Schlitz Audubon Nature Center

2018 Citizen Science Summary | Birds

Cavity Nesting Songbird Monitoring

Lead Investigator | Corinne Palmer

Project Description

In 2018 there were nine cavity nesting songbird boxes monitored weekly from April through August by three volunteers and one Schlitz Audubon staff member. The goal of the study is to track Eastern Bluebird *Sialia sialis* and competing cavity nesting species, including Tree Swallows *Tachycineta bicolor*.

Summary of Results

Out of the nine bluebird boxes, three were utilized by Eastern Bluebirds during the 2018 breeding season. There were eight total eggs laid and four of those eggs fledged. Nest boxes for Eastern Bluebirds have been monitored at Schlitz Audubon since 2009. Over the ten-year period from 2009 to 2018, Eastern Bluebird fledging has declined a significant amount. During the next monitoring season, we will be moving bluebird boxes to encourage Eastern Bluebird use.

Daily Bird Sightings

Lead Investigator | Jennifer Rutten

Project Description

The Center is considered a regional birding hotspot. There are a number of passionate birders who bird here throughout the year and record their sightings for us. This group of dedicated nature lovers helps us obtain information about migratory cycles and species' populations. Any knowledgeable birder is welcome to record their sightings at the Center on our bird board in the Great Hall. This data is the backbone of our historic bird records, which began in 1974. A volunteer takes the information from our bird board and enters it into eBird, Cornell University's worldwide online database of bird sightings. Volunteers spent 791 hours birding here in 2018.

Summary of Results

According to eBird, 186 species of birds were observed at the Center in 2018. All but one of the birds on the Center's list of species of Greatest Conservation Need were seen and noted, including Blue-winged Teal, Yellow-billed Cuckoo and Black-billed Cuckoo, Red-headed Woodpecker, Purple Martin, Veery and Wood Thrush, Brown Thrasher, Golden-winged Warbler, Blue-winged Warbler and Hooded Warbler, Vesper Sparrow, and Bobolink.

Point Counts

Lead Investigator | Jean Strelka

Project Description

One observer, Norma Zehner, counted birds at seven select points for six weeks between May 29 and July 2. Counts began at dawn and ended no later than 9:30am. Ms. Zehner recorded all birds seen and heard during a three-minute period. A two-minute period followed in which she noted any additional species. Any nesting behavior observed was also noted. The project took place over seven locations throughout the Schlitz Audubon property. As a whole, these locations included the Woodland Loop and Mystery Pond areas.

Summary of Results

Overall, 42 bird species were detected in the project area. Red-winged Blackbirds (78) were the most abundant species, followed by American Robins (30), House Wrens (27) and Northern Cardinals (26). Three species of Birds of Greatest Conservation Need were also detected during the surveys: Wood Thrush (3), Yellow-bellied Flycatcher (1) and Great Blue Heron (1).

Yellow-bellied Flycatcher

Schlitz Audubon Nature Center

2018 Citizen Science Summary | Birds

Project Feeder Watch

Lead Investigator | Jean Strelka

Project Description

An observation period between 2017 to 2018 was the first time Schlitz Audubon participated with the Cornell Laboratory of Ornithology to monitor feeder birds. The Cornell project began in 1987 and now records feeder birds from most of the United States and all of the provinces in Canada. Project FeederWatch is a winter-long survey of birds that visit feeders at backyards, nature centers, community areas, and other locales in North America.

Feeder watchers periodically count the birds they see at their feeders from November through early April and send their counts to Project FeederWatch. FeederWatch data helps scientists track broad scale movements of winter bird populations and long-term trends in bird distribution and abundance.

Six volunteers watched the Center's bird feeders on Tuesdays and Wednesdays from the west side windows of the Great Hall. Between one and three birders observed the feeders at a given time. Volunteers observed the feeders for a minimum of one half-hour per day, while most observers watched the feeders for one hour or more.

Summary of Results

Volunteers at Schlitz Audubon recorded 20 species of birds between November 21, 2017 and April 10, 2018. The highest daily number of species visiting the feeder was 14, recorded on March 6 and March 20, 2018. The highest number of individual birds visiting was 34, recorded on January 2 and March 6, 2018. Species observed on every count included Downy Woodpecker, Black-capped Chickadee, White-breasted Nuthatch, American Goldfinch and House Sparrow. House Sparrows had the highest average flock size of 8.7.

