



Project FeederWatch

Embrace the winter. Count feeder birds for science!



Use of Project FeederWatch to Engage Undergraduates in Bird Studies and Behavior



Katherine S. Wydner, Ph.D.

Biology Department

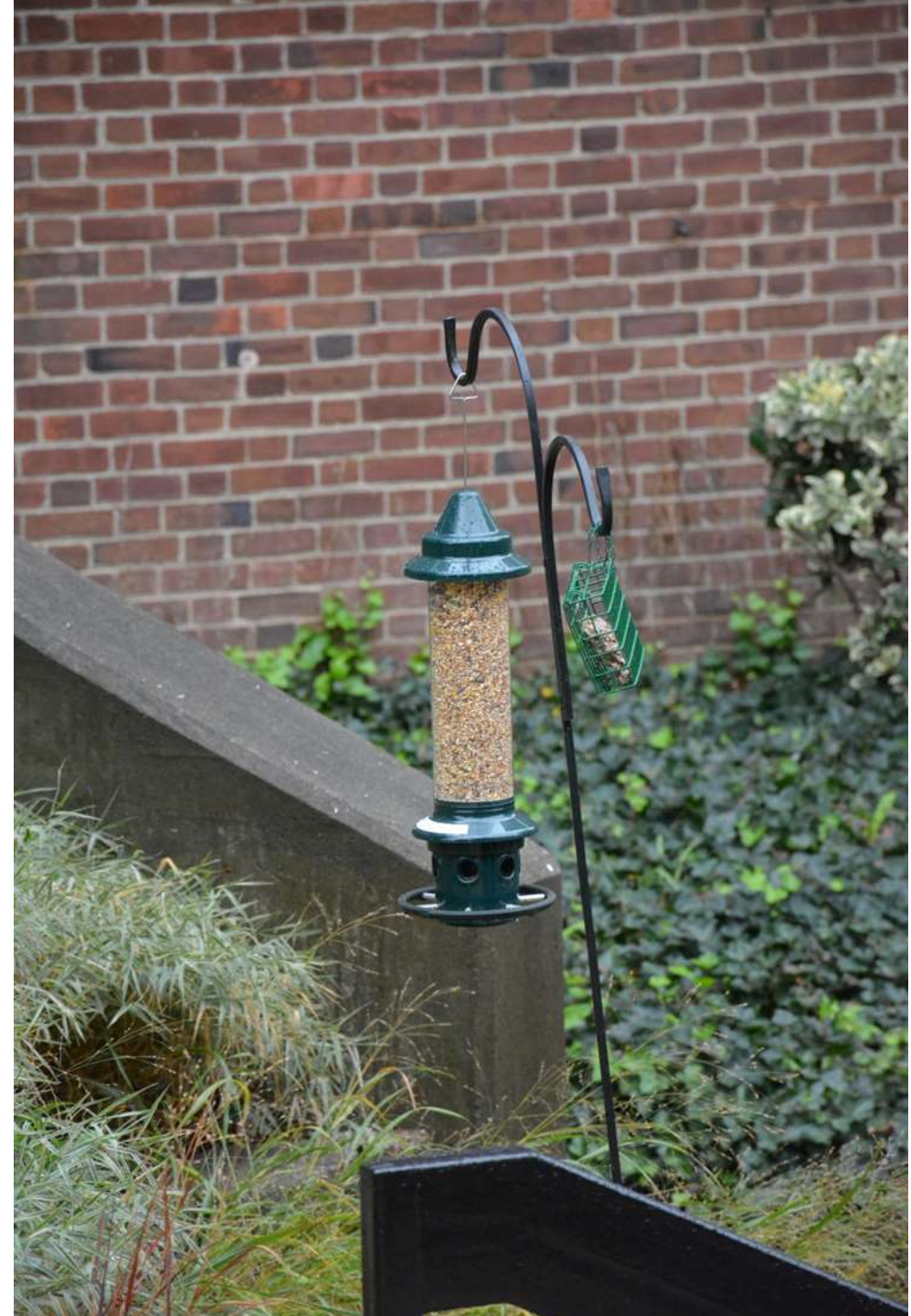
Saint Peter's University

Jersey City, NJ 07306



Introduction

Photo: Saint Peter's University Staff
October 2014



What is Project FeederWatch?

<https://feederwatch.org/>

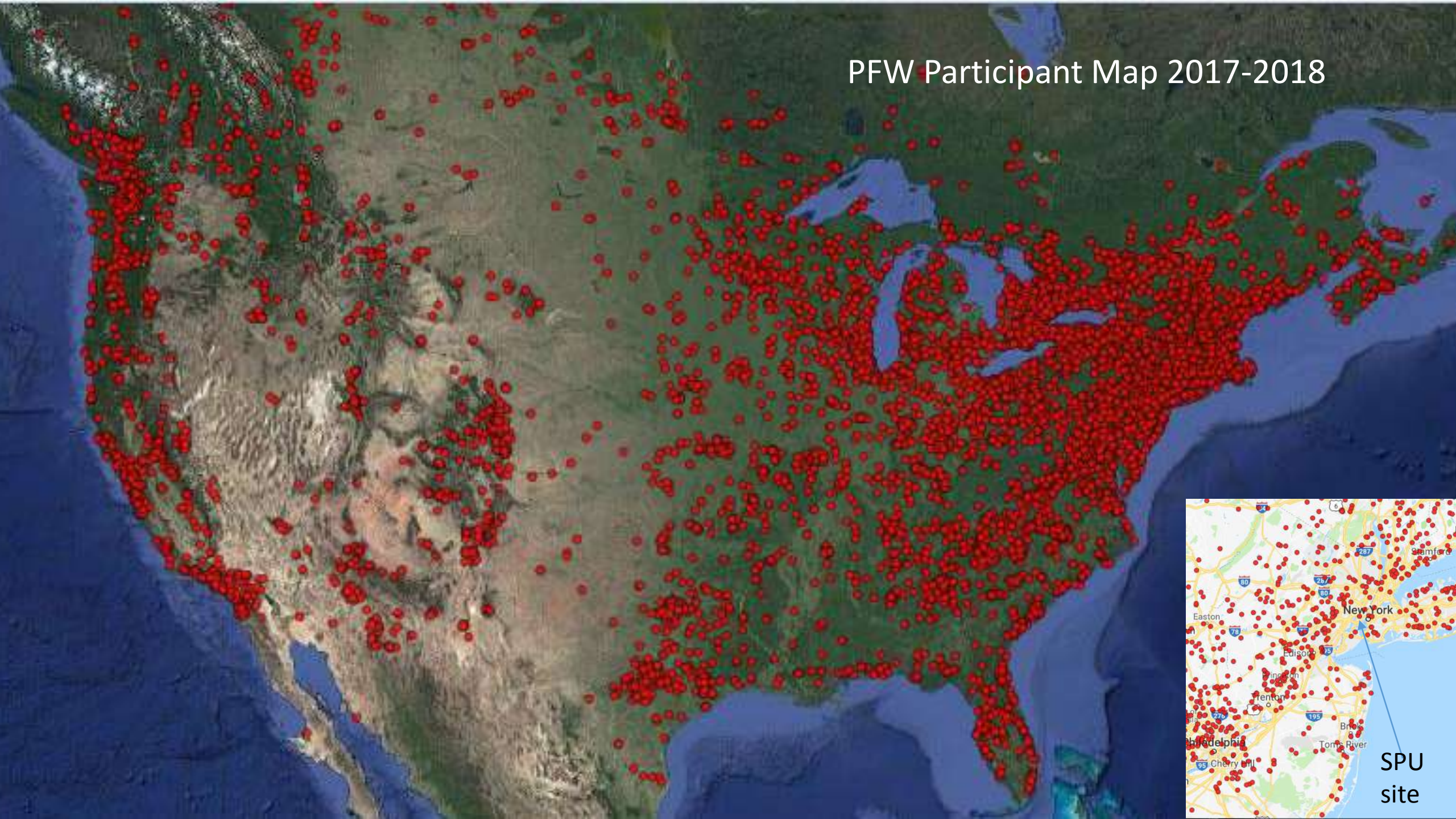


- PFW is an annual winter survey of birds → long-term info on bird distribution and abundance across North America
- From Nov to April, birds at and around feeders are monitored according to a protocol and reported to a website managed by the Cornell Lab of Ornithology & Bird Studies Canada
- Data on the number of individuals of each species are collected.
- Environmental factors (temperature, precipitation, and snow cover) are also recorded.

Why are PFW Data important?

- Annual continent-wide study began Winter 1987-88 → *31 years of data!!!*
(Has grown from 4000 participants to > 25,000)
- Reveals long-term trends in populations – up ↑ or down ↓
- Creation of dynamic maps – including seasonal movements (weekly)
- Creation of annual graphs & statistics → reveals *TRENDS*
- Tells you where birds are ...
... As well as where birds are ***not***
- Track bird diseases
- Used to understand bird behavior (e.g. dominance hierarchies)

PFW Participant Map 2017-2018



Additional Benefits:

- Connects students to the natural world
- Revives “natural history” studies (neglected in recent decades)
- Lifelong hobby even if not a career
- Watching birds: Health benefits, e.g. relaxation & stress release
- Low cost
- Doesn't require a lab or expensive equipment
- Annual poster presentations for undergraduates
- Can be linked to other research – computer-based statistical analysis

Four Years of PFW at Saint Peter's University

Poster Presentations & Abstracts

- 2014-15: “Project Feederwatch at Saint Peter’s University: A Place to Eat and Be counted”
- 2015-16: “Project FeederWatch: A Tale of Two Seasons”
- 2016-17: “FeederWatch: A Third Winter of Flurries and Feathers”
- 2017-18: “Project FeederWatch at Saint Peter’s: How Four Years Have Flown By”

Blessing of the New Feeder
October 2014



Materials & Methods



Materials & Methods

Saint Peter's as an example
(Annual PFW registration fee ~ \$18)

1. Choose a site
2. Select type(s) of bird feeder
3. Select type(s) of seed
4. Assemble your “team” of students
5. Establish weekly schedule for observations
6. Follow the established PFW protocol
7. Establish central reporting system
8. Enter data in website portal



1. Choose Your PFW Site

- You need to observe from the same location every week
- Establish clear boundaries / Create a site description online

How large is your FeederWatch count site?

- ☐ Very small -- A window or hanging feeder only.
- ☐ Small -- Up to 100 sq meters (1,000 sq feet), an area up to the size of half a tennis court.
- ☐ Medium -- 101 to 375 sq meters (1,001 to 4,000 sq feet), an area the size of 1/2 to 2 tennis courts.
- ☒ Large -- More than 375 sq meters (4,000 sq feet), an area greater than 2 tennis courts.

SPU: Urban campus in Jersey City, an area of high housing density and many paved surfaces

How would you describe your count site?

- ☐ No vegetation (e.g., pavement only)
- ☒ Garden or courtyard
- ☐ Landscaped yard (with lawn and plantings)
- ☐ A mix of landscaped and natural vegetation
- ☐ Natural vegetation (woods, fields)
- ☐ Desert: natural or landscaped
- ☐ Other

Our PFW site is about the size of two tennis courts, bordered on three sides by buildings, and includes part of a courtyard and walkway



Google Earth. PFW area is under the white rectangle.



