

Bird Banding – Fall 2019

The Arboretum at Penn State



Merlin banded October 8

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Bander-in-Charge
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General

The bird banding component of the Avian Education Program of The Arboretum at Penn State (PSU) operated for a total of 16 days between September 3 and October 16, 2019. A total of 590 birds of 35 species were processed during this period (507 newly banded, 83 recaptures). The total was 24% above the ten year fall average of individuals for newly banded birds and 15% below average for species. Daily capture rates varied from a low of six birds (shortened hours) to a high of 70 individual birds. Average daily capture was 33 birds. This was the first fall season of banding at the new location and considered a very successful season.

The Hartley Woods banding site of The Arboretum at Penn State is centered at GPS coordinates 40.808589-77.873100 (40° 48' 31" N and 77° 52' 23" W). The site is approximately ¼ mile NW of the H.O. Smith Botanic Gardens and ¼ mile ESE of the original Air Quality site that was used from 2010 to 2018.

The irregular polygon-shaped area is approximately 4 acres in size. It consists of mature mixed woodland edges, brushy fence rows and prairie habitats. Primary vegetation consists of white oak, invasive species (common privet, Asiatic bittersweet) that are being removed, native forbes (goldenrod, pokeweed, and milkweed), planted warm season grasses (bluestems, grama and Indian grass) and annually mowed grass fields. A small water source (14' x 20' retention basin from storm water runoff) is located in the ravine near the northwest edge of the site.

A total of 13 mist nets (eleven nets of 12-meter length and one double set of a 6 meter and a 9 meter net) were used. A pole feeder was placed at net #1 (the double set net) on the SE edge of the site. Feeders present were kept filled with mixed seed, black oil sunflower seed, suet and nyger (thistle) seed to attract birds. Banding headquarters utilized a picnic table placed at the SE corner of the banding area (see map).

Effort

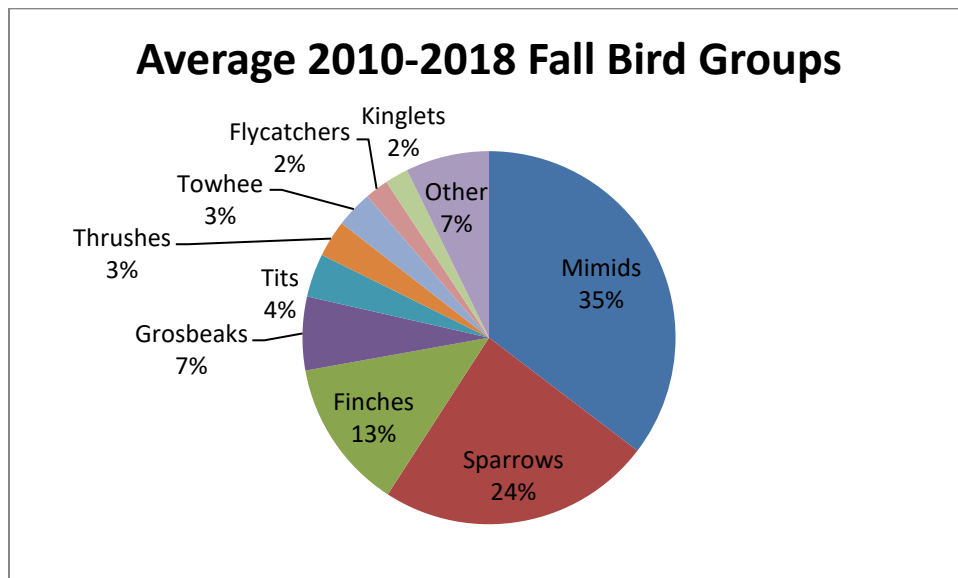
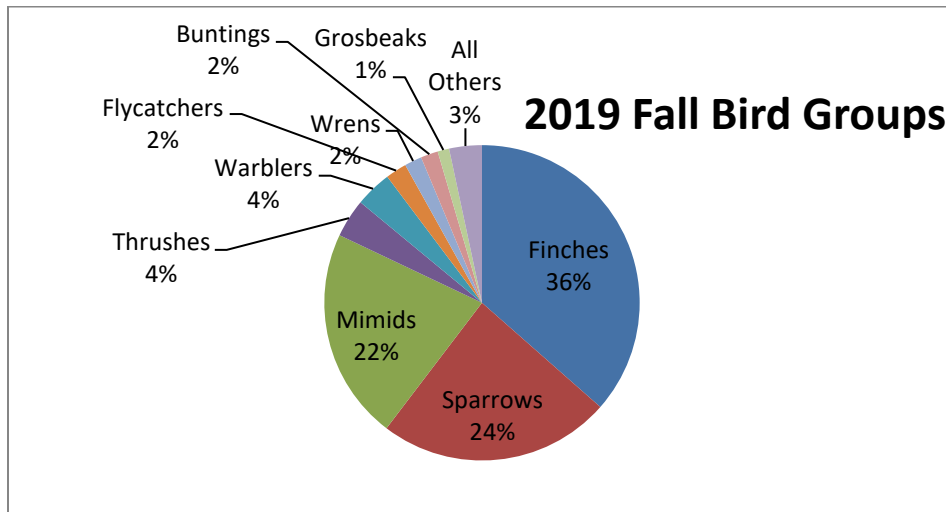
Nets were opened for an average of three hours each day starting shortly after sunrise for all but two days (scheduled group requests on September 3 and 17). Total net hours were 526 which resulted in a capture rate of 130 birds/100 net hours. This capture rate remains consistent with other northeast United States banding stations. The busiest day was September 9 with 70 birds handled.

