

2009 Long Lake Biological Surveys and Using Citizen Science Volunteers

by
Paul Regnier
Door County Nature and Travel LLC

March 31, 2010
32nd Annual Lakes Convention
Green Bay, Wisconsin



Long Lake Habitats



Open water

Long Lake Habitats



Water lilies and “vegetation islands”

Long Lake Habitats



Spring Ponds, spring holes and cold water stream

Long Lake Habitats



Wetland Communities dominated with Black Spruce and Tamarack

Long Lake Habitats



Upland Forests with sugar maples, white ash, white birch and red maple

Long Lake Habitats



Seasonal cottages and small homes

Long Lake Biological Surveys



- Bird Survey



- Frog and Toad Survey



- General Plant Survey



- Aquatic Plant Survey

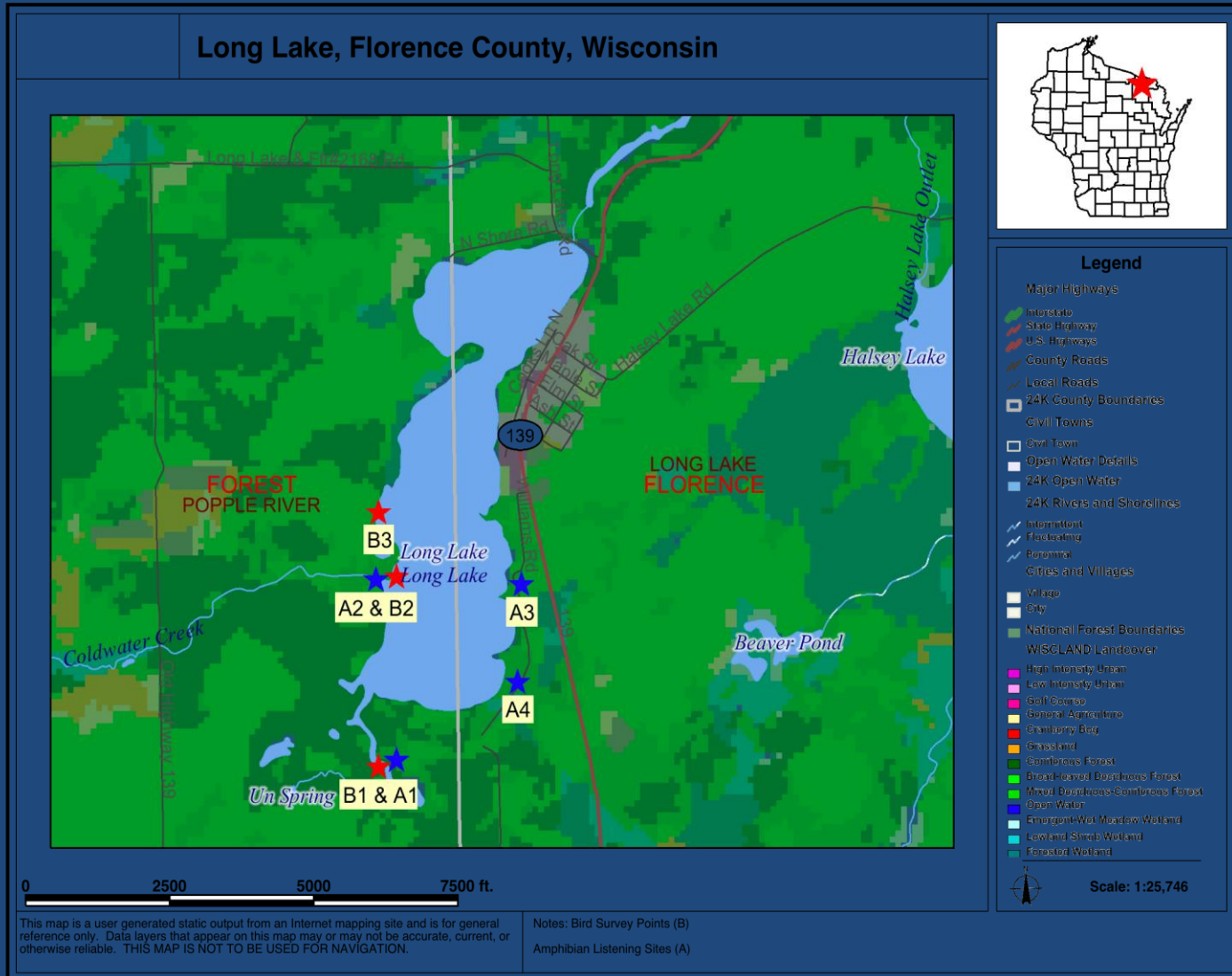


Long Lake Bird Survey

Long Lake Bird Survey

- Protocol:
 - Standard method of sampling birds in an unlimited radius
 - 3 site points were selected and counted at 4 different times
 - 10 minute count
 - All birds seen or heard are counted
 - Weather, time, temperature and other data was collected at each site.

Long Lake Bird Survey: Site Points



Bird Survey Mode



Long Lake Bird Survey: Field Data Sheet

Long Lake Bird Survey Field Sheet

Master
 Draft

Site # _____ Group Leader _____ Data Recorder _____ Habitat Type _____

