce a summary report of project activities and results.

This report will serve as the final report for activities on this grant cycle October, 2021 – October, 2023. As required by the Knobloch Family Foundation, WPC will prepare a 2-3 page report to be submitted in by October 31, 2023.

5. Create Evening Grosbeak Working Group, coordinated by the FiRN with WPC and CMNH.

With its first meeting in September 2021, WPC coordinated with FiRN to form the first International Evening Grosbeak Working Group. The group consistently meets on a bi-monthly schedule to discuss the conservation priorities for Evening Grosbeak and how we can fill-in critical knowledge gaps through purposeful collaborative efforts. There are now over 60 members participating from across the United States and Canada. The core participants come from non-profits, government agencies, universities and other conservation groups, but the group does include community members, business owners, foresters and other non-scientists.

We are taking an intentional approach toward co-production within the working group. We have given presentations to more than 25 birding or nature groups across 12 states and have created more than 20 social media posts about the Evening Grosbeak project across Facebook, Instagram and LinkedIn reaching a wide audience. One example of how we intend to engage communities across the Evening Grosbeak range is by holding “Coffeehouse Chats” with groups of community members as we did in at Sax-Zim Bog, Minnesota during February 2023 together with our partners at the Friends of Sax-Zim Bog. This was a forum to dialogue with local business owners, local government officials and other interested parties about bird conservation where they live and specifically how they see the importance of Evening Grosbeak and its associated bird species. Evening Grosbeaks are a popular backyard feeder bird loved by many, and as a purposeful collaboration with and for the



Photo 3. Male Evening Grosbeak with Sunbird satellite tag 225373 tagged in Maine in April 2022. This bird is nicknamed “Champ”, as he still sending locations 17 months since deployment with 2,559 total positions.

larger birding community, we established a “Finch FeederCam” live stream on YouTube that was co-sponsored by FiRN and Aspen Song Wild Bird Seed in northern Maine at one of our research sites. We have plans to possibly add additional livestream feeder cameras in New York and Pennsylvania.

During this past spring we established teams within the working group that will meet in between bi-monthly meetings to focus on each of the following priorities in the decline and conservation of Evening Grosbeak: diet, direct mortalities (collisions, cats and disease), habitat, migratory connectivity and population dynamics and climate change. To-date, we have made the most progress within the migratory connectivity, diet and direct mortalities teams. Below is a summary of work that is currently happening within each of these teams:

Direct Mortalities (collisions, cats, and disease)

Members of the working group from the USGS Bird Banding Lab (BBL) and U.S. Fish and Wildlife Service (USFWS) are working to address the threat of bird collisions more accurately. This team is currently working on what the BBL can accomplish by using banded bird data and how that analysis can complement conservation and recovery efforts for bird collisions by the USFWS and other partners, especially for species of concern. The BBL did an initial data query of the BBL database and found the most collision records reported occurred for birds that frequent feeding stations. *The species that had the most collisions in this data query was Evening Grosbeak, and surprisingly 4 other finch species were also noted in the top 15 colliders list.* Due to the steep decline of Evening Grosbeak and bird collisions being a potential limiting factor for the decline of this species, the BBL and USFWS joined



Photo 4. Matt Young (FiRN) meets with community members for a “Coffeehouse Chat” about Evening Grosbeak and boreal bird conservation (top), and presents to a public group at the Friends of Sax-Zim Bog Welcome Center in February 2023 (bottom).



Photo 5. In northern Maine our team deployed a radio nanotag on this male Evening Grosbeak “228” in April 2022. This bird was killed from a window collision in November 2022 in Grand Bend, Ontario – 920 mi from its last location. A USFWS/USGS article tells the whole story: <https://www.fws.gov/story/dont-let-sun-set-evening-grosbeaks>

the R2R Evening Grosbeak Working Group to help address this issue and other direct mortality factors. By further investigating bird collisions, and specifically for Evening Grosbeak, as well as understanding the specific covariates of bird collisions, we may shape the type of conservation recommendations and mitigation needed to reduce collision mortality in the most problematic areas across the U.S. and Canada.

