



Project FeederWatch, Year Five: A Garden of Birdly Delights

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Abstract

Project FeederWatch (PFW) is an annual winter survey of birds that provides information about changes in bird distribution and abundance across North America. From November to April, birds at and around feeders are counted according to an established protocol and reported to a database managed by the Cornell Lab of Ornithology and Bird Studies Canada. Data on bird species and the highest number of each species are recorded. On our urban campus in Jersey City, NJ, PFW has been conducted for five seasons. Over the first four seasons (2014-2017), a total of eighteen species were identified although only five species were present every season: house sparrow, mourning dove, European starling, American robin, and northern mockingbird. In the summer of 2018, a grant enabled us to begin to renovate the PFW count area by removing foreign invasive plants, restoring natural habitat through planting native flora such as wildflowers, and adding a water bath and a second feeder with sunflower seeds. As a result, the season just completed (2018-2019) has demonstrated a significant increase in species diversity on a weekly basis with visits from many native songbirds, some observed for the first time.

Introduction

As the ornithologist Roger Tory Peterson once said, "Birds are indicators of the environment. If they are in trouble, we know we'll soon be in trouble". Habitat loss is the greatest threat that birds face.

The urban campus of Saint Peter's University provides a setting for studying bird populations in a city. For five winters, we have collected data for Project FeederWatch (PFW). Our observations of species that spend time on our campus between November and April are studied on a local level as well as entered in the national PFW database managed by the Cornell Lab of Ornithology and Bird Studies Canada.

In our first four years, we counted eighteen species, only five of which were present every winter: house sparrow, mourning dove, European starling, American robin, and northern mockingbird. In the summer of 2018, a grant from the Society for Biodiversity Preservation enabled us to begin to restore native habitat in the PFW count area. We also added a bird bath and a second feeder station to provide more variety of seed.

As a result, the season just completed (2018-2019) has demonstrated a significant increase in species diversity on a weekly basis with visits from many native songbirds, some observed for the first time.

Materials and Methods

The Project FeederWatch (PFW) protocol used at Saint Peter's University has been published (Wydner 2019). Our PFW area is slightly larger than two tennis courts and is located on an urban campus in Jersey City. The PFW area was monitored between November and April. Data recorded included (1) species, (2) maximum number of each species seen at a time, (3) time of day and length of observations ("effort"), and (4) physical factors such as weather and snow cover. Data was entered at the PFW website <http://feederwatch.org/>. For statistical comparisons, we followed practices and terms as defined on the PFW website for average group size (a.k.a "flock size") and abundance index. For four seasons (2014, 2015, 2016, 2017), a tube feeder mounted on a pole was kept filled with a mix of birdseed (such as milo, cracked corn, millet, black oil sunflower). Two suet cakes were also suspended on the same pole.

Thanks to a grant from the Society for Biodiversity Preservation, changes were made to the PFW area in summer/fall 2018: First, English ivy and other nonnative, invasive plants that had overgrown the landscape were removed. Second, replanting of the area with native species, beginning with wildflowers was begun. Third, a water bath was added. Fourth, a sunflower seed feeder and a niger seed sock on a pole were added to our original setup of one tube feeder of mixed seed and two suet cakes. Replanting the area in order to restore natural habitat with native species is continuing.

Results

Figure 1. Development of the native plant garden started in July 2018. (A) Before native plants could be planted, English ivy overgrowing the PFW area had to be removed. (B) Afterwards, native wildflowers were planted.



Figure 2. Students volunteered in the summer and fall of 2018 to clear away nonnative, invasive plants that have little value to wildlife. (A) Gabriela Mosqueda & Alaa Barbour clear away ornamental grass. (B) Sara Gonzalez, Pamela Fernandez, & Valeria Hernandez remove English ivy.



Figure 3. Representative photos of the developing native plant garden are shown below. A mix of native and naturalized North American annuals and perennials were planted, such as *Rudbeckia*, *Coreopsis* species, *Echinacea*, *Lobelia cardinalis*, butterfly milkweed, and New England aster. Native vines and woody plants are also in the process of being established.



Figure 4. The number of bird species seen per PFW week increased significantly in the 2018-19 season as compared to previous seasons.

