

MUNICIPALITY OF THE DISTRICT OF LUNENBURG

Meeting of the

SHERBROOKE LAKE COMMITTEE

Held at the New Ross Consolidated School, 4689 Highway 12, New Ross

Thursday December 10, 2015

ATTENDANCE:

Murray Coolican	Committee Member
Lennis Corkum	Committee Member
Larry Hagell	Committee Member, Chair
Allan Veinot	Committee Member
Jack Wentzell	Committee Member, Vice Chair
Garth Bangay	Committee Member
Mark Wentzell	Committee Member
John Budden	Committee Member

STAFF:

Trudy Payne, Director of Recreation
Tina Robichaud-Bond, Administrative Support
Alex Dumaresq, Deputy CAO
Kevin Malloy, CAO

REGRETS:

Rex Veinot	Committee Member
Douglas Moore	Committee Member

SPECIAL GUESTS:

Tina Connors, Councillor – Municipality of Chester
Brad Armstrong, Councillor – Municipality of Chester
Terry Dorey, Councillor, MODL
Michael Ernst, Councillor, MODL
Frank Fawson, Councillor, MODL
Don Zwicker, Councillor, MODL

1. CALL TO ORDER

Chair Larry Hagell called the meeting to order at 7:00 p.m.

Larry introduced special guests in the audience and explained how the committee was formed and how it works. MODL encourages public input. One of the methods being used to gather public input is by hiring consultants who will be managing a public

engagement process. Other ways for input is by attending meetings, sending information, or visiting MODL's website. A direct mailing list has been compiled. If you would like to be included on this email list, contact Trudy or add names on notepad tonight.

2. APPROVAL OF AGENDA

Letter from Jim Cook added to Agenda

Moved by Mark Wentzell, seconded by Garth Bangay that the agenda be approved as amended. Carried.

3. APPROVAL OF MINUTES

Page 2, Item 5 – 2nd line – Originally said “This lake is more than a base of water” should read “This lake is more than a basin of water”.

Moved by Murray Coolican seconded by Mark Wentzell, that the Minutes of the November 12, 2015 Sherbrooke Lake Access Advisory Committee be approved as amended. Carried.

4. BUSINESS ARISING FROM THE MINUTES

Trudy - Page 3, Item #6 - advised that the Municipality of Kings could not be here. Trudy met with them yesterday and she will provide info at next meeting.

5. WHO IS THE SHERBROOKE LAKE ACCESS COMMITTEE AND WHAT IS THEIR MANDATE

Trudy - presented PowerPoint presentation, copy of which is included in the Agenda.

6. UPDATE ON THE REQUEST FOR PROPOSALS CONCERNING THE PUBLIC CONSULTATION PROCESS

Trudy - Several firms submitted proposals. The Committee short-listed them, did interviews and reference checks. Committee concluded to hire the firm, Upland.

7. INTRODUCTION OF THE CONSULTING FIRM UPLAND

Ian Watson introduced himself and his co-worker, Steffen Kaubler. They are a planning and design firm located in Halifax. They specialize in public consultations, design, municipal planning. They've worked around Atlantic Canada.

Why are we here? Fundamental reason is to listen. There is a lot of interest here and we want to hear your perspective on public access to Sherbrooke lake. We will be working through a plan and getting details from you.

What to expect? A website, a survey in the New Year, open houses to drop in and talk to us, and provide contact information to you.

We are here to hear from you in an objective, arm's length manner, with no preconceived notions. We want to ensure that your voice gets recorded, in a confidential manner. We want to ensure everyone is heard, including those with no internet access, ensuring people who are not here in January that they have an opportunity to be heard, for example, cottage owners.

We will come back to the Committee with some ideas, concepts, that will help guide site selection, process, budget numbers.

We are just getting started, there will be lots of opportunities to be heard. The more we hear from you, the better results we have. Whatever you can do to get the word out to neighbours, friends would be great.