Month _____ Day _____ Year _____ Time _____ N _____ W _____

Latitude _____ Longitude _____ Temp. _____ Wind _____ Sky _____

BTBW = first observed 0-3 min.
BTBW ✓ = first observed 3-5 min.
BTBW ✗ = first observed 5-10 min.

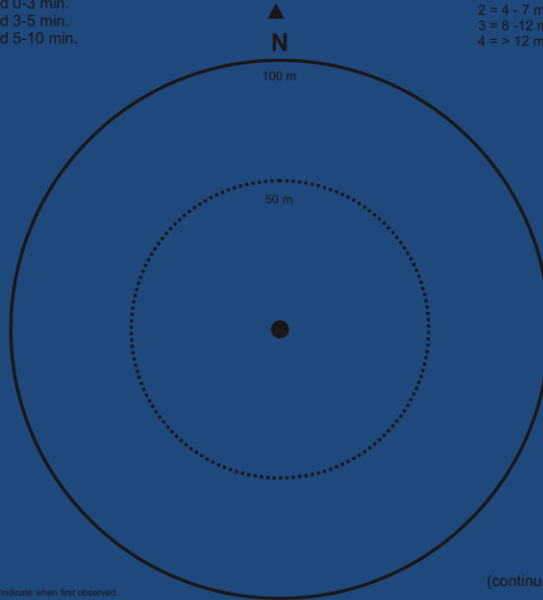
0 = none
1 = 1 - 3 mph
2 = 4 - 7 mph
3 = 8 - 12 mph
4 = > 12 mph

0 = < 10% clouds
1 = partly cloudy
2 = mostly cloudy
3 = overcast
4 = raining

Notes:

- AMCR American Crow
- AMRO American Robin
- BARO Baltimore Oriole
- BARS Barn Swallow
- BDOW Banded Owl
- BAWW Black-and-white Warbler
- BTBW Black-throated Green Warbler
- BLBW Blackburnian Warbler
- BHW Blue-headed (Solitary) Vireo
- BWWA Blue-winged Warbler
- BHCO Brown-headed Cowbird
- CEDW Cedar Waxwing
- CEWA Cerulean Warbler
- CSWA Chestnut-sided Warbler
- CORA Common Raven
- COWW Connecticut Warbler
- DEJU Dark-eyed Junco
- EATO Eastern Towhee
- EAWP Eastern Wood Pewee
- GCFL Great Crested Flycatcher
- GTBH Great Blue Heron
- LEFL Least Flycatcher
- NOFL Northern Flicker
- OVEN Ovenbird
- PALW Palm Warbler
- REVI Red-eyed Vireo
- ROPI Rock Pigeon (Dove)
- RSDR Rose-breasted Grosbeak
- SAVS Savannah Sparrow
- TRES Tree Swallow
- TRUS Trumpet Swan
- WITU Wild Turkey
- WISN Wilson's (Common) Snipe
- YRWA Yellow-rumped Warbler