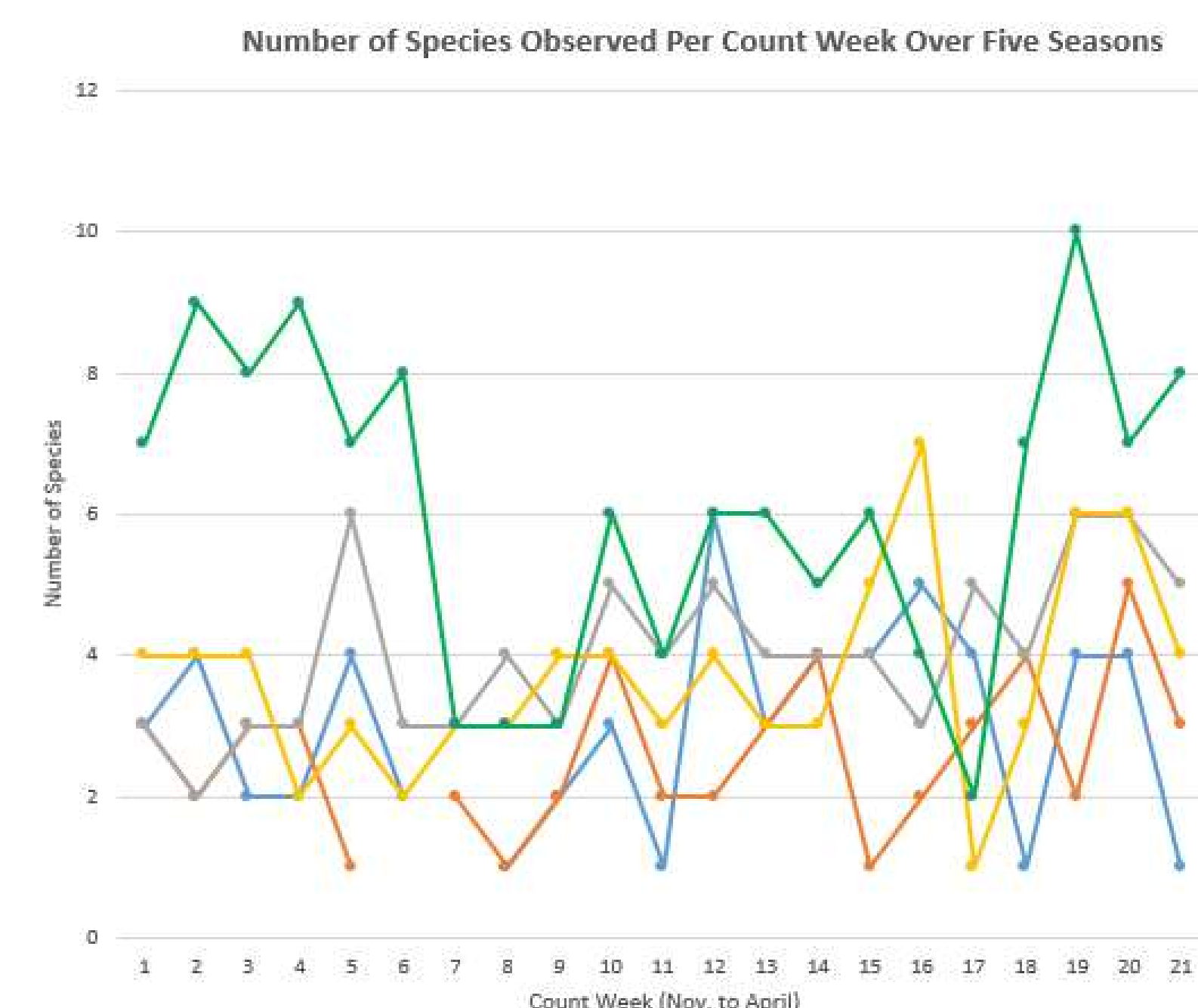


Figure 5. Three native species were observed for the first time in five PFW seasons. (A) An American goldfinch was photographed on this niger seed sock by Alaa Barbour (11-20-18). (B) A fox sparrow was present for two weeks (photo by K. Wydner, 12-5-18). (C) A white-breasted nuthatch visited the feeders and PFW area for two months (photo by A. Barbour, 11-20-18).



Figure 6. House sparrows continued to dominate the feeders in 2018-19. The photo below shows a female house sparrow observed throughout this season which has a distinct leucistic wing patch (Photo: K. Wydner 12-2018).

