

GREAT SACANDAGA LAKE COLIFORM MONITORING PROGRAM – 2007 FIFTH INTERIM REPORT

prepared for

The Great Sacandaga Lake Advisory Council (GSLAC)

&

The Great Sacandaga Lake Association (GSLA)

By

Lawrence W. Eichler, Research Scientist

&

Charles W. Boylen, Associate Director

Darrin Fresh Water Institute

5060 Lakeshore Drive

Bolton Landing, NY 12814



Darrin Fresh Water Institute

A Research Center of Rensselaer Polytechnic Institute

July 19, 2007

Great Sacandaga Lake Coliform Monitoring Program

The Great Sacandaga Lake Coliform Monitoring Program (GSLCMP) is composed of two activities. Baseline bacterial water quality will be sampled at 9 locations monthly from May thru October, 2007. The data collected will be compared to similar collections taken from 1991 thru 1995. The second component of the GSLCMP will collect water samples from suspected contamination sources throughout the lake basin. Twelve to 15 shoreline locations will be sampled during each biweekly sampling cycle. Sample collection is scheduled to begin the last week in June and conclude the first week in September 2007, for a total of five sampling dates. The time interval coincides with the period of maximum population density and intensity of recreational use. Two primary measurements will be made for each sample: Total Coliform (TC) and Fecal Coliform (FC) Bacteria. These bacteria serve as indicators of the presence of animal or human waste. The presence of elevated levels of these bacteria indicate potentially disease-causing protozoans, bacteria and other microorganisms may be present in the water. Follow-up sampling will be conducted within 48 hours for any samples exceeding contact recreation standards (Table 1). Should adjacent public swimming areas exist, they will be sampled along with any follow-up sampling efforts. Sampling sites will be chosen in consultation with the GSLA, GSLAC, DEC, towns and villages, other regulatory agencies and citizens groups. DFWI personnel will attempt to assist the local regulatory authorities with location of bacterial sources, working closely with the county and local authorities to locate and correct sources of contamination. Follow-up investigations by the NYS Department of Health, NYS Department of Environmental Conservation and county and local government personnel are encouraged at sites with elevated fecal coliform levels.

Action Levels of the Great Sacandaga Lake Coliform Monitoring Program

In order to respond effectively to contamination problems detected during the Great Sacandaga Lake Coliform Monitoring Program, the following actions will occur:

1. If 200 or more fecal coliform bacteria per 100 milliliters are reported, the site will be resampled during the next sampling cycle.
2. If 400 or more fecal coliform bacteria per 100 milliliters are reported, the site will be resampled within 24 to 48 hours. The data for both samples will be reported to the GSLA. They will accept responsibility for contacting the appropriate regulatory agencies.

Follow-up samples to locate specific shoreline problems are not within the guidelines of this program and will be the responsibility of the appropriate regulatory agencies. The Darrin Fresh Water Institute will provide technical assistance upon request, however the cost of additional sampling and analysis must be covered by the local, county or state agency responsible for water quality complaints.

SUGGESTIONS FOR INTERPRETATION OF COLIFORM DATA

New York State Department of Health has determined maximum allowable bacterial levels for contact recreation (swimming, wading, etc.). A table of these bacterial concentrations is included. When these maximum bacterial levels are exceeded, the New York State Department of Health is empowered to close the location to bathing until the problem or problems are corrected. These levels are used by the Darrin Fresh Water Institute to determine appropriate responses to various bacterial concentrations found during sampling. A table of these responses is included.

Interpretation of data to determine and locate sources of contamination (human or other warm-blooded animal) requires more than just current bacterial levels. A knowledge of past history of the site, weather, geology of the area, drainage patterns, and some information on human activities in the area are also useful. To differentiate between human waste and that produced by other warm-blooded animals, it is sometimes helpful to refer to the ratio of fecal coliform to fecal streptococcus bacteria (FC/FS). An FC/FS ratio of 4 or greater is generally considered indicative of contamination of human origin. Fecal Streptococcus (FS) Bacteria abundance will be determined for any resample locations.

