

PORTAGE COUNTY LAKES GRANT

Amphibians & Reptiles (2002-2003)

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Methods

Herpetological Survey

Surveys for anurans were conducted from April - August 2002 and April - August 2003, but most intensely during their spring breeding aggregations starting in late-March-early April. Anurans were surveyed by direct observation on three of the Portage County lakes (Adams, Jacqueline, Rinehart) and by call-surveys on twenty-eight lakes following the Wisconsin Frog and Toad Survey (WDNR) protocol. Anuran breeding call surveys were chosen to monitor the twenty-eight lakes because of the large number of study sites. Breeding call surveys are the best way to determine anuran habitat use and inventory populations over a large area (Zimmerman, 1994). Call surveys are also beneficial when monitoring secretive species. Sites were approached quietly to avoid disturbance that may result in the cessation of calling, surveys began after a one-minute waiting period (Mossman and Hine, 1984). A three-minute breeding call survey took place at each sampling site, all species heard during the period were recorded according to call intensity. A four value call index was used, partially based on the call index used by the Wisconsin Frog and Toad Survey: 1 = one individual calling, 2 = multiple individuals are calling but there is space between the calls, 3 = calls of individuals are still distinguishable but calls overlap, 4 = full chorus, calls of individuals are not distinguishable (Mossman and Hine, 1984, Mossman et al., 1998). The following periods were employed by this study and are commonly used as distinct calling periods for Wisconsin anurans: early spring (8-30 April), late spring (20 May-5 June), and summer (1-15 July) (Mossman et al. 1998). *Rana sylvatica*, *Pseudacris crucifer*, *P. triseriata*, *R. pipiens*, and *R. palustris* breed in early spring; *Hyla versicolor*, *H. chrysoscelis*, and *Bufo americanus* breed in late spring; and *R. clamitans* breeds in summer (Mossman and Hine, 1984). All lakes were surveyed once during each period from a single point on each lake.

Turtles were surveyed regularly throughout the season using hoop nets and hand-netting. Captured turtles were identified to species, sexed, marked, measured and released. Each lake was trapped for 24 hrs with six hoop nets; nets were set in the morning, checked that evening, checked the following morning and relocated to another lake.

Salamanders exclusive of the aquatic Mudpuppy were surveyed during spring breeding aggregations by active searches. One salamander survey was conducted at each of the study lakes in the spring of 2002. Surveys were targeted at areas adjacent to or surrounding each lake that contained suitable salamander habitat. Areas selected were generally wooded, moist, and undisturbed. Surveys were 45 minutes in length and consisted of actively searching habitat in the search area. Downed logs and other objects were the primary focus of the surveys.

Mudpuppies (*Necturus maculosus*) were surveyed using Mini-Fyke nets in 10 or less feet of water at various locations of the lake. Additionally, one day of electro-shocking with a boom shocking boat was employed to collect specimens. Specimens were individually marked with colored glass beads and released back into the lake near the point of capture.

Snakes and lizards were rarely encountered and searches directed specifically for these organisms were not performed.

Discussion

Herpetological Survey

This summary provides information on the amphibian and reptile species observed and their distribution at the twenty-nine Portage County lakes included in the Portage County Lakes Grant.

The objectives of this component of the Portage County Lakes Grant project were to: 1) Determine the presence and abundance of species of reptiles and amphibians at 29 Portage County Lakes; 2) Identify habitat quality relative to each species of reptile and amphibian at each lake; 3) Identify sensitive areas for each species at each lake.

Herpetological surveys followed standard protocols, which differ for the various species. Because of limits determined by time and resources, not all reptiles and amphibians were as thoroughly surveyed. In anticipation of this limit we focused on anurans (frogs and toads) and turtles. We emphasized anurans because with their permeable skin and biphasic lifecycle (having two life phases: tadpole and adult) they are considered excellent indicators of overall ecosystem health. Furthermore, both turtles and anurans utilize both aquatic and terrestrial habitats and especially the shoreline interface between these two habitats, and thus are of particular relevance.

