

Results of BCN Migration Monitoring at LaBagh Woods and Montrose Point

Mason Fidino, Urban Wildlife Institute

Seth Magle, Urban Wildlife Institute

Judy Pollock, Bird Conservation Network

Summary

Migratory bird monitoring and analysis were undertaken as part of the Chicago Urban Conservation Treaty for Migratory Birds partnership. Partners are the US Fish and Wildlife Service Chicago Field Office, Forest Preserves of Cook County, Bird Conservation Network, Chicago Park District, Lincoln Park Zoo's Urban Wildlife Institute, Chicago Ornithological Society, Chicago Audubon Society, Friends of the Chicago River and Greencorps Chicago.

The purpose of this monitoring program was to use newly developed volunteer protocols to determine the effectiveness of habitat restoration in maintaining or improving migratory bird habitat at two Chicago natural areas: Montrose Point (Chicago Park District) and LaBagh Woods (Forest Preserves of Cook County). The specific questions we addressed were:

1. How does a habitat restoration activity affect species richness and abundance of migratory birds?
2. Which habitat structures are used more frequently by specific bird species and guilds?
3. Which planting areas are used more frequently by specific bird species and guilds?

Data was collected by volunteers from April 1 to June 7 and August 20 through October, starting in spring of '15 and ending in summer of '17.

The questions were answered by collecting two different types of data. For the first and third question, 5-minute point counts were conducted at set locations (i.e., sites) within LaBagh Woods and Montrose during the migratory season between 2016 and 2017.

At LaBagh Woods, sites were selected that had similar woodland habitat but varied in the amount of restoration that had occurred. The restoration activity at LaBagh was removal of buckthorn to make cleared areas for planting native shrubs. Restored areas were largely wooded clearings surrounded by buckthorn or lawn edges. When buckthorn was removed, some of it was

retained as brush piles and brushy fences, sometimes with vines draped over them. Herbaceous seeding was done. Shrubs were small when installed, and birds were not observed using them, so that the restoration action measured in this analysis is the buckthorn clearing and retaining some piles of cut brush. At LaBagh, the point count radius was 50', the greatest distance practical for ID of migratory birds in those conditions.

At Montrose, which is a small site with many diverse plantings, a 25' radius was selected. Points were laid out evenly around the site, positioned to best sample each of the small habitats. Because restoration is happening there in phases, Question 1 will need to be considered in a before-and-after fashion. Only one point was restored during the monitoring period, a lawn converted to a butterfly garden. Data collected in this study forms a baseline for an assessment of future restoration efforts.

For the second question, a 5-minute foraging survey was conducted at a subset of sites to record the type of vegetative structure (i.e., canopy trees, understory trees / shrubs, buckthorn, and snags) a species first foraged on. Monitors were assigned to sample only odd or only even points in order to reduce the amount of sampling time. Following this, survey organizers quantified the abundance of different vegetative types at each site to estimate whether bird species foraged more or less on a given vegetative type than would be expected by chance.

Overall, our analysis indicates that presence of one bird family, wrens, correlated positively to buckthorn clearing, and one family, finches and allies (Purple Finch, House Finch and American Goldfinch), correlated negatively. There was no significant correlation between any of the other 12 families. Furthermore, many families of birds were observed foraging less on buckthorn than would be expected by chance, but more often than expected on canopy trees. Finally, we determined that families of birds varied in their abundance at different point count locations within LaBagh Woods and Montrose.

The results at LaBagh likely indicate that the removal of buckthorn in a phased manner such that clearings are connected by buckthorn thickets and using brush piles to provide some substitute structure may have little effect on most bird families' use of the site. As new shrub plantings grow up, it seems reasonable to expect that the subsequent replacement of buckthorn with native planting will likely increase foraging opportunities at this site and therefore increase the quality of migratory stopover habitat for many species and allow for removal of the remaining buckthorn. In addition, since birds are observed in the unrestored points which have plenty of buckthorn, but are infrequently using buckthorn to forage, they are most likely using buckthorn for cover. This again supports the restoration method of replacing buckthorn with a mix of openings and dense shrubs and thickets.

At Montrose, baseline data will allow for future restoration effects to be analyzed. The analysis of which locations were more frequently used by different bird species shows that Montrose's mix of habitats is well-used by many different bird families. The results allow us to hypothesize that a mix of dense, structurally complex habitat with open wooded areas attracts birds from the warblers and thrush families, which can provide a guide for future restoration efforts.

Another important question about this study is whether enough data can be collected by volunteers to allow for meaningful conclusions. We attempted to have points visited three times per week during spring and fall for 2.5 years, but some weeks fell short due to monitor availability. This is a significant number of visits, and it did allow for meaningful conclusions to be drawn. Even in an urban area full of birders, it was difficult to find birders willing to make a once-a-week commitment during spring migration. The foraging study added about an extra 20 minutes to the time.

We had initially planned to study three sites but were unable to find enough monitors to visit the third site, Burnham Wildlife Corridor, which was somewhat inaccessible and had many fewer birds. We used the strategy of conducting a class to train beginning birders to recognize bird families, which we thought would give us enough data to perform this type of an analysis. However the strategy also did not result in enough data. It requires more time than a season for most to competently ID families, and the lack of birds at the site was a disincentive as well.

Question 1. How does habitat restoration affect species richness and abundance of migratory birds?

LaBagh Woods

We addressed this question by analyzing the total counts of commonly observed bird families at LaBagh Woods during migration. As the most rare species did not have enough data to estimate their correlation to restoration efforts, families were removed from the analysis if they had less than 25 total observed counts between 2015 – 2017 (pilot data from 2015 were included in this analysis). After removing the less common families, there were 1,217 datapoints across 14 families. We then fit the following Poisson model to these data:

$$\text{Count} = \text{proportionrestored} + \text{family} + \text{lawn} + \text{proportionrestored} * \text{family} + \text{lawn} * \text{family}$$

The resulting model provides family specific estimates of relative abundance and their correlation to restoration, while controlling for the amount of lawn within a point count. Lawn was controlled for because the presence of lawn indicates a portion of a point count that could not be subject to restoration (i.e., there is no buckthorn on a lawn). Furthermore, a number of families (e.g., Turdidae) were commonly seen foraging on lawns during surveys.

Overall, one family (Troglodytidae) was counted significantly more frequently in more restored sites and one family was counted significantly less (Figure 1). The negative response was observed in finches & their allies (Fringillidae). Generally, less abundant species' counts appeared to rise after restoration activity, although many of these results were not significant. The shifts in counts can also be observed in the raw data (Figure 2).