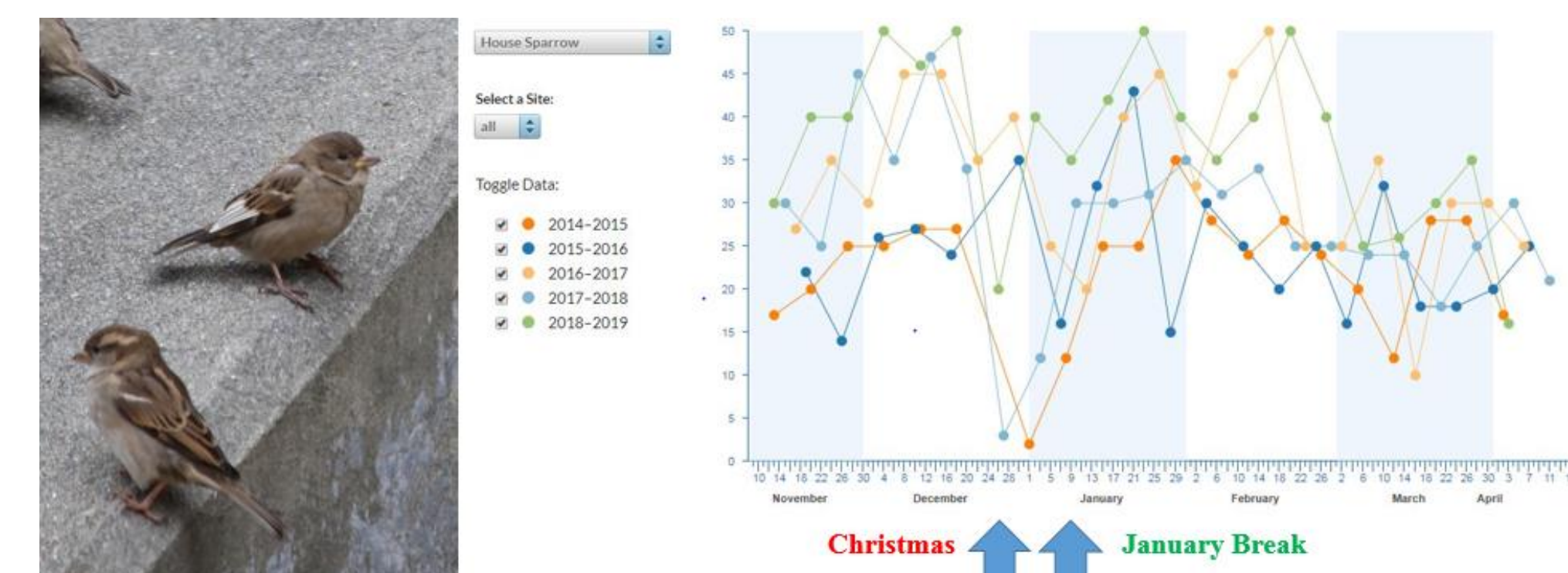


Figure 7. Mourning doves were second to house sparrows in visits to the feeder area. This season saw a marked increase in their numbers, although average group size had already been increasing (Photo: K. Wydner 12-2018).



Figure 8. Dark-eyed juncos, a native species that winters in NJ, were present in their highest numbers in five years (Photo: K. Wydner 12-2018).