Large sections of continuous natural shoreline on lakes are ideal habitats for many frog species. Natural areas with large amounts of submergent, emergent, and floating-leaf vegetation provide protection and for attachment of eggs during the breeding season. The upland areas surrounding these lakes also provide important habitat as many frog species migrate to lakes and other bodies of water in the spring or fall to breed and spend the summer months foraging in the uplands. Several species also use the surrounding uplands for overwintering. The turtle species found associated with lakes are predominantly aquatic, usually departing from the water only to deposit eggs in a nest. Nests are usually on south facing slopes above the shoreline where there is open vegetation and sandy soil. The newly hatched young then find their way to the water. Thus, both turtles and anurans are intimately associated with lakes and the associated habitats of a watershed.

Table 1: Summary of herpetological surveys of Portage County Lakes during 2002–2003 (A = Amphibians).

Lake	Survey Efforts					
	Frog Call Surveys	Frog Transect Surveys	Turtle Trapping	Shoreline Vegetation	Sensitive Areas	Salamander Surveys
Adams	X	X	X	X	A	X
Amherst Millpond	X		X		A	X
Bear	X		X	X	A	X
Bentley Pond	X				A	X
Boelter	X				A	X
Collins	X		X	X	A	X
Ebert	X		X	X	A	X
Emily	X		X		A	X
Fountain	X		X	X	A	X
Helen	X			X	A	X
Jacqueline	X	X		X	A	X
Joanis	X		X	X	A	X
Jordan Pond	X		X		A	X
Lime	X		X	X	A	X
Lions	X		X	X	A	X
McDill Pond	X		X		A	X
Onland	X		?	X	A	X
Pickereel	X		X	X	A	X
Rinehart	X	X		X	A	X
Rosholt Millpond	X				A	X
Severson	X			X	A	X
Skunk	X				A	X
South Twin	X			X	A	X
Spring	X		X		A	X
Springville	X			X	A	X
Sunset	X		X	X	A	X
Thomas	X		X	X	A	X
Tree	X		X	X	A	X
Wolf	X		?	X	A	X

Results

Twelve frog species have been documented in Wisconsin, nine of which currently inhabit Portage County: American toad (*Bufo americanus*), chorus frog (*Pseudacris triseriata*), spring peeper (*Pseudacris crucifer*), eastern gray treefrog (*Hyla versicolor*), Cope’s gray treefrog (*Hyla chrysoscelis*), green frog (*Rana clamitans*), pickerel frog (*Rana palustris*), northern leopard frog (*Rana pipiens*), and wood frog (*Rana sylvatica*). Historically, Blanchard’s cricket frog inhabited Portage County but is believed to now exist only in southwestern Wisconsin. Of the nine species that currently inhabit Portage County, the pickerel frog was not located through fieldwork for this project. The pickerel frog has been listed as a species of Special Concern in Wisconsin.

Seven salamander species have been documented in Wisconsin, all of which currently inhabit Portage County: blue-spotted salamander, spotted salamander, tiger salamander, central newt, mudpuppy, northern redback salamander, and four-toed salamander. The blue-spotted salamander and the northern redback salamander were located during fieldwork for this project. Other research has documented the mudpuppy in one lake.

Table 2: Species of frogs and toads documented for Portage County Lakes during 2002–2003.

Lake	Species							
	American Toad (<i>Bufo americanus</i>)	Gray Treefrog (<i>Hyla versicolor</i>)	Cope's Treefrog (<i>Hyla chrysoscelis</i>)	Spring Peeper (<i>Pseudacris crucifer</i>)	Western Chorus Frog (<i>Pseudacris triseriata</i>)	Wood Frog (<i>Rana sylvatica</i>)	Green Frog (<i>Rana clamitans</i>)	Leopard Frog (<i>Rana pipiens</i>)
Adams				X	X	X	X	X
Amherst Millpond				X	X			
Bear				X	X		X	
Bentley Pond				X			X	X
Boelter	X			X				
Collins	X			X		X	X	X
Ebert				X				
Emily	X			X	X			X
Fountain	X			X		X	X	
Helen				X	X	X		X
Jacqueline	X			X	X		X	X
Joanis	X	X	X	X	X		X	
Jordan Pond				X	X		X	
Lime				X				
Lions				X		X		
McDill Pond	X	X		X			X	X
Onland				X				
Pickerel	X			X				
Rinehart	X	X		X	X	X	X	X
Rosholt Millpond				X		X		
Severson	X			X				
Skunk							X	
South Twin	X			X	X		X	
Spring	X			X				
Springville	X							
Sunset	X	X	X	X	X	X		
Thomas				X			X	
Tree				X				
Wolf				X				

