AQUATIC, AGRICULTURAL AND ENVIRONMENTAL TECH SERVICES INC.

SUMMARY REPORT FOR LAKE ST. MALO FISHERIES ASSESSMENT

Prepared for the St. Malo and District Wildlife Association

Presented by AAE Tech Services Inc.
August 25, 2014

Study dates thus far:

Date	Tasks
February 16	Fishing derby; winter dissolved oxygen profiles
April 29	Hoop netting; mussel collection
May 7	Trap netting
May 8	Set trap net
May 9	Trap netting and WQ
May 10	Trap netting and WQ
May 12	Lift trap net and WQ
May 15	Bathymetry; trap netting
May 16	Bathymetry; trap netting and WQ
May 17	Electrofishing
May 21	Electrofishing
May 23	Backpack electrofishing
May 26	Electrofishing
May 28	Electrofishing and WQ
May 29	Electrofishing
June 7	Electrofishing
Total:	**16 days**

Objectives to Date:

1. **Fish Utilization (16 days)**
   - Sampling sites spanned the St. Malo Lake and the Rat River. No site was sampled more than once.
   - Capture methods consisted almost entirely of electrofishing, trap netting, and backpack electrofishing. Rods were used during a winter fish derby to capture two fish. Hoop netting of the Rat River was less successful due to excessive water velocities and depths, as well as ice catching during April.
   - Daily visual observations of fish within each drain were recorded

- A total of 694 fish were captured during the spring assessment. 22 fish species were identified, the most common (>30 captured) species being the Brown Bullhead, Yellow Perch, Common Shiner, White Sucker, Silver Redhorse, Rock Bass, and Northern Pike. A photo record of each species will be provided in the final report. 34 lampreys were also captured.
- The only important barrier observed was the dam. Although some recreational fishermen set trap nets within the lake, they only partially restricted fish access to any area of the lake.

SPECIES	NUMBER	SPECIES	NUMBER
BROWN BULLHEAD	222	Common Carp	14
YELLOW PERCH	87	Unknown	10
COMMON SHINER	63	Freshwater Drum	8
WHITE SUCKER	58	Channel Catfish	4
SILVER REDHORSE	44	Bigmouth Buffalo	3
ROCK BASS	42	Mooneye	2
CHESTNUT LAMPREY	34	Trout Perch	2
NORTHERN PIKE	34	Blacksided Darter	1
SHORTHEAD REDHORSE	28	Brook Stickleback	1
GOLDEYE	18	Northern Redbelly Dace	1
WALLEYE	16	Sauger	1
TOTAL = 694			

2. Habitat Assessment (16 days)

- Photos were taken during the spring to document the habitat across St. Malo Lake and along the Rat River. Additional photos will be taken during the late summer months.
- Together, the photos will be used to help prioritize fish habitat. within Lake St. Malo.
- A DVD of all photographs taken will be provided to the St. Malo and District Wildlife Association upon completion of project.

3. Bathymetry (2 days)

- A bathymetric survey of Lake St. Malo was conducted on May 15 and 16, 2014. The assessment measured lake depth, substrate, vegetation coverage, and

vegetation height along lateral and longitudinal transects no greater than 50 m apart. Substrate sampling was performed periodically to quantify the substrate across the lake. In late August, a second, similar survey will be conducted in order to document seasonal changes in vegetation.

- Maps of each parameter, as measured in both the spring and late summer, will be constructed. These maps will allow one to identify and prioritize the available fish habitat across the lake, which will be very useful for potential remediation sites.

