The Friends of Pheasant Branch Conservancy (FOPBC) Frog & Toad Survey 2022 Report

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General Introduction

In the interest of understanding the broader ecological landscape and assessing change over time to both the existing and recently expanded portion (Acker farmland acquisition) of Pheasant Branch Conservancy, a survey of frog and toad populations was performed as a trial run by the FOPBC's Restoration and Management Committee in 2021. The survey format was based on the Wisconsin DNR phenology program (wiatri.net) and consisted of weekly or twice weekly monitoring of six sites throughout of the Conservancy from April 2021 to August 2021. Based on the interest generated by the program both within and external to the Friends' organization and a desire to expand our understanding through additional data over time, the survey was continued for 2022.

2022 Survey Introduction

The six sites monitored in 2021 were selected by Conservancy land manager Rob Schubert for their broad coverage of the existing and expanded Conservancy as well as their historical and future likelihood to consistently hold water and support habitat for frog and toad species. One aim of the 2021 survey was to gather data from these sites as well as record more informal observations from other areas in the Conservancy to evaluate the best places to monitor for frog and toad activity. Based on these observations, several additional sites were identified as potential candidates for the 2022 program. With a goal of having a direct comparison to 2021 data, the hope was to retain the original six sites as well as add more, pending our small group's ability to provide sufficient coverage. Simultaneously, FOPBC have had an interest in expanding public program offerings, both generally, and in response to reduced public opportunities given pandemic-related constraints. The goal to continue and expand the survey provided a perfect fit meet this objective while giving the community a new way to engage with the Conservancy via a new community/citizen science program. Based on great public support, two new sites were added for the 2022 survey with a more diverse set of observers monitoring the six returning sites.



Survey Method

The survey was conducted approximately from April 1st to August 1st, 2022, consisting of a twice weekly survey of each of our eight sites (see page 3) through June 15th, and once weekly for the remainder of the survey duration.

A survey consists of the following routine:

- 1. Weather permitting, travel to designated site after sunset (i.e., in cases of heavy rain or wind, surveying was generally not to be performed, but if survey occurred, conditions were recorded along with survey data for reference, see below)
- 2. Wait briefly for settling time (e.g., 1-3 minutes), listen for calls for 5 minutes
- 3. Record an abundance code for each species heard directly at the site: 1=one individual calling 2=multiple frogs/toads, but can still count individuals
 3=multiple frogs/toads, but too many to accurately count individuals
- 4. Record the environmental conditions, including air temperature, approximate wind speed (based on provided Beaufort scale based code list), sky conditions (e.g., cloudy, clear, using provided code list), and if water is present, water temperature using a provided thermometer
- Record any other general observations (e.g., frog/toad calls heard away from survey site and from which direction, other wildlife present)

If conducting the survey would create a noticeable disruption to other wildlife (e.g., nesting bird alarm calls heard in response to presence) the survey was to be taken from a greater distance from site if possible otherwise abandoned.

Survey results were submitted to a specific email address for entry into an online accessible spreadsheet editable by the survey coordination team.

Specific survey experience was not required for this program, as self study and a survey procedure overview were deemed sufficient for participants to successfully provide useful data. Surveyors were provided audio call resources for practice and an on-site introduction session that included a visit to and sample survey at one or more survey sites. Additional support of the survey coordinator was provided to help discern between species, questions on abundance code classification, or other general questions or concerns.



Survey Sites

8 sites were monitored in 2022, with two new sites (7 and 8) added to the returning six from the 2021 survey.

Sites 1-3 are in the north Conservancy expansion at a newly established detention pond (site 1), at a culvert at the site of the old farming operations (site 2), and at a water flow control system beneath a berm at the old Conservancy north boundary (site 3).

Two of the sites (4 and 5) are a significant distance off established trails at established detention ponds and were monitored only by surveyors who had experience in the 2021 program. Site 6 is at the main springs in the Conservancy.

The two new sites were added based on significant populations observed in 2021 (site 7) and to expand to another permanent water body in the City of Middleton's Orchid Heights Park (site 8).