Table 3: Species of salamanders documented for Portage County Lakes during 2002–2003.

Lake	Species		
	Blue Spotted Salamander (<i>Ambystoma laterale</i>)	Red Backed Salamander (<i>Plethodon cinereus</i>)	Mudpuppy (<i>Necturus maculosus</i>)
Adams			X
Amherst Millpond			
Bear			
Bentley Pond			
Boelter			
Collins			
Ebert			
Emily			
Fountain			
Helen			
Jacqueline			
Joanis			
Jordan Pond			
Lime			
Lions			
McDill Pond			
Onland			
Pickereel			
Rinehart	X		
Rosholt Millpond			
Severson			
Skunk			
South Twin			
Spring			
Springville			
Sunset	X	X	
Thomas			
Tree			
Wolf			

Table 4: Species of turtles documented for select Portage County Lakes during 2002–2004.
 (Numbers indicate trapped and marked turtles; obs = observations; hist = historical record or observation.)

Lake	Species				
	Painted Turtle <i>Chrysemys picta</i>	Snapping Turtle <i>(Chelydra serpentina)</i>	Spiny Softshell Turtle <i>(Apalone spinifera)</i>	Wood Turtle <i>(Clemmys insculpta)</i>	Blanding's Turtle <i>(Emydoidea blandingii)</i>
Adams	6	4			
Amherst Millpond	0	2			
Bear	13	0			
Bentley Pond					
Boelter					
Collins	11	1			
Ebert	1	1			
Emily	9	6			
Fountain	0	2			
Helen					
Jacqueline					
Joanis	2	0			
Jordan Pond	12	3		obs	
Lime	13	4			
Lions	9	1			
McDill Pond	obs	obs	hist obs	hist obs	
Onland					
Pickerel	obs	obs			
Rinehart					
Rosholt Millpond					
Severson					
Skunk					
South Twin					
Spring	obs	1			
Springville					
Sunset	5	0			
Thomas	6	3			
Tree	0	1			
Wolf	obs		hist		

ADAMS LAKE

Of the amphibians observed during the survey of Adams Lake 7 frog species were identified (wood frog, spring peeper, chorus frog, northern leopard frog, American toad, gray treefrog, green frog) along with 1 salamander species (mudpuppy). The primary amphibian habitat is located on the southwest corner and east side of the lake (sensitive areas are identified in red on the photo below). Some of the key features of this habitat include protected areas of marsh with large amounts of submergent, emergent, and floating-leaf vegetation.

The good news is that several frog species are present at Adams Lake; shoreline alteration due to development has been kept to a minimum by the low number of houses and protection of shoreline habitat is in place in many locations. The bad news is that small stretches of highly altered shoreline may prevent amphibian populations from establishing in some areas.

During the survey of reptiles Adams Lake was found to contain 2 turtle species (painted turtle, snapping turtle).



AMHERST MILLPOND

Of the amphibians observed during the survey of Amherst Millpond 5 frog species were identified (spring peeper, American toad, gray treefrog, green frog, chorus frog). The primary amphibian habitat is located on the north side of the pond (sensitive areas are identified in red on the photo below). Some of the key features of this habitat include protected areas of marsh with large amounts of submergent, emergent, and floating-leaf vegetation.

The good news is that large areas of natural habitat are present on portions of the pond. However, there are also high levels of shoreline alteration due to development.

During the reptile survey Amherst Millpond was found to contain 1 turtle species (snapping turtle).