West Meadow Weekly Bird Survey

Lead Investigator | Jean Strelka

Project Description

Intensive brush cutting and ash tree removal due to the Emerald Ash Borer has made it important to understand bird population data in the West Meadow. For this project, birders walked the trails in the West Meadow each week from April 15, 2018 to October 15, 2018, recording all birds observed and heard. Breeding data was also noted. Counts began at 7:00am and lasted from 2-3 1/2 hours. The goal of this survey is to monitor the bird population in response to environmental changes.

Summary of Results

92 species were recorded overall, with the highest number, 50, noted in May 2018. The highest number of individuals, 396, was recorded in July 2018. Breeding birds were also noted in the West Meadow, including Red-bellied Woodpecker, Hairy Woodpecker, Northern Cardinal, Black-capped Chickadee, Gray Catbird, Baltimore Oriole, American Redstart, House Wren, Red-winged Blackbird, Eastern Bluebird, and Song Sparrow.

In addition to providing habitat for nesting birds, ornithologists are beginning to realize the importance of habitat as a stop-over site for migrating birds. 25 species of migratory birds were recorded in the West Meadow, with the largest numbers being the Ruby-crowned Kinglet (50), and the Yellow-rumped Warbler (29).

Yellow-rumped Warbler

Schlitz Audubon Nature Center

2018 Citizen Science Summary | Reptiles and Amphibians

DNR Frog and Toad Survey

Lead investigator | Michelle Allison

Project Description

2018 was the second year that Schlitz Audubon Nature Center participated in the Frog and Toad Survey with the Wisconsin DNR. The project, which began in 1981, has been tracking frog and toad populations' distribution and sizes in the state. Over the course of three survey runs, four staff members and seven volunteers went to 10 sites along ponds and rivers in the northern part of Milwaukee County on Route 412 to identify frogs and toads by their call. The participants listened for a total of five minutes at each site, and the intensity of the calls were then gauged with a call index ranging from one-three.

Summary of Results

During the course of the surveys, seven frog and toad species were identified: the Wood frog, Spring Peeper, Northern Leopard Frog, Gray Treefrog, American Toad, American Bullfrog, and the Green Frog. Sites included Juneau Park Lagoon, Riverside Park, Estabrook Park, McGovern Park, Havenwoods State Forest North, Havenwoods State Forest South, Brown Deer Park, North River Road Bridge, and Schlitz Audubon's Bird Blind Pond and Boardwalk Pond. In the previous year's survey, Schlitz Audubon was the only location where Spring Peepers *Pseudacris crucifer* were identified. However, in this year's survey run the species was heard calling at the North River Road Bridge site location as well.

Across all three survey runs, the Green Frog was heard calling the most (seven different times), followed by Spring Peepers (five different times), and American Toads (four different times). 2 of the 10 sites were located on Schlitz Audubon Property: Boardwalk Pond and Bird Blind Pond. Three of the same species were found in both ponds: Spring Peeper, Gray Treefrog, and Green Frog. A Wood Frog was only heard calling at Boardwalk Pond, as was a whip-poor-will *Caprimulgus vociferus*.

Note: The number of observations does not represent the actual number of frogs found at the given location but is indicative of the number of times a frog was heard calling during a survey date.

FrogWatch USA

Lead investigator | Michelle Allison

Project Description

2018 was the first year that Schlitz Audubon participated in FrogWatch USA, a citizen science program from the Association of Zoos and Aquariums (AZA) that has expanded to 151 chapters across the United States. It gives volunteers an opportunity to gather important data on their local frog and toad species, as well as gain a better understanding of the state of their wetland ecosystems.

Frogs and toads can serve as indicators for environmental health. The surveys were taken at six "stations" (ponds/lakes) on the Schlitz Audubon property: North Pond, Research Pond, Bird Blind Pond, Teal Pond, Boardwalk Pond, and Mystery Lake. The survey period ranged from April 25, 2018 to August 14, 2018.

The participants remained quiet for the first two minutes so the surrounding frogs and toads could become accustomed to their presence. Then, they listened three minutes for the calls, which are gauged by a call index of one to three. The overall goal of the program is to compile expansive, long-term data on frog and toad species in the United States.