Photo: Braian Fernandez. 4-18-2016

Zoom to:



Saint Peter's University, John Fitzgerald Kennedy Boulevard, Jersey City, NJ, USA



Map

Satellite



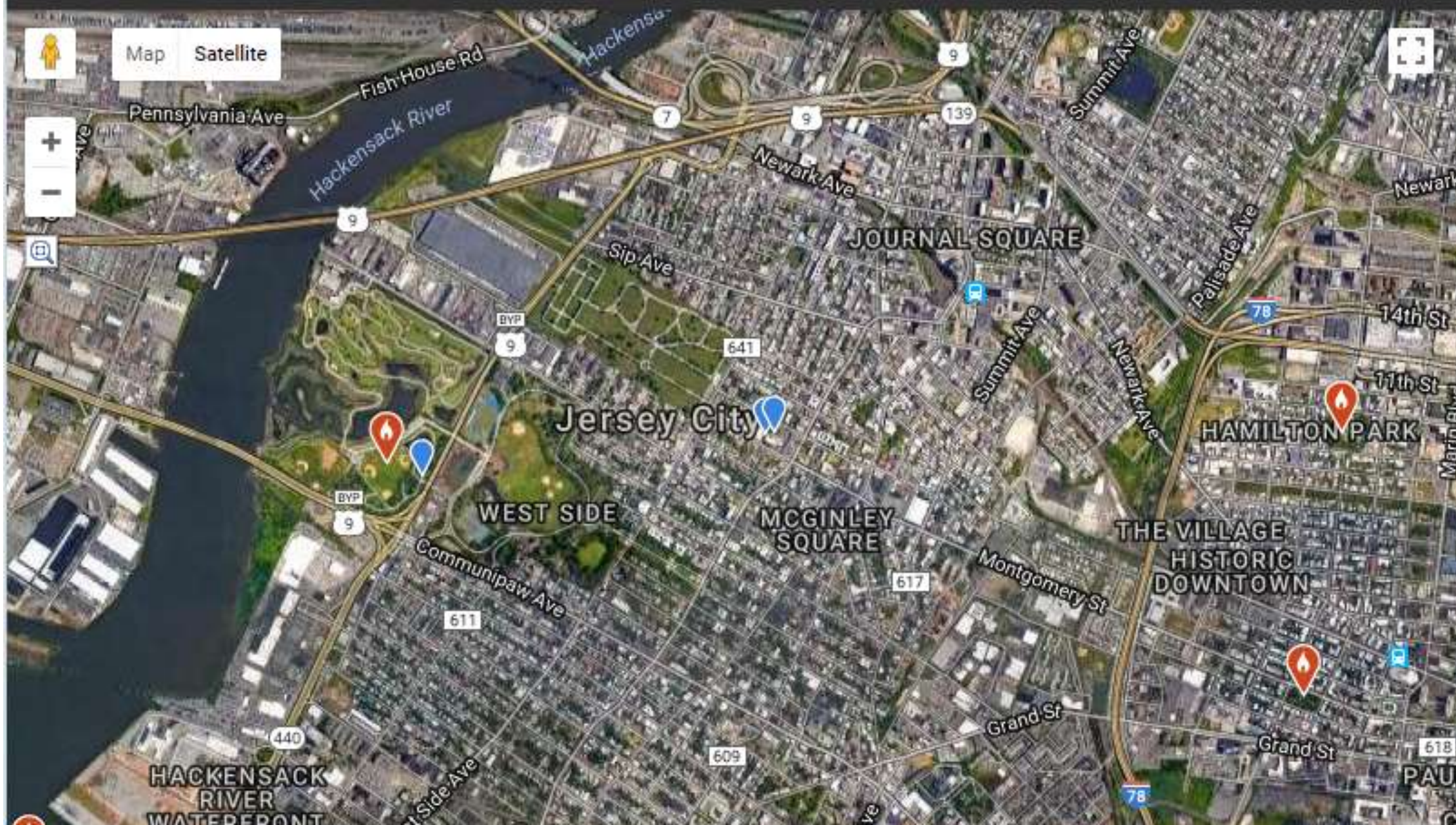
Zoom to:

🔍 Saint Peter's University, John Fitzgerald Kennedy Boulevard, Jersey City, NJ, USA



Map

Satellite



2. Select type(s) of bird feeder

How many and what kinds of feeders do you normally |
site, November through May?

- | | |
|--------------------------------|-------------------------------|
| <input type="text" value="0"/> | Seed feeders: hopper |
| <input type="text" value="2"/> | Suet or fat feeders |
| <input type="text" value="1"/> | Seed feeders: tube |
| <input type="text" value="0"/> | Fruit feeders |
| <input type="text" value="0"/> | Seed feeders: raised platform |
| <input type="text" value="0"/> | Sugar water feeders |
| <input type="text" value="1"/> | Seed on ground (# sites) |



Brome Squirrel Buster Plus
Holds 3 Qts Seed



Photo during blizzard by Chelsey Holloway 1-23-16

A Guide: Different Feeders – Different Birds

<https://feederwatch.org/learn/feeding-birds/>

Ground



Platform (fly through)



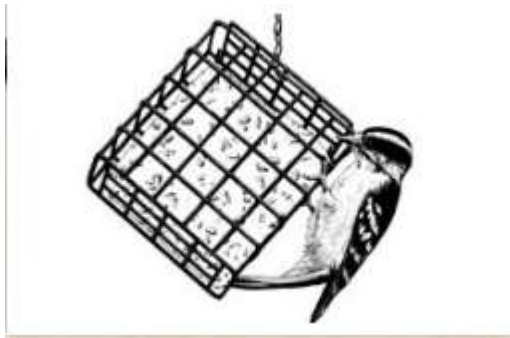
Hopper (large or small)



Tube (large or small)



Suet Cage

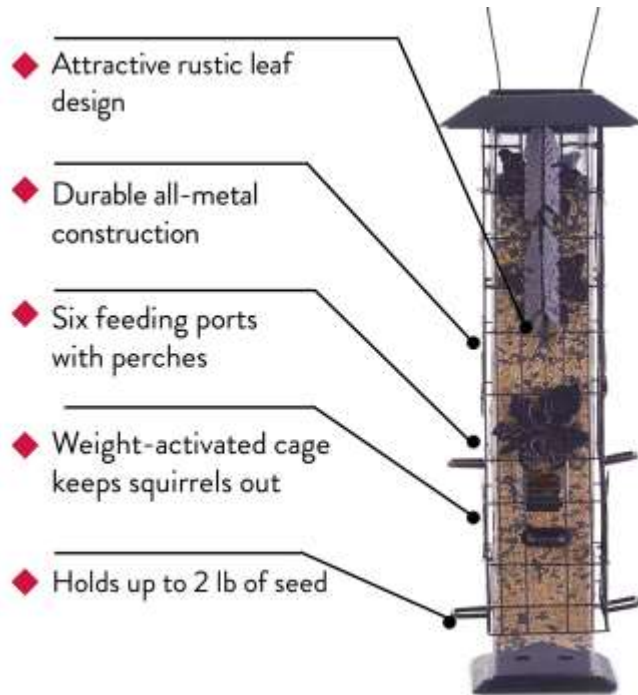


Nectar



Baffles Deter Squirrels

- Squirrel-resistant or squirrel-proof bird feeders are another option



Perky-Pet 336 Squirrel-Be-Gone
Wild Bird Feeder – 2 lb



“Caged Type”



<https://www.harrietcarter.com/products/squirrel-baffle>

3. Select type(s) of bird seed (& suet)



<http://blairs-hardware.squarespace.com/birdseed/>



Yellow-rumped warbler on suet. May 2018.

Photo: K. Wydner

- General seed mixes range from premium to basic, cheap. Attract a variety of species.
- Mixes with a high % of black-oil sunflower seeds are best.
- You can add specialized stations for black Nyjer (niger), for example, to attract finches.
- If your area has warm winters, you can add fruit and nectar feeders.
- Suet blends of fat and protein/seeds/fruit are high energy foods (see photo above).

Bird Seed Preferences

Black oil sunflower seeds attract the greatest variety of species

	Chickadees Titmice Nuthatches	Finches	Cardinals Grosbeaks	Sparrows Blackbirds	Jays	Wood- peckers	Orioles Tanagers	Pigeons Doves
Sunflower	◆	◆	◆	◆	◆	◇		◇
Safflower	◇	◇	◇					
Corn				◇	◆			◆
Millet		◇		◇				◇
Milo					◇			◇
Nyjer		◆						
Suet	◆				◇	◆	◇	
◆ Preferred ◇ Readily Eaten								

Based on studies by the Cornell Lab of Ornithology and the US Fish and Wildlife Service.

https://feederwatch.org/wp-content/uploads/2013/10/BirdNote01-Winter-Bird-Feeding-_for-PDF_2012-10-22-RGB.pdf

4. Assemble your PFW “team”

No prior experience with birds required!!

If for a two-semester project involving volunteers (Nov to April)

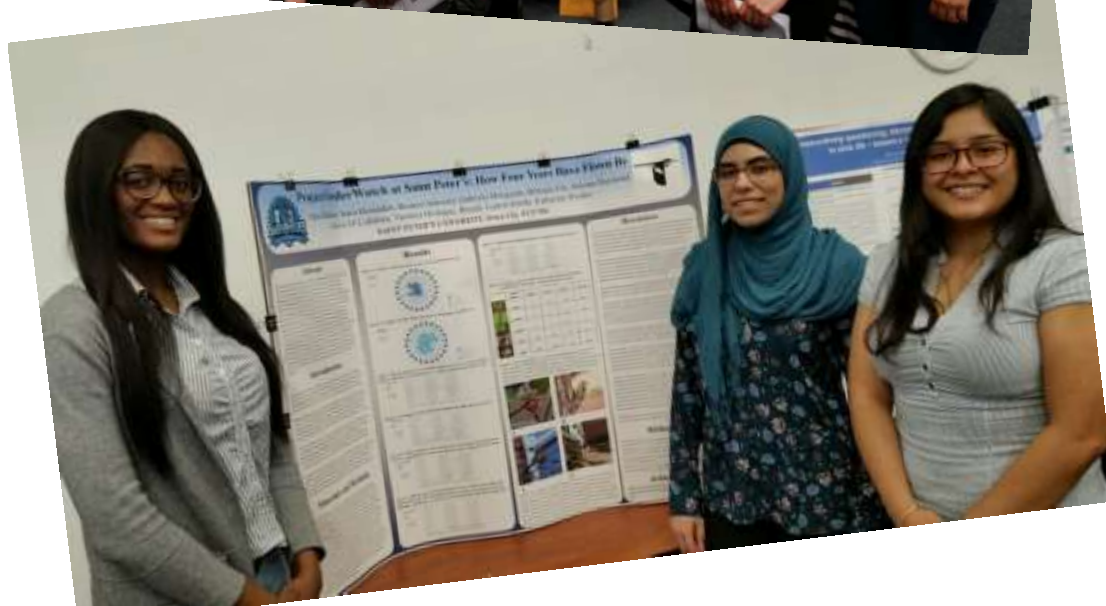
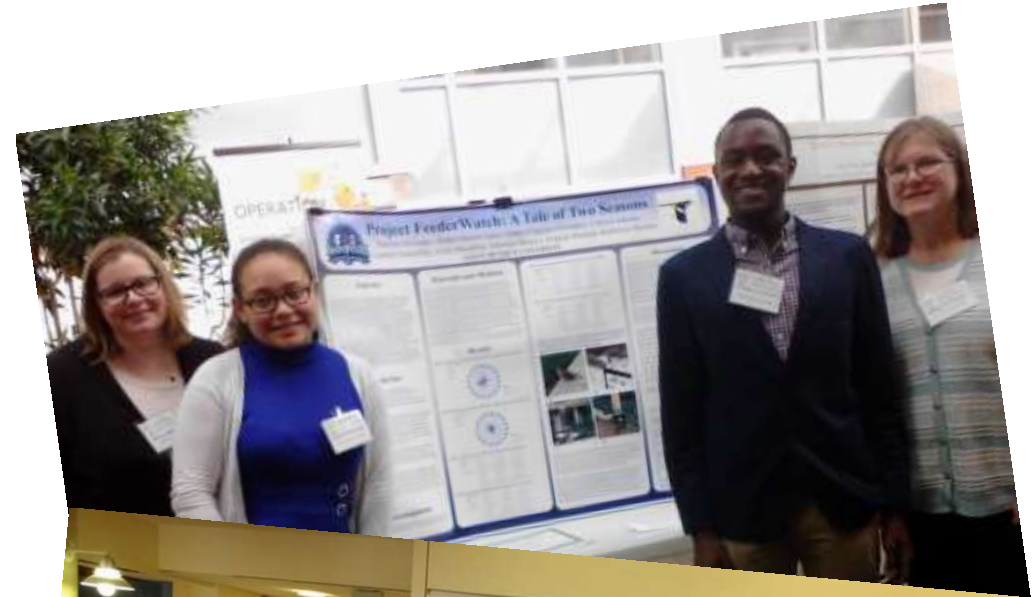
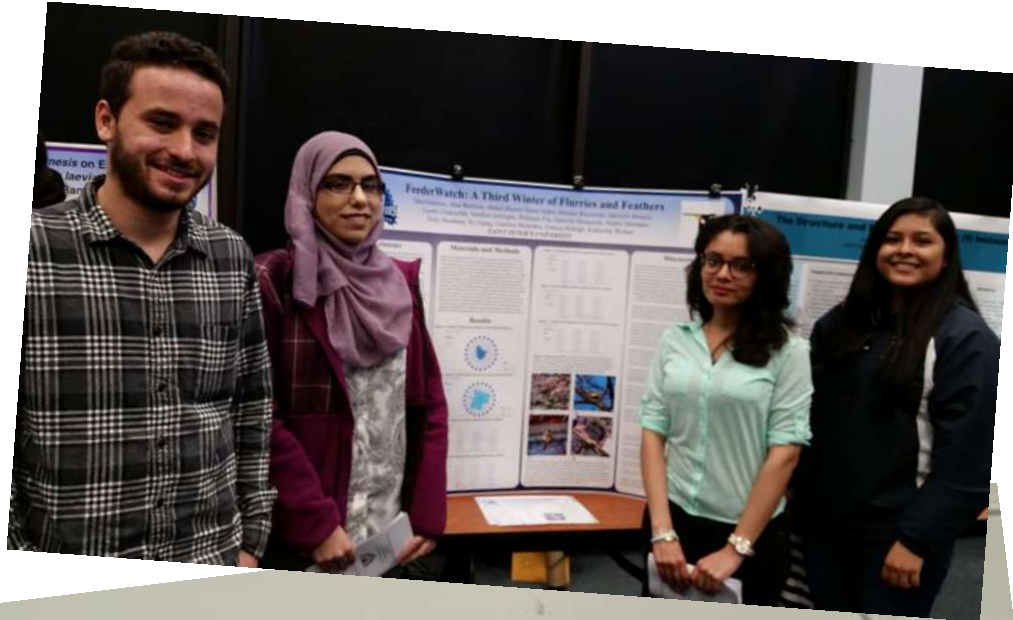
- In my case, I recruited students from:
 - my own biology classes
 - clubs, e.g. SAVE clubs
 - among biology-related majors in general (through an email in Oct)

If for a lecture course, lab, or credited internship:

- Require PFW observations as a weekly assignment on your syllabus
 - Could be done during or after class/lab (homework)
 - It is a “weekly” assignment but weeks can be skipped if needed (e.g. PFW fits better with spring semester than fall)
- Require a Final Report/Season Summary/Poster Presentation?