8. PRESENTATION BY BARRIE CLARK – SHERBROOKE LAKE WATER QUALITY REPORT 2014

Mr. Clarke introduced himself as a Geologist and presented a Power Point presentation. He explained that he is not a water quality expert but has been writing water quality reports for the last 6 years. He is a volunteer with the Bluenose Coastal Action group.

After presentation - Does committee have questions?

Murray – Thanked Barrie for work on water quality of Sherbrooke Lake. Barrie is a member of a home association and 6 years ago attended a meeting and talked of water quality. He talked about what Lahave is doing and he convinced us that people around the lake should be putting money into research to get better info. Some of the sites are being funded by SFHA Barrie went to other associations to get money to help pay for this. A lot of this info is as a result of contributions from homeowners. He has followed the same standards of science as the Lahave research efforts. It's good work, but it's being contributed by property owners because of concern for water quality. Thank you to Barrie for his work and initiative – work to engage volunteers and contributions. Without his work we wouldn't have the information we have today.

9. UPDATE ON THE REPORT TO MODL COUNCIL

Trudy - Dec 1 Larry and Trudy went to MODL – see page 17 to 20 in package
What may be of interest is the work plan that is in the package

10. UPDATE AND FINANCIAL REQUEST TO THE MUNICIPALITY OF CHESTER COUNCIL

Trudy – Met with MODC this morning. Presented a similar PowerPoint presentation as the one this evening. We informed MODL Council that MODL wanted to engage residents and property owners of MODL and MODC. We were seeking funds to help with public consultation process. Council agreed to provide \$5000 towards the public consultation process.

11. ADDITION TO AGENDA

Larry – We received a letter yesterday from Jim Cook which was also sent to MODL and MODC. Letter was read, copy of which is attached. We will refer this letter to MODL council.

12. PUBLIC INPUT (15 MINUTES)

Bernard Wentzell – I own a cottage on Boat Cove. I fully endorse everything that is in the letter that was just read.

Greg Stokes – Presented a petition which represents 200 or so signatures of residents on Sherbrooke Lake who are opposed to the direction you are moving. It is a known view that we do not want to see public access which includes a boat launch. It is extremely detrimental to the lake. I am opposed.

Tony Nestel – We seem to have jumped the base on the whole argument. What I'd like to know is what is driving this? It's obvious that there are interest groups who is driving this. Who/what is it?

Larry H – Access to Sherbrooke Lake is the #1 item that was on the list of the Strategic Open Space Plan. MODL worked through the plan and access to Sherbrooke Lake moved up.

Tony Nestel – Where did the reason originate?

Larry H – My understanding is, Trudy can better speak to this, the Open space plan is as a result of public consultation in various areas.

Tony Nestel – where did that originate? You don't have to answer now. My second question is, the process jumped a step, first we have to ask "should there be public access?" How much of the public want it and how much of the public don't want it. Has a survey been done? If there is more opposition than interest, it should not get off the ground.

Uwe Graemer – I live on Sherbrooke Lake permanently on Deep Cove. We pay a lot of tax on our property. If I'm looking at MODC – Brown's road is private - we pay all the money - who pays for open access – who pays for access. – every year in summer all the subdivisions in the lake, gates open in summer, access for all who wants to come down, a lot of people have no idea where is Sherbrooke Lake – all gates are open for everyone who wants to come to the lake to enjoy the lake. I think we have concern here, what you plan will kill Sherbrooke Lake – they spend money on that project – no one says how much for a plan that was made years ago and now they say we have a plan, we have to follow. That project will bring bankruptcy for the municipality. Property owners never get any money.

Greg Stokes – we do not get the services –we get nothing – we pay high taxes

Larry H – no decisions have been made – this is all part of public consultation process which we've hired

Greg Stokes – you ignored Church Lake people

Larry H – I was not on that committee and cannot speak for that committee

Uwe Graemer – why do they want to bring money in that project. If there is tax payer's money in community project – show how much money

Larry H – that type of concern should be taken to council – it's outside of the scope of work of this committee

Tina Connors – MODC would welcome comments and interest – give us a call, contact us, make an apt.