Net # 1 (feeder net) accounted for 29% of all captures for the fall season. This compares with a capture rate of 65% during the spring banding season. This was expected, as natural foods (primarily insects and fruits) were more readily available in the fall than the spring.

Net # 10 was replaced with a smaller mesh size (30 mm mesh vs 35) to determine if there was an increase in capture rates from smaller species that may have been able to free themselves from the larger mesh size. Results were inconclusive due to the low capture rate.

Comparison of Species/ Numbers Abundance

The top three bird groups (Finches, Sparrows, Mimids) remained the same as during the spring banding season. This is consistent with the open woods and field edge habitat of the Hartley Woods banding area. It also remains consistent with the previous nine years at the former banding location of the Air Quality site (see graphs below).



Top Five Most Abundant Birds (new banded)

American Goldfinch 107
Gray Catbird 101
Song Sparrow 89
House Finch 78
White-throated Sparrow 20

American Goldfinch led the way for total new bandings, accounting for 21% of all new birds banded. The top five species accounted for 78% of all new birds banded. This is a change from previous years at the Air Quality site where American Goldfinch appeared usually in the lower “top five” or not at all.

New Species

Merlin was added as a new banded species this season. The total of banded species since 2010 is now 85.

Five “Best Birds”

This listing is based upon low frequency of occurrence since fall of 2010. Values given are average birds/year since 2010.

- Merlin (first time)
- Scarlet Tanager 0.11
- Palm Warbler 0.16
- Canada Warbler 0.26
- Blackpoll Warbler 1.00

Recaptures

There were no recaptures outside of the local area this season.

Eighty-three birds were recaptured on one or more days after being banded at the Arboretum. Interesting was the recapture of a White-throated Sparrow that was banded this past April 2019. This species does not breed in the immediate area, so it was caught during its northward and southward migration. It apparently shows an affinity for use of the same stopover area.

Number of Individuals Comparison

The chart below compares numbers of individuals for each species banded during the fall of 2019 to the average of individuals of each species in all previous fall seasons. Shading indicates numbers for 2019 that were either higher or lower than the average fall season since 2010.

SPECIES	Average 2010-2019 Fall	Fall 2019 9/3-10/16
Mourning Dove	1.1	3
Downy Woodpecker.	3.4	3
Northern Flicker	0.8	1
Merlin	0.1	1
Least Flycatcher	1.7	4
Eastern Phoebe	2.3	7
Blue-headed Vireo	2	1
Red-eyed Vireo	2.1	2
Black-capped Chickadee	6.1	1
Tufted Titmouse	5.6	2
White-breasted Nuthatch	1.9	2
House Wren	0.9	7
Carolina Wren	1.9	2
Gray Catbird	115	101
Northern Mockingbird	1.6	9
Swainson's Thrush	4.2	1
American Robin	3.2	19
House Finch	26.9	78
Ammerican Goldfinch	29.2	107
Field Sparrow	0.7	1
White-throated Sparrow	58.2	20
Song Sparrow	19.1	89
Lincoln's Sparrow	1	3
Swamp Sparrow	1.7	8
Ovenbird	6.9	2
Common Yellowthroat	3.1	10
Magnolia Warbler	8.9	2
Blackpoll Warbler	2	1
Palm (western) Warbler	0.2	1
Canada Warbler	0.4	1
Wilson's Warbler	0.7	2
Scarlet Tanager	0.2	1
Northern Cardinal	17.8	5
Rose-breasted Grosbeak	1.2	1
Indigo Bunting	1.6	9
		13 lower
		22 higher

Weather and Other Effects

Weather conditions were generally good. Although no banding days were cancelled, four days were shortened or fewer nets open due to rain.