Presentations:

Academic Symposium & MACUB (Metropolitan Assoc of College & Univ Profs)



5. Establish weekly schedule for observations

- Select two consecutive days for the count period.
- Leave at least five days when you do not count between each of your two-day counts.
- Counts need to be during daytime.
- For consistency, I kept the pattern the same throughout a season.
- It's okay to skip a week(s) or shift pattern if needed.
- Do not pick & choose dates that have “better birds” as this could cause a bias in the data.

Example: Blue indicates PFW Days

Jan 2018

Su	M	Tu	W	Th	F	Sa
	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30	31			

6. Follow the established PFW protocol

<https://feederwatch.org/about/how-to-participate/>

- Collect data on each weekly two-day count period
- Keep your birdfeeder filled with seed & suet
- Instructions on the PFW website are for ***an individual***, so I adjusted the protocol to make it work for ***a group***.
- This is what I asked students to do:
 - Stop by the feeder for as little as a few minutes at a time
 - RECORD the following:
 - **Maximum number of each species** seen during a time interval
 - **Effort** (time in **minutes** spent observing the feeder area)
 - **Temperature, precipitation, snow cover** (if present)

From PFW Instructions:

<https://feederwatch.org/about/how-to-participate/>

5. **What to count** – Please count

- all of the individuals of each species in view at any one time
- birds attracted to food or water you provided
- birds attracted to fruits or ornamental plantings
- hawks and other predatory birds that are attracted by the birds at your feeders

But do not count

- birds that simply fly over the count site, such as Canada Geese or Sandhill Cranes.
- birds seen on non-count days

Clarification and finer points:

<https://feederwatch.org/about/detailed-instructions/>

- Do not count birds that are flying over or through.
- They must be attracted to and/or making use of resources that your PFW area provides – directly or indirectly. Perching on a tree or structure is fine.
- Birds must be **seen** to be counted – it is not enough to hear them.
- Do not add separate counts together, go with the highest tally.
- Birds can only be counted when present **simultaneously** – so if you see one American robin, which flies away, and then two robins fly in later, the count recorded is 2 not 3.

Sexual Dimorphism & PFW

- Individuals of some species can be identified as male and female.
- However, they must be treated the same in this example PFW scenario:
- During an observation, you see a male cardinal, which flies away, and then a female cardinal arrives. Unless they are present at the same time, you must only report 1 bird.
- This prevents bias due to higher counting of some species (w/ sexual dimorphism) versus those that don't show clear male/female dimorphism (e.g. chickadees or titmice).



Female (left) and male Northern Cardinals by Robert Williams, Huntley, IL.

<https://projectfeederwatch.wordpress.com/2011/03/02/research-news-gender-gap-at-our-feeders/>

All Birds Matter!

<https://feederwatch.org/learn/articles/all-counts-are-important/>

- If you see no birds, report “zero” birds.
 - Don’t be too concerned for fluctuations in birds seen – this could be due to many factors, such as weather or predators.
- If you only see the same few birds or “common species” that is fine!
- Ordinary birds are the “heart” of PFW!

While we are all thrilled by unusual sightings and high counts, it's the everyday observations of common birds that are so important for monitoring bird populations.

Correct Identification is Important!

But there are many resources on the PFW website to help out beginners

<https://feederwatch.org/learn/identifying-birds/>



7. Establish reporting system

- In order to coordinate all data collected by a team, there needs to be centralized reporting.
- In our 1st & 2nd season, I had students email me their observations.
- By the 3rd season, I created a Google sheet that I shared with students each week so they could enter their data directly.
- This worked best and allowed students to enter notes on their observations.
- Email was still used to share photos of birds among the group and for weekly reminders that I sent out.

Google Sheet We Used

 PFW Report for Dec. 22-23 ☆ 📁 File Edit View Insert Format Data Tools Add-ons Help Last edit was on January 8, 2017 🗨 👤 SHAR												
↶ ↷ 🖨 📄 100% \$ % .0 .00 123 Arial 10 B <i>I</i> <u>U</u> <u>A</u> 🔍 🔍 🔍 ☰ ⌵ 🔍 🔗 + 📊 🔍 Σ												
fx	PFW Report for Dec. 22-23, 2016											
	A	B	C	D	E	F	G	H	I	J	K	L
2												
3	If you have a bird photo or question, email it to me.											
4												
5	Your Name	Date	Time	Total Minutes	Species Name	Maximum No.	Leuca Seen (Y/N)	Temperature	Sunny? Cloudy	Precipitation (Y/N)	Av. Snow Depth	Other Notes
6												
7	Justin Example	Nov. 18	8:00 AM	5 min	House Sparrow	10	No	45F	Partly Cloudy	None	None	
8												
9	Alaa Barbour	Dec. 22	2:58 PM	5 min	House Sparrow	28	Yes	41F	Sunny	None	None	
10												
11	Kathy Wydner	Dec. 23	10:00 AM	20 min	House Sparrow	35	No	43F	Sunny	None	None	The feeder was empty
12					American Robin	2						There were two more
13					Starling	1						The campus was very
14												The Coopers Hawk
15												
16	SUMMARY	Dec. 22	PM	25 min	House Sparrow	35	Leuca seen 12/2	Temp Range =	12/22: Sunny	None	None	Dec. 22: 37-52F
17		Dec. 23	AM		American Robin	2		37-52 F	12/23: Sunny			Dec. 23: 37-48F
18					Starling	1		Based on checking				
19								historical weather info				
20								for the two dates				

Tally Sheet Provided on PFW Website

<https://feederwatch.org/wp-content/uploads/2013/08/TallySheet.pdf>

Version Prior to 2018-2019

Project FeederWatch

Tally Sheet

Effort

When did you watch your FeederWatch count site?

☐ Day 1, morning ☐ Day 2, morning
☐ Day 1, afternoon ☐ Day 2, afternoon

Estimate the cumulative time you watched your FeederWatch count site.

☐ Less than 1 hour ☐ 4+ to 8 hours
☐ 1 to 4 hours ☐ More than 8 hours

Weather

Daylight temperature

Mark the temperature extremes for each count day. Submit only the extreme low and high for the two-day count.

Low	Day	Temperature	High	Day
1	2		1	2
☐	☐	Under -18°C (under 0°F)	☐	☐
☐	☐	-18° to -10°C (0° to 14°F)	☐	☐
☐	☐	-10° to 0°C (14° to 32°F)	☐	☐
☐	☐	0° to 10°C (32° to 50°F)	☐	☐
☐	☐	10° to 20°C (50° to 68°F)	☐	☐
☐	☐	Over 20°C (over 68°F)	☐	☐

Daylight precipitation

Indicate the kind of precipitation that occurred during the two-day count.

Type	Duration
☐ None	☐ Under 1 hour
☐ Rain	☐ 1 to 4 hours
☐ Rain and Snow	☐ 4 to 6 hours
☐ Snow	☐ Over 6 hours

Total depth of ice/snow cover

Mark the average conditions during the two-day count.

☐ None
☐ Under 5 cm (under 2")
☐ 5 cm to 15 cm (2" to 6")
☐ Over 15 cm (over 6")
☐ Hard crust or ice covers snow
☐ Snow cover is patchy (less than 50% cover)

FeederWatch ID number: Password: User name:

The 2 consecutive dates of this count are _____ and _____

Bird Counts

Use the space below to tally the number of individuals of each species that you see simultaneously. Report your counts to Project FeederWatch at feederwatch.org (do not send in this Tally Sheet). Report only the highest number seen at one time—do not add your running tally together.

(Species name) Highest number seen at one time

Example: House Finch 123 (enter this number online)

Behavior Interactions

Use the space below to note if a bird attempted to displace or depredate another bird and if the attempt was successful.

Source species	Behavior	Target species	Successful?
Example: House Finch	displaced	American Goldfinch	No

Helpful hints

- Under "Species name," list the birds you see most often. Then make copies of your tally sheet.
- Print tally sheets from our website at: feederwatch.org/About/detailed-instructions/#prepare-a-tally-sheet.

Current Version (2018-19)

Project FeederWatch

Tally Sheet

FeederWatch ID number: Password: User name:

The 2 consecutive dates of this count are _____ and _____

Bird Counts

Use the space to the right to tally the number of individuals of each species that you see simultaneously. Report your counts to Project FeederWatch at feederwatch.org (do not send in this Tally Sheet). Report only the highest number seen simultaneously—do not add your running tally together.

Species name Highest number seen at one time

Example: House Finch 123 (enter this number online)

Effort

When did you watch your FeederWatch count site?

☐ Day 1, morning ☐ Day 1, afternoon
☐ Day 2, morning ☐ Day 2, afternoon

Estimate the cumulative time you watched your FeederWatch count site.

☐ Less than 1 hour ☐ 4+ to 8 hours
☐ 1 to 4 hours ☐ More than 8 hours

Snow depth

Mark the average conditions during the two-day count.

☐ None
☐ Under 5 cm (under 2")
☐ 5 cm to 15 cm (2" to 6")
☐ Over 15 cm (over 6")

Eye disease

Watch for eye disease in House Finches, Purple Finches, Evening Grosbeaks, or goldfinches and note how many birds you see with the disease.

Behavior Interactions

Use the space below to note if a bird attempted to displace or depredate another bird and if the attempt was successful.

Source species	Behavior	Target species	Successful?
Example: House Finch	displaced	American Goldfinch	No

Helpful hints

- Under "Species name," list the birds you see most often. Then make copies of your tally sheet.
- Print tally sheets from our website at: feederwatch.org/about/detailed-instructions/#prepare-a-tally-sheet.

8. Enter data in website portal

<https://feederwatch.org/pfw/count/enter?new#/new>

- I summarized and entered our weekly data to the website.
- Three Steps:



The screenshot displays a web form titled "ENTER A COUNT" with a "cancel" button. Below the title, there are three numbered steps in a horizontal sequence:

- 1** Select Count Site and Dates
- 2** Enter Weather and Effort
- 3** Enter Birds
Enter Birds

1. Select Your Count Dates REQUIRED



Need to enter data for a previous season?

Click on the first date of your two day count period

Nov 2017

Su	M	Tu	W	Th	F	Sa
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30		

Dec 2017

Su	M	Tu	W	Th	F	Sa
					1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30
31						

Outside FeederWatch season

Your previous count dates
(unavailable to enter data)

Your selected dates (click first day to
create)

Jan 2018

Su	M	Tu	W	Th	F	Sa
	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30	31			

Feb 2018

Su	M	Tu	W	Th	F	Sa
				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28			

Mar 2018

Apr 2018

2. Enter Weather and Effort

EFFORT INFORMATION

When did you watch your feeders? REQUIRED

Check all that apply.

November 15:

☒ AM

☒ PM

November 16:

☒ AM

☒ PM

☐ I watched AM and PM
both days.

Estimated cumulative time you watched your feeders: REQUIRED

1 to 4 hours ▼

WEATHER INFORMATION

Did you forget to record weather information? [Find historical weather online.](#)

Count Site: Gannon Hall, St. Peter's Univ.

Count Dates: Nov 15 & 16, 2017

Time of day counted:

Day 1: AM PM

Day 2: AM PM

Time watched: 1 to 4 hours

Daylight temperature:

Low: 1 to 10° C (33 to 50° F)

High: 11 to 20° C (51 to 68° F)

Daylight precipitation:

Type: None

Duration:

Total depth of
snow/ice cover: None

Save and Continue

3. Enter Birds

☐ Check if you watched your feeders but NO BIRDS were present

FeederWatch New Jersey Birds

Taxonomic

Alphabetic

+ Add Species

Waterfowl



Mallard

Grouse, Quail, and Allies



Wild Turkey

Vultures, Hawks, and Allies



Sharp-shinned Hawk

Count Site: Gannon Hall, St. Peter's Univ.