Larry H – go to council either Chester or MODL

Uwe Graemer – You have been given a petition. There are a lot of arguments and comments about that project

Greg Stokes – Council has already decided that they are going to do this?

Larry H – Yes council has decided

Tony Nestel – So you don't care? If your report says otherwise.

Larry H – Our job is to take feedback from public consultation and take it to council

Tony Nestel – Which means it will be meaningless

Larry Keddy – I am a permanent resident. A few years ago, I got the word that MODL wanted access. I went to MODL meetings and it was a sham in my opinion. Over a year of going to meetings it seemed that they were pushing a certain access to lake. This committee is not MODL council, this committee has been formed based on the fact that a brute was pushing for access, putting the cart before the horse, no concern about water quality, no concern about if access would bother home owners . So they formed a committee to assess what MODL wants. This committee is trying to find alternative sites, if any access, if the people say they want access, they can come up with 3 or 4 sites that will not impact a lot of people. This is a committee who is trying to juggle a lot of balls, I don't want a Coney Island, don't want a big parking lot. But I'm not opposed to having access.

Larry H – We thank you all, we encourage public input, we encourage you to get your thoughts to council.

Our committee has to go in camera.

13. NEXT MEETING DATE

Thursday, January 14, 2016 at 6:30pm – Parkdale/Maplewood Community Hall

14. IN CAMERA ITEM AS PER THE MGA 22 (2) (c) – LAND NEGOTIATIONS

Moved by Murray Coolican, seconded by Mark Wentzell that the Committee go In Camera In Committee. Carried.

The purpose of the In Camera meeting was to deal with Land Negotiations, in accordance with section 22 (2) (a) of the Municipal Government Act.

Moved by Murray Coolican, seconded by Mark Wentzell that the Committee return to open session. Carried.

15. ADJOURNMENT

There being no further business to discuss at 9:20 p.m., it was moved by Murray Coolican, seconded by Mark Wentzell that the meeting be adjourned. Carried.