- Status
- singing male = S
 - male (seen) = M
 - female (seen) = F
 - pair together = P
 - calling (?? sex) = C
 - juvenile = J
 - nest = N
 - flyover = X
 - BTBW observed = O (sex unknown)



Indicate when first observed

Alpha Code	Status	Dist	0-3	3-5	5-10	Total

Dist. = minimum distance from observer.
1 = < 50 m; 2 = 50 - 100 m; 3 = > 100 m

(continued)

Indicate when first observed

Alpha Code	Status	Dist	0-3	3-5	5-10	Total

Dist. = minimum distance from observer.
1 = < 50 m; 2 = 50 - 100 m; 3 = > 100 m

Reviewed by: _____

Key for data used on “Summary Data by Bird Site Points”

Bird Species: common bird species by alpha order.

Code: Standard alphabetic codes for common species of western Great Lakes region. Codes are derived from North American Bird Banding Manual.

WI Conserv. Status:

E = endangered
THR = threatened
SC = special concern
SGCN = species of greatest conservation concern

WI Breeding Status:

* = breeds in Wisconsin
*PR = permanent resident
M = migrant
WR = winter resident
Abundance Codes – used with breeding Status
a = abundant; very easy to find
c = common; easy to find in appropriate habitat and season
uc = uncommon; requires additional effort to find
r1 = rare; but regularly seen in Wisconsin annually
r2 = casual; no more than one record every 1-5 years
r3 = accidental; less than one record every 5 years

Status: Records field observation of bird.

S = singing male
M = male (seen)
F = female (seen)
P = pair together
C = call
J = juvenile
N = nest
X = flyover
O = observed

First Observed: All birds seen or heard are recorded within a 10-minute time period which is divided into three time segments:

0-3 minutes
3-5 minutes
5-10 minutes

Distance: Estimate of distance away a bird is believed to occur.

1 = <50 meters
2 = 50-100 meters
3 = >100 meters

Wind: 0 = none

1 = 1-3mph
2 = 4-7mph
3 = 8-12mph
4 = >12mph

Sky: 0 = < 10% clouds

1 = partly cloudy
2 = mostly cloudy
3 = overcast
4 = raining

Summary Data by Bird Site Points

Site Point: #B1 Spring Ponds/Bog area GPS: N45° 49.520 W88° 40.814

Date: May 6, 2009 Time: 6:20am Temp: 53°F Wind: 0 Sky: 1

Bird Species	Code*	WI Conserv. Status*	WI Breeding Status*	Status	First observed	Distance
Yellow-rumped Warbler	MYWA		c*	S/M	0-3	1
Red-winged Blackbird	RWBL		a*	C/S	0-3	1
Black and White Warbler	BAWW		c*	S	0-3	1
Blue Jay	BLJA		a*	C/X	3-5	2
Broad-winged Hawk	BWHA		c*	X	0-3	2
Mourning Dove	MODO		a*	C	5-10	2
Ruffed Grouse	RUGR		c*PR	S	5-10	3
Swamp Sparrow	SWSP		c*	S/M	0-3	1
White-throated Sparrow	WTSP		c*	S	5-10	2
Pileated Woodpecker	PIWO		uc*	C	3-5	2

Date: June 1, 2009 Time: 6:45am Temp: 55°F Wind: 2 Sky: 3

Bird Species	Code*	WI Conserv. Status*	WI Breeding Status*	Status	First observed	Distance
Black and White Warbler	BAWW		c*	S	0-3	2
Canada Goose	CAGO		a*	X	5-10	3
Common Yellowthroat	COYE		a*	M	0-3	1
Great-crested Flycatcher	GCFL		c*	M/S	3-5	2
Hermit Thrush	HETH		c*	S	0-3	2
Mallard	MALL		a*	P	0-3	2
Northern Waterthrush	NOWA		c*	S	5-10	2
Red-winged Blackbird	RWBL		a*	F/X	0-3	1
White-throated Sparrow	WTSP		c*	M/S	3-5	2
Belted Kingfisher	BEKI		c*	X/C	0-3	1