Count Dates: Dec 6 & 7, 2017

No. of Species
2



American Kestrel

1



House Sparrow

35

If you would like to save any comments along with this count, please enter them here:

The Kestrel was on the roof of Gannon. The sparrows were hiding in the bushes.

Comments are for informational purposes only and may not be reviewed. If you have a question for project staff, please [contact us](#) directly.

Submit Count

Tracking Bird Diseases

With House Finches & Goldfinches, you are prompted to respond to a question on a contagious bacterial conjunctivitis.

Finches, Euphonias, and Allies

1	House Finch	Did you check for signs of Eye Disease? ☐ Yes ☒ No
	Purple Finch	
	Common Redpoll	
	Pine Siskin	
	American Goldfinch	

Other illnesses
& abnormalities
can also be
submitted
to the PFW
website as well
through a link.

Count successfully submitted

Please review your count below.

Enter behavioral interactions for this count

Enter another count

Revise this count

Gannon Hall, St. Peter's Univ. Jersey City, NJ

December 6 & 7, 2017

Share ▾

BIRD COUNT

2

species

36

individuals



Taxonomic

Alphabetic

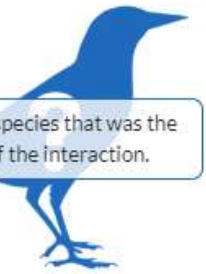
Species		1	35
	American Kestrel	1	
	House Sparrow	35	

Behavioral Interactions – Relatively New

Displaced or depredated? Was it successful or unsuccessful?

Add Interactions

Please add the interactions that you observed during this count.

Source Species	Interaction Type ?	Target Species	Count
 select the species that initiated the interaction.	Select one... ▼ ☐ Successfully ☐ Unsuccessfully	 Select the species that was the target of the interaction.	1 The number of times this interaction was observed.
Comments: If you wish, describe the interaction in more detail.			Add Interaction

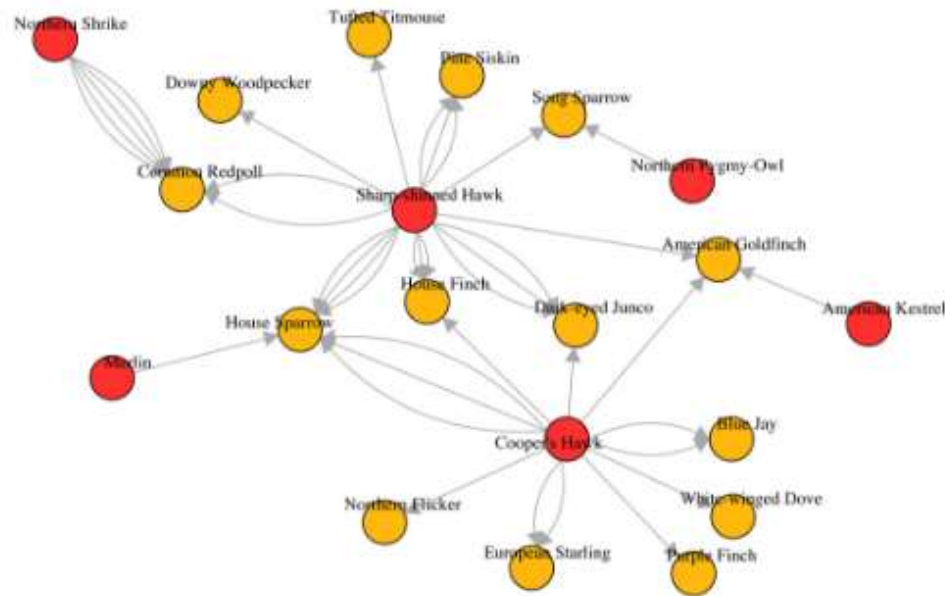
- You need to know the identity of both the source and target species.
- Was it an attempt at displacement of one bird by another bird?
- Was it a predation attempt?
- Was it successful or not?
- Descriptive comments are welcome.

PFW Interaction Project

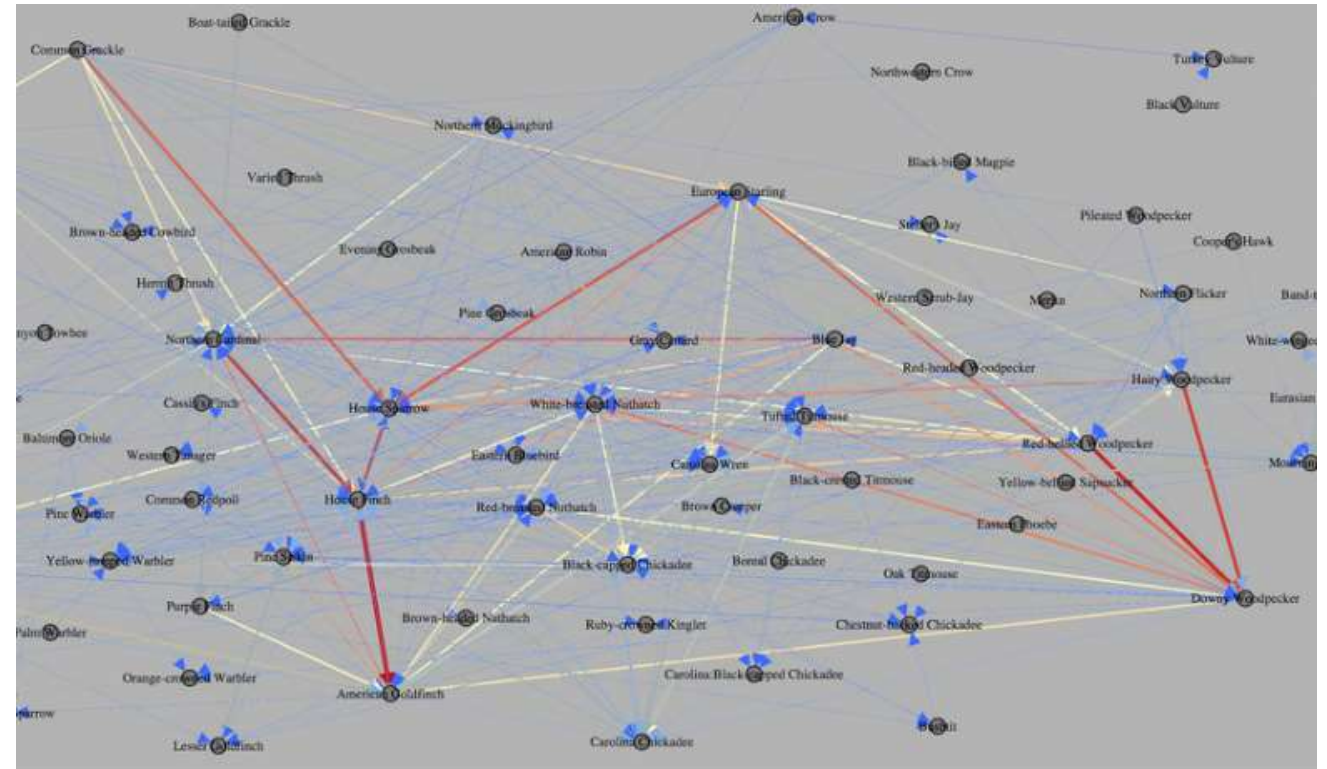
<https://eliotmiller.weebly.com/feederwatch-interactions.html>

24 March 2016 – Data from Pilot Season

1) Predation



2) Displacement → Dominance Hierarchy



Limitations of PFW

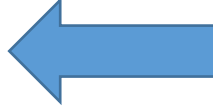
- PFW Protocol was not designed to identify all species within an area
- PFW is set up to reveal **relative abundance of species**, and to show how this changes over time and over geographical distances
- Absence of birds from PFW reports does not mean they are not present in your local area:
 - Species may be rare/uncommon
 - Not attracted to what you are providing (directly or indirectly)
 - “Effort” plays a factor (how many hours?)
- Participants must stick to established protocol in order for data reported to be pooled for analysis
 - Your greatest contribution is to the overall PFW database as part of the “**Big Picture**”
- However, you can still supplement your PFW studies as you wish – you can collect additional data
 - For example, **eBird** is another powerful citizen scientist /research database
<https://ebird.org/home>

Results



Photo taken in PFW area on SPU campus: K. Wydner

How We Have Used PFW for Our Studies on the SPU Campus: Data Display & Analysis

1. Season Count Explorer 
2. Bird Trend Graphs 
3. Download tables of data into your computer
4. Request raw data for statistical analysis

1. Season Count Explorer

There are 21 weeks of PFW each season (maximum of 22 counts)

Figure 1a. Number of species reported per count period of 2017-18.

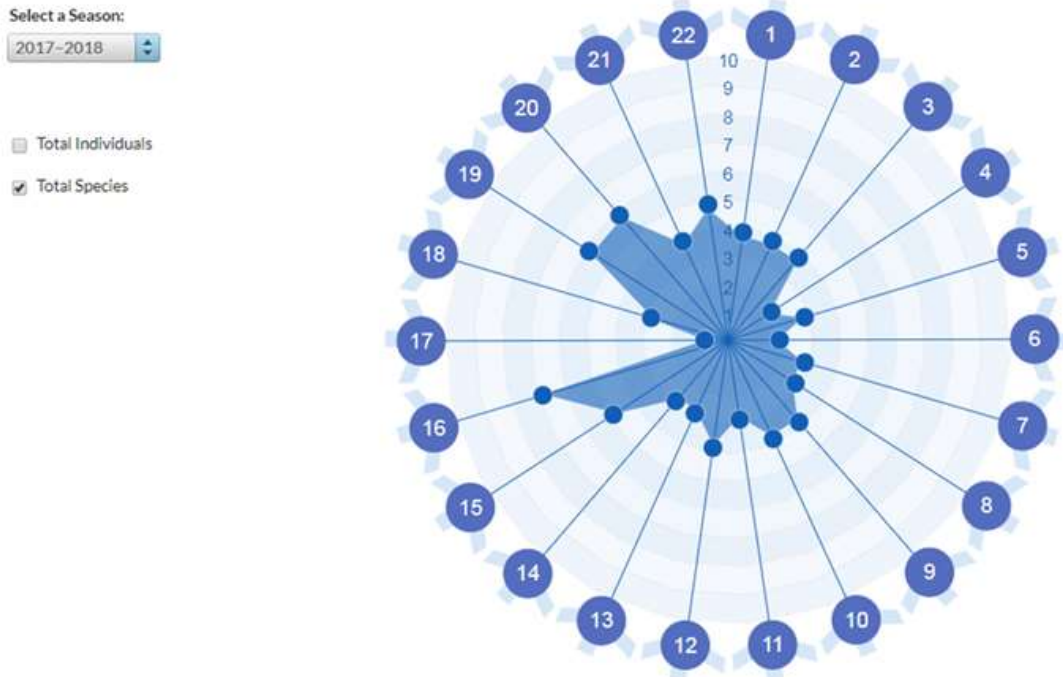
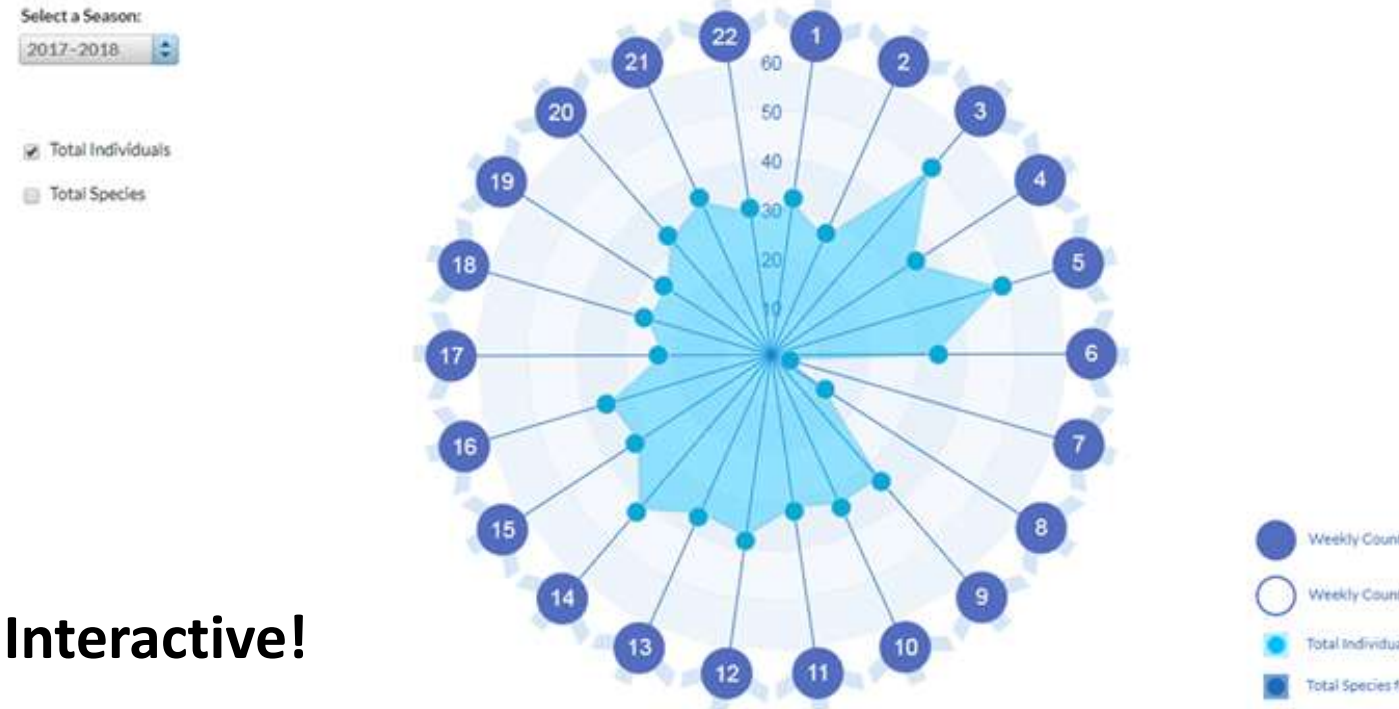


Figure 1b. Number of individuals reported per count period of 2017-18.