One approach that the analysis team thought had promise for analyzing this data turned out not to be so useful. Because bird use of a site varies so much during migration season, we compared

points on a given day, and thought that would help us to control for the confounding factors association with migration (date, wind, weather). What we found was that one point stood out as having more bird sightings - the only site along the water, which we had decided to eliminate from the analysis as being too different from the other habitats. Among the restored and un-restored woodland sites without water, differences were not detected, despite having nearly 3000 recorded bird observations.

We also attempted to analyze species richness data to determine whether habitat restoration increased species richness, but these results were inconclusive. Thus, while species richness may not vary across sites, the relative abundance of bird families do.

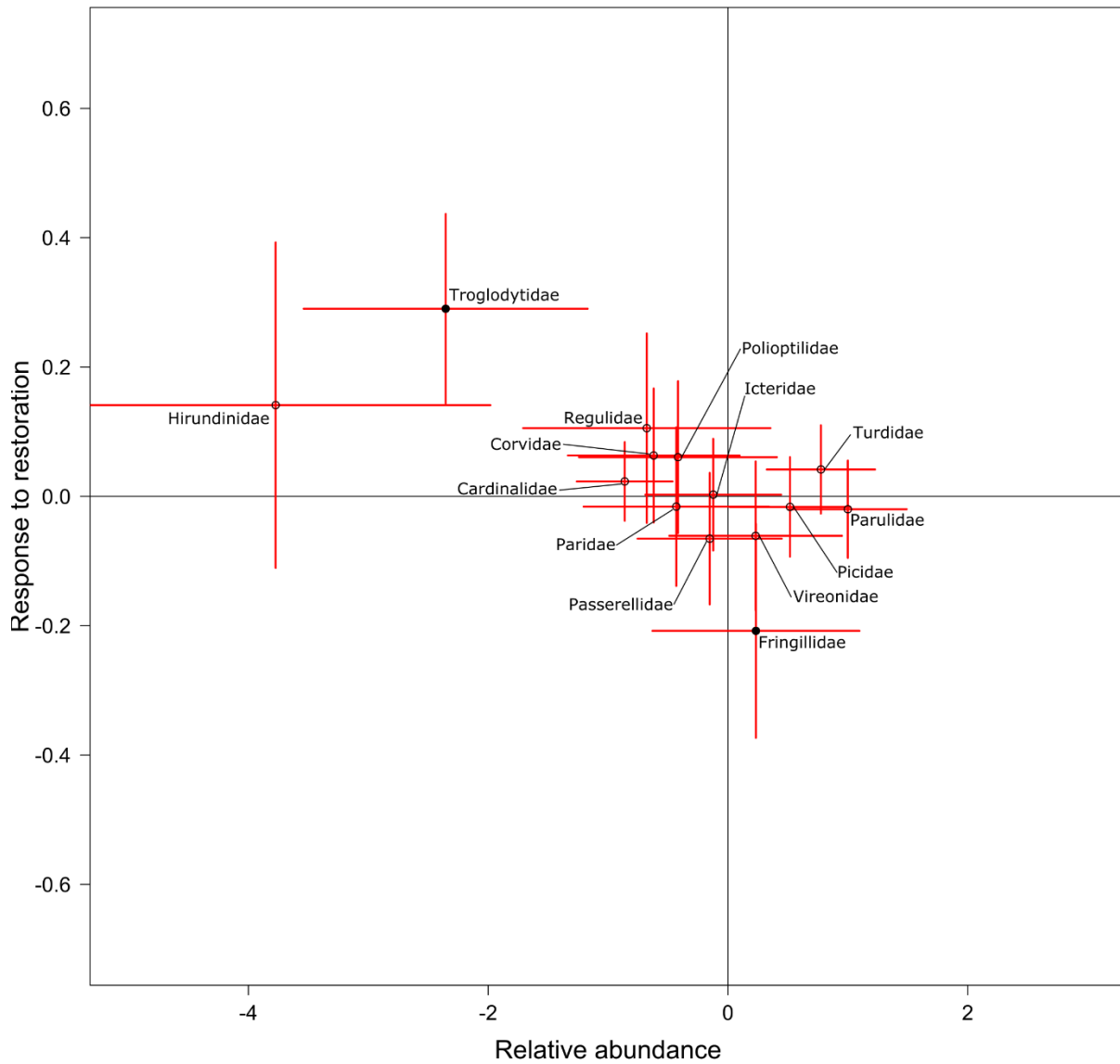


Figure 1. The response of the fourteen most commonly observed bird families at LaBagh Woods during migration from 2015 to 2017. The x-axis is an estimate of the relative abundance of each family, with positive values indicating species who are more commonly counted. The y-axis is an estimate of how much a species' relative abundance changes as a function of how much a site has been restored. Positive values on the y-axis indicate families that have a greater abundance in restored sites while negative values indicate families that are counted less often in restored sites. The red lines around each point are 95% confidence intervals for each family's relative abundance (the horizontal line) and correlation to restoration (the vertical line). Filled dots indicate families that showed a significant correlation to restoration.