Note: Satellite imagery shown here does not reflect current terrain (e.g., farm infrastructure is no longer present at site 2)



In 2022, this site was sporadically wet, but never more than some small, shallow pools. Compared to 2021 where the pond started relatively full and gradually depleted until it was virtually dry by June.

Despite this difference, calls were recorded at the site after not hearing activity in 2021, with the caveat being that site 1 was monitored less formally during the summer months of 2021. It is possible the tree frog call from early in the season was actually a Chorus Frog, however a corresponding temperature spike could correlate with very early tree frog activity.

It was noted that some tree frog activity could be heard to the north (at the farm) and south (further into the Conservancy) from mid-May to mid-June.



Air temperatures are shown in °F



Monitoring for this area was conducted from the south side of the culvert.

Compared to 2021, greater diversity was noted, e.g. tree frog, however less overall abundance with consistent Chorus Frog activity heard throughout April and May in 2021. The recorded American Toad call from the end of the season is more likely to be similar sounding insects, but cannot be confirmed.

While comprehensive data for 2021 is not available, anecdotally there appeared to be less water present at the site which could account for the reduction in calls.

From this site, calls could sporadically be heard to the south. With no calls recorded at site 3 throughout the season, the assumption is that these calls came further west on Frederick's Hill and/or somewhere between sites 2 and 3.



Air temperatures are shown in °F



This site was virtually dry from late April onward.

No calls were recorded from here directly with the exception of a call noted in late July, however the specific details have not been confirmed in time for this report. There were also notes of calls heard to the south. By comparison, modest Chorus Frog activity was recorded here throughout April 2021.

There were some gaps in monitoring this from June to August, so while it is unlikely when considering 2021 site 3 data and 2022 data from adjacent sites, it is possible some activity was missed here.





This detention pond site was almost dry at the start of the season and was completely dry from early April onward.

No calls were recorded here for the entire season compared to 2021 where Cope's Gray Tree Frog, American Toad, and Chorus Frog were all documented with multiple individuals on multiple occasions. Furthermore, an active Killdeer nest which impacted our survey ability for several weeks in 2021 was not present.

Based on the high activity at site 5 just to the south, it is likely that the lack of water at site 4 meant activity shifted there.

Given difficult accessibility due to heavy plant growth and low probability of activity, the last formal survey of this site occurred on 7/7.





The most active site by far, calls from 7 species were recorded over the season. This detention pond had ample water all season which was noticeably cleaner than 2021, e.g., the water thermometer had comparatively very little run-off residue when pulled out.

New for 2022, the Green Frog and Wood Frog were recorded. Northern Leopard Frog was not heard here this year, however only one individual was heard in 2021, so it is possible that a small population exists that was not calling during our survey nights.

Overall, numbers were massively higher in 2022 compared to 2021. For example, in all of 2021, only one instance of an abundance code 3 (American Toad in mid-May) was recorded. Comparatively, 17 such examples were recorded in 2022 among both tree frog species and Chorus Frogs. Higher tree frog activity and the new presence of Green Frog at this site meant calls were documented longer into the season – 6/24 in 2021 versus 7/26 in 2022.

Given difficult accessibility due to heavy plant growth, the last two weeks of monitoring at this site were performed from the trail just south of the site.





This site is the main springs at the Conservancy.

Despite consistent water, little activity was recorded at this site, similar to 2021. However similar to site 5, Green Frogs made a new appearance in 2022. Conversely, American Toads were not heard directly at the springs after observing their calls in 2021, however they were heard along with a greater abundance of Green Frog to the south of site 6.





New for 2022, this site is the stream and surrounding trees near what is known as the "little springs", a consistently wet area due to ground water contributions. This site was added due to the extensive tree frog calls heard there during the 2021 survey.

To find the best spot, experimentation occurred by monitoring this site from two locations early in the season – 7a (from the trail culvert north of the site) and 7b (further south where the trail bends from north-south to east-west). Eventually 7b was settled upon, specifically a spot near the steps that extend towards the water from an informal path off the main trail. In addition to being easier to record water temperature, this was a sufficient distance from site 5 to be able to differentiate call location.