Interactive!

2. Bird Trend Graphs

Conveniently generated on website but you could also plot your own.

Figure 2a. Mourning Dove trends compared for three seasons – 2017 version of graph (simplifies)

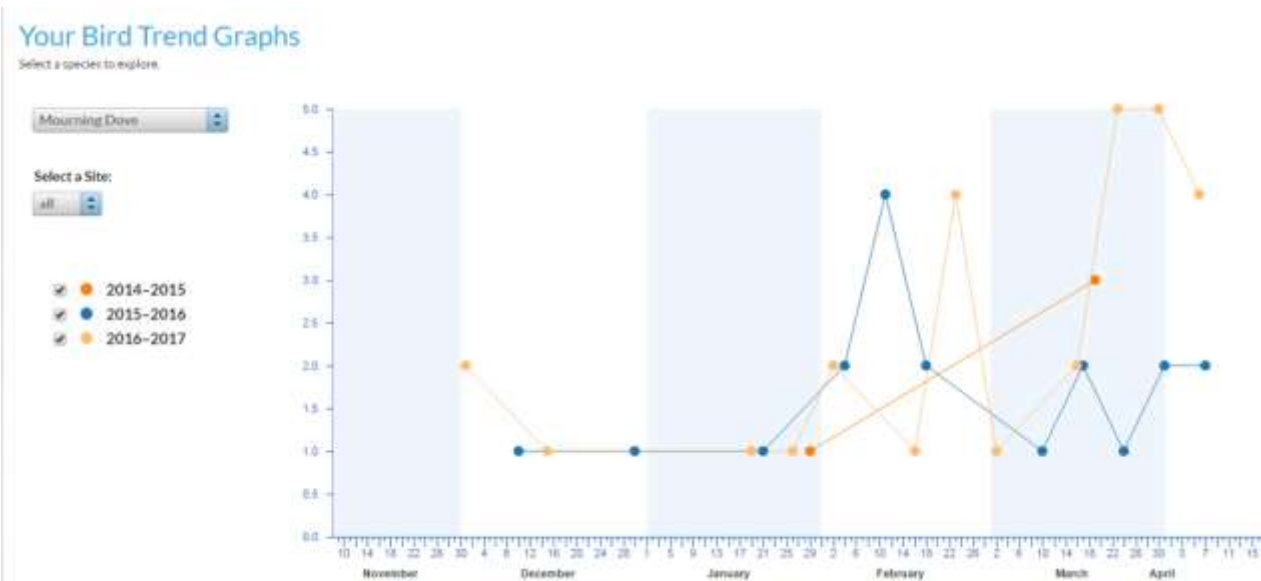


Figure 2b. Mourning Dove trends compared for three seasons – 2018 version of graph (more details)

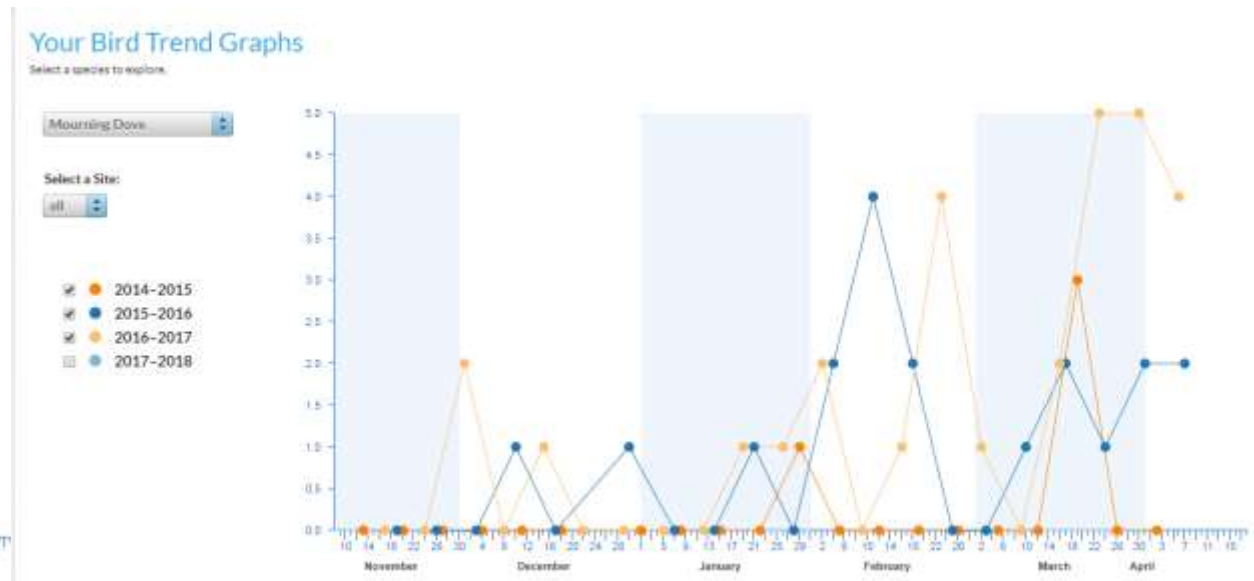


Figure 3. House sparrow observations over four PFW seasons demonstrate that they are abundant. There isn't a strong monthly pattern other than a slight decline in overall numbers between Dec & Apr.

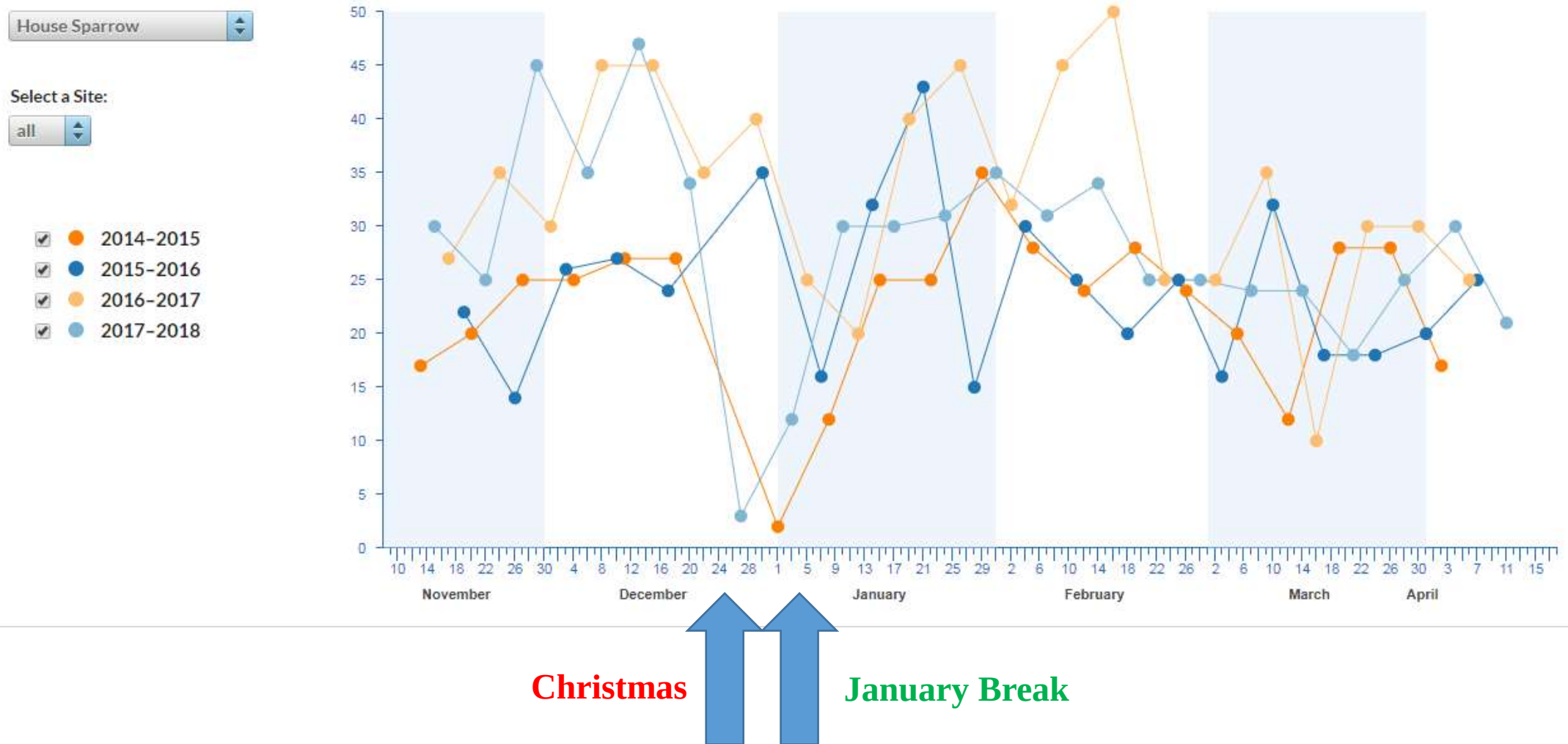


Figure 4. Starling trends for four PFW seasons. Starlings remain present throughout the winter in low and variable numbers.

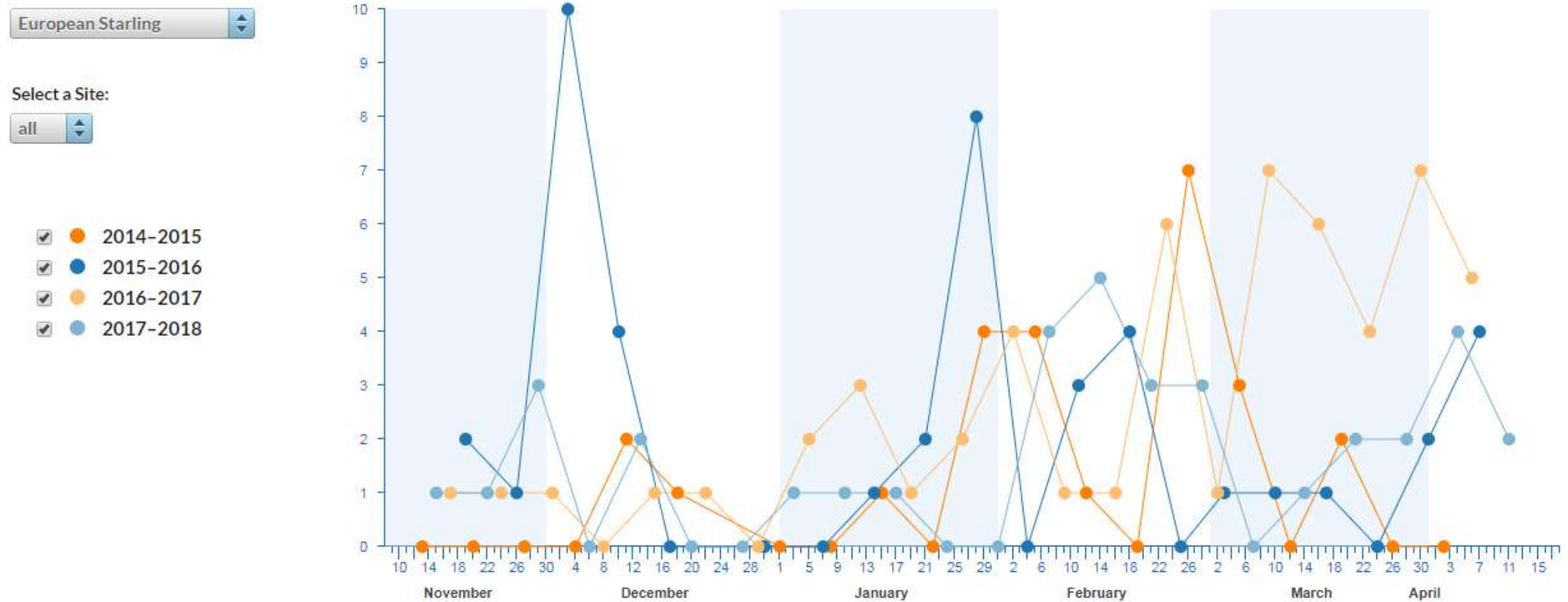


Figure 5. Mourning dove trends over four PFW seasons. Mourning dove visits increase after mid-winter and into spring. Their average group size when seen has increased in the past three winters.