Date: June 21, 2009 Time: 7:55am Temp: 79°F Wind: 0 Sky: 1

Bird Species	Code*	WI Conserv. Status*	WI Breeding Status*	Status	First observed	Distance
American Goldfinch	AMGO		a*	S	3-5	2
American Robin	AMRO		a*	S	3-5	2
Eastern Kingbird	EAKI		c*	S	0-3	1
Great-crested Flycatcher	GCFL		c*	S	5-10	1
Mourning Dove	MODO		a*	S	5-10	1
Nashville Warbler	NAWA	SC	c*	S	5-10	1
Ovenbird	OVEN	SC;SGCN	c*	S	3-5	2
Red-eyed Vireo	REVI		a*	S	3-5	2
Red-winged Blackbird	RWBL		a*	S	3-5	1
Swamp Sparrow	SWSP		c*	S	0-3	1
White-throated Sparrow	WTSP		c*	S	3-5	2

Long Lake Frog and Toad Survey

Free Frog Survey Program on Long Lake

FROG SURVEY

JUNE 20, 2009



Spring Peeper

Join Naturalist Paul Regnier in a Free Frog Survey Program at Long Lake

Date: Saturday, June 20

Time: 7:00 pm

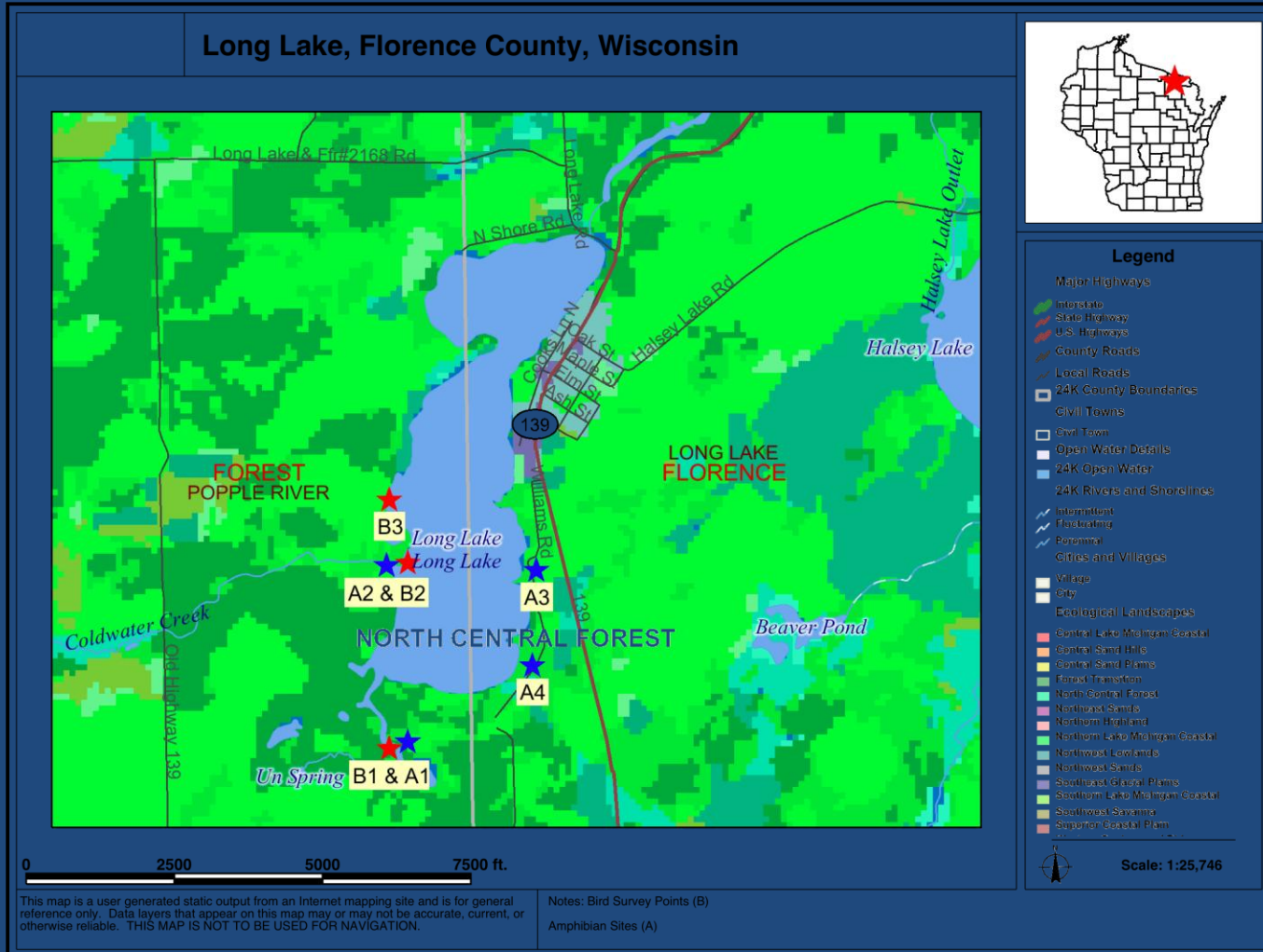
Meet: Town Hall, Downtown Long Lake

Learn about several species of frogs living in the Long Lake area, then, participate in a survey of frogs at designated points near Long Lake. We'll listen for and identify frog songs. This is one of several wildlife surveys being conducted to gather information on Long Lake wildlife. Information collected will be used for a Long Lake Management Plan. Dress for weather. Interested people can continue the survey in future years. Sign up at the Lake Fair on June 13 or call Chris Hanson at 715-889-0200 or Paul Regnier at 920-493-1572.