Volunteers and Visitors

Fifty-seven volunteers (Penn State students and others) provided 578 hours of volunteer time in banding, data compilation, site preparation and equipment maintenance.

A “Bander-in-Training” class was conducted September 5 to acquire new volunteers to help with banding operations. Twenty-five people attended the training, but only eight were present for the requested three days of additional time for hands-on training and assistance to the banding operations. Six of the eight assisted on additional days beyond the three requested. There were two no shows.

The following groups were provided with banding demonstrations at the Hartley Woods site:

- Penn State WFS 497 class - 18 people
- Penn State Osher Lifelong Learning Institute (OLLI) class - 10 people
- Penn State FOR/WFS 150S class - 21 people
- Impromptu Visitors - 45 people

FOR/WFS 150S class



Outreach Programs



Banding demonstrations and related activities were conducted for the following groups in other community locations:

- The Friends School, State College, PA, bird activities and banding demonstration, 4 programs, 42 people
- PA Society for Ornithology Annual Meeting, Williamsport, PA, banding demonstration, 10 people

Friends School 4th Graders
involved in “Bird Beaks” activity

Research/Observations

Catbird Fault Bar

A Hatch Year (HY) Gray Catbird of unknown sex banded 10/4/2019 exhibited what appears to be an example of a major fault bar across the tail. Such fault bars are caused by stresses on the bird during early growth, usually by food deprivation. The bar was approximately 15 mm in width and was present on all the retrices (tail feathers), except the right R5 which exhibited a white tip and both R6s which also had a larger paler area toward the tip. Unfortunately no other observations were recorded, as other birds were being processed and training of student helpers was occurring at the time.

Contact with several other banders in the United States and United Kingdom were amazed by the size of this band, larger than any they had ever encountered.

A short note on this observation is to be published in a future issue of *North American Bird Bander*.



American Kestrel Banding

As part of a nest box project initiated by Shaver's Creek Environmental Center of Penn State University, assistance was provided for the second year in banding nestlings of this species. Assistance was requested for only two boxes this year as other nestling banding was completed by Steve Eisenhauer of *Natural Lands*, Media, PA as described in article excerpt below:

"This year, 32 nest boxes were successful, with 138 young reaching banding age of two weeks. The program's study area covers Centre, Mifflin and the north half of Huntingdon County. Most boxes are mounted on steel poles that telescope up 15 feet, usually located along a fence line. Centre County had the most successful kestrel boxes with 14. Mifflin and northern Huntingdon County each had nine."

The full article can be found in the appendix of this report.

Publication of Data

Daily summaries of banding results were posted on the local State College Bird Club listserv. Reports of banding totals and birds observed were submitted at the end of each banding day to eBird, the online database of bird observations operated by the Cornell Lab of Ornithology.

All recorded data are forwarded to the United States Geological Survey (USGS) Bird Banding Laboratory with copies to the Pennsylvania Game Commission as per banding permit requirements.

Information on banding results for 2017 and 2018 was forwarded to the Eastern Bird Banding Association as requested to be included in future publication in the group's journal *North American Bird Bander*.

Recommendations for 2020

- Relocate four nets.
Capture rates for nets# 2,3,4, and 5 were low. Although accounting for 33% of total nets present, they only captured a combined total of 6% of all new birds banded for the spring and fall seasons. As comparison, the next four lowest capture rates (nets 7, 8, 9 and 10) had a combined capture rate of 26% of all new birds banded.
- Monitoring of net locations
Continuing efforts by Arboretum staff to remove invasive vegetation and replant with native species along the Hartley Woods edge will require periodic adjustments to net locations. Scarcity of thick shrub cover lessens capture rates. This presents a perplexing problem as invasives (privet, etc.) currently provide the only thick cover preferred by birds.
- Increase availability of program to scheduled and impromptu visitors

Acknowledgements

Thanks to Dr. Margaret Brittingham (Avian Education Program coordinator, Professor of Wildlife Resources), Shari Edelson (Director of Horticulture/Curator of The Arboretum at Penn State), Penn State Operation and Physical Plant employees (maintenance/support).