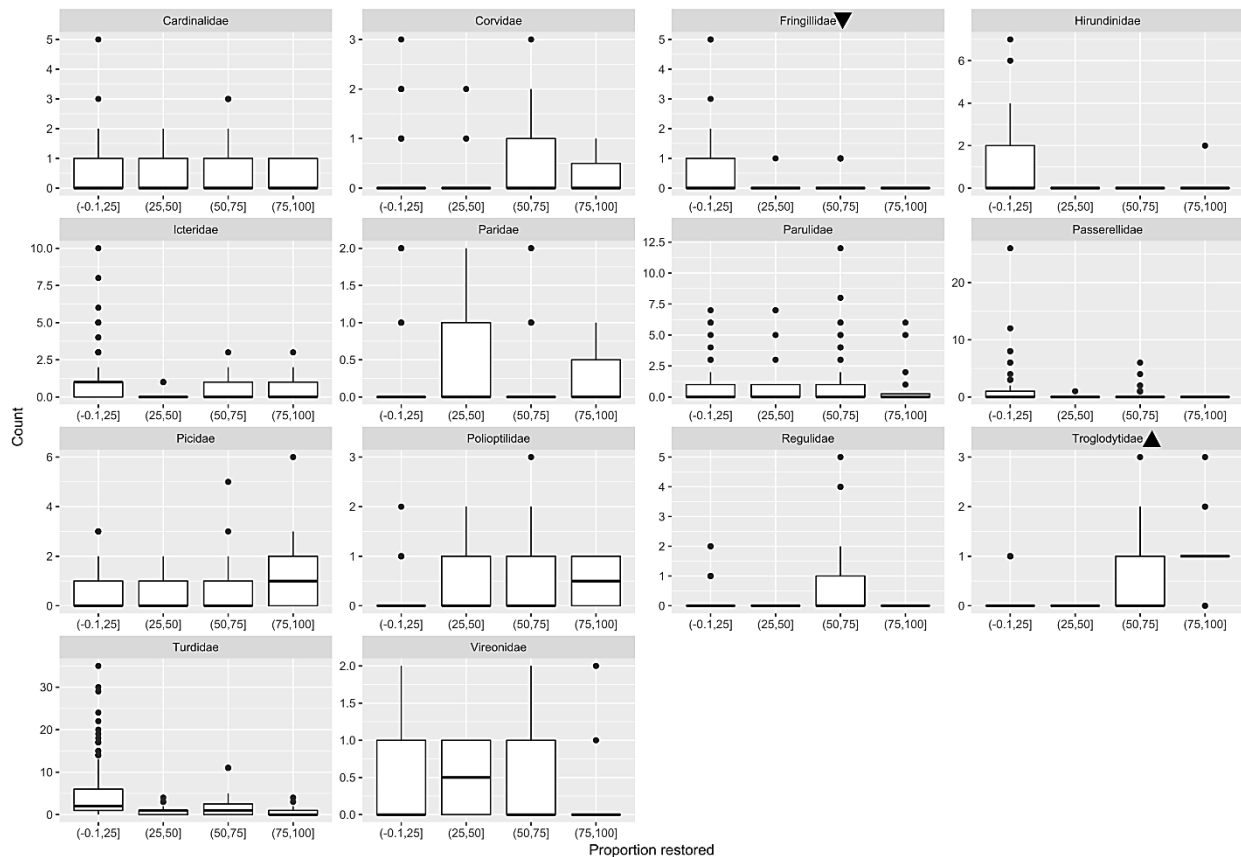


Figure 2. Boxplots of counts of varying bird families across sites that vary in how much they have been restored from 2015 to 2017 at LaBagh Woods. Sites were grouped into four different categories, those that fall between 0 – 25% restored, 26 - 50% restored, 51 -75% restored, and 76 – 100% restored. The black horizontal line for each boxplot is the median count of a bird family at sites. The inter-quartile range is white box, which represents the middle 50% of counts for each group. Outliers are represented as dots for each group. Families that showed a significant negative correlation to restoration have downward facing arrows following their name. Likewise, families that showed a significant positive correlation to restoration have upward facing arrows following their name.

Montrose

Restoration occurred at only one point at Montrose. There was not sufficient data from this one point to answer question 1. Therefore, no analysis was done.

Question 2: What habitat structures are used more frequently by specific bird species and guilds?

The goal of this analysis is to determine if there are vegetative types that bird species more frequently forage on than would be expected based on the abundance of that vegetation type within a plot. We selected four different vegetation types: canopy trees, buckthorn, understory trees / shrubs, and snags. Following Gabbe et al. (2002), we conducted a selective analysis. As a result, ground foraging events (which were recorded) were not analyzed, as the analysis relies on a count of number of stems. This method estimates relative importance values for each vegetation type for a given bird species. Positive values indicate that a bird was observed foraging more frequently on this vegetative structure than would be expected by chance while negative values indicate that a bird was observed foraging less frequently on this vegetative structure than would be expected by chance. Finally, the significance of the results can be assessed by using a chi-square goodness of fit exact test to determine if there are differences between the observed foraging events and what we would expect if a bird was foraging on vegetative types based solely on their abundance in each site.

LaBagh Woods

There was not enough species-specific data to analyze, so, like the last analysis, foraging events were summarized to families instead. All families that had less than 10 observations were removed from the analysis as there was not enough data to generate reliable results. Overall, almost every family foraged less on buckthorn than they did on other vegetative types (Figure 3). However, this difference was only significant for woodpeckers, warblers, vireos, thrushes, kinglets, gnatcatchers, chickadees, and blackbirds (Figure 3). Furthermore, almost every bird species foraged more often than would be expected on canopy trees.