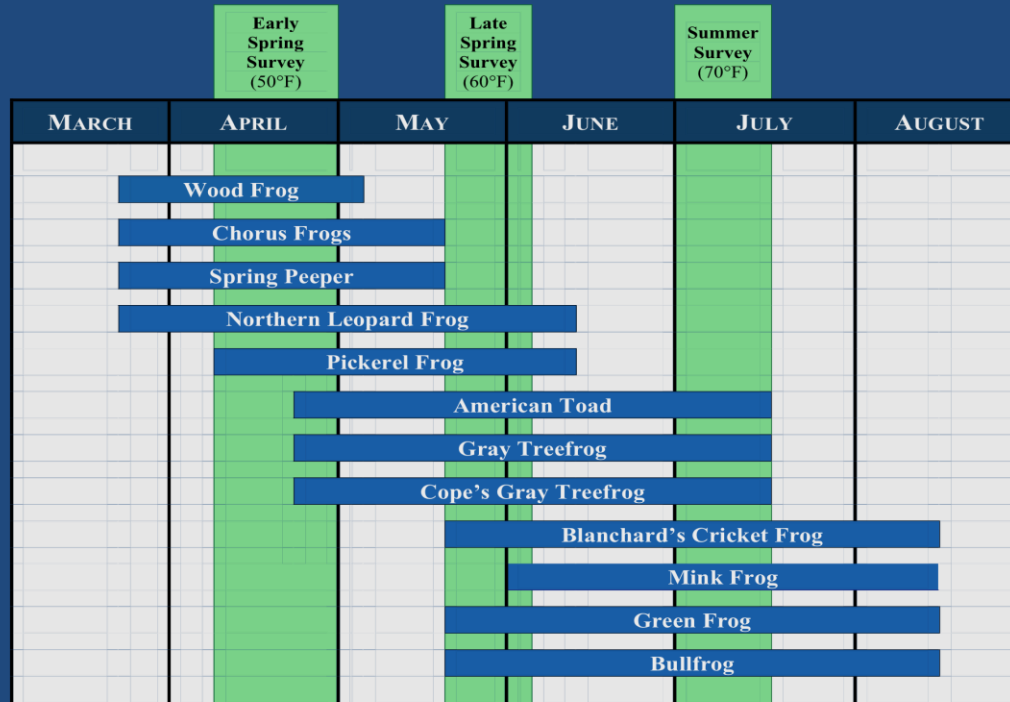
Long Lake Frog and Toad Survey

- Protocol
 - Auditory survey based on the Wisconsin Frog and Toad Survey,
 - Consisted of a route of 4 listening stations,
 - Three sampling periods,
 - Data collected included weather, water temperature, and wind speed.

Long Lake Frog and Toad Survey: Site Points



Wisconsin Frog and Toad Calling Calendar



Long Lake Frog and Toad Survey

WISCONSIN FROG AND TOAD SURVEY (WFTS) -- Field Data Sheet

Observer name(s): Run 1: _____
 Run 2: _____
 Run 3: _____

Route Number: _____
 Year: _____
 County: _____

IMPORTANT -- Please return at the end of the season to:

Bureau of Endangered Resources
 Wisconsin Department of Natural Resources
 P.O. Box 7921
 Madison, Wisconsin 53707-7921

Instructions: Use this voluntary form to record data at each of the 10 listening points along a WFTS route. Surveys are repeated 3 times during the breeding season according to the minimum water temperatures and ranges of dates given below for each survey run. Conduct surveys after dark when wind speed is less than 12 mph. Listen for 5 minutes at each site and record a call index value* of 1, 2, or 3 for each species calling. See back of data sheet to obtain wind and sky codes and record additional comments. Return data sheet to above address by August 15th.



SITE NAME	FIRST RUN Water Temp 50°F+; April 8-30										SECOND RUN Water Temp 60°F+; May 20 - June 5										THIRD RUN Water Temp 70°F+; July 1-15																								
	DATE:					DATE:					DATE:																																		
	BEGIN: Time:		END: Time:			BEGIN: Time:		END: Time:			BEGIN: Time:		END: Time:																																