Summary of Results

One hundred and thirty-nine observations were made during the survey period. Overall, six frog and toad species were found in the designated lakes and ponds on the Schlitz Audubon property: the American Bullfrog, American Toad, Gray Treefrog, Green Frog, Spring Peeper, and the Wood Frog. The species that had more observed callings were the Green Frog (45) and the Gray Treefrog (25), followed by Spring Peeper (22), American Bullfrog (11), and a Wood Frog (1). Boardwalk Pond was the only location where a Wood Frog was heard calling. There were also 18 surveys in which no frogs or toads were heard. Mystery Lake and Research Pond both contained five out of the six species identified.

Note: The number of observations does not represent the actual number of frogs found at the given location but is indicative of the number of times a frog was heard calling during a survey date.

Schlitz Audubon
Nature Center

2018 Citizen Science Summary | Plants

Plant Phenology

Lead investigator | Tess Carr

Project Summary

Phenology surveys have been used to track changes in climate and plant life cycles over time. Schlitz Audubon recently began using Budburst, through the Chicago Botanic Garden, to document plant life cycles: the time plants at our Center open their leaves, their flowers bloom, their seeds ripen, and then finally go dormant. This data contributes to regional, national, and even global studies on climate change and its effects. Plant monitoring began on April 6, 2018 with Virginia Bluebells. Observations concluded on August 29, 2018 with some of our last blooming flowers, Bouncing Bet, on the beach's edge.

Summary of Results

First year results will be compared to future findings and regional data over time.

Virginia Bluebell

2018 Citizen Science Summary | Insects

Bumble Bee Surveys

Lead investigator | Drew Shuster

Project Description

On August 28, 2017 the Rusty Patch Bumble Bee (RPBB) was found at the Center. Being federally listed as endangered effective February 10, 2017. RPBB is an important species of greatest conservation need. In addition, a Wisconsin species of concern, the Yellow Bumble Bee, was found in June 2018. Finding these two species of bumble bee has generated questions about which other species are seen at the Center as well as their foraging behaviors. In 2018, only incidental and very limited surveying for bumble bees were done.

Summary of Results

In 2018, 16 RPBB and three Yellow Bumble Bees were recorded between both incidental sightings and surveying. Of those, 50% were found foraging on Culver's Root. The next most common species of plants that bees foraged on was Virginia Mountain Mint (19%), followed by Bergamot (7%), Boneset (6%), Sneezeweed (6%), Grass-leaved Goldenrod (6%), and Goldenrod spp. (6%).

Rusty-patched Bumblebee

Schlitz Audubon Nature Center

2018 Citizen Science Summary | Insects

Monarch Butterfly Monitoring Projects

Lead Investigator | Moya Mowbray

Project Description

The Monarch Butterfly population has dramatically declined in recent years. Monitoring helps scientists understand the threats Monarchs face during the breeding season, and helps to create strategies for implementing growth, habitat, health, and migration enhancement and support. Combined with habitat management records over time, these data will also be used to assess the effectiveness of our Center's conservation projects for Monarchs. We participated in four separate Monarch-related citizen science initiatives at Schlitz Audubon.

Summary of Results

1. Project Monarch Health

Project Monarch Health is a citizen science survey project that tracks the occurrence of a protozoan parasite called Ophryocystis elektroscirrha, or OE for short. We also kept track of the number of reared larvae that perished due to parasitoids such as Tachinid Flies that commonly feed on and kill Monarchs. Out of approximately 320 Monarchs raised by citizen scientists at the Center, 17 were lost to disease, and three to Tachinid flies.

2.Monarch Larva Monitoring Project

A small but committed group of six citizen scientists monitored stand 99 for Monarchs and Milkweed from May 29, 2018 through September 5, 2018. We examined an average of 203 Milkweed stems each week. Collectively, we exam ined 4,599 Milkweed stems and found 479 eggs as well as 74 larvae in various instars. The heaviest production period for breeding Monarchs occurred from mid-July to late August.

3. Journey North - Migration Patterns

Schlitz Audubon has been submitting data about Monarch migrations both north and south to journeynorth.org for the last seven years. The spring peak dates, as well as fall peak dates, are within two weeks of each other every year. The differences may be attributed to weather factors, such as wind and temperature, which traditionally alter the progress of migration. The first sighted Monarch of 2018 was on May 2, and peak fall migration took place on September 8.

4. Monarch Tagging

The Center held two tagging programs involving 32 citizen scientists. Sixty-two Monarchs were tagged, more than double the number of last year. The data from these recap tures are used to determine the pathways taken by migra ting Monarchs, the influence of weather on the migration, and various other factors. Peak migration occurred a week earlier than in the five previous years, September 7-8 instead of September 14-15. Late migrants were still pass ing through on October 11.

