

Amphibian Calling Survey Summary

Metro Park volunteers were trained in February. At the training session, volunteers learned which frogs and toads can be found in Metro Parks, how to identify them (see Appendix A) and how to recognize frog and toad vocalizations (They received an audio recording of the vocalizations). Volunteers were trained on and received a copy of the frog monitoring protocol (see Appendix B). They received frog monitoring data sheets (see Appendix C) and were assigned one or more maps of wetlands to monitor in the Metro Parks.

Throughout the summer, Metro Park's observations were entered into the Frogwatch USA database. These results can be viewed at the Frogwatch USA web site: <http://www.mp2pwr.usgs.gov/FrogWatch/CustomPages/Results/state.cfm>.

Results

Forty-three sites were assigned this season to be monitored. One new site was monitored at the Nature Realm. A vernal pool was created there by park staff and volunteers in 2006. This pool was added to the amphibian calling survey program in 2007. Three sites that we assigned were not monitored as expected. These three sites were in Firestone Metro Park and no data is represented for them in 2007.

The species distribution is represented in Figure 1. Spring peepers continue to be the most widely distributed species throughout the Metro Parks, detected at 33 sites in 2007. Green frogs were the next most widely distributed species (26 sites) followed by American toad (23). Gray tree frogs were documented in 26 sites in 2006, but only 17 sites in 2007. American toads were only found in 18 sites in 2006.

Pickerel frogs continue to be the least widely distributed frog in the Metro Parks. For the past three years, it has only been detected in Liberty Park. They were recorded at two sites.

In past years, the northern leopard frog has only been detected at Liberty Park. In 2007, they were also found along the Bike and Hike Trail near Young Road and in Silver Creek Metro Park. This species also resides in Firestone Metro Park (these sites were not surveyed in 2006 or 2007).

Five sites recorded bullfrogs in 2006 which did not contain this species in previous years. In reviewing the sites, many were close to streams or permanent ponds, habitats where the bullfrog thrives. They may be utilizing the survey sites as alternatives to their preferred habitats. In 2007, fewer sites contained bullfrogs (10). This species may not have been detected at some sites because they were not surveyed thoroughly in 2007. On the other hand, three sites (1470, 1471 in Sand Run and 3417 in Clinton) had the opportunity to detect the species but did not. There is no explanation for this except that bullfrogs have the ability to utilize a variety of habitats and probably do so in response to seasonal habitat conditions.

The number of sites harboring western chorus frogs remains low. This species occurred at fourteen sites in 2004, but at only seven sites during 2005 and 2006. 2007 yielded only 6 sites with western chorus frog activity.

Figure 1. Species distribution among 39 sites surveyed within Metro Parks, Serving Summit County in 2007.