	Wind:	Sky:	Wind:	Sky:	Wind:	Sky:	Wind:	Sky:	Wind:	Sky:	Wind:	Sky:	Wind:	Sky:																															
	Air Temp (°F):		Air Temp (°F):			Air Temp (°F):		Air Temp (°F):			Air Temp (°F):		Air Temp (°F):																																
CALL INDEX*										CALL INDEX*										CALL INDEX*																									
Site Number	Water Temp (°F)	Wood frog	Chorus frogs**	Spring peeper	Leopard frog	Pickerel frog	American frog	(Eastern) Gray treefrog	Cope's gray treefrog	Crickler frog	Mink frog	Green frog	Bullfrog	Site Number	Water Temp (°F)	Wood frog	Chorus frogs**	Spring peeper	Leopard frog	Pickerel frog	American frog	(Eastern) Gray treefrog	Cope's gray treefrog	Crickler frog	Mink frog	Green frog	Bullfrog	Site Number	Water Temp (°F)	Wood frog	Chorus frogs**	Spring peeper	Leopard frog	Pickerel frog	American frog	(Eastern) Gray treefrog	Cope's gray treefrog	Crickler frog	Mink frog	Green frog	Bullfrog				
1.	1.													1.														1.																	
2.	2.													2.														2.																	
3.	3.													3.														3.																	
4.	4.													4.														4.																	
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* The call index is a rough estimate of the number of calling males of a particular species, according to the following index values:
 1 = Individuals can be counted; there is space between calls (no overlapping of calls).
 2 = Calls of individuals can be distinguished but there is some overlapping of calls.
 3 = Full chorus. Calls are constant, continuous, and overlapping; individual calls cannot be distinguished.