Table 1. New York State coliform bacteria standards for bathing beaches.

Maximum Allowable Levels of Coliform Bacteria in Waters Used for Contact Recreation (NYS Dept. of Health)		
Bacterial Test	Max. 5 Sample Mean	Max. Single Result
Total Coliform	2400 per 100 mls	5000 per 100 mls
Fecal Coliform	200 per 100 mls	1000 per 100 mls

Definitions

TC – Total Coliform Bacteria

FC – Fecal Coliform Bacteria

FS – Fecal Streptococcus Bacteria

FC/FS – Ratio of Fecal Coliform to Fecal Streptococcus Bacteria

TNTC – Too Numerous to Count

CONF – Confluent growth of target bacteria

MAT – Confluent growth of non-target bacteria

? – High background, referring to non-target growth of bacteria interfering with counts of target bacteria

lt – Less than

LA – Laboratory accident preventing enumeration of bacteria

2007 GREAT SACANDAGA LAKE COLIFORM MONITORING PROGRAM

SITE	DATE	TC/100mls	FC/100mls	NOTES
Town Of Broadalbin				
Broadalbin Town Beach	18-Jun-07	9	3	Closed, no bathers, clear
Hans Creek	17-Jul-07	90	12	cold, brown water
McMurry Boat Livery	26-Jun-07	170	132	lots of suspended debris
NYSDEC Boat Launch in Broadalbin	18-Jun-07	22	7	Slightly turbid, pollen
Rowell Site 2 - Sacandaga Bible Conference	22-May-07	3	1	2 geese, slightly turbid
Rowell Site 2 - Sacandaga Bible Conference	18-Jun-07	20	4	Slightly turbid
Rowell Site 2 - Sacandaga Bible Conference	17-Jul-07	7	8	bathers, slightly turbid
Sacandaga Boat Club	26-Jun-07	19	4	slightly turbid
Sand Island - North End	10-Jul-07	7	2	Ducks, gulls, no bathers
Sand Island - South End	10-Jul-07	1	1	Gulls, no bathers
Town of Day				
Daley Creek	18-Jun-07	40	lt 1	Brown, suspended pollen
Rowell Site 8 - Saratoga Co. Boat Launch	22-May-07	16	lt 1	clear, cold
Rowell Site 8 - Saratoga Co. Boat Launch	18-Jun-07	60	lt 1	Clear, pollen
Rowell Site 8 - Saratoga Co. Boat Launch	17-Jul-07	9	2	clear, cool
Rowell Site 9 - Day Center	22-May-07	5	lt 1	clear, cold
Rowell Site 9 - Day Center	18-Jun-07	2	lt 1	Suspended pollen, clear
Rowell Site 9 - Day Center	17-Jul-07	2	lt 1	clear, cool
Town of Edinburgh				
Edinburgh Marina	18-Jun-07	30	3	Clear, pollen
Edinburgh Town Beach	17-Jul-07	3	1	Closed, no bathers, clear
Rowell Site 6 - Batchellerville Bridge	22-May-07	18	10	clear, cold
Rowell Site 6 - Batchellerville Bridge	18-Jun-07	7	1	Clear, suspended pollen
Rowell Site 6 - Batchellerville Bridge	17-Jul-07	14	5	clear, warm