Diet (tree seeds, feeders, insect prey)

During this grant period, FiRN has initiated several student-based research projects aimed at better understanding various aspects of Evening Grosbeak ecology to help fill-in knowledge gaps relevant to conservation of the species. These projects primarily involve work with professors Doug Robinson (Oregon State University, OSU) and Thomas Hahn-Coombs (University of California-Davis, UC Davis):

- What do Evening Grosbeaks eat? (OSU, Will Kirsch)
 - Thousands of Evening Grosbeak photos from eBird and the Macaulay Library are being evaluated to determine food items from across the range to fill-in knowledge gaps about their diet.
- iNaturalist Grosbeak Finch Foraging Project (OSU graduate, Caleb Centanni)
 - This community science project will collect ecological information on diet foraging preferences for different Evening Grosbeak call type populations, increasing our knowledge to better develop conservation strategies for different populations.
- Investigation of occurrence, seasonality of breeding, diet ecology and population dynamics of Type 1 and Type 4 Evening Grosbeak subspecies populations in Wyoming (UC-Davis, Konshau Duman)
- Evening Grosbeak will be one of five focal species for a bird seed sales study funded by the Wild Bird Feeding Institute (WBFi).
 - This will be a collaborative project among FiRN, WBFi and University of California-Los Angeles (UCLA, Ben Tonelli) to determine how boreal finch irruptions impact the bird seed sales market.

Migratory Connectivity & Population Dynamics

- Continental Connectivity of the Evening Grosbeak (WPC-PNHP, CMNH-PARC, FiRN)
 - This is the research component of this R2R Pilot Species Project and the primary research project of the Evening Grosbeak Working Group. As described in this report the focus is learn more about the species' annual cycle ecology and links from wintering to breeding areas to help identify limiting factors.
 - We have garnered interest from banders across the Northeast and Midwest and could add Evening Grosbeak color-banding sites in Vermont, Massachusetts, northern New York and Wisconsin during winter 2024.
 - See "Next Steps" below.
- Identification of Evening Grosbeak Type 1 and Type 2 subspecies population range boundaries in Oregon (OSU, UC-Davis, Will Kirsch)
 - This undergraduate project seeks to determine the range boundary between Type 1 and Type 2 Evening Grosbeak populations and seasonal occurrence patterns in a transition area for the two populations.
- Monitoring Evening Grosbeak abundance at a migratory stopover site on the Oregon State University campus (OSU)
 - Evening Grosbeaks were once abundant at a migratory stopover site in Corvallis, Oregon. Estimates from the 1970s suggested 150,000 to 250,000 grosbeaks would be present. Re-surveys a decade ago indicated numbers were down to about 10,000. Annual surveys have been re-established, starting in 2023, to track the trends through time.
- Evening Grosbeak monitoring and call type distribution mapping with Automated Recording Units (ARUs)

- Northern California to central Oregon: UC-Davis and OSU have placed more than 12 ARUs (provided by Cornell Lab and FiRN) across the region.
- The working group is making plans to explore what current ARU networks exist within the Evening Grosbeak's breeding range and discussing how these data could be used to assess subspecies/call type population distributions.

Next Steps

For the next phase of this project we would like to implement the following work:

Migratory Connectivity

- We are beginning to meet with partners from Vermont Center for Ecostudies and St. Lawrence University to discuss and develop specifics around visualization and analysis of our current tracking data. One next step will be completion of a publicly accessing ArcGIS StoryMap that will elevate the visibility of the project and help tell salient stories about individual grosbeaks.
- Current migratory connectivity research (Knight et al. 2021, Maurizio et al. 2019, Tonra et al. 2019, Knight et al. 2018, Cohen et al. 2017 and others) suggests that we need high quality annual cycle linkages (winter to migration to breeding) for 50 to 100 Evening Grosbeaks distributed across six or more non-breeding sites range wide to effectively evaluate migratory connectivity and fill-in knowledge gaps for limiting factors in the species decline. This sample size should enable us to conduct the type of quantitative and explanatory analysis needed to evaluate migratory connectivity for this species across the continent using current statistical methods.
- We currently have 16 high quality linkage tracks from satellite tags from four geographic regions: Pennsylvania, Maine, Minnesota and New York. We have 41 other Motus tracks, which with additional analysis should add more quality linkages. However, 25 of these Motus tracks are from Pennsylvania due to our tagging efforts from 2017-2021. This means we still need about 25-80 more grosbeaks with high quality annual cycle linkages (e.g. satellite, GPS, or complete Motus tracks) to complete this assessment.
- We will seek funding to continue gathering adequate grosbeak linkages in the East and Midwest, but we also need to expand our efforts to western populations by traveling to tagging sites in the Pacific Northwest, Northern California and Intermountain West. The best technology for this will be Lotek Sunbird satellite transmitters (~\$2,800/tag/year) or possibly new CTT Flicker GPS transmitters (~\$1300/tag), however these tags may not be light enough yet for Evening Grosbeaks. In western locations we are limited to the use of non-Motus tags, but can also augment work in the Northeast with more nanotag radio transmitters (~\$220/tag).
- Along with continuing to fill-in tagging and tracking gaps in the winter range, we would like to explore the potential for tagging efforts in breeding areas and how new or existing networks of ARUs can help add population level information.
- We also will seek funding to coordinate and train a growing network of Evening Grosbeak color-banders and potential sites for new tag deployments. This will enrich our project both in terms of filling-in knowledge gaps but also by engaging community scientists and backyard bird watchers in re-sighting color-banded grosbeaks.