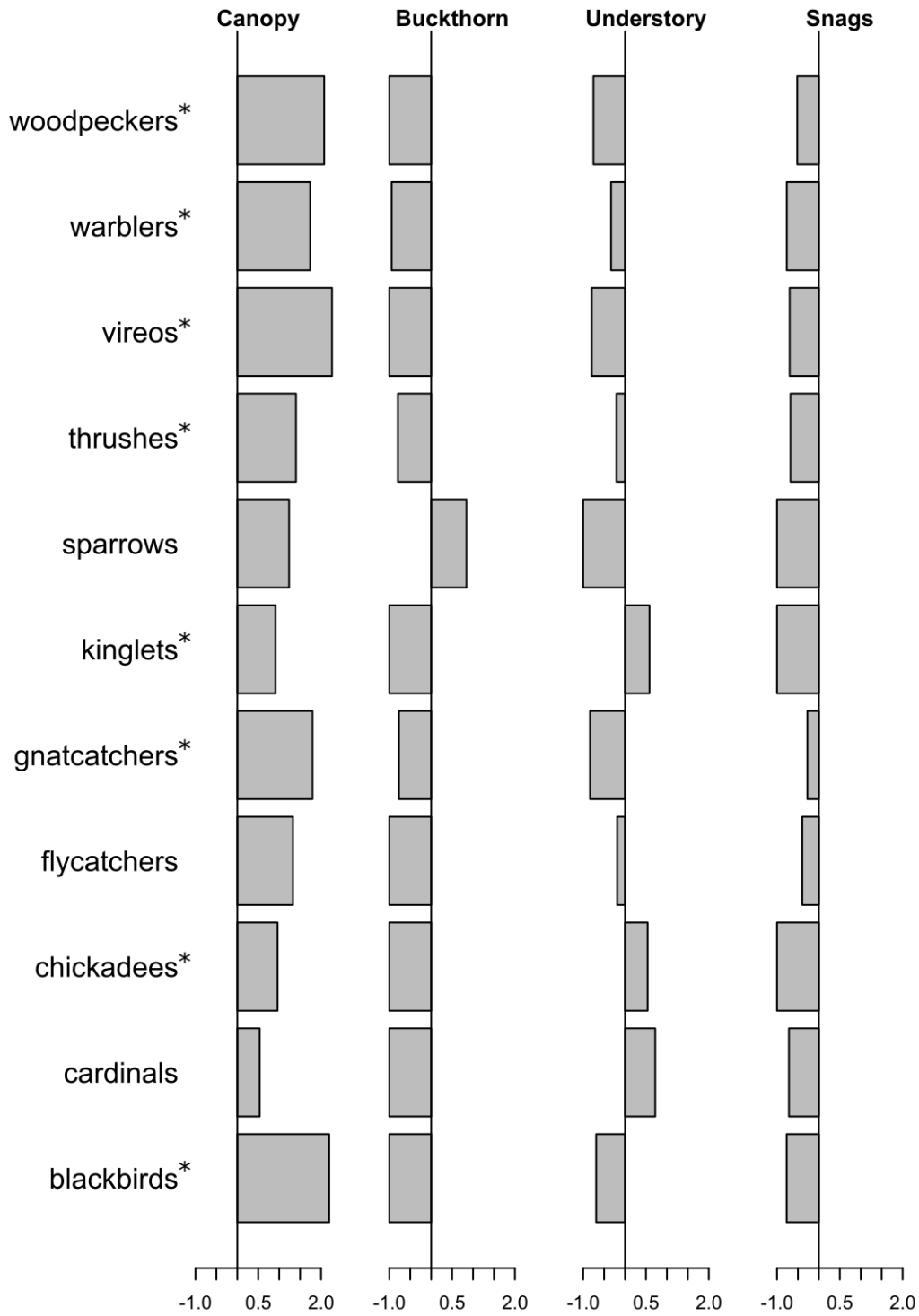


Figure 3. Foraging preferences of bird families who had 10 or more observations in 2016 and 2017 at LaBagh Woods. Positive values indicate selectivity (i.e., the bird guild forages more on this habitat structure than would be expected by chance) while negative values indicate aversion

(i.e., the bird guild forages less on this habitat structure than would be expected by chance). Guilds with an asterisk next to their name indicates significance ($p < 0.05$).

Montrose

Like LaBagh Woods, we only selected families which had 10 or more observations. However, while LaBagh Woods had 313 foraging events after censoring data (out of 438 data points, after excluding ground foraging events), Montrose only had 129 (out of 241 data points, after excluding ground foraging events). There were 6 families that had enough data for this analysis. Furthermore, buckthorn was not present at any of the sites monitored at Montrose, so this habitat type was excluded from the analysis. Overall, kinglets were the only group that had a significant difference, which indicates that many of these groups are foraging on these vegetative types about as frequently as you would expect by chance (Figure 4).

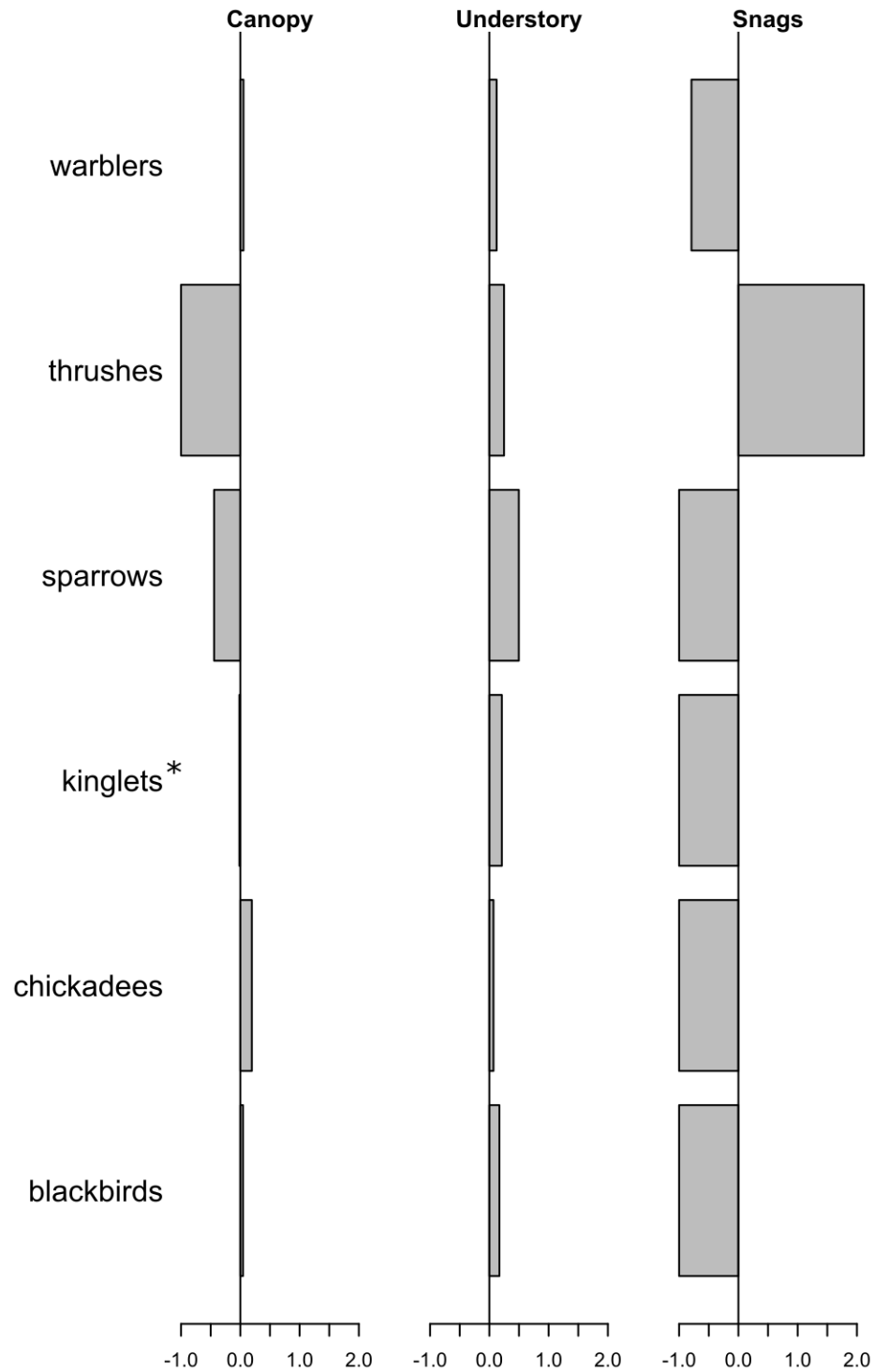


Figure 4. Foraging preferences of bird families who had 10 or more observations in 2016 and 2017 at Montrose. Positive values indicate selectivity (i.e., the bird guild forages more on this habitat structure than would be expected by chance) while negative values indicate aversion (i.e., the bird guild forages less on this habitat structure than would be expected by chance). An asterisk next to a guild name indicates a significant result ($p < 0.05$).