A special thanks to all volunteers who assisted in this season's banding efforts. Volunteers who contributed two hours or more are: Liam Abbey, Bruna Amaral, Dana Arnold, Sara Benzio, Kyle Bettwy, Matt Brenner, Erile Clark, Kyle Clark, Mary Derstein, Jennifer Dong, Jesse Evans, Jill Fluge, Muge Gedik, Nathan Goldner, Laken Gonoe, Kylie Green, Katie Hentzel, Madison Jurak, Matt Kello, Larry Koehler, Luke Kosuda, Carol Lebold, Ian Lebold, Micaria Lefever, Ryan Mast, Sally McDermott, Devin McPheeters, Craig Miller, Jean Miller, Taylor Miller, Ruchi Mulajker, Eric Myskowski, David Palmieri, Alissa Pendorf, Karen Poh, Tracy Potteiger, Jeff Prusch, Anne Puchaisky, Katherine Reese, Madison Reszek, Deb Rittlemann, John Rogers, Tom

Rodgers , Sage Saum, Zack Schumbar, Susan Smith, Gwen Snavely, Wil Snyder, Gabrielle Stewart, Erin Taylor, Jenna Tsang, Chad Vosburg, Paris Werner, Kyle Zampagna

Appendix

Falcon nest appears on campus

By STEVE EISENHAUER
Special to the Centre County Gazette

August 29, 2019



Swine Center Manager, Mark Kreidler, holding an 18-day-old female Kestrel chick



Female kestrel with a single chick in a nest box. This year's average of banded chicks per box was over

UNIVERSITY PARK — American Kestrels are North America's smallest falcon — about the size of a robin and often overlooked while perched on a utility line, a preferred hunting location. They feed on small rodents, big insects and occasionally, small birds. They nest in cavities, often in natural tree holes, but seem to prefer properly-constructed and mounted manmade nest boxes.

For the past two years, Kestrel Next Box Program volunteers from Shaver Creek Environmental Center tried to attract them to nest boxes mounted high on poles on the horse pastureland near Penn State's football stadium. No luck there yet, but this year the volunteers installed a nest box at the Porter Road Swine Center in the pregnant sow pastures, and a kestrel pair moved in. Four female kestrel young resulted and, with the help of Swine Center Director Mark Kreidler, aluminum identification bands were placed on their legs on Aug. 2. They may now be hunting for food around the numerous grassy pastures on the campus's northwest corner, or may have already headed south.

PSU's Shaver's Creek Environmental Center initiated an American Kestrel Nest Box Program three years ago to try to help reverse this species' decline seen over most of the country. In 2018, 12 nest boxes were successful, and 48 kestrel nestlings were banded.

This year, 32 nest boxes were successful, with 138 young reaching banding age of two weeks. The program's study area covers Centre, Mifflin and the north half of Huntingdon County. Most boxes are mounted on steel poles that telescope up 15 feet, usually located along a fence line. Centre County had the most successful kestrel boxes with 14. Mifflin and northern Huntingdon County each had nine.

Although kestrels nest almost exclusively in rural areas with grassland, grazing land and hayfields, one population has nested in New York City for more than 100 years. It's difficult to accurately count this population; estimates range from 50 to 80 pairs. Eating mostly house sparrows, and nesting in rusted building cornices, these urban kestrels look identical to rural kestrels. There is only a handful of other – less-extensive – confirmed reports of nesting urban and suburban kestrels in other parts of the country, and in Canada.

Reports are rare of kestrels nesting on college campuses. Stanford University recently reported kestrels nested in an old chemistry building, entering through a broken window. And in the early 1980s, kestrels nested on the Purdue University campus. But few college campuses have the acreage of grassland and grazing land found around Penn State's campus and the adjacent hospital, even considering football weekend parking seasonally utilizes much of this land. Although kestrels are territorial in the breeding season, they are also colonial. If the habitat is good, and food available, they tolerate and may even welcome neighbors. Come fall, they often seek out kestrel company, and are seen traveling in loose flocks.

So keep your eye out for kestrels in the fall season, when hundreds migrate through central Pennsylvania on their way south. They can be seen almost anywhere in migration, although some routes concentrate them. One fall day last year more than 5,000 kestrels migrated through Cape May, N.J., when the wind conditions made crossing Delaware Bay easiest. In the spring, the migration north is more diffuse. Starting in mid-March, start to look for campus kestrels. The one successful Swine Center nest box could expand to two, three or four in 2020. The habitat is here. The food is here. The nest boxes are up. A kestrel pair successfully bred here this year, and most successful boxes are reused the following year.