Spring Bathymetry Maps (Preview)

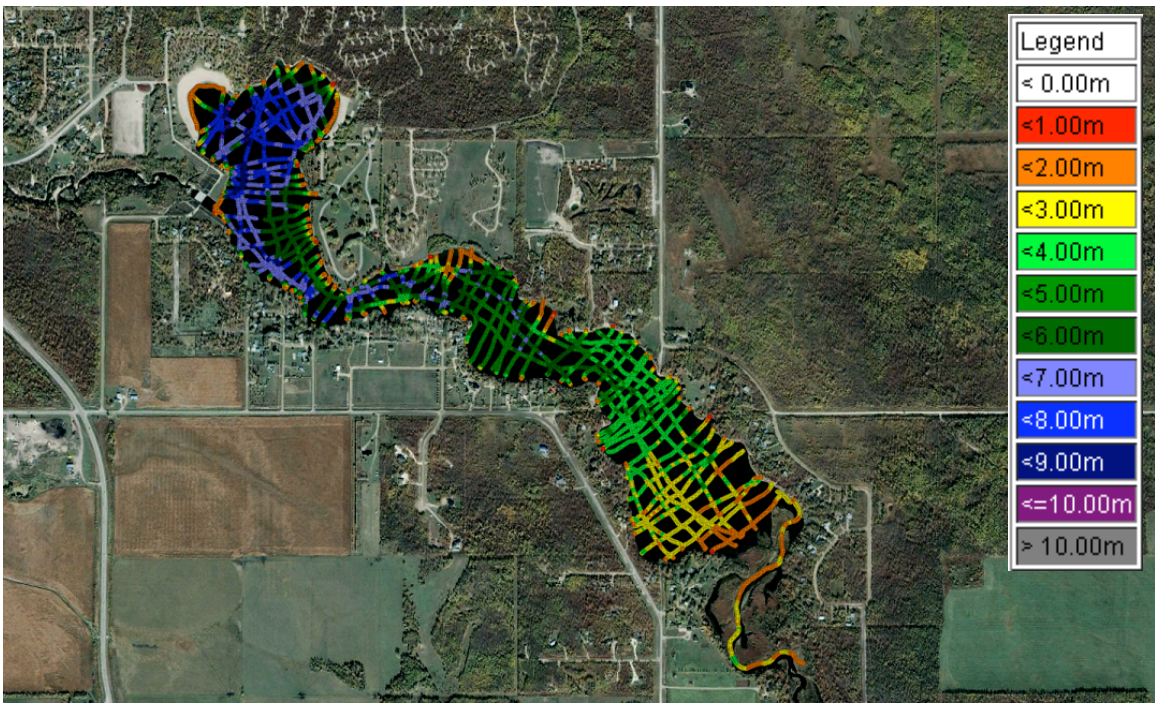

Figure 1. Map of lake depth for Lake St. Malo.