BEAR LAKE

Of the amphibians observed during the survey of Bear Lake 5 frog species were identified (spring peeper, American toad, gray treefrog, chorus frog, green frog). The primary amphibian habitat is located on the east and west sides of the lake (sensitive areas are identified in red on the photo below). Some of the key features of this habitat include protected areas of marsh with large amounts of submergent, emergent, and floating-leaf vegetation.

The good news is that large amounts of natural habitat are available because, although houses are present on the lake, shoreline development has been kept to a minimum. The bad news is that there is a small amount of recreational use on the lake which may affect amphibian populations.

Of the reptiles observed during the survey Bear Lake was found to contain 1 turtle species (painted turtle).



BENTLEY POND

Of the amphibians observed during the survey of Bentley Pond 3 frog species were identified (spring peeper, northern leopard frog, green frog). The primary amphibian habitat can be found in numerous areas throughout the pond (sensitive area is identified in red on the photo below). Some of the key features of this habitat include protected areas of marsh with large amounts of submergent, emergent, and floating-leaf vegetation as well as downed trees.

The good news is that numerous, large areas of suitable amphibian and reptile habitat surround the pond. Unfortunately, some areas of altered shoreline do also exist due to development.

Reptile surveys were not conducted on Bentley Pond.



BOELTER LAKE

Of the amphibians observed during the survey of Boelter Lake 4 frog species were identified (spring peeper, American toad, gray treefrog, Cope's gray treefrog). The primary amphibian habitat is located on the west and southeast sides of the lake (sensitive area is identified in red on the photo below). Some of the key features of this habitat include undeveloped areas of shoreline with submergent and emergent vegetation.

The good news is that several sections of shoreline provide ideal habitat for amphibian and reptile populations. However, some areas of altered shoreline do also exist due to development.

Reptile surveys were not conducted on Boelter Lake.



COLLINS LAKE

Of the amphibians observed during the survey of Collins Lake 5 frog species were found (wood frog, spring peeper, northern leopard frog, American toad, green frog). The primary amphibian habitat is located on the southwest side of the lake (sensitive area is identified in red on the photo below). Some of the key features of this habitat include areas of marsh with large amounts of submergent, emergent, and floating-leaf vegetation.

The good news is that several frog species are present and large sections of undisturbed natural shoreline exist. However, the bad news is that several sections of shoreline are disturbed by development.

During the survey of reptiles Collins Lake was found to contain 2 species of turtles (painted turtle, snapping turtle).



EBERT LAKE

Of the amphibians observed during the survey of Ebert Lake 3 frog species were identified (spring peeper, American toad, green frog). The primary amphibian habitat can be found around the majority of the lake (sensitive area is identified in red on the photo below). Some of the key features of this habitat include the unaltered shoreline and areas with large amounts of submergent, emergent, and floating-leaf vegetation as well as downed trees.

The good news is that there are numerous areas of ideal amphibian and reptile habitat present; there is minimal residential development and excellent shoreline protection. Because of this there really are no major threats to amphibian and reptile habitat at this time.

During the survey of reptiles Ebert Lake was found to contain 2 species of turtles (painted turtle, snapping turtle).



LAKE EMILY

Of the amphibians observed during the survey on Lake Emily 6 frog species were identified (spring peeper, chorus frog, gray treefrog, green frog, northern leopard frog, American toad). The primary amphibian habitat is located on the east and west sides of the lake (sensitive areas are identified in red on the photo below). Some of the key features of this habitat include protected areas of marsh with large amounts of submergent, emergent, and floating-leaf vegetation.

The good news is that several frog species are present and several large sections of natural shoreline still exist. Unfortunately, the lake also contains a high amount of altered shoreline due to development.

During the survey of reptiles Lake Emily was found to contain 2 species of turtles (painted turtle, snapping turtle).



FOUNTAIN LAKE

Of the amphibians observed during the survey of Fountain Lake 4 frog species were identified (spring peeper, American toad, green frog, wood frog). The primary amphibian habitat is located in a small pond to the north of the lake and on the south side of lake (sensitive areas are identified in red on the photo below). Some of the key features of this habitat include areas of marsh with large amounts of submergent, emergent, and floating-leaf vegetation as well as downed trees.