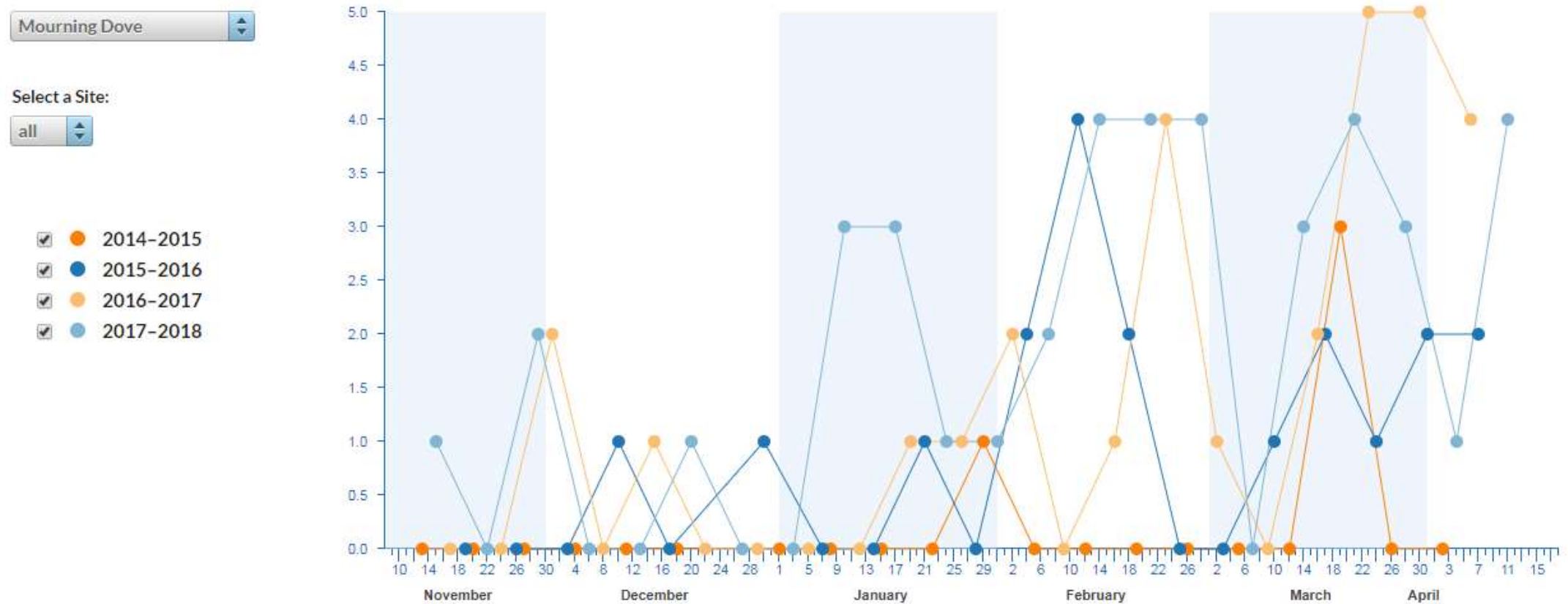


Figure 6. Northern Mockingbird trends are compared for four PFW seasons. Results are consistent with mockingbirds being territorial outside the breeding season.

Northern Mockingbird

Select a Site:

all

- ☒ 2014-2015
- ☒ 2015-2016
- ☒ 2016-2017
- ☒ 2017-2018

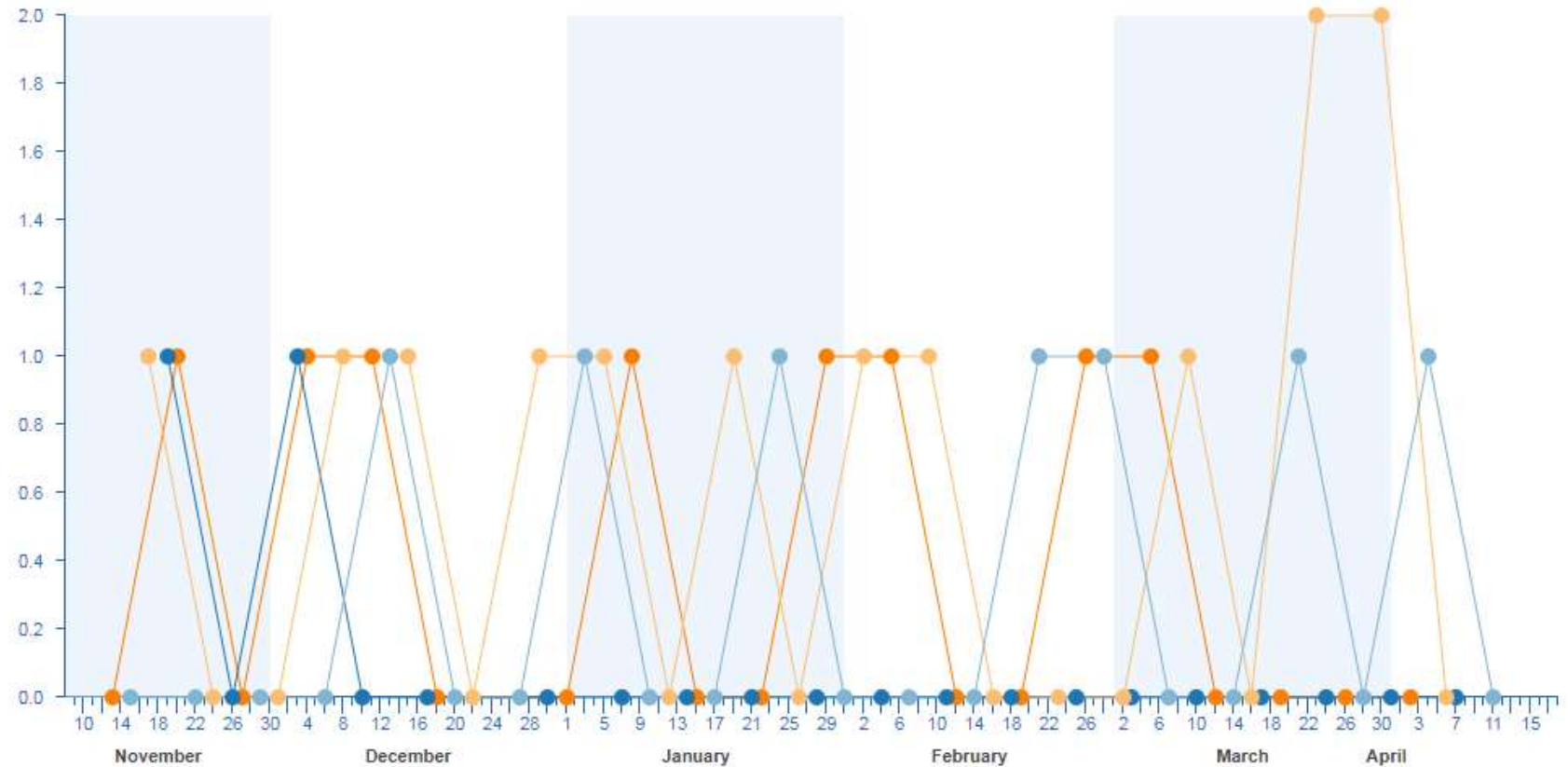
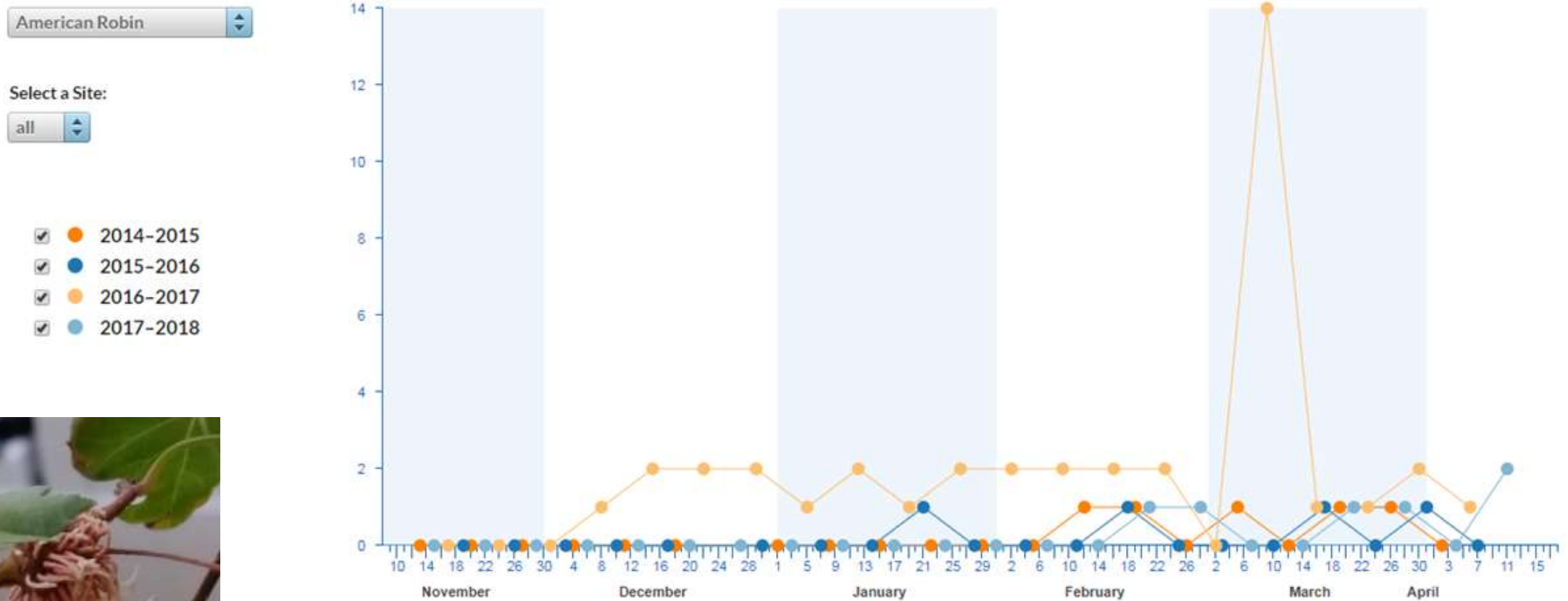


Photo of Northern Mockingbird with Hawthorn berries by K. Wydner, 12/16/2016

Figure 7. American Robin trends over four PFW seasons. Robins have not been reported in Nov. For 2014-15, the first robin appeared in Feb; 2015-16, in Jan; 2016-17, in Dec; but in 2017-18, the first robin was reported in Feb (during a warm-up). At least one pair nested in the PFW area in May 2017.



A rust on the hawthorn trees (*Crataegus* sp.) caused failure of berry production in winter 2017-18. Photo by K. Wydner, 10/6/17.

Figure 8. Dark-eyed Junco sightings are compared for four PFW seasons. Juncos appeared once in 2014-15, once in 2016-17, & four times in 2017-2018.