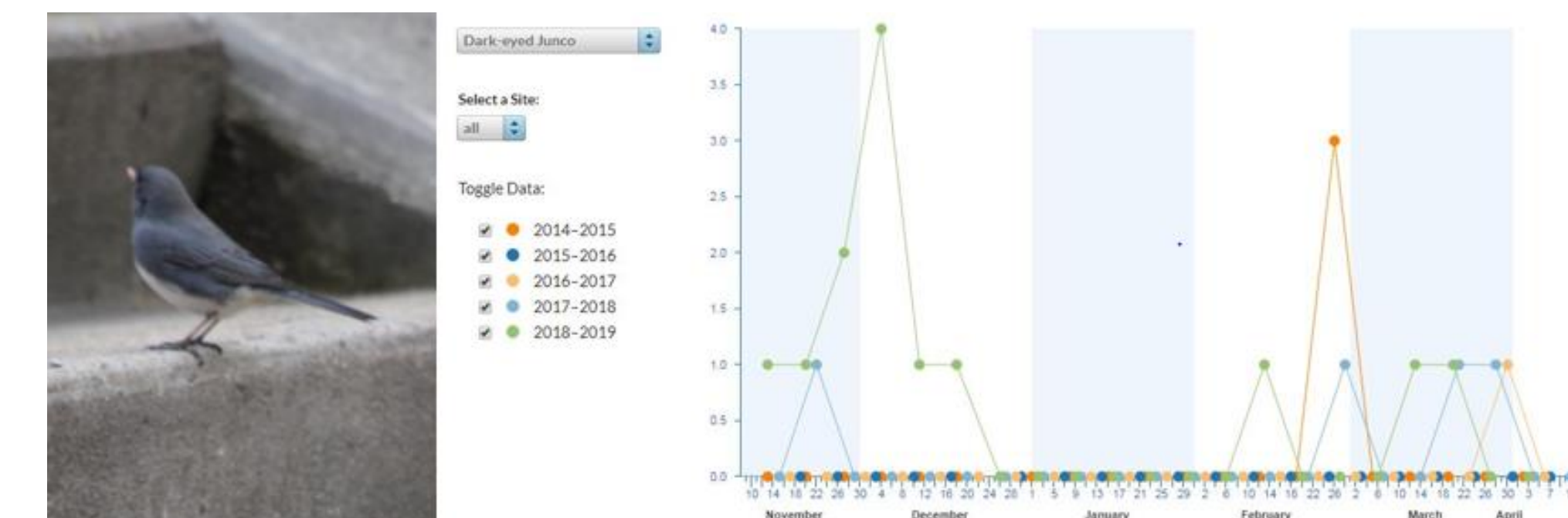


Figure 9. House finches were present throughout the 2018-19 season. They were introduced from Western North America. (Photo K. Wydner 12-2018).

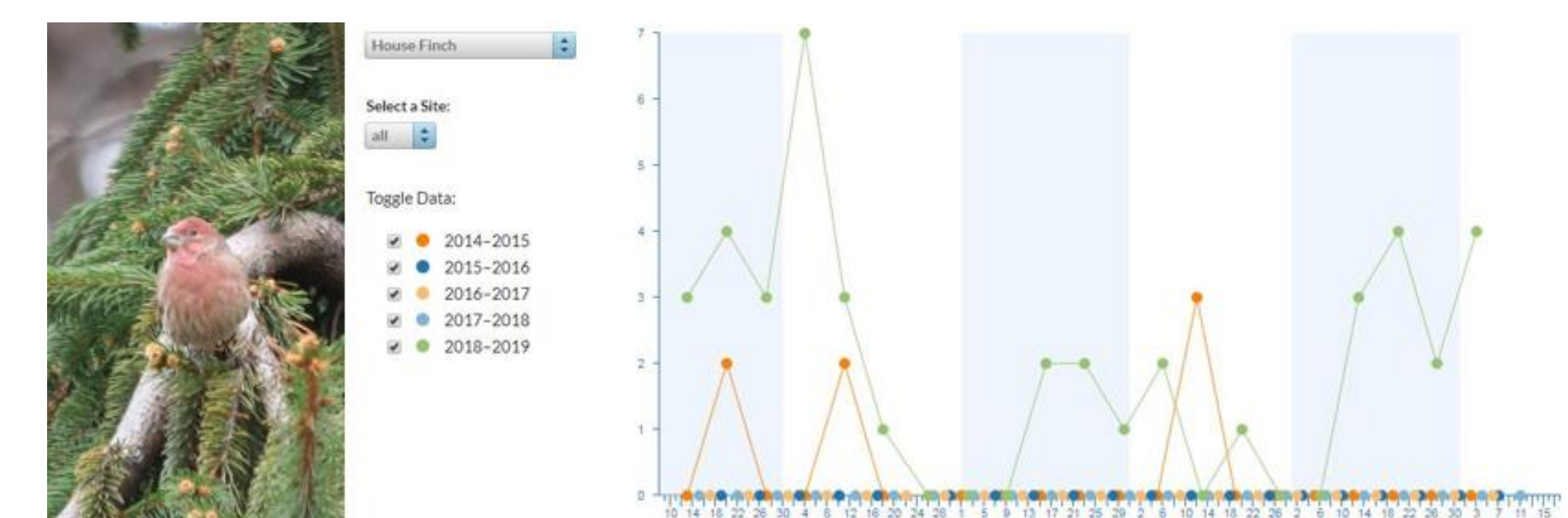
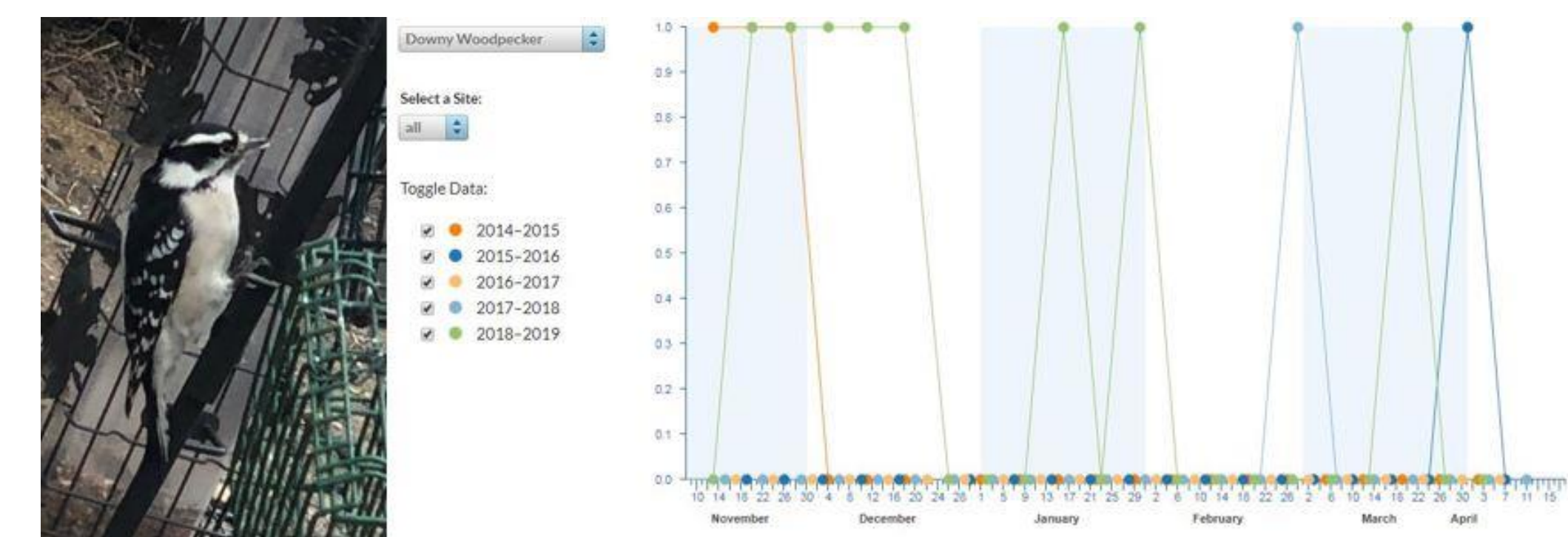