The good news is that there is minimal shoreline alteration on Fountain Lake, which provides numerous areas of ideal amphibian and reptile habitat. The bad news is that there is a small amount of recreational use on the lake which may affect amphibian populations.

During the reptile survey Fountain Lake was found to contain 1 species of turtle (snapping turtle).



LAKE HELEN

Of the amphibians observed during the survey of Lake Helen 6 frog species were identified (wood frog, spring peeper, chorus frog, northern leopard frog, gray treefrog, green frog). The primary amphibian habitat is located in some small sections on the south side of the lake and in the wetlands to the north of the lake (sensitive areas are identified in red on the photo below). Some of the key features of this habitat include protected wetlands with submergent and emergent vegetation.

The good news is that several frog species are present on Lake Helen. The bad news is that high levels of shoreline development are present.

Reptile surveys were not conducted on Lake Helen.



LAKE JACQUELINE

Of the amphibians observed during the survey of Lake Jacqueline 5 frog species were identified (spring peeper, chorus frog, northern leopard frog, American toad, green frog). The primary amphibian habitat is located on the north side of the lake (sensitive area is identified in red on the photo below). Some of the key features of this habitat include protected wetland areas with large amounts of submergent, emergent, and floating-leaf vegetation as well as downed trees.

The good news is that several frog species are present and large stretches of undeveloped shoreline exist. However, there are also high levels of shoreline development on portions of the lake.

Reptile surveys were not conducted on Lake Jacqueline.



LAKE JOANIS

Of the amphibians observed during the survey of Lake Joanis 6 frog species were identified (spring peeper, chorus frog, American toad, gray treefrog, Cope's gray treefrog, green frog). The primary amphibian habitat is located on the west side of the lake (sensitive areas are identified in red on the photo below). Some of the key features of this habitat include protected areas of marsh with large amounts of submergent, emergent, and floating-leaf vegetation as well as downed trees, and several temporary wetlands.

The good news is that several frog species are present; there has been minimal shoreline alteration and several temporary wetlands can be found adjacent to the lake. The bad news, however, is that there is a large amount of recreational use surrounding the lake which may affect amphibian populations.

During the survey of reptiles Lake Joanis was found to contain 1 species of turtle (painted turtle).



JORDAN POND

Of the amphibians observed during the survey on Jordan Pond 3 frog species were identified (spring peeper, chorus frog, green frog). The primary amphibian habitat is located on sections of the east and west sides of the pond (sensitive areas are identified in red on the photo below). Some of the key features of this habitat include natural areas with large amounts of submergent, emergent, and floating leaf vegetation as well as downed trees.

The good news is that there is a minimal level of shoreline development. The bad news is that there is some recreational use on portions of the lake which may affect amphibian populations.

During the survey of reptiles Jordan Pond was found to contain 2 species of turtles (painted turtle, snapping turtle). There have also been historical records of the wood turtle (threatened species) observed.



LIME LAKE

Of the amphibians observed during the survey of Lime Lake 4 frog species were identified (spring peeper, gray treefrog, Cope's gray treefrog, green frog). The primary amphibian habitat is located on the east side of the lake (sensitive areas are identified in red on the photo below). Some of the key features of this habitat include protected areas of marsh with large amounts of submergent, emergent, and floating-leaf vegetation.

The good news is that large sections of natural shoreline still exist. The bad news, however, is that some areas of altered shoreline are present also.

During the survey of reptiles Lime Lake was found to contain 2 turtle species (painted turtle, snapping turtle).



LIONS LAKE

Of the amphibians observed during the survey of Lions Lake 3 frog species were identified (wood frog, spring peeper, chorus frog). There are numerous areas of ideal amphibian habitat surrounding the lake (sensitive areas are identified in red on the photo below). Some of the key features of this habitat include protected areas of marsh with large amounts of submergent, emergent, and floating-leaf vegetation as well as downed trees.

The good news is that large sections of natural shoreline are present. Unfortunately, some disturbance has occurred on the southeast side of the lake.