Butterfly Count with North American Butterfly Association

Lead Investigator | Brooke Gilley

Project Description

The North American Butterfly Association has run the Butterfly Count Program in the United States, Canada, and Mexico since 1993. Each of the approximately 450 counts consists of a compilation of all butterflies observed at sites within a 15-mile diameter count circle in a one-day period. The annually published reports provide a tremendous amount of information about the geographical distribution and relative population sizes of the species counted. Comparisons of the results across years can be used to monitor changes in butterfly populations and to study the effects of weather and habitat change on North American butterflies.

Project Summary

13 species and 165 individual butterflies were observed including: Eastern Tiger Swallowtail (3), Cabbage White (6), Clouded Sulphur (1), Eastern Tailed-Blue (88), Pearl Crescent (17), Question Mark (4), Eastern Comma (2), American Lady (2), Red Admiral (4), Common Wood-Nymph (1), Monarch (33), Silver-spotted Skipper (3), and Least Skipper (1).

Eastern Tiger Swallowtail

Schlitz Audubon Nature Center

2018 Citizen Science Summary | Insects

Dragonfly and Damselfly Count

Lead Investigator | Marc White

Project Description

Marc White and 10 observers conducted the first odonate count, which includes dragonflies and damselflies, at Schlitz Audubon on June 29, 2018. The survey team covered approximately one-third of the Center's main 185-acre preserve, including major nodes at Mystery Lake, Teal Pond and the prairie establishment west of the Milner Deck.

Summary of Results

A total of 177 odonates were counted in a 3.5-hour sample period that included 31 total observer hours under excellent count conditions. Fifteen odonate species were observed during the count, including twelve dragonfly species and three damselfly species. On August 4, 2018, Michelle Allison observed several White-faced Meadowhawk *Sympetrum obtrusum* dragonflies at Solitude Marsh. Based on these observations, Schlitz Audubon's main preserve is now known to support 16 odonate species, or 24% of the 68 odonates recorded in Milwaukee County over the last 100 years. Two female Azure Bluet Damselflies *Enallagma aspersum* were netted and photographed. This species has not been recorded in Milwaukee Co. since 2012. The highlight of the day was an unmistakable but very elusive Red Saddlebags dragonfly *Tramea onusta,* observed in flight for approximately 10 minutes over Teal Pond. Count data has been submitted to the Wisconsin Odonata Survey.

Female Azure Bluet

Firefly Watch

Lead Investigator | Moya Mowbray

Project Description

Fireflies light up our summer nights, yet the population at the Center is poorly understood. National research indicates that firefly populations are declining rapidly. We proposed weekly summer monitoring to determine what species of fireflies inhabit our grounds, and to estimate the population size of these luminescent beetles. Using the protocol established by Firefly Watch, we monitored from early June through early September 2018, with teams averaging eight citizen scientists each week. Monitoring took place on the Terrace near the Milner Deck, near the juncture of the paved trail and terrace trail, as well as in the Western Meadows.

Summary of Results

Data was uploaded weekly to the Firefly Watch national website between the start of June and first week of September. The number of fireflies increased at the end of June and beginning of July, in correlation with the rising summer temperatures. The highest number of fireflies was recorded on August 7, with more than 25 flashes counted in a 10-second window.

In total, six different species of Fireflies were identified at the Center through their unique flash patterns: *Photinus Pyralis, Photinus Marginellus, Photinus Ignitus, Photinus Consimilis, Photuris*, and *Practomena Lineris*.

Thanks to the Natural Resources Foundation of Wisconsin for supporting this monitoring effort.

Schlitz Audubon Nature Center

2018 Citizen Science Summary | Mammals

Acoustic Bat Monitoring

Lead Investigators | Cassie Rincon, Michelle Allison, Aubrey Ellickson

Project Description

From June 5 to July 12, 2018, three Schlitz Audubon staff members and 17 volunteers performed acoustic bat monitoring surveys on the Schlitz Audubon property. They used an Echo Meter Touch app and device, and an Anabat device. The survey spanned five nights, but due to technological issues, only data from four of the nights were captured.