2007 GREAT SACANDAGA LAKE COLIFORM MONITORING PROGRAM

SITE	DATE	TC/100mls	FC/100mls	NOTES
Town of Hadley				
Rowell Site 7 - Conklingville Dam	22-May-07	9	lt 1	2 geese, surface film of pollen & debris
Rowell Site 7 - Conklingville Dam	18-Jun-07	12	1	Pollen suspended in water
Rowell Site 7 - Conklingville Dam	17-Jul-07	7	lt 1	No bathers, clear
Town of Mayfield				
Chambers Brook	26-Jun-07	130	13	turbid, horse farm
Cranberry Cove Marina	26-Jun-07	2	1	clear, many ducks, pollen
Driftwood Park Boat Launch	26-Jun-07	31	4	duck, clear, cool
Grandview Marina Launch Ramp	26-Jun-07	47	6	ducks
Kennyetto Creek	26-Jun-07	80	37	turbid
Lakeview Road Farm runoff	26-Jun-07	10	2	turbid, pollen, algae growth
Lanzi's Restaurant Docks	26-Jun-07	5	3	clear, pollen
Mayfield Lake Spillway	22-May-07	60	17	turbid, fishy odor, Eurasian watermilfoil
Mayfield Town Beach	26-Jun-07	7	lt 1	clear, calm, swimmer
Rowell Site 3 - Sunset Bay	22-May-07	17	2	clear, cold
Rowell Site 3 - Sunset Bay	18-Jun-07	17	5	Clear, some pollen
Rowell Site 3 - Sunset Bay	17-Jul-07	7	lt 1	clear, cool
Ryan's Marina Boat Launch	26-Jun-07	9	9	pollen
Sunset Bay Marina/Trailer Park	26-Jun-07	12	4	ducks, cool, clear
Vandenberg Point Swim Area	26-Jun-07	63	37	swimmers
Woods Hollow Marina	26-Jun-07	13	7	turbid