Figure 8. A single downy woodpecker was seen in 8 of 21 count weeks. In past seasons, their visits were rare. (Photo: Disleiny Perez 12-3-2018).



Discussion

The most significant finding of the 2018-19 PFW season was the increased number of bird species seen per count week (Figure 4) as compared to all four previous seasons. The difference was most significant in the first six weeks of the PFW season, during the time when the wildflowers and other native foliage had not completely died back.

House sparrows (*Passer domesticus*) were still the most abundant species on the Saint Peter's campus with an average group size (37.1) that far exceeds the 2018-19 NJ average of 6.55. A partially leucistic female "Leuca II", was identified (Figure 6). She may be the same female with "white wing tips" ("Silva") noted in 2017-18.

Mourning dove (*Zenaidura macroura*) counts were the highest ever recorded throughout 2018-19, with the increases most pronounced in November and December (Figure 7). Average flock size on campus has already been on the increase over the past three winters, e.g. to 2.6 in 2017-18, but this number more than doubled to 5.7 in 2018-19; the NJ average was 4.91 for 2018-19.

A total of 15 bird species were reported for the 2018-19 season. In addition to the five species seen every PFW season (house sparrow, mourning dove, European starling, northern mockingbird, and American robin), other species reported included dark-eyed junco, downy woodpecker, white-throated sparrow, white-breasted nuthatch, American goldfinch, fox sparrow, brown-headed cowbird, northern cardinal, house finch, and rock pigeon. Figure 5 shows the three species seen for the first time: American goldfinch, fox sparrow, and white-breasted nuthatch. House finches visited for the first time since 2014-15 and were seen throughout the winter (Figure 9). Juncos were seen more often throughout this winter than in all past seasons. A single downy woodpecker (male or female) was reported on 8 of the 21 count weeks, a major increase over previous seasons (Figure 10).

Future plans include continued development of the native plant garden with planting of woody species in addition to wildflowers that will provide food and shelter for the year-round bird community.

Bibliography

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Acknowledgments

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