** The western and boreal chorus frogs are combined for WFTS calling surveys because their calls are nearly indistinguishable.

Long Lake Frog and Toad Survey: Summary of Data

Date: May 5, 2009

Begin Time: 8:10pm
End Time: 9:15pm

Air Temp: 65°
Air Temp: 58°

Wind: 1
Wind: 1

Sky: 0
Sky: 0

Location/Site Names	Site #	Water Temp	Wood Frog	Spring Peeper	Leopard Frog	American Toad	Eastern Gray Tree Frog	Green Frog
A1 Spring Ponds	1	52		2*				
A2 Cold Water Cr.	2	46		2*	1*			
A3 Williams Rd. N	3	58	1*	2*				
A4 Williams Rd. S	4	59	1*	2*				

Date: June 21, 2009

Begin Time: 8:45pm
End Time: 10:15pm

Air Temp: 63°
Air Temp: 62°

Wind: 0
Wind: 0

Sky: 1
Sky: 1

Location/Site Names	Site #	Water Temp	Wood Frog	Spring Peeper	Leopard Frog	American Toad	Eastern Gray Tree Frog	Green Frog
A1 Spring Ponds	1	63				1*	1*	1*
A2 Cold Water Cr.	2	61						1*
A3 Williams Rd. N	3	70						1*
A4 Williams Rd. S	4	69						1*

Date: July 26, 2009

Begin Time: 9:30pm
End Time: 11:00pm

Air Temp: 69°
Air Temp: 63°

Wind: 1
Wind: 1

Sky: 3
Sky: 3

Location/Site Names	Site #	Water Temp	Wood Frog	Spring Peeper	Leopard Frog	American Toad	Eastern Gray Tree Frog	Green Frog
A1 Spring Ponds	1	65						2*
A2 Cold Water Cr.	2	63						1*
A3 Williams Rd. N	3	68						1*
A4 Williams Rd. S	4	68						1*

*The Call Index is a rough estimate of the number of calling males of a particular species according to the following index values:
 1 = individuals can be counted; there is space between calls.
 2 = calls of individuals are distinguishable but some calls overlap.
 3 = full chorus; calls are constant, continuous, and overlapping.

Long Lake Plant Survey



Long Lake Plant Survey

- Protocol
 - General assessment of vascular plants
 - Primary assessments were made in the field by kayaking and walking
 - Major plant communities were identified