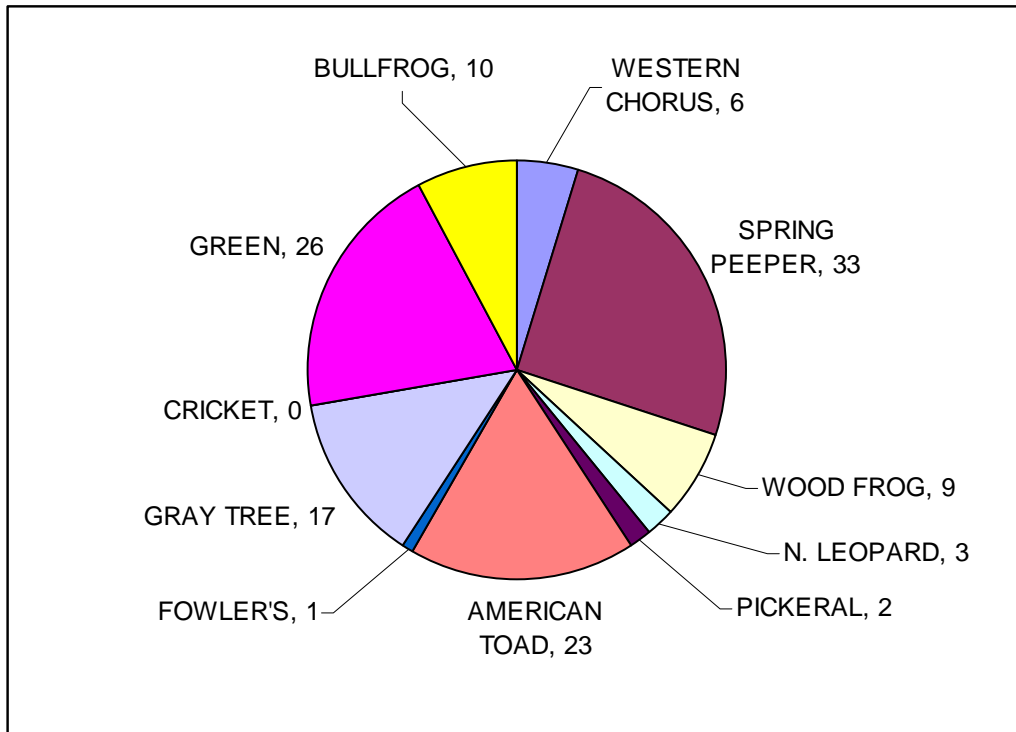


Table 1 documents the occurrence of each species at each survey site during 2007. The number of surveys performed, as well as, the number of months the site was visited is also recorded. This helps explain why a particular species may not be documented for a site from year to year. For example, if the observer did not visit the site in March, they may not have heard wood frogs.

Several sites were assigned but did not get surveyed including sites at Firestone Metro Park and Silver Creek. The new site at the Nature Realm, vernal pool # 5771 was well surveyed. Unfortunately, no frogs were detected calling there in 2007. Frogs were observed using the pool in 2006 after it was created and during the 2007 season. However, it must not have been used by amphibians for breeding purposes. The site will continue to be monitored in the future.

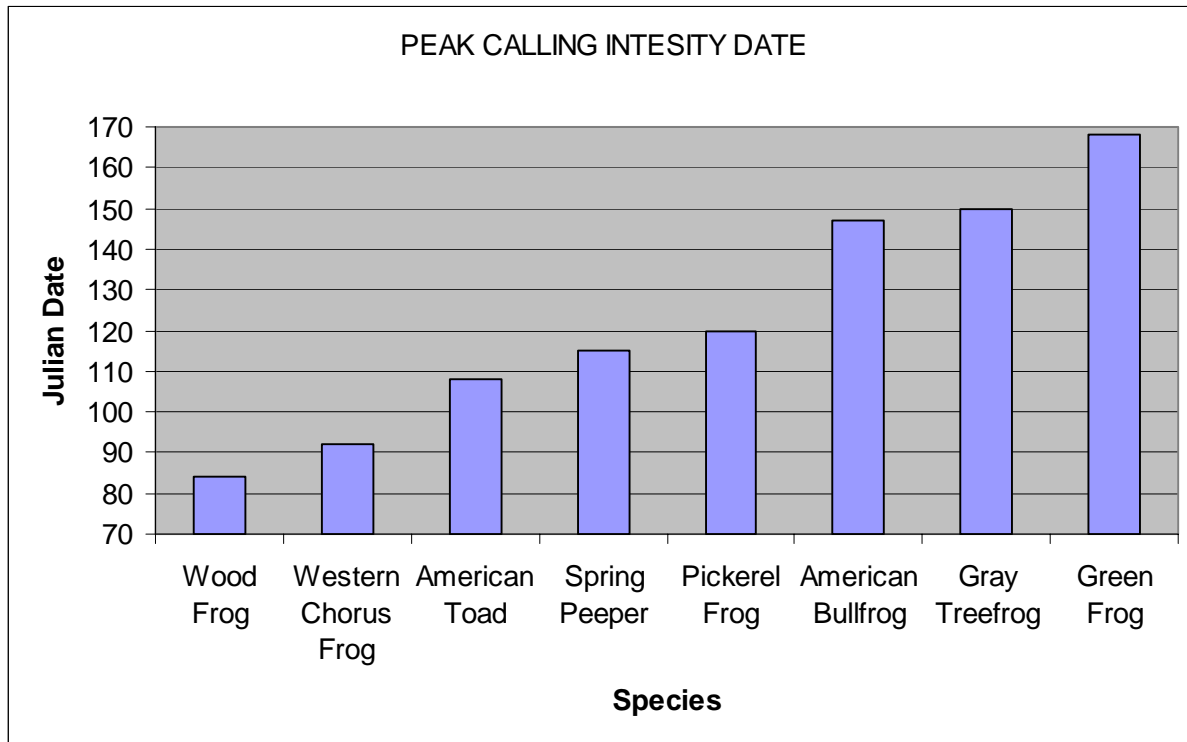
Many sites including those in Cascade Valley, Deep Lock and along the towpath were only surveyed for three months during the calling season. The data for these sites may not be a comprehensive representation of the frogs at these sites. Figure 2 makes it clear that surveys should be completed from March through June to be thorough.