During the reptile survey Lions Lake was found to contain 2 turtle species (painted turtle, snapping turtle).



MCDILL POND

Of the amphibians observed during the survey of McDill Pond 5 frog species were identified (spring peeper, American toad, green frog, gray treefrog, northern leopard frog). The primary amphibian habitat can be found on several areas throughout the pond (sensitive areas are identified in red on the photo below). Some of the key features of this habitat include protected areas of marsh with large amounts of submergent, emergent, and floating-leaf vegetation as well as downed trees.

The good news is that several frog species are present, along with a number of large sections of natural shoreline. At the same time, however, there is also a high level of shoreline development.

During the survey of reptiles McDill Pond was found to contain 2 species of turtles (painted turtle, snapping turtle). There have also been historical records of spiny softshell turtle and wood turtle (both threatened species) observed.



ONLAND LAKE

Of the amphibians observed during the survey of Onland Lake 3 frog species were identified (spring peeper, American toad, gray treefrog). The primary amphibian habitat is located on several small sections of shoreline (sensitive area is identified in red on the photo below). The key feature of this habitat is undisturbed natural shoreline.

The good news is that there has been minimal shoreline alteration from development. The bad news, however, is that there are few areas containing large amounts of submergent, emergent, and floating-leaf vegetation, the ideal habitat for amphibians.

Reptile surveys were not conducted for Onland Lake.



PICKEREL LAKE

Of the amphibians observed during the survey on Pickerel Lake 3 frog species were identified (spring peeper, American toad, gray treefrog). The primary amphibian habitat is located on several small sections of shoreline, along with a pond to the southeast of the lake (sensitive area is identified in red on the photo below). The key feature of this habitat is undisturbed natural shoreline.

The good news is that there is currently a minimal level of shoreline development. Despite this fact there are few areas that contain large amounts of submergent, emergent, and floating-leaf vegetation.

During the reptile survey Pickerel Lake was found to contain 2 species of turtles (painted turtle, snapping turtle).



RINEHART LAKE

Of the amphibians observed during the survey on Rinehart Lake 7 frog species were identified (wood frog, spring peeper, chorus frog, northern leopard frog, gray treefrog, American toad, green frog), along with 1 salamander species (blue-spotted salamander). The primary amphibian habitat is located on the south and west sides of the lake and in a temporary wetland to the southeast of the lake (sensitive areas are identified in red and yellow on the photo below). Some of the key features of this habitat include protected areas of marsh with submergent, emergent, and floating-leaf vegetation.

The good news is that there are numerous frog species present and several residential areas have protected portions of shoreline. However, large areas of altered shoreline exist due to residential development.

Reptile surveys were not conducted on Rinehart Lake.



ROSHOLT MILLPOND

Of the amphibians observed during the survey of Rosholt Millpond 4 frog species were identified (wood frog, spring peeper, gray treefrog, green frog). The primary amphibian habitat is located on the west side of the pond (sensitive area is identified in red on the photo below). Some of the key features of this habitat include protected areas of marsh with large amounts of submergent, emergent, and floating-leaf vegetation.

The good news is that a nature preserve is present on the northwest side of the pond which provides ideal amphibian habitat. The bad news is that some sections of the pond have been altered by development

Reptile surveys were not conducted on Rosholt Millpond.



SEVERSON LAKE

Of the amphibians observed during the survey of Severson Lake 5 frog species were identified (spring peeper, American toad, gray treefrog, Cope's gray treefrog, green frog). The primary amphibian habitat can be found on numerous sections of shoreline (sensitive areas are identified in red on the photo below). Some of the key features of this habitat include protected areas of marsh with large amounts of submergent, emergent, and floating-leaf vegetation.

The good news is that there are minimal levels of development and many wetland areas surrounding the lake which provide ideal habitat for amphibians. Because of this there are no major threats to amphibian and reptile habitat at this time.

Reptile surveys were not conducted on Severson Lake.