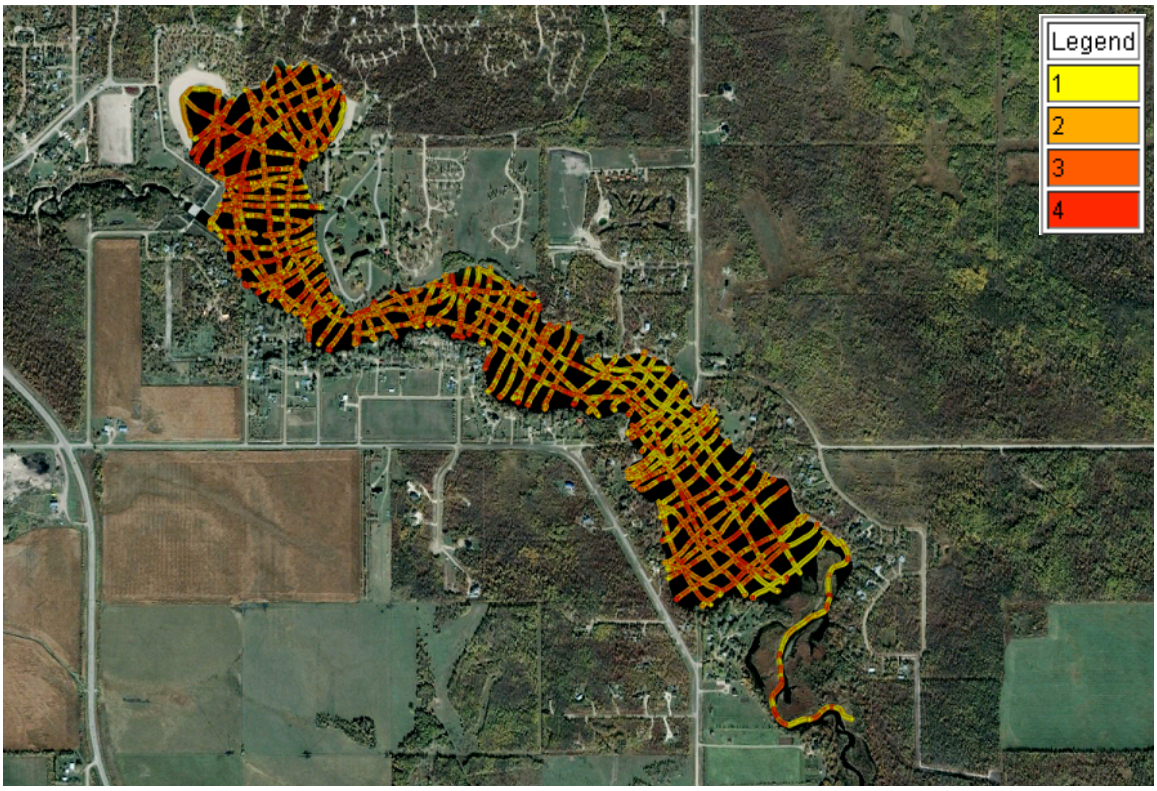

Figure 2. Map of bottom type for Lake St. Malo.

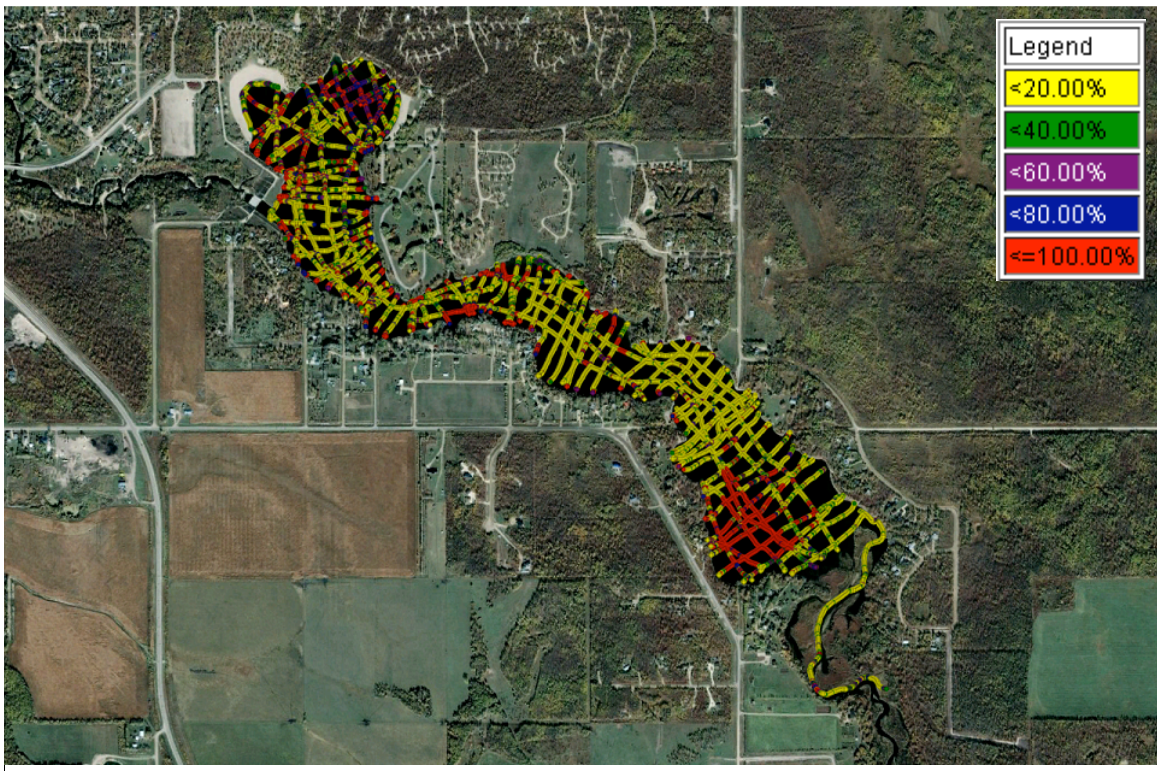

Figure 3. Map of plant coverage for Lake St. Malo.