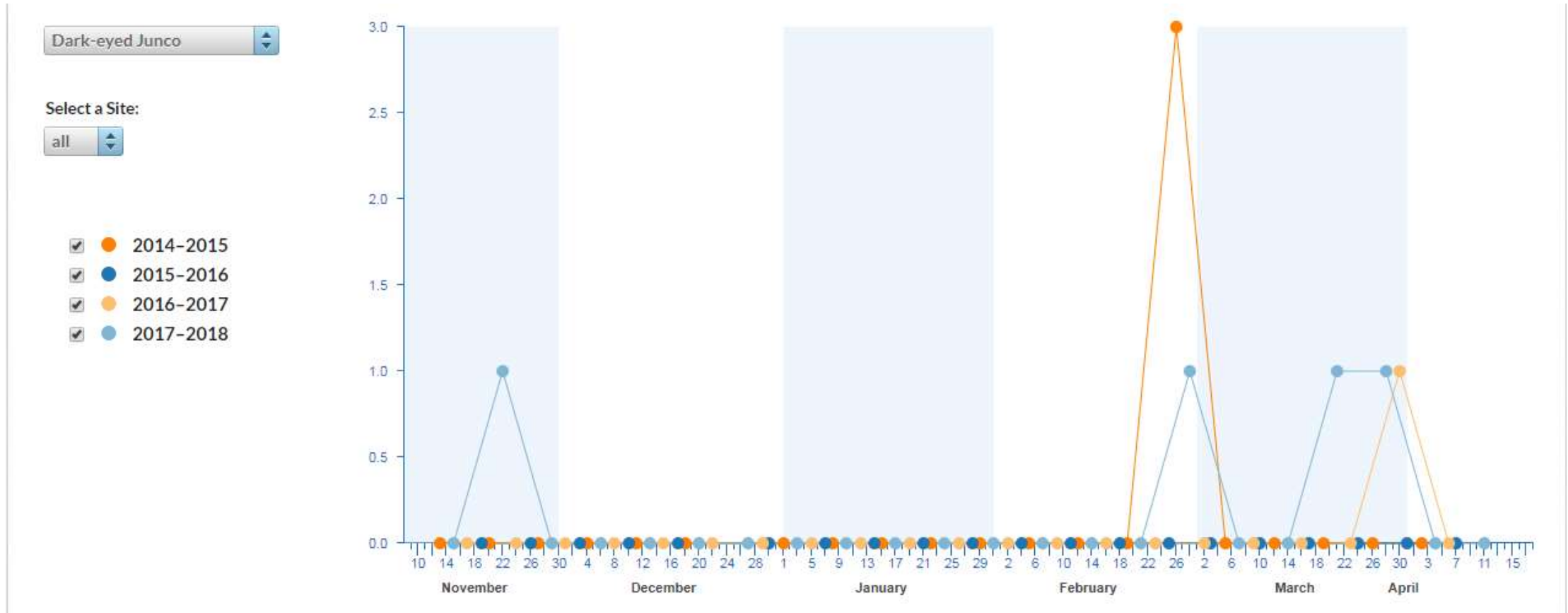


Figure 9. Northern Cardinal sightings are compared for four PFW seasons. Cardinals appeared twice in 2014-15, twice in 2016-17, & twice in 2017-2018.

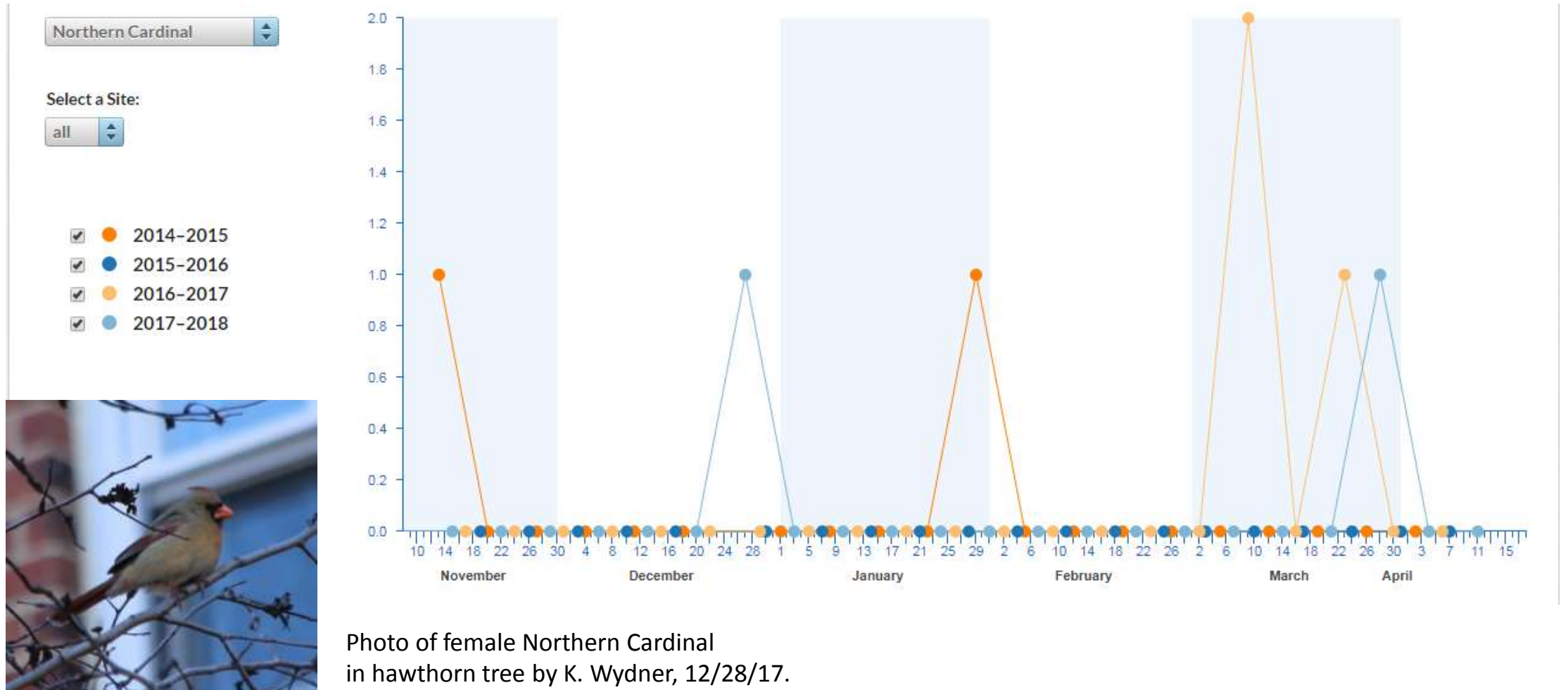


Figure 10. Downy Woodpecker sightings are compared for four PFW seasons. Downies appeared three times in 2014-15, once in 2015-16, & once in 2017-2018.

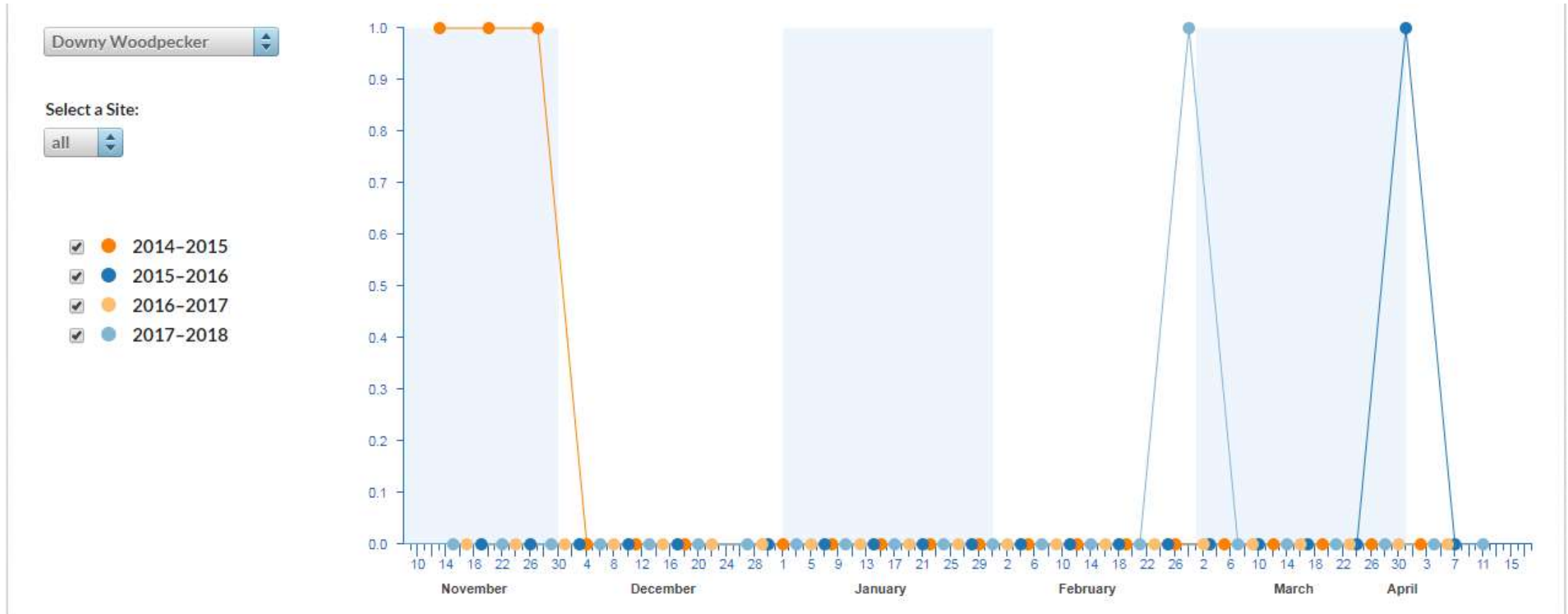


Table 1. “Average Group Size When Seen” for the Top Five PFW Species at Saint Peter's University - Listed in Taxonomic Order

	Species Abbrev.	2014-15	2015-16	2016-17	2017-18
	MODO	2	1.7	2.4	2.6
	AMRO	1	1	2.4	1.2
	NOMO	1	1	1.2	1
	EUST	2.8	3.1	2.9	2.3
	HOSP	22.5	24.2	33	27.9



Average Group Size = “flock size”, but is computed using a formula to compute the mean of the PFW observations without including any “zero” counts (those who did not report the species at their site) and that de-emphasizes rare high counts to provide a mean that more closely matches what a typical FeederWatcher is likely to see.

“Leuca” – A Partially Leucistic House Sparrow

In leucism, pigment can be made but it is not transported into feathers.
Identified in Fall 2014, she was present throughout three full seasons of PFW.



Bill Orologas: 12-14-2014



Nathalie Staiger: 12-4-5-2014



K. Wydner: 12-16-2016

A Surprise Visitor: A Wood Thrush in December!!

Alaa Barbour took these photos on 12-15-2016 with snowflakes on the ground. This report would not have been accepted without the excellent documentation – front, back, & side of the bird. It was reported on eBird & the Christmas Bird Count.



Another Winter Rarity for Hudson County, NJ: Yellow-Bellied Sapsucker: Dec. 28, 2017



Photos: K. Wydner, 12-28-2017

Summary of 2017-2018 Season:

- In 2017-18, 14 species were identified.
- This compares to 9 in 2016-17, 6 in 2015-16, and 11 in 2014-15.
- Five new birds - American kestrel, American crow, yellow-bellied sapsucker, brown-headed cowbird, and gray catbird (unconfirmed) - brought our four year total to 18.
- Other species reported this year were: house sparrow, European starling, mourning dove, American robin, northern mockingbird, northern cardinal, dark-eyed junco, downy woodpecker, and rock pigeon.
- Except for kestrel, sapsucker, mockingbird, and pigeon, the species reported are among the top 25 most common birds to visit NJ feeders in 2017-18

Discussion & Activities



Photos by Sara Gonzales,
11-30-2017

Abbrev. Discussion of SPU Data

There are many contexts in which to consider PFW data (local vs. pooled)

- Climate change / global warming correlations
 - Published studies have noted northward range expansions of some species
- Effects of supplemental feeding on birds
 - How much do some species depend on this? (published studies)
- Understanding the urban habitat
 - Reduced diversity of birds compared to suburbs & rural habitats
 - What species are doing well? What does PFW data tell us?
- Significance of the birds we **don't** see
 - Would habitat improvements increase bird diversity on our urban campus?

Comparison of Two PFW Sites:

SPU (Urban) vs. East Brunswick (Suburban/rural)

Rank	25 Most Common Feeder Birds PFW in NJ (2016-17)	SPU, Jersey City, NJ (18 species over 4 seasons)	East Brunswick, NJ (38 species over 5 seasons)
1	Northern Cardinal	X	X
2	Carolina/Black-capped Chickadee		X
3	Dark-eyed Junco	X	X
4	Mourning Dove	X	X
5	Downy Woodpecker	X	X
6	Blue Jay		X
7	Tufted Titmouse		X
8	White-breasted Nuthatch		X
9	Red-bellied Woodpecker		X
10	House Finch	X	X
11	American Goldfinch		X
12	White-throated Sparrow	X	X
13	House Sparrow	X	X

4	Mourning Dove	X	X
5	Downy Woodpecker	X	X
6	Blue Jay		X
7	Tufted Titmouse		X
8	White-breasted Nuthatch		X
9	Red-bellied Woodpecker		X
10	House Finch	X	X
11	American Goldfinch		X
12	White-throated Sparrow	X	X
13	House Sparrow	X	X
14	European Starling	X	X
15	Common Grackle	X	X
16	Carolina Wren		X
17	American Robin	X	X
18	Red-winged Blackbird		X
19	Song Sparrow		X
20	Brown-headed Cowbird	X	X
21	Hairy Woodpecker		X
22	Cooper's Hawk		X
23	Red-breasted Nuthatch		X
24	American Crow	X	X
25	Fox Sparrow		X
	Northern Mockingbird	X	X
	American Kestrel	X	

There are many differences between the two sites, urban vs. suburban/rural, as well as the number and variety of feeders, but the differences between the two sites are greater than this table shows.