Evening Grosbeak Working Group

- It is imperative to the continuation of the Evening Grosbeak Working Group to secure funds for coordinating group activities and meetings. This person will help facilitate collaboration among group members toward the group's conservation goals advancing the species toward recovery. This could be a part-time person at WPC-PNHP, or sub-contract to FIRN to pursue as a student-based project or another solution. We have already identified some suitable options for this need, but require funds to implement.
- Continue work within priority teams focused on diet, direct mortalities (collisions, cats, and disease), habitat, migratory connectivity & population dynamics and climate change to compile our current state of knowledge and determine gaps that need to be filled.
- Continue to strategically seek partners throughout the United States and Canada to engage in purposeful collaboration that will increase public participation, and improve the quality of conservation research and planning advancing the Evening Grosbeak along the road to recovery.
- Increase collaboration with FIRN to continue projects that can help fill-in knowledge gaps in priority areas of diet, direct mortalities, migratory connectivity and habitat.

Communications

Below is a non-exhaustive list of various communications about the project during the grant period, not including numerous social media posts by WPC-PNHP, FiRN, and CMNH-PARC.

Websites:

Road to Recovery website: *Evening Grosbeak: Continental Conservation of the Evening Grosbeak: A Road to Recovery Pilot Species Project*: <https://r2rbirds.org/tipping-point-species/evening-grosbeak/>

Western Pennsylvania Conservancy website: *Species At Risk: Evening Grosbeak*: <https://waterlandlife.org/wildlife-pnhp/species-at-risk-in-pennsylvania/evening-grosbeak-birds-species-irruptive-migration/>

Finch Research Network website: *International Road to Recovery Evening Grosbeak Project*: <https://finchnetwork.org/projects/the-evening-grosbeak-project>

Western Pennsylvania Conservancy Evening Grosbeak project donation page: bit.ly/3z2qN6U

Presentations:

Young, M.A. 2021-2023. From Finches, Finch Irruptions, to the Launching of the Finch Research Network (FiRN). Presentations included a significant amount of material about the Evening Grosbeak research and conservation planning happening within the working group. Presentations were made to the following groups:

Cayuga Bird Club (Oct 2021), BC: Nature Vancouver (Nov 2021), Syosset Wild Birds Unlimited (Dec 2021), Audubon Vermont (Dec 2021), Montezuma Audubon (Jan 2022), Onondaga Audubon (Feb 2022), Mearns Bird Club (April 2022), South Shore Audubon (May 2022), Texas Audubon (Dec 2023), Maine Audubon (Dec 2022), Horicon Bird Club (Jan 2023)

Young, M.A. 2023. All Things Finch: From finch irruptions, to winter finch forecasts, to finch research projects, including projects about the distribution and ecology of different Evening Grosbeak and Red Crossbill flight calls. North Shore Audubon. March 2023

Young, M.A. 2023. All Things Finch: From finch irruptions, to winter finch forecasts, to finch research projects, including projects about the distribution and ecology of different Evening Grosbeak and Red Crossbill flight calls. Duluth Audubon. March 2023.