SKUNK LAKE

Of the amphibians observed during the survey of Skunk Lake 4 frog species were identified (spring peeper, gray treefrog, Cope's gray treefrog, green frog). The primary amphibian habitat can be found on numerous sections of shoreline (sensitive areas are identified in red on the photo below). Some of the key features of this habitat include protected areas of marsh with large amounts of submergent, emergent, and floating-leaf vegetation.

The good news is that there is plenty of ideal, natural habitat for many amphibian and reptile species with minimal levels of development. Because of this there are no major threats towards amphibians or reptiles at this time.

Reptile surveys were not conducted on Skunk Lake.



SOUTH TWIN LAKE

Of the amphibians observed during the survey on South Twin Lake 5 frog species were identified (spring peeper, chorus frog, American toad, gray treefrog, green frog). The primary amphibian habitat is located on the south, west, and east sides of the lake (sensitive areas are identified in red on the photo below). Some of the key features of this habitat include protected areas of marsh with large amounts of submergent, emergent, and floating-leaf vegetation.

The good news is that large sections of natural shoreline remain. However, there are also several small portions of altered shoreline.

Reptile surveys were not conducted on South Twin Lake.



SPRING LAKE

Of the amphibians observed during the survey of Spring Lake 3 frog species were identified (spring peeper, American toad, green frog). The primary amphibian habitat is located on several sections of shoreline (sensitive area is identified in red on the photo below). Some of the key features of this habitat include protected areas of marsh with large amounts of submergent, emergent and floating-leaf vegetation.

The good news is that large sections of natural, undisturbed shoreline are present on Spring Lake. Unfortunately, there have been small sections of shoreline altered.

During the survey of reptiles Spring Lake was found to contain 2 turtle species (painted turtle, snapping turtle).