Surprisingly, no calls were observed directly from this site the entire season. Given the extensive and increased call activity at site 5, it is highly likely that most, if not all activity shifted to that site in 2022. Some calls were noted from further south into the Conservancy wetlands (towards the "ditchfill") which may prompt further investigation in that direction next year.



Air temperatures are shown in °F



New for 2022, this site is at Orchid Heights Park between the two large ponds west of the soccer fields. This site was added to evaluate another more permanent water area and an area further east than was observed in 2021.

Minor tree frog activity was recorded, and Green Frogs were active from June until the end of the survey. More tree and Chorus Frog calls were noted further to the west into the wetlands during the season as well. These notes are consistent with calls heard to the south/south east of site 7 and the south of site 6.

Given the relatively large size of this site, if populations had been higher here and/or in directly adjacent areas, it may have been difficult to directly attribute calls to this spot.





Other Comments/Observations

Not included in the report data for each site are the water temperatures recordings which, with the exception of consistent temperatures in the springs, tracked fairly consistently with the ambient air temperatures, though a bit warmer as temperatures increased over the season. Two examples are given below.



Site 5 (°F)



A caveat to this data is that given the difficulties of getting accurate air and water temperature readings due to various factors including thermometer settling time in each condition (air and water), varying user technique, and varying measurement location, it may be hard to draw particular conclusions about water temperature relative to activity observed.

Wind and sky conditions were also recorded, but a careful analysis of these factors is not included here. As more data is captured in future surveys, a more detailed look at correlation between conditions and frog and activity will likely be explored.

Anecdotally, more coyote activity was observed in 2022 compared to 2021, with the animals at least audibly getting a bit closer and at times affecting survey activities. Many more wildlife activity notes such as Woodcock calls, bats, deer, and more were captured as part of the survey painting a vivid picture of the night activity that occurs in the Conservancy.



Looking Ahead

Continued restoration work in the northern expansion to the Conservancy will likely bring further changes downstream including those to water quality and wildlife habitat. Given this, despite low activity in sites 1-3, continued focus here will be important as the ecosystem evolves relatively rapidly. On top of monitoring frog and toad populations in these sites, regularly documenting the presence and (subjective) quality of water there (as well as downstream at sites 4 and 5) has been useful in assessing the impact of terrain and land use changes.

As noted previously, since water temperature data may not provide substantial value beyond ambient air temperature, recording of this data may be reduced or eliminated for some sites in future surveys. Instead, switching to a simpler water level assessment may be considered. The Friends of Pheasant Branch Conservancy Watershed Committee and other connected members will be consulted to determine the most useful approach.

Regarding potential site changes, given some of the larger changes from 2021 to 2022, particularly with sites 4 and 7, continuing to visit the same areas will be useful to better understand why changes in activity and/or water presence occurred. However, some sites may be combined or switched to more informal monitoring pending further discussion. As noted previously, the large size of site 8 (Orchid Heights Park) may warrant some adjustment if further precision is deemed to add more value to the data.

Overall, as more community members become knowledgeable of the various calls and general survey process, the data quality and usefulness of this program will continue to grow. Collaboration with other local natural area programs and their survey activities will also be an opportunity to increase awareness of frog and toad populations and how local and broader ecosystem changes impact these and other wildlife.

Special Thanks

Public participation in 2022 was a big change in our process, allowing collection of broader and more comprehensive data and establishing a high benchmark for the program in the future. Huge thanks to the roughly 20 participants who toughed out many quiet nights, and at times, difficult weather conditions to learn about this process and help accomplish the goals of the program!

Big thank you to long time Friends' supporters Susan Gruber and Janet Kane. Janet served as the master data recorder and helped with our transition of the survey into a public program. Susan, a huge contributor in 2021, stepped up again in 2022 to share in surveying the off trail and difficult mid-summer conditions of sites 4 and 5. Without these two, the program would not have been possible.

Also thank you to Wisconsin DNR Conservation Biologist Andrew Badje who supported our kickoff event with a great presentation to give our activities some context including how they relate to state-wide survey programs.

Last, but not least, thanks to the rest of the FOPBC team and membership for supporting the program through donations and internal/external support to bring the public program together.