Young, M.A. 2023. All Things Finch: From finch irruptions, to winter finch forecasts, to finch research projects, including projects about the distribution and ecology of different Evening Grosbeak and Red Crossbill flight calls. Indiana Dunes Birding Festival. May 2023.

Young, M.A. 2023. All Things Finch: From finch irruptions, to winter finch forecasts, to finch research projects, including projects about the distribution and ecology of different Evening Grosbeak and Red Crossbill flight calls. Friends of Sax-Zim Bog Welcome Center. 17 Feb 2023.

Young, M.A. 2023. Evening Grosbeak Project – Coffeehouse Chat with Community members at Sax-Zim Bog. 15 Feb 2023.

Young, M.A. 2022. Winter Finch Migration – Where Will Seed Sales Thrive this Year. Wild Bird Feeding Institute. Nov 2022.

Young, M.A., D. Yeany, and L. DeGroot. 2022. Initiating Continental Conservation of Evening Grosbeak: A Road to Recovery Pilot Project. Association of Field Ornithologists 2022 Annual Conference. Plymouth, MA. Oct 2022

Young, M.A. 2021. Pennsylvania Society of Ornithology Annual Meeting: From winter finch forecasts, to finch irruptions, to finch research projects, including projects about the distribution and ecology of different Evening Grosbeak and Red Crossbill flight calls. 29 Sept 2021.

Yeany, D. 2023. Participated in Road to Recovery Species Working Group Roundtable Panel at the 2023 American Ornithological Society-Society of Canadian Ornithologists Conference in London, Ontario.

Yeany, D. 2023. Road to Recovery: Continental Conservation of the Evening Grosbeak. Bartramian Audubon Society. 10 April 2023.

Yeany, D. 2023. Road to Recovery: Continental Conservation of the Evening Grosbeak. Lycoming Audubon Society. 22 Feb 2023.

Yeany, D. 2023. Road to Recovery: Continental Conservation of the Evening Grosbeak. Lancaster County Bird Club. 13 April 2023.

Yeany, D. 2023. Road to Recovery: Continental Conservation of the Evening Grosbeak. Friends of Sax-Zim Bog Webinar. 15 Dec 2022.

Publications:

Gehring, J. 2023. Don't Let the Sun Set on Evening Grosbeaks. USFWS News Story. Accessed: <https://www.fws.gov/story/dont-let-sun-set-evening-grosbeaks>

Robinson, W.D., J. Greer, J. Masseloux, T.A. Hallman and J.R. Curtis. 2022. Dramatic declines of Evening Grosbeak numbers at a spring migration stop-over site. *Diversity* 14:496-505.

Yeany, D. 2023. Road to Recovery Evening Grosbeak Project – Winter 2023. Wild Heritage News: Pennsylvania Natural Heritage Program, Information for the Conservation of Biodiversity. Spring 2023. Accessed here: <https://www.naturalheritage.state.pa.us/docs/2023%20Q1%20PNHP%20newsletter.pdf>

Yeany, D. 2022. Putting Evening Grosbeak on the Road to Recovery. Wild Heritage News: Pennsylvania Natural Heritage Program, Information for the Conservation of Biodiversity. Summer 2022. Accessed here: <https://www.naturalheritage.state.pa.us/docs/2022%20Q2%20PNHP%20newsletter.pdf>

PNHP. 2022. Evening Grosbeak Project. Pennsylvania Natural Heritage Program: Annual Report 2021. 36 pages. Accessed here: <https://www.naturalheritage.state.pa.us/docs/PNHP-2021-AnnualReport.pdf>

Yeany, D. 2021. Tracking Boreal Nomads: Winter Movements of Evening Grosbeaks. Wild Heritage News: Pennsylvania Natural Heritage Program, Information for the Conservation of Biodiversity. Summer 2022. Accessed here: <https://www.naturalheritage.state.pa.us/docs/2021%20Q1%20PNHP%20newsletter.pdf>

Other Media Coverage:

Grueskin, Zoe. 2023. Highlighting Evening Grosbeak Conservation and Research. Audubon magazine (in progress). David Yeany and Matt Young were interviewed for this forthcoming media piece.