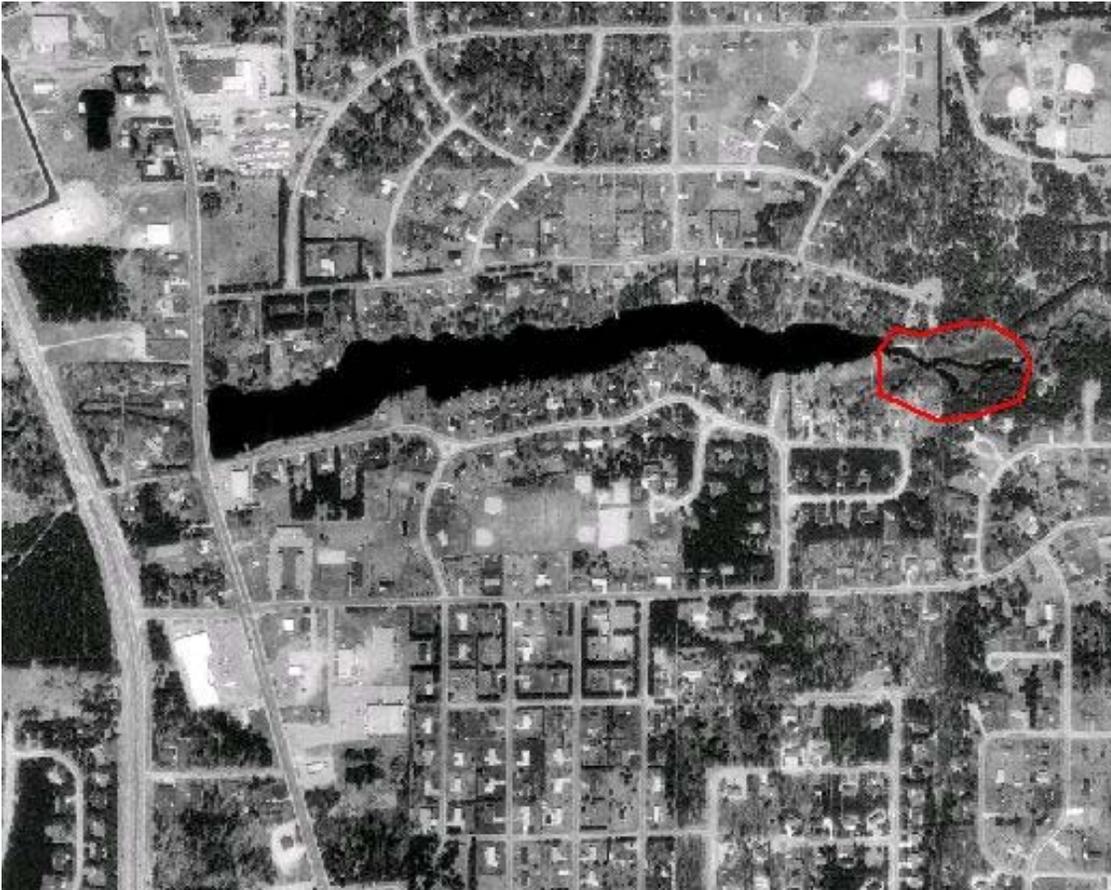


SPRINGVILLE POND

Of the amphibians observed during the survey of Springville Pond 2 frog species were identified (American toad, spring peeper). The primary amphibian habitat is located on the east side of the pond (sensitive area is identified in red on the photo below). Some of the key features of this habitat include undisturbed natural shoreline with large amounts of submergent, emergent, and floating-leaf vegetation.

The good news is that several areas on the eastern end of the pond support some amphibian species. The bad news is that few amphibian species have been found at Springville Pond; the high levels of altered shoreline may be preventing the establishment of amphibian populations.

Reptile surveys were not conducted on Springville Pond.



SUNSET LAKE

Of the amphibians observed during the survey of Sunset Lake 6 frog species were identified (wood frog, spring peeper, chorus frog, American toad, gray treefrog, Cope's gray treefrog), along with 2 salamander species (blue-spotted salamander, northern redback salamander). The primary amphibian habitat is located on the east and southeast sides of the lake (sensitive areas are identified in red and yellow on the photo below). Some of the key features of this habitat include undisturbed natural shoreline with large amounts of submergent, emergent, and floating-leaf vegetation for frogs; moist wooded areas for salamanders.

The good news is that several species of frogs are present and some large, undisturbed areas of natural shoreline still exist. There is also a small wetland near the boat landing that provides excellent frog habitat, and a large wooded area at CWES which provides ideal habitat for salamanders. The bad news is that sections of highly altered shoreline are present at the lake.

During the reptile survey Sunset Lake was found to contain 1 turtle species (painted turtle).



THOMAS LAKE

Of the amphibians observed during the survey of Thomas Lake 5 frog species were identified (spring peeper, American toad, gray treefrog, Cope's gray treefrog, green frog). The primary amphibian habitat is located on the west side of the lake (sensitive area is identified in red on the photo below). Some of the key features of this habitat include protected areas of marsh with large amounts of submergent, emergent and floating-leaf vegetation.

The good news is that Thomas Lake contains large sections of undisturbed, natural shoreline. However, there are also small sections of altered shoreline.

During the survey of reptiles Thomas Lake was found to contain 2 turtle species (painted turtle, snapping turtle).



TREE LAKE

Of the amphibians observed during the survey at Tree Lake 3 frog species were identified (spring peeper, American toad, green frog). The primary amphibian habitat is located on the west side of the lake (sensitive areas are identified in red on the photo below). Some of the key features of this habitat include protected areas of marsh with large amounts of submergent, emergent, and floating-leaf vegetation. The good news is that some large sections of undisturbed, natural shoreline are present. However, there is also a high level of shoreline development.

During the reptile survey Tree Lake was found to contain 1 turtle species (snapping turtle).



WOLF LAKE

Of the amphibians observed during the survey on Wolf Lake 2 frog species were identified (spring peeper, green frog). The primary amphibian habitat can be found surrounding numerous areas of the lake (sensitive area is identified in red on the photo below). Some of the key features of this habitat include protected areas of marsh with large amounts of submergent, emergent and floating-leaf vegetation.

The good news is that Wolf Lake contains large sections of undisturbed, natural shoreline. The bad news is that there is some recreational use of lake which may affect amphibian populations.

During the survey of reptiles Wolf Lake was found to contain 1 turtle species (painted turtle). There is also a historical record of spiny softshell turtle being present.