Question 3: Which plantings are used more frequently by bird species and guilds?

Different plantings at the site have different characteristics, and it is of interest to land managers and volunteers to know which are most successful. We assessed whether families of birds were more commonly observed at specific sites relative to other sites. Such an analysis allows us to highlight locations that have either more or fewer species or guilds, which might be driven by the presence of specific plantings. These locations may then be revisited to determine if the plantings at these locations vary from other sites. Like the first question, we fit a Poisson model to the family count data. However, with this analysis, we estimated whether each species' relative abundance varied across sites, instead of treating it as a function of the degree of restoration at each site.

LaBagh Woods

Site MP1 had the most negative responses across all families except for thrushes & their allies (Turdidae). The monitors often noted the presence of a Cooper's Hawk in the vicinity anecdotally; however the hawk was not recorded significantly more frequently on the point counts so it is hard to know whether this result is related to the habitat or the hawk.

Table 1. The relative abundance of bird families at each site in LaBagh Woods as estimated via Poisson regression. Red cells indicate that a bird family is significantly counted less frequently at that site while green cells indicate that a bird family is counted significantly more often at that site. Cells with no color represent no significant relationships.

Family	Monitoring points (had clearing)						Reference points (no clearing)				
	MP1 Open woods	MP2 Ox- bow	MP3 Open woods	MP4 Lawn, woods	MP5 Wood- ed rise	MP8 Ash open- ing	RP1 Wood s	RP2 Riv- er bank	RP3 woods	RP4 Lawn, woods	RP5 Lawn, woods
Cardinal- idae			---								
Corvidae	---										
Fringill- idae	---			+++			+++				+++
Hirundin- idae											
Icteridae	---			+++						+++	+++
Paridae	---										
Parulidae		+++		---							---
Passerell- idae	---			+++						+++	+++
Picidae	---			---		+++			+++		
Polioptil- idae	---			---							
Regulidae						+++	+++				
Troglodyt- idae	---										
Turdidae	+++	---	---	+++	---	---	---		---		
Vireonidae			---	---							

References

Gabbe A. P., Robinson, S. K., & Brawn, J. D. (2002). Tree-species preferences of foraging insectivorous birds: implications for floodplain forest restoration. *Conservation Biology*, **16**, 462-470.

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Partners

The monitoring protocol and study was overseen by a committee consisting of:

Craig Billington, Michelle Uting, Forest Preserves of Cook County

Louise Clemency, Kristen Voorhies, US Fish and Wildlife Service

Forrest Cortes, Byron Tsang, Chicago Park District

Mason Fidino, Seth Magle, Urban Wildlife Institute, Lincoln Park Zoo

Glenn Gabanski, Mary Lou Mellon, Bird Conservation Network

Katy Krigbaum, Fran Morel, Luis Munoz, Chicago Ornithological Society

Nat Miller, Audubon Great Lakes

Douglas Stotz, Field Museum

David Willard, Chicago Ornithological Society

Monitors

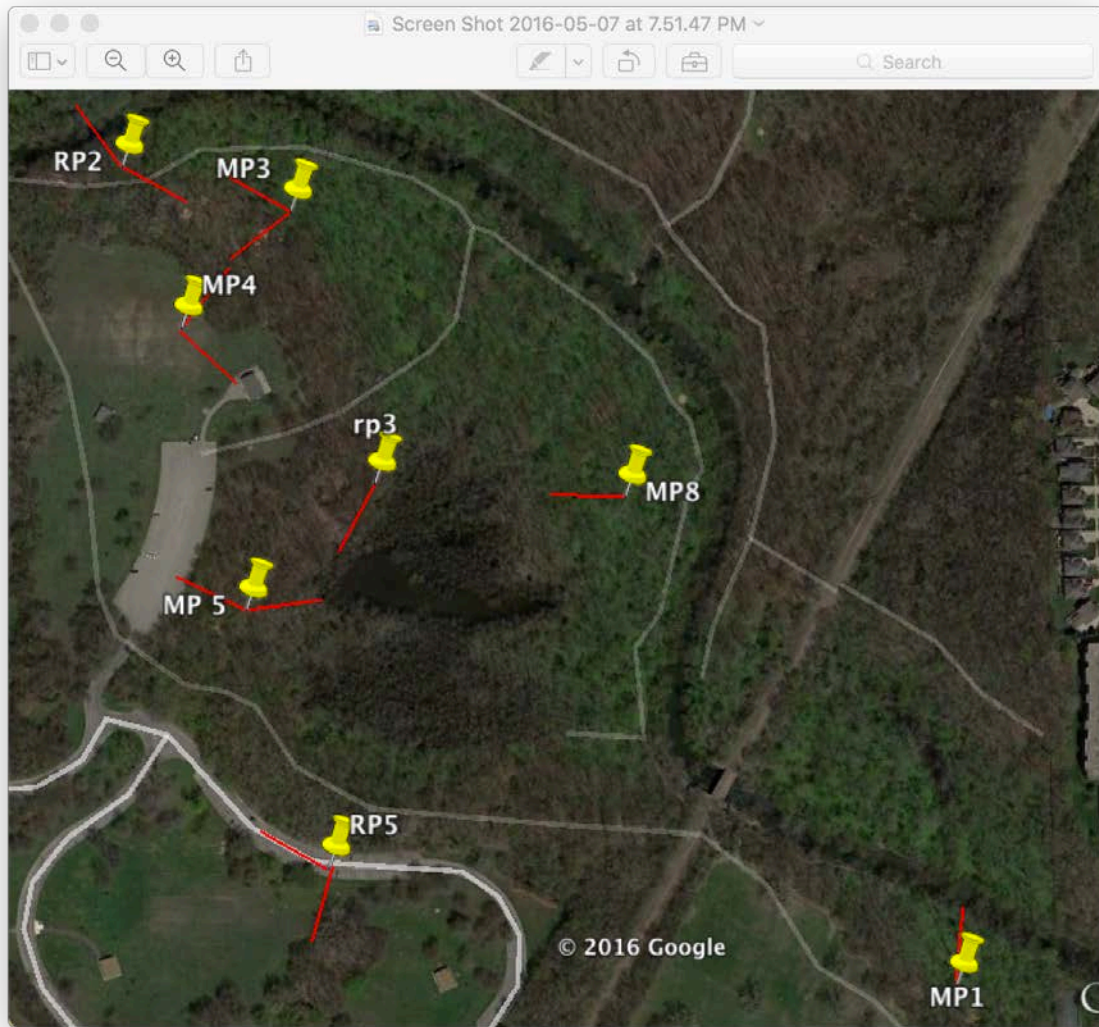
Bill Branson, Charlie Branson, Katy Krigbaum, Dennis Marton, Linda Marton, Fran Morel, Luis Munoz, Jill Niland, Patricia Palmer, Judy Pollock, Vicky Senter, Aerin Tedesco

Appendix 1



Point locations and descriptions

Montrose point locations. Circles show 25m radius.