Table 1. Species documented at survey sites in 2007.

SITE#	PARK	SITE NAME	# OBS	# MONTHS	WESTERN CHORUS	SPRING PEEPER	WOOD FROG	N. LEOPARD	PICKERAL	AMERICAN TOAD	FOWLER'S	GRAY TREE	CRICKET	GREEN	BULLFROG
1445	Nature Realm	SENECCA POND	11	5										X	X
1446	Nature Realm	ECHO POND	11	5						X		X		X	X
1447	Nature Realm	HERB POND	12	5		X				X		X		X	
1450	Munroe Falls	HERON POND	8	5		X								X	X
1451	Munroe Falls	BEAVER POND	9	5		X								X	X
1452	Munroe Falls	MAPLE BEACH	9	5		X				X					
1453	Firestone	LITTLE TURTLE POND	N/A	N/A											
1454	Firestone	LONESOME POND	N/A	N/A											
1455	Goodyear	ALDERPOND	7	5	X	X				X				X	X
1456	Silver Creek	MEDINA LINE RD	5	3		X		X						X	
1457	Silver Creek	PHEASANT RUN	N/A	N/A											
1458	Silver Creek	PARKWAY POND	6	4		X						X		X	
1459	Silver Creek	PINEY POND	1	1		X									
1460	Deep Lock	LOCK 28	3	3		X								X	
1461	Deep Lock	TOWPATH TRAIL	3	3			X								
1462	Deep Lock	QUARRY	3	3		X								X	
1463	Cascade Valley	OXBOW	5	5		X				X					
1464	Cascade Valley	CHUCKERY	3	3		X				X					
1465	Cascade Valley	PARKWAY	3	3	X										
1466	Munroe Falls	BIKE AND HIKE	9	5		X					X				
1467	Hampton Hills	A/P ROAD	11	5		X	X			X		X		X	
1468	Hampton Hills	TOP O'WORLD	10	5		X						X		X	X
1469	Sand Run	MINGO	8	4		X	X							X	
1470	Sand Run	MERRIMAN	10	5	X	X				X		X		X	
1471	Sand Run	BIG BEND	9	5		X				X				X	
1472	Furnace Run	BRUSHWOOD	9	4		X				X				X	X
1473	Furnace Run	BOG IRON POND 2	9	4		X	X								
1868	Firestone	COVENTRY OAKS	N/A	N/A											
1870	Munroe Falls	INDIAN TRAIL	9	5		X	X			X					
2944	Sand Run	PARKWAY 2A	8	4		X	X			X					
2945	Pond Brook	VERNAL POOL	5	5		X	X		X	X		X		X	
2946	Pond Brook	BARR WETLAND	6	5	X	X	X			X		X		X	X
2947	Pond Brook	BALL FIELD	7	4		X		X	X	X		X		X	
3411	Towpath	BIG BEND 1	5	3		X				X		X		X	
3412	Towpath	BIG BEND 2	5	3		X				X		X		X	
3413	Bike and Hike	303 LOT	21	5		X				X		X		X	
3414	Bike and Hike	NORTON RD	8	3		X				X		X		X	X
3417	Towpath	CLINTON	9	4	X	X				X		X		X	
3559	Wetmore	WETMORE RD	17	5		X				X		X		X	
3727	Pond Brook	TRAIL	6	4	X	X				X		X			
4332	Bike and Hike	YOUNG RD	15	5		X	X	X		X		X		X	X
5771	Nature Realm	VERNAL POOL	11	5											