2007 GREAT SACANDAGA LAKE COLIFORM MONITORING PROGRAM

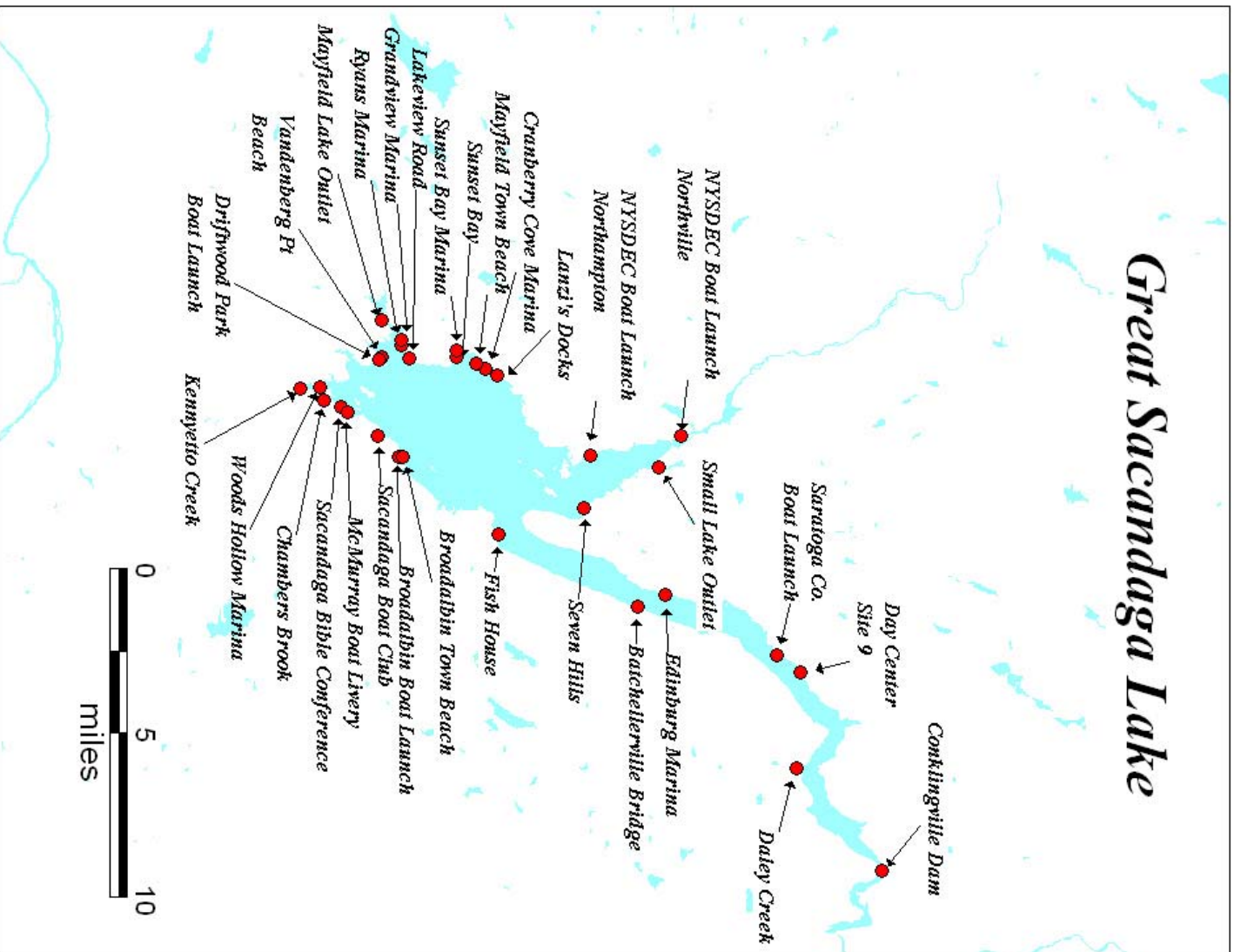
SITE DATE TC/100mls FC/100mlsNOTES

**Town of
Northampton**

HRBRRD Boat Launch	10-Jul-07	18	23	clear
Kenyon Islands - Mid Channel	10-Jul-07	4	3	Clear
Kenyon Islands - Northville	10-Jul-07	lt 1	3	Clear
Northampton Marina	10-Jul-07	1	lt 1	clear
Northville Town Beach	10-Jul-07	9	14	slightly turbid, no bathers
NYSDEC Boat Launch in Northampton	10-Jul-07	10	8	Clear
NYSDEC Boat Launch in Northville	18-Jun-07	30	7	Pollen
NYSDEC Boat Launch in Northville	10-Jul-07	15	12	clear, boats launching
Park Marina	10-Jul-07	85	47	Slightly turbid
Rowell Site 1 - Fish House	22-May-07	11	lt 1	clear, cold
Rowell Site 1 - Fish House	18-Jun-07	40	7	Suspended pollen
Rowell Site 1 - Fish House	17-Jul-07	6	4	clear
Rowell Site 4 - State Boat Launch	22-May-07	20	lt 1	clear, cold
Rowell Site 4 - State Boat Launch	18-Jun-07	7	5	Heavy pollen
Rowell Site 4 - State Boat Launch	17-Jul-07	16	6	clear, warm
Rowell Site 5 - Seven Hills Beach/Lakeview Ave.	22-May-07	12	lt 1	clear, cold
Rowell Site 5 - Seven Hills Beach/Lakeview Ave.	18-Jun-07	14	1	Clear, cool
Rowell Site 5 - Seven Hills Beach/Lakeview Ave.	17-Jul-07	5	lt 1	clear, cool
Sacandaga Beach/Sport Island Pub	10-Jul-07	19	12	No bathers, clear
Sacandaga Park Brook	10-Jul-07	19	4	Low flow
Small Lake Outlet	18-Jun-07	10	5	Pollen
Stream @ Intersection of 7 Hills & White Birch N	10-Jul-07	1	lt 1	Low Flow
Stream @ Intersection of 7 Hills & White Birch Rd	10-Jul-07	1	1	Low Flow
The Inn at the Bridge Beach	10-Jul-07	5	1	clear, no bathers

**Town of
Providence**

Creek Next to Providence Town Beach	17-Jul-07	380	50	brown water, low flow
Providence Town Beach	17-Jul-07	5	4	Closed, no bathers, clear



Great Sacandaga Lake

July 13 & 17, 2007 Sampling Locations