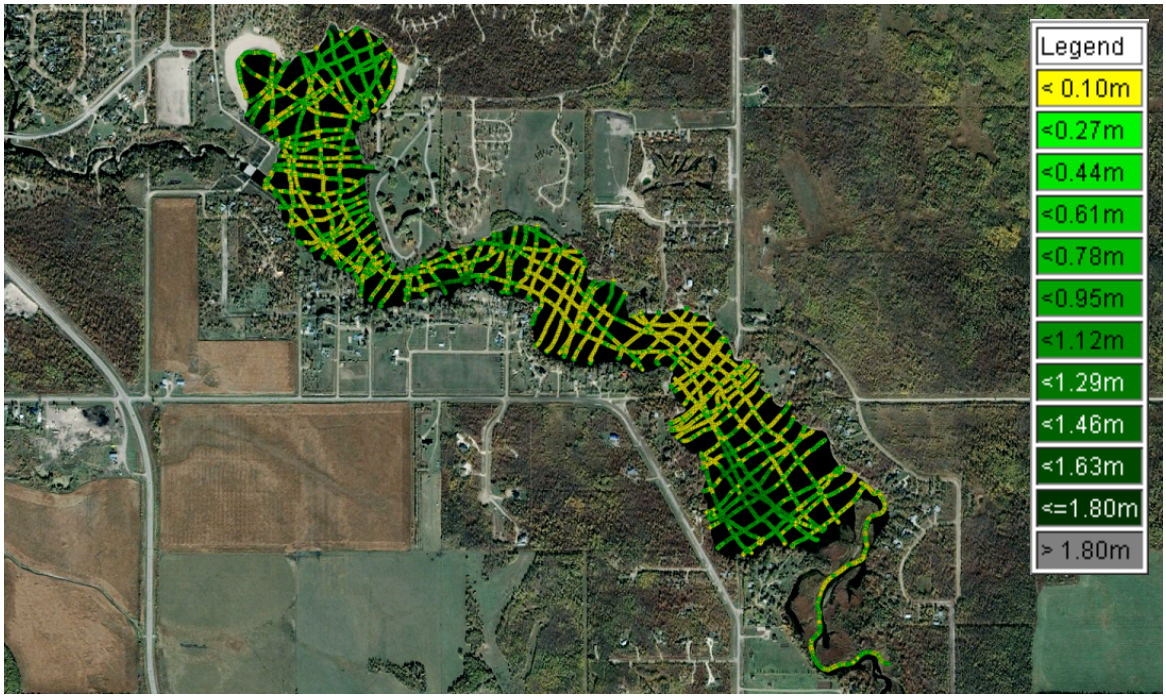

Figure 4. Map of plant height for Lake St. Malo.

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4. Water Quality (6 days)

- Water temperature, dissolved oxygen, conductivity, pH, and turbidity have been documented at all fish collection sites distributed across the lake during the spring assessment (April and May). These parameters will continue to be measured during the late summer assessment (August and September).
- Winter dissolved oxygen profiles were conducted at five sites during February. These profiles will provide an indication of the health of the lake in terms of dissolved oxygen.

5. Invertebrate Survey (Upcoming)

- Because the diversity and composition of the invertebrate community provides a great deal of information in regards to water quality, invertebrates will be collected and identified at the backpack electrofishing sites to help identify water quality issues.
- The diversity of the invertebrate community will be compared with remediation sites and those sites with complex habitat.
- Invertebrates will only be identified to order and/or family level.

If there are any questions about the progress of the project please contact me on my cell phone at 204-997-3483 or via email at mlowdon@aaetechservices.ca.

Sincerely,

Mark Lowdon
Fisheries Biologist
AAE Tech Services Inc.