Cincinnati Nature Center Community Science News 2022 Season Part 1

Greetings Community Science enthusiasts!
As the 2022 Community Science season ends and we look forward to the winter season, it is time to look back and reflect on the adventures and findings of our CS volunteers for 2022. In this edition we will cover butterfly, bluebird, and vernal pool monitoring. In the second edition we will cover firefly monitoring and Project FeederWatch. Let us begin with butterfly monitoring.

Butterfly Monitoring
Steve Inglish is our coordinator for this community science program. He took over leading this program in 2011 and continues to this day. Steve and his volunteers monitor a consistent 1.75 mile route (called the transect).
The transect is monitored weekly from the first week of April through the end of October. Butterflies are counted, identified, and recorded. Low count weeks in April and October may be five species and 10-20 individuals. These numbers can increase rapidly during June, July, and August and reach around 30 species and over 300 butterflies per week in late August or early September. We have identified 66 species over the last 11 years and this year recorded 49 species and 2,840 butterflies (third highest ever).

Notable Findings
- Record highs for: Horace's duskywing, little wood-satyr (532 with 429 recorded in three weeks!), spicebush swallowtail, tawny emperor, wild indigo duskywing, and zebra swallowtail
- The 532 little wood-satyr were the #1 species for the second year in a row
- Other species that had a good year: American snout, crossline skipper, Eastern tailed-blue (382 after 181 last year; we thought the gravel on the transect might be influencing their numbers but that does not appear to be the case), fiery skipper, pearl crescent, sachem, silver-spotted skipper, and Zabulon skipper
- A down year for cabbage whites and the three main sulphurs (clouded, cloudless, and orange)
- Only two common wood-nymphs, which is the lowest since we started monitoring in 2011
- A big drop in monarchs from 162 last year to 35 this year, which is the lowest since 2013

A heart felt thank you from Steve to Haruko for her hard work recording data!

Bluebird Monitoring
Our Bluebird Monitoring program kicked off on March 20 and wrapped up on August 28 as the last two Carolina wren hatchlings finally left the nest.

Wait ... Carolina wrens? Our community science volunteers record literally everything that happens with each nesting box. Our aim is to provide nesting opportunities for the endangered Eastern bluebirds, but many other cavity nesters will also use the nesting boxes such as Carolina wrens, house wrens, and tree swallows.

The Cincinnati Nature Center has 116 bluebird nest boxes spread out between our two properties. This community science program began in the early 1970s by Elmer Bomkamp at the request of Bill Creasey and has continued to grow and improve to the present day. The data collected is shared with Cornell University and the Ohio Bluebird Society.

This year, 20 trained volunteer monitors were assigned nest boxes to visit weekly to collect nesting data for all active nesting attempts during the year. Information they collected includes species of the nester, number of eggs, number of live young, and number of fledglings that successfully left the nest among other things.

The most successful species in 2022 was the **house wren** with 342 fledglings. In descending order of offspring:

- **Eastern bluebird**, 155 fledglings
- **Tree swallow**, 140 fledglings
- **Carolina chickadee**, 9 fledglings
- **Carolina wren** 8 fledglings

A total of 654 fledglings out in the world because of our volunteers efforts!

Vernal Pool Monitoring

Another of our early spring monitoring programs is vernal pool monitoring. What is a vernal pool? Vernal is another name for spring. A vernal pool is a temporary isolated body of water. Per the name they usually form in the spring but can also form in the autumn. Vernal pools are defined as a woodland system that is isolated from a continuous source of water. Water levels fluctuate significantly or dry up completely during part of the year. Because of these factors they are free of fish and are a haven for amphibians.

They are natural water basins and reflect the health of surrounding systems. Amphibians breathe through their skin and so are intolerant of pollution. One could compare monitoring a vernal pool to taking the temperature of the woodland surrounding it. The amount and diversity of amphibian species reflects the health of the woodland.

Our Vernal Pool Monitoring History

Our first season of monitoring our vernal pools was in 2009. The program ran from late February to mid May. It consisted of two to six volunteers walking to several sites to be observed. A recorder was chosen to record data gathered at each site. Observations were made by sight and sound. One method was to record each individual of a specified species and another was to record the total number of different species found excluding the individuals. The chosen method used was determined by time constraints and the number of participants.

Our Current Season

Last year our research ecologist Danie Frevola revamped the vernal pool monitoring program into a more finely focused organized structure using a mobile app to record data into a shared site. The feedback from our volunteers regarding both the use of the mobile app and the more focused approach to gathering data was overwhelmingly positive. This year's data focused on frog species.

Data Highlights

- Overall number of frogs counted were highest at Reservoir and Spring ponds.
- The lowest number of frogs counted were at Duck and Marsh ponds.
- The highest number of egg masses were from the wood frogs at Cabin field, Spring pond, and Lotus (in descending order of frequency).
- The least numerous egg masses were from the spotted frog.
- The highest call intensity was from the American toad at Celebration Garden and Reservoir pond.
- The next highest call intensity came from the spring peepers at Reservoir pond and LBFT pool.
- The most numerous call intensity again came from the spring peepers at multiple locations.

A big heartfelt thank you from everyone at CNC to our dedicated volunteers! Because of your efforts we are able to track and improve our conservation efforts as well as our land stewardship goals.