LaBagh Woods point locations. Lines show 50 meter radius.

Point	Point Description
A LaBagh – steep bank RP2	Steep buckthorn-infested riverbank and woods - 10% cleared and shrub clumps planted
B LaBagh – Hawthorn MP3	Clearing in woodland - above floodplain but on mild slope with seep. 75% cleared, shrub clumps planted, brush piles retained
A LaBagh – picnic edge MP4	Lawn and edge of woodland. This site had 0% restoration when the study started. Buckthorn was cleared over 30% of the circle in winter of 2015/2016 and made into brush piles and native shrubs were planted in clumps.
B LaBagh – slough slope RP3	Wet buckthorn-infested woods near the oxbow. 0% restoration.
A LaBagh – Slope MP5	Steep rise up from floodplain – buckthorn-infested woods - 50% cleared winter 2015/6 and clumps of native shrubs planted.
B LaBagh – lot RP5	Lawn and edge of woodland. 0% restoration. Compare to MP4.
A LaBagh – ash opening - MP8	Ash die-off area near oxbow, now has few canopy trees. Shrubs planted across 100%. Small number of brush piles.
B LaBagh Hernandez River East-MP1	Just above floodplain in buckthorn-infested open woods. Buckthorn removed in 75% of site and native shrub clumps planted.
A Montrose 1	Layered diverse clump
B Montrose 2	Layered diverse hedgerow
A Montrose 3	Lawn converted to Butterfly Meadow 2017
B Montrose 4	Layered diverse woods
A Montrose 5	Meadow and water feature
B Montrose 6	Dense plum grove
A Montrose 7	Middle of path between sumac and aspen groves, some other tree and shrub species
B Montrose 8	Lakeside prairie on revetment

Appendix 2

Vegetation Measurements

Estimated Percent of Each Vegetation Layer, by Point

point	re-stored_p	plant-ings_p	canopy_p	buckthorn_p	understory_p	shrub_p	lawn_p	snags_p
MP4	25	n	10	20	20	0	75	5
RP3	0	n	70	20	40	5	0	5
MP5	50	n	50	50	40	0	0	10
MP8	100	y	10	5	40	5	0	20
MP1	75	y	30	0	60	5	0	30
RP5	0	n	30	5	30	5	35	5
MP3	75	y	60	5	20	10	0	20
RP2	10	y	80	25	10	5	0	5

Number of Each Vegetation Type Counted Along an E-W and N-S Transect

point	canopy_num	buckthorn_num	understory_num	snag_num				
MP4	5	55	52	3				
RP3	50	42	56	8				
MP5	25	86	72	7				
MP8	11	2	44	26				
MP1	10	0	59	28				
RP5	19	10	40	2				
MP3	47	18	54	17				
RP2	8	25	68	5				

Appendix 3

Protocol for Experienced Birders

Monitoring Protocol – Experienced Birders

Monitoring response of Migrant Bird Populations to Habitat Restoration

LaBagh Woods, Montrose Point, Burnham Wildlife Corridor

Bird Conservation Network, Forest Preserves of Cook County, Chicago Park District, US Fish and Wildlife Service, Lincoln Park Zoo Urban Wildlife Institute, Field Museum, Chicago Ornithological Society

Developed –April 2016

Overview

A Chicago partnership was formed under the US Fish and Wildlife Service’s Urban Treaty for Migratory Birds program. Eight Chicago partner organizations are joining to restore a total of 40 acres of migratory landbird stopover habitat in two large sites, LaBagh Woods and Burnham Wildlife Corridor, to monitor results of restoration at those two sites and a third, Montrose Point, and to expand community engagement in bird appreciation and conservation.

The three restoration projects address the key threat of lack of stopover habitat in an urban area for the tens of thousands of migrant landbirds trapped over Lake Michigan at daybreak. A report describing priority migratory stopover habitat in the Chicago region (Ewert, 2008) assigned the highest ranking to our 2 sites, LaBagh Woods and Burnham Wildlife Corridor, due to the dense urban development surrounding them and their respective locations in a wide riparian strip and on the lakefront. Habitat preferences of migratory birds of conservation concern were studied in the Chicago area. (See study at: <http://www.habitatproject.org/webdocs/birds/migranthabitatstudy.pdf> .)

The purpose of this monitoring program is to determine the effectiveness of the restorations in maintaining migratory bird habitat at Montrose and LaBagh, and increasing it at the Burnham Wildlife Corridor. Data collected will be analyzed and shared with land managers, monitors and stewardship volunteers. The specific questions that will be looked at are:

1. How does habitat restoration affect species richness and abundance of migratory birds?
Which habitat structures (including varying aged plantings) are used more frequently by specific bird species and guilds?
2. Which plantings are used more frequently by specific bird species and guilds?

Monitoring the impacts of restoration on migratory bird populations is needed. This protocol addresses the difficulty of making comparisons of how migrants use sites, given that the number of migrants at a site frequently changes in response to weather conditions and date. The protocol has been developed in coordination with the Lincoln Park Zoo's Urban Wildlife Institute and the Field Museum. Data are collected according to standardized protocols so that they can be compared to data collected at other sites in the region and will provide valid long-term monitoring.

Procedures

Overview:

Observers will use three different methods to collect data about the migratory bird community each day they go out. Point counts will be conducted to relate community composition to restoration activities around LaBagh and Montrose wherein the observer records all birds seen or heard over 5 minutes at a specific location. Following this, a 5-minute foraging survey will be done in the same location to determine if migrants selectively use different habitat structures (e.g. shrubs, tree canopy, etc.). Finally, a daily checklist is collected throughout the entire site visit, which consists of a list of all bird species seen or heard while the observer is at the site (whether or not the bird is observed during a point count or foraging survey). The foraging study may not be appropriate on certain days, and will only be conducted at half the points.

Observers: We ask that at least one observer from each party have a good knowledge of the appearance and songs of the birds that may be observed. Any number of observers may participate in point counts and in preparing the daily checklist.

Note that that observers are responsible for their own personal safety during the survey. Neither the Forest Preserves of Cook County, the Chicago Park District, the Bird Conservation Network, nor any other entity or individual accepts any responsibility for observer safety. In an emergency, dial 911.