Amphibian calling survey data has been collected for many sites since 2002. All records were compiled (1759 documented calls) and peak calling intensity dates were calculated. The peak call intensity is represented by Julian date. Wood frogs peak at the end of March. Western chorus frogs peak April first, followed by American toad and spring peepers throughout April and pickerel frog at the end of the month. American toad and Gray treefrogs peak in late May, while green frogs round out the season in early June.

Figure 2. Peak Calling Intensity for Each Species Recorded in the Metro Parks, Serving Summit County 2002-2007.



The amphibian calling survey will continue in 2008. No new sites will likely be added to the program unless a need arises through property acquisitions.

Appendix A
Northeastern Ohio Frog and Toads

- 1) Western Chorus Frog (*Pseudacris triseriata*) length: $\frac{3}{4}$ - 1 $\frac{1}{2}$ in
 - a) prefer open fields and prairies with dense vegetation.
 - b) emerge from hibernation very early in late winter or early spring, and begin calling one to several days before spring peepers and wood frogs from vegetation in or around shallow pools or ditches.
 - c) breeding season: late-February through early-May
 - d) call similar to the sound made by rubbing one's finger over the teeth of a hard plastic comb.
- 2) Spring Peeper (*Hyla crucifer*) length: $\frac{3}{4}$ - 1 $\frac{1}{4}$ in
 - a) The size of a dime, they have a prominent dark "X" on their back, as well as rounded treefrog toe pads
 - b) After the breeding season, peepers move upland to moist woodlands where they spent the rest of their time.
 - c) Breeding season: March through late-May
 - d) Call sounds like a shrill, birdlike peep or whistle repeated about once per second. Chorus of many peepers sounds like sleigh bells.
- 3) Wood Frog (*Rana sylvatica*) length: 1 $\frac{1}{2}$ - 2 $\frac{3}{4}$ in
 - a) Northern distribution, lives farther north than any other North American amphibian or reptile.
 - b) Prefers moist woodlands to ponds
 - c) Breeding season: mid-March through early-April
 - d) Call is a series of five or six explosive clucking notes – r-r-racket, r-r-racket, r-r-racket...
- 4) Northern Leopard Frog (*Rana pipiens*) length: 2-3 $\frac{1}{2}$ in
 - a) Named for the black leopard spots on their back, sides, and legs.
 - b) Habitat ranges from margins of lakes and rivers to marshes and wet meadows.
 - c) Breeding season: late-March through early-May
 - d) Call is a low, guttural grunting like the sound produced by rubbing a thumb over a balloon
- 5) Pickerel Frog (*Rana palustris*) length: 1 $\frac{3}{4}$ - 3 in
 - a) Similar in appearance to leopard frog, but is slightly smaller, tends to light brown instead of green, and has two rows of squarish rather than roundish spots running down its back.
 - b) Favor the cool, clear water of streams over ponds and lakes
 - c) Breeding season: late-March through early-May
 - d) Call is a harsh, descending snore of about 2-second duration (the call of the leopard frog is more extended)