Long Lake Plant Survey

Common Plant Name	Scientific Name: Genus and species
1 red maple	<i>Acer rubrum</i>
2 hard maple, sugar maple	<i>Acer saccharum</i>
3 mountain maple	<i>Acer spicatum</i>
4 staghorn sumac	<i>Rhus hirta</i>
5 sweet cicely	<i>Osmorhiza claytonii</i>
6 wild parsnip	<i>Pastinaca sativa</i>
7 common winterberry	<i>Ilex verticillata</i>
8 Jack-in-the-pulpit	<i>Arisaema triphyllum</i>
9 wild calla	<i>Calla palustris</i>
10 wild sarsaparilla	<i>Aralia nudicaulis</i>
11 swamp milkweed	<i>Asclepias incarnata</i>
12 common milkweed	<i>Asclepias syriaca</i>
13 common yarrow	<i>Achillea millefolium</i>
14 common ragweed	<i>Ambrosia artemisiifolia</i>
15 pearly everlasting	<i>Anaphalis margaritacea</i>
16 calico aster	<i>Aster lateriflorus</i>
17 large-leaved aster	<i>Aster macrophyllus</i>
18 spotted knapweed	<i>Centaurea biebersteinii</i>
19 daisy fleabane	<i>Erigeron annuus</i>
20 Joe-Pye-weed	<i>Eupatorium maculatum</i>
21 common boneset	<i>Eupatorium perfoliatum</i>
22 orange hawkweed	<i>Hieracium aurantiacum</i>
23 Canada hawkweed	<i>Hieracium kalmii</i>
24 tall wild lettuce	<i>Lactuca canadensis</i>
25 ox-eye daisy	<i>Leucanthemum vulgare</i>
26 pineapple-weed	<i>Matricaria discoidea</i>
27 northern sweet-colt's-foot	<i>Petasites frigidus</i>
28 black-eyed Susan	<i>Rudbeckia hirta</i>
29 Canadian goldenrod	<i>Solidago canadensis</i>
30 goat's-beard	<i>Tragopogon dubius</i>
31 orange jewelweed	<i>Impatiens capensis</i>
32 blue cohosh	<i>Caulophyllum thalictroides</i>
33 speckled alder	<i>Alnus incana</i>
34 yellow birch	<i>Betula alleghaniensis</i>
35 paper birch	<i>Betula papyrifera</i>
36 beaked hazelnut	<i>Corylus cornuta</i>
37 ironwood	<i>Ostrya virginiana</i>
38 forget-me-not	<i>Myosotis scorpioides</i>
39 yellow-rocket	<i>Barbarea vulgaris</i>
40 marsh bellflower	<i>Campanula aparinoides</i>
41 bush-honeysuckle	<i>Diervilla lonicera</i>
42 twinflower	<i>Linnaea borealis</i>
43 red-berried elder	<i>Sambucus racemosa</i>
44 maple-leaved viburnum	<i>Viburnum acerifolium</i>
45 bladder campion	<i>Silene latifolia</i>
46 lamb's-quarters	<i>Chenopodium album</i>

Long Lake Aquatic Plant Survey



Wildlife Sightings

Long Lake Home Owners, Visitors, Fishers, Hunters, Boaters, Tourists

WANTED

LONG LAKE WILDLIFE SIGHTINGS



Information wanted from your current or historical observations
of Long Lake Wildlife

WILDLIFE SIGHTINGS NEEDED FOR LONG LAKE MANAGEMENT PLAN

Information on wildlife sightings on or around Long Lake is needed to provide knowledge for a future Long Lake Management Plan. Please contact Chris Hanson at 715-889-0200 or email at younglaw@frontiernet.net or Paul Regnier at 920-493-1572 or email at paul@doorcountynatureandtravelcompany.com with any information on your sightings. Information on birds, mammals, frogs, turtles, snakes, etc. is needed. Dates, locations, behavior (like bears eating at your bird feeder, etc) is helpful. Fish species caught, ducks, geese, bear, etc. seen or shot, snakes, birds at feeders (all seasons) are helpful and will contribute to a body of knowledge for a Lake Management Plan. Phenological data (dates for ice out, first frog heard, eagle returns, bears at feeder etc.) is also important. Call or email your sightings today. Thank You!

Citizen Science

(one of many definitions)

- **Citizen science is a term used for projects or ongoing program of scientific work in which individual volunteers or network of volunteers, many of whom may have no specific scientific training, perform or manage research-related tasks such as observation, measurement or computation.**
- **Examples include: Christmas Bird Count, Loon Watch, and Crane Count**

Citizen Science/Volunteers

- Involvement:
 - Organizing
 - Internal Organizational Support
 - Site knowledge; historical, political etc.
 - Field data collection
 - Data processing
 - Longevity
 - Advocate

Citizen Science/Volunteers

- Considerations:
 - Abilities
 - Training
 - Safety
 - Commitment
 - Management
 - Validity

Citizen Science/Volunteers

- Benefits
 - Increased knowledge & understanding of Lake
 - Better decision making, based on data
 - Value: investment of time, energy and money
 - Increase body of data for Lake's environment
 - Sense of satisfaction
 - Advocate for the Lake's ecological integrity

Thank you!



2009 Long Lake Biological Surveys and Using Citizen Science Volunteers

by

Paul Regnier

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March 31, 2010

32nd Annual Lakes Convention

Green Bay, Wisconsin