In total, staff members spent nine hours monitoring the property, while volunteers monitored for 35 hours. The bats that were recorded during this season included the Big Brown Bat *Eptesicus fuscus*, the Eastern Red Bat *Lasiurus borealis*, and the Hoary bat *Lasiurus cinereus*. All acoustic data was sent to Paul White, from the Wisconsin DNR, and his team for analysis. Maps with the GPS route as well as the locations of the echolocation calls were recorded and then sent back to the Center. The goal of the monitoring surveys is to identify which bat species are located on the property as well as the frequency of their calls.

Summary of Results

Of the four nights the data was successfully collected, there were a total of 18 echolocation calls from the Big Brown Bat, 21 calls from the Eastern Red Bat, and 51 calls from the Hoary Bat. On June 5, there was minimal bat activity compared to other nights due to colder temperatures (49.6°F). When looking at the maps generated by the Wisconsin DNR, the location with the most activity was near Mystery Lake.

2018 Citizen Science Summary | Water

Alliance for the Great Lakes "Adopt-a-Beach"

Lead Investigator | Jessy Knox

Project Summary

Adopt-a-Beach is a program run by the Alliance for the Great Lakes that works to protect all of the Great Lakes through clean-ups and community projects. For more than 25 years, the Adopt-a-Beach program has worked to keep the Great Lakes shorelines healthy, safe, and beautiful.

Schlitz Audubon incorporated the Adopt-a-Beach program into our elementary All Day Great Lakes class in the spring of 2012 with a grant from the Wisconsin Coastal Management Program. This year we also added the clean-up portion of the project to some of our middle and high school Lake Michigan programs. Students come to learn about Lake Michigan and work to protect it.

Together students and naturalists fill out a Routine Visit Form, gathering information such as air and water temperature, pH and turbidity, wind speed, wave height and bather load. We also take a water sample and report our results to The Alliance for the Great Lakes through their website. After this data is collected, all students participate in litter monitoring. With a gloved hand and a plastic bag for trash, everyone collects as much litter as we can find. Back in the classroom we weigh our bag of total trash removed and then dissect our garbage bags! We group the litter into categories such as Plastic, Smoking, Metal, Glass, Paper and Other. A final count of each category is submitted on the Alliance's website.

Summary of Results

All of the data is put into the Alliance for the Great Lakes website and is readily available for the organization and users to reference. In 2018 Schlitz Audubon hosted five beach clean ups through our programming. Students and volunteers collected over 50 pounds of litter that had washed up from Lake Michigan, including thousands of pieces of Styrofoam and hundreds of pieces of plastic. We are proud to continue serving our freshwater resources and educating students as a partner of Alliance for the Great Lakes.

All Day Great Lakes Program

Schlitz Audubon Nature Center

2018 Citizen Science Summary | Water

Wetland Monitoring

Lead Investigator | Tess Carr

Project Description

In March 2018, 15 volunteers were trained using protocol and methods provided by the Milwaukee County Parks Wetland Monitoring Project. Three types of surveys were covered - aquatic funnel trapping, visual encounter surveys, and macroinvertebrate scoop sampling. The survey area included four of the Center's ephemeral wetlands. Monitoring began on March 26 and concluded on May 27, 2018. Volunteers contributed 125 hours in this time. The goal of this project is to identify species of amphibians and macroinvertebrates utilizing our wetlands during the breeding season.

Three types of surveys were used to find different stages of life in the ponds. Aquatic funnel trap surveys were conducted for at least four days and three nights. Volunteers strategically set the traps in travel corridors in the ponds and left them overnight, when salamanders are most active, and then checked them the following day. The number of individuals of each species were counted and released. Volunteers also conducted a visual encounter survey, used to look for egg masses in the ponds, and macroinvertebrate scoop sample surveys by taking a scoop of water from the pond and identifying the species collected.

Summary of Results

In the Aquatic funnel trap survey, at least 117 Blue-spotted Salamanders were recorded. Crayfish were confirmed to be breeding in two ponds by finding juveniles, and adult Calico Crayfish were trapped and released in Boardwalk Pond. Green Frogs, Spring Peepers, and Eastern Gray Tree Frogs were also confirmed to have breeding populations in some of the ponds. During visual encounter surveys, over 100 Blue-spotted Salamander eggs were observed and more than 10 Wood Frog egg masses. Fifteen species of invertebrates were observed during scoop samples surveys, including Fairy Shrimp, a wetland indicator species, and daphnia, an indicator of clean, unpolluted water. Volunteers also found invertebrates that serve as a food base for larval salamanders.

Wetland Monitoring volunteer at Teal Pond.