Article written by Steve Eisenhauer, Regional Director of Stewardship and Land Protection
Natural Lands, Media, PA

Fall 2019 Species/Numbers Handled
(chart on next page)

Fall 2019 Species/Numbers Handled																			Individuals Total
3-Sep	3-Sep	5-Sep	9-Sep	11-Sep	16-Sep	17-Sep	19-Sep	21-Sep	24-Sep	28-Sep	30-Sep	4-Oct	8-Oct	10-Oct	12-Oct	14-Oct	16-Oct		
Day 1	WFS150S	Day 2	Day 3	Day 4	Day 5	OLLI	Day 6	Day 7	Day 8	Day 9	Day 10	Day 11	Day 12	Day 13	Day 14	Day 15	Day 16		
M. Dove									1					1		1			3
Downy Woodpecker	1			2															3
Y.S. Flicker										1									1
Merlin													1						1
Least Fly catcher				3		1													4
E. Phoebe			1							2	2	1	1						7
Blue-Headed Vireo													1						1
Red-eyed Vireo				1			1												2
B.C. Chickadee											1								1
T. Titmouse								1							1				2
WB Nuthatch					1		1												2
House Wren	1					1			1	1	2		1						7
Carolina Wren		1				1													2
Swainson's Thrush												1							1
Am. Robin			5	3	4			5	1	1									19
Gray Catbird	10	1	18	11	6	7	4	5	7	5	6	8	10		2	1			101
N. Mockingbird			1	1				2				1		2			2		9
Ovenbird								1			1								2
C. Yellowthroat			1		1		1	2			2		2	1					10
Magnolia W.									1		1								2
Blackpoll W.			1																1
Palm Warbler								1											1
Canada W.							1												1
Wilson's W.								1		1									2
Field Sp.														1					1
Song Sp.				1	2	3		7	6	9	12	8	14	1	8	6	9	3	89
Swamp Sp.									1					2	2	3			8
Lincoln's Sp.											1		2						3
White-thrt. Sp.												1			8	8	3		20
Scarlet Tanager					1														1
N. Cardinal						1									2	1	1		5
Rose-B. Grosbeak				1															1
Indigo Bunting								1	3	2			2	1					9
House Finch	14	2	5	13	9	8	1	7	5				6	1	4	2	1		78
Am. Goldfinch		1	13	29	14	2	2	4	4	3	9	8	1	7	2		1	7	107
Number of New Banded	26	5	45	65	38	24	9	38	30	23	37	30	39	18	20	23	23	14	507
Total Species	4	4	8	10	8	8	5	13	10	8	10	7	9	10	7	7	7	4	
Fall 2019 Recaptures																			Individuals Total
3-Sep	3-Sep	5-Sep	9-Sep	11-Sep	16-Sep	17-Sep	19-Sep	21-Sep	24-Sep	28-Sep	30-Sep	4-Oct	8-Oct	10-Oct	12-Oct	14-Oct	16-Oct		
Day 1	WFS150S	Day 2	Day 3	Day 4	Day 5	OLLI	Day 6	Day 7	Day 8	Day 9	Day 10	Day 11	Day 12	Day 13	Day 14	Day 15	Day 16		
Downy Wd.			1						2				1						4
Red-bellied Wd.														1					1
WB Nuthatch									1					1				1	3
Carolina Wren					1														1
Am. Robin					1														1
Gray Catbird	2		2	2	1	1	1	3	1	2		1	1		2				19
Song Sp.								1	1		2	2	1	7	7	2	2	2	27
Swamp Sp.																		1	1
White-thrt. Sp.																1	1		2
Am. Goldfinch				1	2	1								1	3				8
House Finch		1		1				1	3	2	3	1	1	1		1			15
Indigo Bunting												1							1
Number of Recaptures Handled	2	1	2	5	5	2	1	5	8	4	5	5	4	10	13	3	3	5	83
Total Birds Handled	28	6	47	70	43	26	10	43	38	27	42	35	43	28	33	26	26	19	590
3-Sep	3-Sep	5-Sep	9-Sep	11-Sep	16-Sep	17-Sep	19-Sep	21-Sep	24-Sep	28-Sep	30-Sep	4-Oct	8-Oct	10-Oct	12-Oct	14-Oct	16-Oct		
Day 1	WFS150S	Day 2	Day 3	Day 4	Day 5	OLLI	Day 6	Day 7	Day 8	Day 9	Day 10	Day 11	Day 12	Day 13	Day 14	Day 15	Day 16		