Thomas, Mary Ann. 2023. Spotting black and gold evening grosbeaks may help slow their decline. Pittsburgh Post-Gazette. 22 Mar 2023. David Yeany interviewed. Accessed here: https://www.google.com/url?sa=t&rct=j&q=&esrc=s&source=web&cd=&cad=rja&uact=8&ved=2ahUKEwjBwKzKubH_AhWZLFkFHdaeCk0QFnoECA0QAQ&url=https%3A%2F%2Fwww.post-gazette.com%2Flife%2Foutdoors%2F2023%2F03%2F22%2Fevening-grosbeak-western-pa-conservancy%2Fstories%2F202303140129&usg=AOvVaw0J_pM2vcDaxrhC2CHdkUUc

Evening Grosbeak and winter finch article in Minnesota Timberjay News. May 2023.

The Winter Finch Forecast 2022. Badgerland Birding Podcast. Sept 2022.

Evening Grosbeak and other winter finches. Allerton Park Bird Club Podcast. Dec 2021.

Finches and the Finch Research Network. The Bird House Livestream. Nov 2022.

Additional Photos



Photo 6. Double baited Evening Grosbeak bownet trap set-up with ice shelter banding station at Sax-Zim Bog, Minnesota.

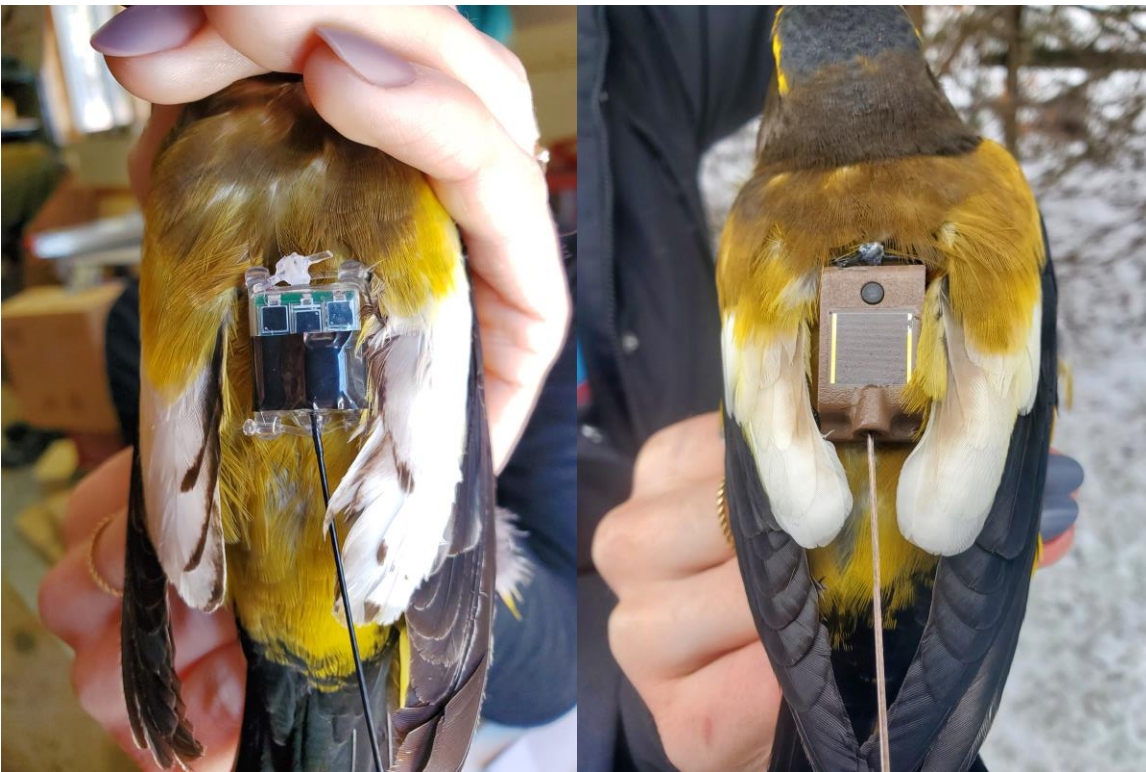


Photo 7. A comparison of two types of transmitters that we use for tracking Evening Grosbeaks: Lotek solar hybrid radio nanotag (Left) and Lotek Sunbird satellite tag (Right).