For example, of 18 species detected at SPU, only 5 have been seen for all four PFW seasons.

In East Brunswick, at least 22 of the species shown in this table have been present for five seasons so far, at least once, but usually on a regular basis.

Future Directions

- Continue PFW
- Have students perform statistical analysis on our data
 - Examine patterns for various species
 - Effect of weather conditions on observations
 - Biodiversity comparisons with home site (e.g suburban/rural)?
- Request data on other urban sites – compare
- Make habitat improvements (\$1000 grant from Society for Biodiversity Preservation)
 - Add bird bath (water source)
 - Native Plant Garden (Restoration of natural habitat)
 - Expand feeders – Add more variety
 - Examine how PFW observations change over time as a result



Celebrating the New Bird Bath

Bird Identification Activity

Photo by Alaa Barbour, 5-20-2018



Online Resources for Help with Bird ID

<https://feederwatch.org/learn/identifying-birds/>

- Tricky Bird ID: <https://feederwatch.org/learn/tricky-bird-ids/>
- Free Online Bird Guide: <https://www.allaboutbirds.org/>
- eBird: <https://ebird.org/home>
- **Merlin Bird ID App With Photo ID:** Merlin is a free app for iPhone, iPad, and Android devices from the Cornell Lab of Ornithology. Merlin now has a Photo ID feature that helps identify a bird in an image. You can get Merlin Bird ID with the Photo ID feature at the [Apple App Store](#). The Android version is available on [Google Play](#).
- **Audubon Bird Guide:** This award-winning app is free and available for smartphones and tablets through the [Apple App Store](#), [Google Play](#), and [Amazon App Store](#).

Eastern Feeder Birds



Eastern Towhee



American Goldfinch
transitional plumage



Dark-eyed Junco



Evening Grosbeak



Pine Siskin



House Sparrow



American Tree Sparrow



White-throated Sparrow



Song Sparrow



Common Redpoll



White-crowned Sparrow



House Finch



Purple Finch



Hairy Woodpecker

Downy Woodpecker

White-breasted Nuthatch

Red-bellied Woodpecker

Red-breasted Nuthatch

Four Keys to Bird ID

0. Habitat

1. Size and Shape

2. Color Pattern

3. Behavior

4. Habitat



<https://www.allaboutbirds.org/building-skills-the-4-keys-to-bird-identification/>

Photo by Magee Marsh
<http://surfbirds.com/bird-feeders/orioles.html>

(0) & (4) Habitat

- First and last clue!
- Narrow down your list by knowing where you are
- What can I expect? Know ahead of time typical, common species
- Ask - Is it reasonable to see this species in:

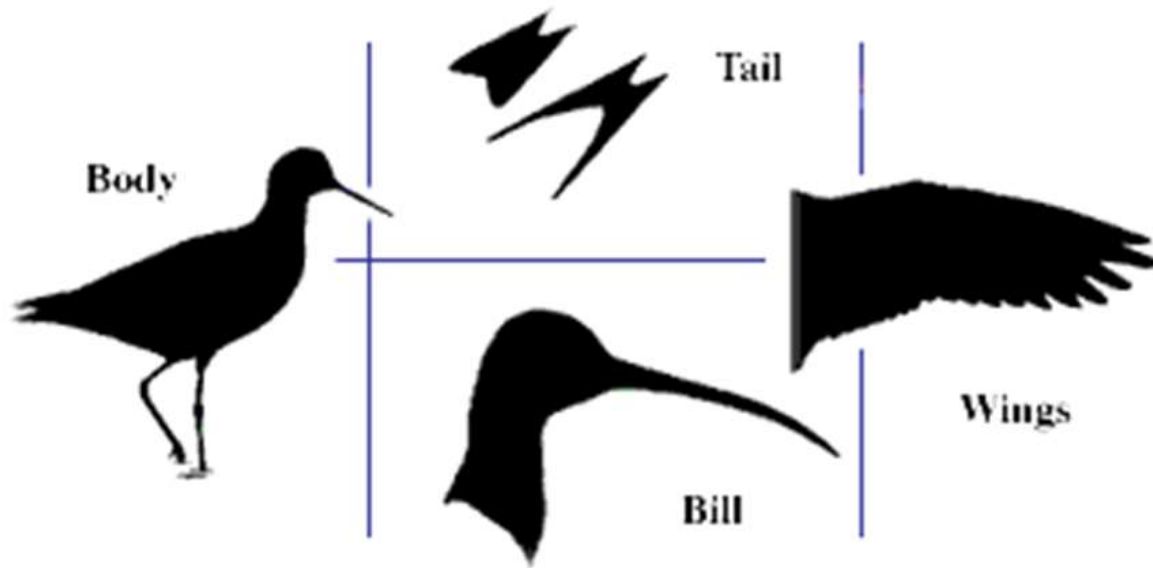
This type of habitat?

Time of year/season?

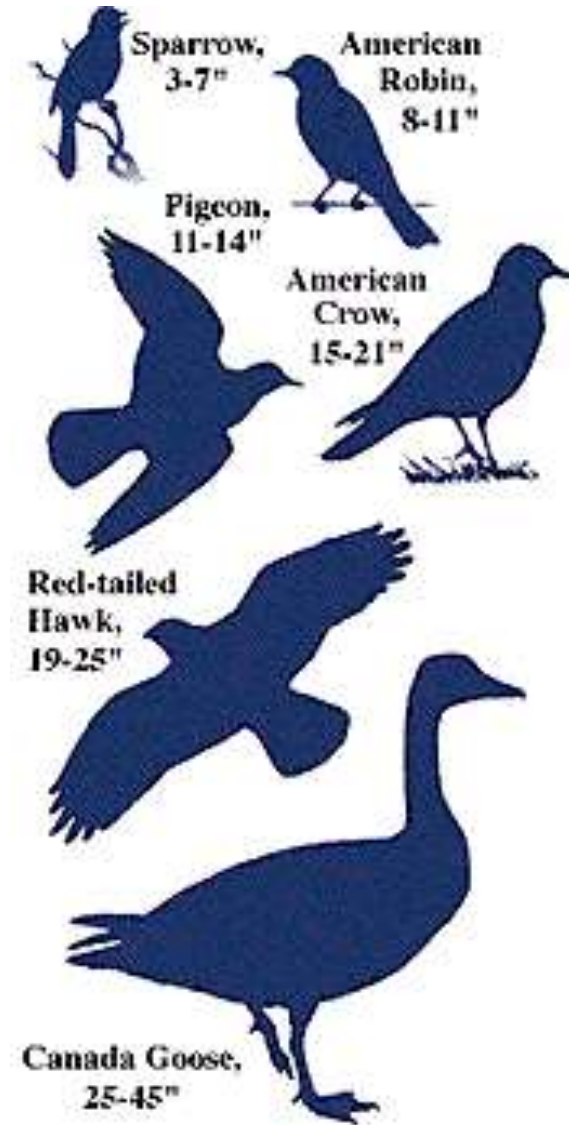
Geographical location?

(1) Size and Shape

Peterson Field Guide Recommendations:



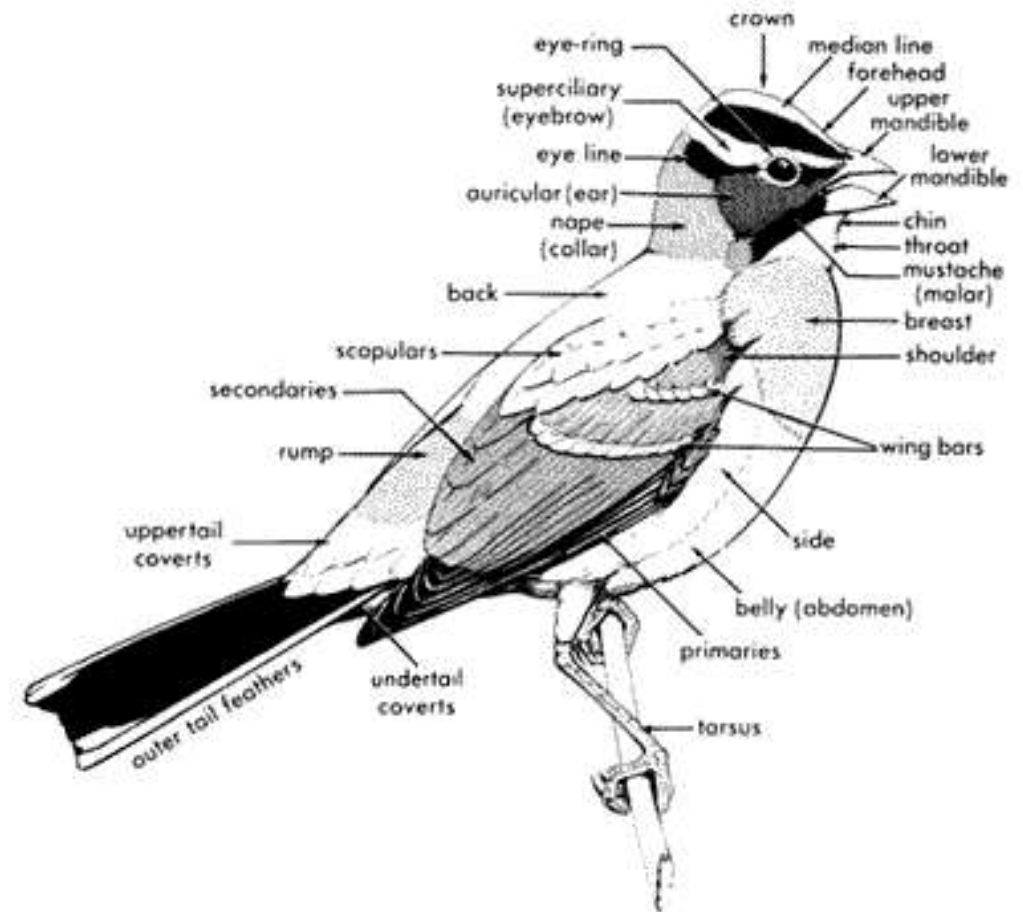
Compare the size and shape of a bird with one of these six common birds:



(2) Color Patterns

- Pay attention to the overall color
- Some birds have unmistakably bright colors and strong patterns
- Others have faded, subtle colors and patterns
- Lighting can be tricky
- Practice helps with IDs!

Field Marks (Peterson Field Guide)



(3) Behavior

- Posture
- Movement
- Song & Calls
- Flight pattern
- Feeding style
- Flocking?
- Take notes!

Eastern Phoebe: Tail bobbing

<https://www.youtube.com/watch?v=p2iSiGVEKwI>



(4) Habitat

- **First and last clue!**



CHIPPING SPARROW

Example of Four Parts of Bird ID

Size & Shape: A small, compact, fairly flat-headed sparrow with a long, notched tail

Color Pattern: Crisp, frosty gray-white below, striking rufous cap with black line through eye

Behavior: Often in flocks; feeds on open ground, sings from high in trees, often evergreens

Habitat: Open woodlands, forests with grassy clearings, parks, roadsides, yards



Photo by *Byard Miller* via *Birdshare*.

Be Ready for The Surprise Visitor – Exciting!

How to be ready for the Unexpected!

- Take notes
- Take photos
- Make a sketch

We've had several surprises:

Leucistic Birds (House Sparrows)

Wood Thrush

Yellow-bellied Sapsucker

Rose-breasted Grosbeak

Photo by Sarah Gonzales, 4-27-2018



After that, they showed up again!

Reported on eBird – the last spring report in Hudson County: May 18, 2018



Above photo from SPU Biology professor – texted to me.



Above photo not from us -- SUBMITTED BY
Bob Vuxinic (PFW Participant photo)

Crossville, TN, United States

Potential “Feeder Birds” of Columbus, OH in June

Ohio State University – Main Campus (Hotspot on eBird)

Rock Pigeon

Mourning Dove

Downy Woodpecker

American Crow

Carolina Chickadee

American Robin

European Starling

Cedar Waxwing

Chipping Sparrow

Song Sparrow

Northern Cardinal

Rose-breasted Grosbeak

Red-winged Blackbird

Common Grackle

House Finch

American Goldfinch

House Sparrow

Acknowledgements

Thank you to all the students and professors who have helped with Project FeederWatch through their observation, effort, and donations of seed!



And thank you Jill Callahan for letting me know about
ABLE!!

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