Survey Timing: Sunrise is the best time to perform the point counts, and every attempt should be made to conduct the surveys at or near sunrise. However, a survey may be run at any time before 9:30 AM if a sunrise survey is not possible. We recommend 1 visit per week for regular monitors, in April and May, and again from the last week in August to the end of October. We encourage visits by anyone who can identify migrating birds.

Before your field day assemble the following items:

- binoculars
- watch which indicates seconds
- waterproof boots
And one of the following:
- A voice recorder OR
- at least 2 pens and a field notebook
(with either of the two above you can take notes and enter them directly into eBird – just remember to record the time you start), OR
- sufficient blank data forms, clipboard, rubber bands (for holding forms on clipboard)

You may also need:

directions and maps, GPS unit & extra batteries, cell phone, field guide, water and snacks hat, sunscreen, insect spray

On the Field Visit:

- Arrive with enough time to complete the points you have chosen to do before 9:30 AM.
- Visit each point in succession. If possible start at a different point and/or go in a different direction on successive visits.
- At each point, do a point count survey first:
- count all birds seen or heard within 50 meters of the point (LaBagh) or 25 meters of the point (Montrose) during a five-minute uninterrupted period, beginning as soon as you arrive at the point.
- Count birds flushed within 50 m (LaBagh) or 25 m (Montrose) of the point as you approach

the point.

- If you observe a flock in your count circle during the count, you may follow it for a short time (less than 5 minutes) after the count to determine its size and composition.
- If a bird gives an unknown song or call during a count, you may attempt to track it down after the count for identification.
 - Do not re-count individual birds seen or heard at one point and then seen again at another point. For example, if a Cooper's Hawk is patrolling the area, you might see the bird at several points. Count it only once.
 - Birds that are flying over but not using the habitat on the study area are not counted. Birds flying below or at canopy level, flying from one perch to another, or actively foraging on or above the study area are recorded.
 - Do not use anything to attract birds or otherwise distort the count. You may pish or use other means to attract and identify unknown birds if you saw or heard them during the count, but not until after the count interval is over.

At every other point, once the 5 minutes are done, stop the point count and begin the 5-minute foraging count.

- Observe birds in the count circle until you see one that is actively searching for food (foraging) in a tree or shrub.
- Note on the field form the species of bird and the vegetation type of the plant (see "Foraging Survey - Additional info" for classifications of vegetation types). If you know the plant species, note it as well. For LaBagh, also note the enclosure number.
- Find a different bird and repeat the procedure.
- You may walk around your count circle, but remain in the circle.
- Continue for 5 minutes.
- Record only the first foraging stop that you see for each bird.
- See "Foraging Survey – additional info" below for more explanation.
 - Note birds that you see while you are at the site, but that are not observed during any point count or foraging count, for inclusion on the daily checklist.

- If you cannot avoid being interrupted, you may stop the count timer and resume the time when the interruption has passed.
- If you cannot identify a bird as to species, identify it to the lowest taxonomic level possible and note it as such (e.g. woodpecker sp. or warbler sp.).

Record all point count and checklist data on the attached field form or use your own system for field notes and, in either case, enter the data into eBird within the week. Enter point count data as individual stationery counts, and checklist data as traveling count into the hotspot. Record foraging data on the attached field form.

Foraging Survey – additional info

The goal of the foraging survey is to determine if there are vegetation types that bird species spend more time foraging on than would be expected due to the abundance of a particular vegetation type within a plot. This will require the observer to collect data not only on the bird species present (and foraging), but also to collect information on the vegetation type a bird forages on or from. Unlike the point count, observers are encouraged to systematically travel throughout the point count area to locate foraging birds. Foraging surveys are conducted after the point count is completed and last for 5 minutes.

To conduct a foraging survey, slowly travel through the point count area (staying within its bounds) while searching for birds within the circle. If they are heard, move to where you can actually observe the individual. Once the bird is located and you note that it appears to be foraging, record the bird species and vegetation type which the bird was foraging from or on, and continue your search.

Guidelines for the foraging survey include:

- Only record the first vegetation type used by a bird species. If you observe an individual forage on a shrub and then a tree, you would only record that species to have foraged on a shrub.
- Only record the first individual of a given species during a foraging survey (unless more than one individual is clearly identified). For example, if two Blackburnian warblers were observed in one tree you could record two observations. Conversely, you would only record one observation if a Blackburnian warbler was observed at the start of

a survey and then one was located later in the survey. This is done to ensure statistical independence of foraging observations. If the species is sexually dimorphic (e.g. common yellowthroat), then data can be recorded for the first male and first female individual of a given species during a foraging survey.

- The method of foraging used by a bird does not matter (e.g. leaf gleaning, hawking flying insects, etc.).

- Only do half the points (Marked either A or B) according to the schedule below. The vegetation types for this survey include:

Buckthorn

Shrub (other than buckthorn): a small to medium-sized woody plant. It is distinguished from a tree by its multiple stems and shorter height, usually under 6 m (20 ft) tall.

Canopy tree: a tree whose crown is part of the highest layer of vegetation in the forest

Understory tree: any tree growing between the forest canopy and the forest floor

Finally, more specific data will be collected at least once per site to quantify the abundance of different vegetation types at a point count location. This will be done by survey organizers. They will count the total abundance of each vegetation type within a plot (e.g. number of shrubs, number of canopy trees, etc.) and estimate their percent cover within the plot. Because shrubs and other vegetation types may be below canopy trees, percent cover will be estimated separately (e.g. how much of the point count area is covered in shrubs).

In addition, survey organizers will pull weather data for each checklist if necessary.

Point Locations: The attached map shows the point count locations. Count locations were established to monitor each of the different habitats at the site and to provide a thorough, non-overlapping survey.

Points are marked by flagging tape at LaBagh, and numbers on posts at Montrose, and flagging denotes the outer limit of the point count circle. In addition, each enclosure at LaBagh is numbered for the foraging study. Descriptions of the point locations and GPS coordinates for the points are included on the attached point location table.

Points may be surveyed in any order. If it is not possible to survey all points on a given day, observers are encouraged to conduct partial surveys.

Checklist – additional info

Any birds noted at the site that are not included in the point count or foraging protocol should be listed on a separate sheet and entered into eBird as a traveling count. Answer “no” to the question “Are you reporting all the birds that you were able to identify?”

Data Submittal:

Enter point count and checklist data for each survey into eBird. The coordinator will give you the user name and password for our data account.

You will find the point count locations under Submit Observations – Choose from Your Locations. Choose “Stationary” as the Observation Type.