Appendix A

- 6) American toad (*Bufo americanus*) length: 2 – 3 ½ in
 - a) Common from urban backyards to remote woodlands. In spring they congregate in large numbers in just about every available shallow breeding pond
 - b) Often hybridizes with Fowler's toad
 - c) Breeding season: early-April through June
 - d) Call is a long, dreamlike, musical trill averaging from 10-15 seconds long
- 7) Fowler's toad (*Bufo woodhousii fowleri*) length: 2-3 in
 - a) Range throughout the state and generally prefers the same habitats as the American toad
 - b) Breeding season: late-April through early-July
 - c) Call is an unmusical, nasal w-a-a-a-h lasting from one to four seconds (shorter in duration than the American toad)
- 8) Gray Treefrog (*Hyla versicolor*) length: 1 ¼ – 2 in
 - a) Largest treefrog in the northern states
 - b) Changes colors from a gray-green to a light pearl-gray depending on its background
 - c) Spend most of time in trees except during breeding season when they congregate in masses in ponds
 - d) Breeding season: late-April through late-July
 - e) Call is short, melodic trill lasting about one-half second and repeated every few seconds
- 9) Cricket Frog (*Acris crepitans*) length: ½ - 1 ½ in
 - a) Mostly found in western half of Ohio, where they inhabit weed-choked permanent ponds and streams.
 - b) A small, warty frog that are poor climbers, but can leap an extraordinary distance
 - c) Breeding season: early-May through early-July
 - d) Call is a vibrant series of metallic clicking notes that sound like 2 marbles being tapped together in rapid succession
- 10) Green Frog (*Rana clamitans*) length: 2 ¼ - 3 ½ in
 - a) Very aquatic, abundant throughout Ohio along the edges of ponds, lakes, streams, and other permanent bodies of water.
 - b) Starts calling long after most other frogs have finished breeding
 - c) Breeding season: early-May through mid-July
 - d) Call is an explosive, throaty *gunk!* Or *gung!*, similar to the sound made by plucking a loose banjo string

- 11) Bullfrog (*Rana catesbeiana*) length: 3 ½ - 6 in
- a) Largest frog in North America
 - b) Similar in appearance to the green frog except the green frog is smaller and has two pronounced ridges down the back which are absent in bullfrogs.
 - c) in males the tympanum (or eardrum) is much larger than the eye, while in females it is equal to or smaller than the eye.
 - d) Found throughout Ohio in ponds, marshes, and large slow-moving streams
 - e) Breeding season: mid-May through late-July
 - f) Call is deep, resonant “jug-o-rum” or “rumm...rumm...rumm”.
- 12) Spotted salamander (*Ambystoma maculatum*) length: 4 ¼ - 8 ¼ in
- a) There are actually many more species of salamanders in Ohio than frogs, 26 as compared to 14 species of frogs and toads, but salamanders are voiceless and more secretive.
 - b) They spend daylight hours hiding beneath rocks or logs, but during their breeding season many species of salamanders move about and congregate in masses at their breeding ponds.
 - c) Spotted salamanders are one of the common species of salamander that you may run across on warm, moist, early spring nights.
- 13) Jefferson salamander (*Ambystoma jeffersonianum*) length: 4 ¾ - 8 in
- a) You may also encounter the Jefferson salamander while you are listening for frogs.
 - b) This species, like the spotted salamander, also migrates to shallow woodland ponds to breed in the early spring.
 - c) If you notice salamanders at any of your frog survey sites, please count them and note the observation on your data sheet.
- 14) Salamander eggs
- a) Also, if you happen to notice any amphibian egg masses in any of the wetlands you are monitoring, please note these as well, but do not disturb them.
 - b) Salamander eggs are about fist-sized and are usually attached to a submerged stick or plant.

Appendix B

Frog and Toad Monitoring Protocol

- 1) Monitor your wetland at least once per month (March through July). Once or twice a week would be best, though. Different frog species call at different times of the year.
 - Western Chorus Frog (late-February through early-May)
 - Spring Peeper (March through late-May)
 - Woodfrog (mid-March through early-April)
 - Northern Leopard Frog (late-March through early-May)
 - Pickerel Frog (late-March through early-May)
 - American Toad (early-April through June)
 - Fowler's Toad (late-April through early-July)
 - Gray Treefrog (late-April through late-July)
 - Cricket Frog (early-May through early-July)
 - Green Frog (early-May through mid-July)
 - Bullfrog (mid-May through late-July)

- 2) **Before you monitor frogs make sure that:**
 - The air temperature is at least 35°F.
 - It isn't raining too hard to hear frogs calling.
 - The wind is not stronger than 3 according to the Beaufort Wind Scale (>12 mph).

- 3) Make sure that you bring the necessary equipment (data sheet and clipboard, pencil or pen, flashlight, thermometer, watch) each time you monitor your assigned wetland.

- 4) Arrive at your wetland around sundown, so you can take notes about changes to the site. **You can start listening for frogs 30 minutes after sunset or later.**

Remember to keep a distance between you and the wetland. This will ensure that the breeding area is left undisturbed.

- 5) Record the weather information that is asked for on the data sheet.

- Air Temperature
- Wind Speed (using the Beaufort Wind Scale)
- Current Precipitation
- Weather History

- 6) **Stay quiet for a couple of minutes before starting to listen for frogs and toads.** Remain as quiet as possible during this time so you don't disturb the frogs and toads – they may stop calling if you make too much noise.

- 7) When you are ready, cup your hands around your ears and listen for exactly 3 minutes.
After 3 minutes, record:
 - The time you started listening.
 - The time you stopped.

 - The different species that you heard.
 - The calling intensity for *each species separately*, use the calling index.
- 8) You can start over if you are disturbed – for example, an airplane flies overhead or a car drives past you. Just remember to change the time you started on your data sheet.
- 9) If you aren't sure about what you are hearing, bring your recording of frog and toad calls with you for a reference. If you are unable to identify a call, you could record what you are hearing at your site and send the recording or bring the recording to Marlo Perdicas or a Metro Parks Naturalist.
- 10) If you see evidence of disturbance to your wetland or other amphibians near your wetland, such as salamanders moving across land to breeding ponds in the spring, please note your observations in the notes sections of your data sheet.
- 11) Send, fax, email or bring your data sheets to Marlo Perdicas 975 Treaty Line Rd. Akron, OH 44313, email: mperdicas@summitmetroparks.org, fax: (330) 867-4711.
- 12) You don't have to report your data after every visit, but you should send your data as often as possible so that your observations can be analyzed.

Appendix C



Name(s) _____ Date _____

Time Start _____ Time End _____

Site Name _____

Weather Conditions:

Air Temperature _____ °F

Wind Speed (Circle an appropriate value of the Beaufort Scale below):

0 1 2 3 4 5

Precipitation during visit: *None* *Fog/Mist* *Light Rain/Drizzle* *Medium Rain* *Hard Rain* *Hail*
Snow

Has there been precipitation in the past 48 hours? *No Precipitation* *Some Precipitation* *Much Precipitation*

The temperature during the past 48 hours has primarily been: *Above Freezing* *Below Freezing*

Frog and Toad Observations:

Species	Calling Intensity				Notes
Western Chorus Frog	0	1	2	3	
Spring Peeper	0	1	2	3	
Wood Frog	0	1	2	3	
Northern Leopard Frog	0	1	2	3	
Pickerel Frog	0	1	2	3	
American Toad	0	1	2	3	
Fowler's Toad	0	1	2	3	
Gray Treefrog	0	1	2	3	
Cricket Frog	0	1	2	3	
Green Frog	0	1	2	3	
Bullfrog	0	1	2	3	
Other	0	1	2	3	

Other notes _____

Beaufort Wind Scale:

Beaufort Wind Scale	Wind Speed (mph)	Description
0	< 1	CALM: smoke rises vertically
1	1-3	LIGHT AIR: rising smoke drifts; weathervane inactive
2	4-7	LIGHT BREEZE: leaves rustle; can feel wind on face
3	8-12	GENTLE BREEZE: leaves and twigs in constant motion; small flags extend
4	13-18	MODERATE BREEZE: moves small branches; raises dust and loose paper (too windy to monitor)
5	19-24	FRESH BREEZE: small trees begin to sway (way too windy to monitor)

Calling Intensity:

Calling Intensity Code	Description
0	No frogs or toads can be heard calling.
1	You can clearly hear all individuals of a species and can count them easily; individual calls are not overlapping.
2	There is some overlap of calls between individuals of a species, but individuals are still distinguishable; a fairly accurate count is possible, based on location of the calls or differences in their voices.
3	A full chorus; calls for a species are a blur of sound; calls are constant, continuous, and overlapping; there are too many to estimate the number of individuals.

Submit your data forms to Marlo Perdicas 975 Treaty Line Rd. Akron OH 44313, Phone: 330 923-0720, fax: 330-867-4711 email: mperdicas@summitmetroparks.org