To enter transect data, enter “Cook, Illinois” into “Find it on a Map”, zoom into your site and select the red flame (hotspot) and click the green “Continue” bar on the right. Choose “Traveling” as the Observation Type. On the next page where you select the species, above the submit button, you will see the question “Are you submitting a **complete checklist** of the birds you were able to identify?” Answer “no”.

Please submit your electronic data as soon as possible after your survey, preferably within a week. Your effort will be most valuable and we’ll have better data quality if you do.

Record foraging data on the field form. Data forms may be mailed to Judy Pollock, 411 Darrow Ave, Evanston IL 60202 or scanned and sent to jpbobolink@gmail.com at the end of the season.

Rarities: If you think you have seen or heard a rare bird, do your best to document your sighting with either a photograph or a recording. Make good notes about the sighting. Contact other observers to verify your sighting if you think it is appropriate. For more information about documenting rare birds, see the Illinois Ornithological Records Committee web page: <http://www.illinoisbirds.org/illinois-ornithological-records-committee/>

Resources

Song Learning:

- **Bird Song Ear Training Guide: Who Cooks for Poor Sam Peabody? Learn to Recognize the Songs of Birds from the Midwest and Northeast States.** John Feith. A favorite of many.

- **Birding by Ear: Eastern/Central (Peterson Field Guides) Audio CD.** Richard K. Walton and Robert W. Lawson. Edited by Roger Tory Peterson – This is a very good introduction to learning bird songs.
- **Stokes Field Guide to Bird Songs: Easter Region – Audio CD.** Donald and Lillian Stokes and Lang Elliot – This is a fairly complete set of songs with more variations than most collections.
- Phone apps from iBirdPro, Sibley, etc.
- Larkwire.com – Excellent program for song learning and for improving song recognition.

Appendix 4

Training Syllabus Chicago Park District Bird Monitoring Class

Description

An 8-week course to introduce participants to migration season bird monitoring at the Burnham Wildlife Corridor along south Lakeshore Drive between 31st Street and 47th Street. Registration is available here: <http://www.chicagoparkdistrict.com/events/Bird-Monitor-Training-at-Chicago-Women's/>

The course will include indoor and outdoor portions. The course will teach participants

- Why citizen science, in particular bird monitoring, is important to local, national, and world-wide conservation efforts.
- How to identify the common resident birds in Chicago, as well as a few of the common migrants and all the families of landbird migrants.
- The procedures for monitoring birds at Burnham Wildlife Corridor during migration season.

5 required courses

2 optional field walks each led by a local naturalist

1 optional culminating celebration

Personnel, locations and class schedule

Judy Pollock - coordinate class; present at most sessions

All sessions meet from 8:30 - 10:30 except the May 20th event from 9 - 11:30.

April 1 (required) - Presentation by Bobbi Asher, Chicago Audubon Society and Judy Pollock, Bird Conservation Network. Discuss volunteer application. Brief walk outdoors to observe local birds. **Meet at Chicago Women's Park and Garden, 1801 S Indiana Ave.**

Judy

Review course syllabus and requirements

What is the bird life of Chicago like?

What is bird monitoring and why is it important?

Bobbi - slide presentation

How do you go about identifying a bird?

What are the most common birds found in Chicago and what are tips for identifying them?

What are the bird families and how are they identified?

What are good resources for identifying birds?

Practice quiz

Materials: field guide, binoculars

Homework: Practice using field guide to identify common birds in a local park

April 8 (required) - Field Day: Practice field ID with Chris Williamson, Chicago Ornithological Society. Learn monitoring protocol with Judy Pollock, Bird Conservation Network.

Discussion of site art installation, Carolina Macias, Chicago Park District. Dress for the weather; expect muddy trails. **Meet at Burnham Nature Sanctuary parking lot north of Cornell and 47th St.** (just off Lake Shore Drive).

Materials: Field Guide, binoculars

Homework: Practice using field guide to identify common birds in a local park

April 15 (required) - Presentation by Geoff Williamson, Illinois Ornithological Society and Judy Pollock, Bird Conservation Network: Brief walk outdoors to observe local birds. **Meet at Chicago Women's Park and Garden, 1801 S Indiana Ave.**

Geoff -

Learn to identify birds by the sounds they make. This presentation describes basic concepts in bird vocalizations and provides organizing principles for learning to bird by ear. The talk also discusses the many resources available to the person looking to acquire or improve ear-birding skills.

Judy -

What is eBird?

How is eBird used to enter data?

Which organizations have bird walks in Chicago and where is information about them?

Details of upcoming optional field days

Materials: Field Guide, binoculars, monitoring protocol

Homework: Create an eBird account and enter a checklist of birds that you have observed into eBird; send ID and password to Judy if you need her to set up monitoring points. Read over monitoring protocol.

April 22 - Optional Field Day at south lakefront park - details TBD

April 29 - Optional Field Day at south lakefront park TBD - Leader: Carl Giometti, Chicago Ornithological Society

May 6 - Field Day: Practice bird ID with Stephany Virrueta, Loyola University. Practice monitoring protocol with Judy Pollock, Bird Conservation Network. Dress for the weather; expect muddy trails. Observe volunteer activity and learn about stewardship with site steward Kathleen Taylor. **Meet at Burnham Nature Sanctuary parking lot north of Cornell and 47th St.** (just off Lake Shore Drive).

Materials: Field Guide, binoculars, protocol

Homework: enter monitoring data into eBird

May 13th - (required) - Presentation by Forrest Cortes, Chicago Park District, and Judy Pollock, Bird Conservation Network. Brief walk outdoors to observe local birds. Review protocol, discuss monitoring assignments. Review of birds by sight and sound. Quiz. Plan potluck. **Meet at Chicago Women's Park and Garden, 1801 S Indiana Ave.**

Judy - How is monitoring used to promote bird conservation in the region?

Forrest - How does the Chicago Park District protect birds? Presentation of some key projects.

May 20th; 9-11:30 - Optional (but highly recommended) Field Day. International Migratory Bird Day Celebration: Meet other BCN monitors, see bird banding and live raptors, plant a shrub, see a habitat restoration project for birds, bird walks, graduation potluck. Family and friends welcome. **LaBagh Woods, 5275 N Cicero Ave.** (just north of Foster).

Other optional trips from local birding organizations::

<http://www.illinoisbirds.org/illinois-birding-calendar/>

North Pond walks: <http://chicagobirder.org/calendar/>

Jackson Park walks: <https://www.chicagoaudubon.org/calendar-node-field-date/month>

Lincoln Park Zoo walks: <http://www.fortdearbornaudubon.org/2422.html>

Northerly Island walks: <http://greatlakes.audubon.org/events>

Monitoring sponsor: Bird Conservation Network. www.bcnbirds.org