Sherbrooke Lake Water-Quality Update

Barrie Clarke

Geologist ~~Hydrologist~~ ~~Biologist~~ ~~Limnologist~~

December 10, 2015

Bluenose Coastal Action Foundation LaHave River Watershed Project

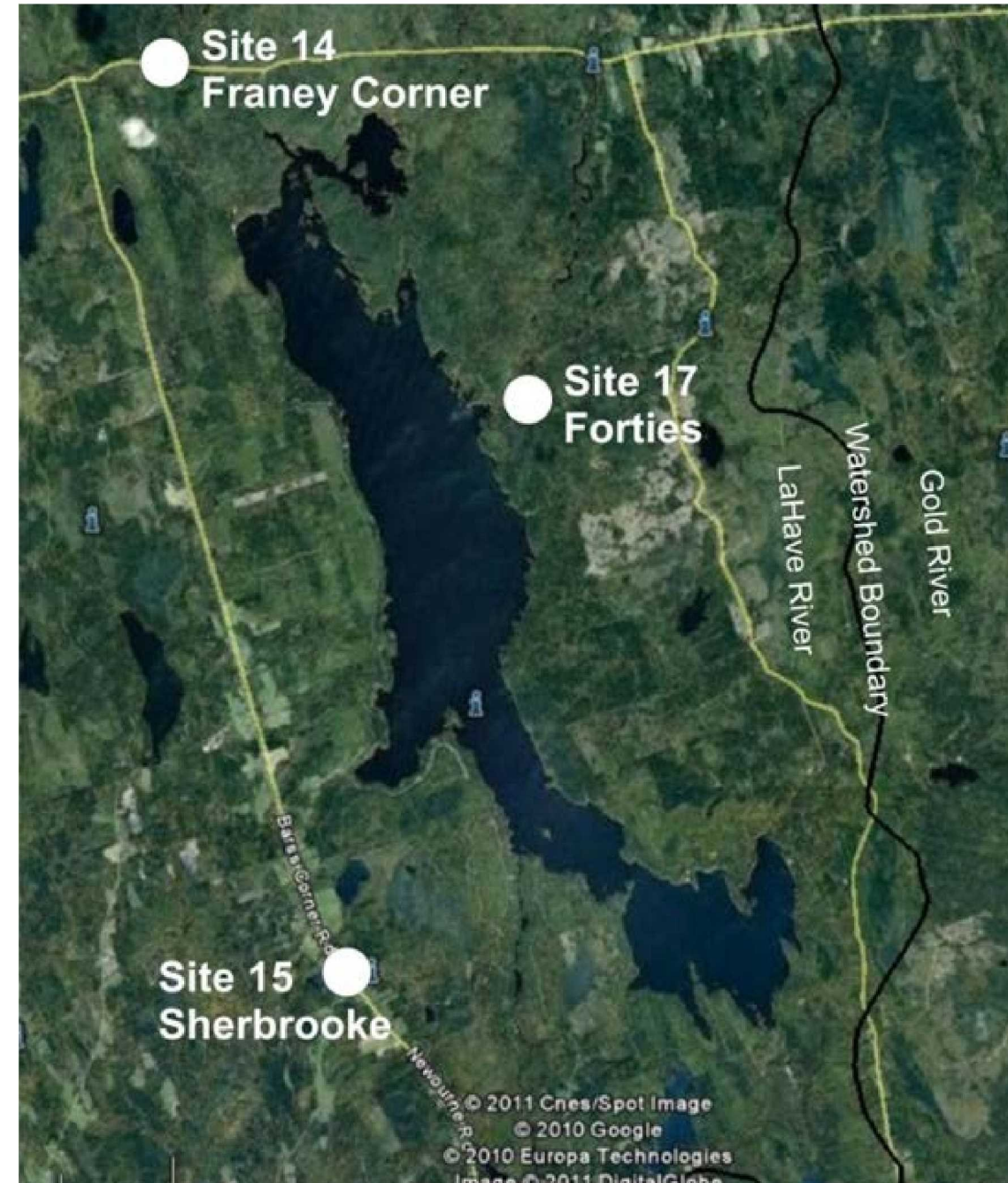
has sampled inlet Site 14 and outlet Site 15
every four weeks for the last six years
(total of 78 measurements at each site)

able to compare quality of water leaving the
lake with the quality of water entering the lake

all five reports at: [http://coastalaction.org/
WordPress/projects/watersheds/lahave-river-
watershed/water-quality/](http://coastalaction.org/WordPress/projects/watersheds/lahave-river-watershed/water-quality/)

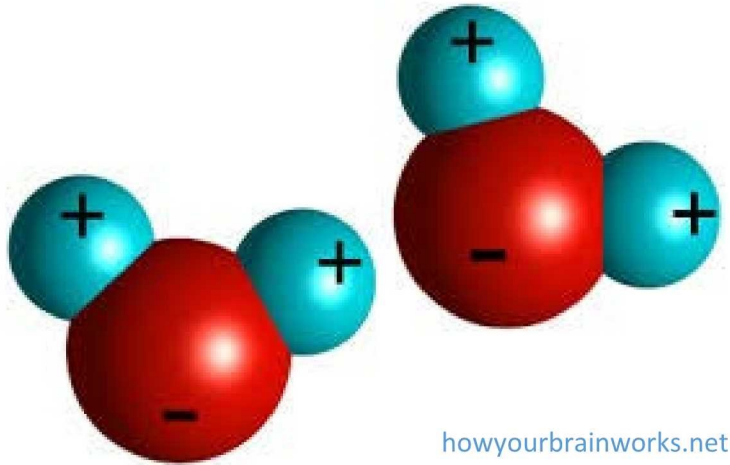
but very little information on the lake itself

OUTLINE: general water, SL particular, recommend

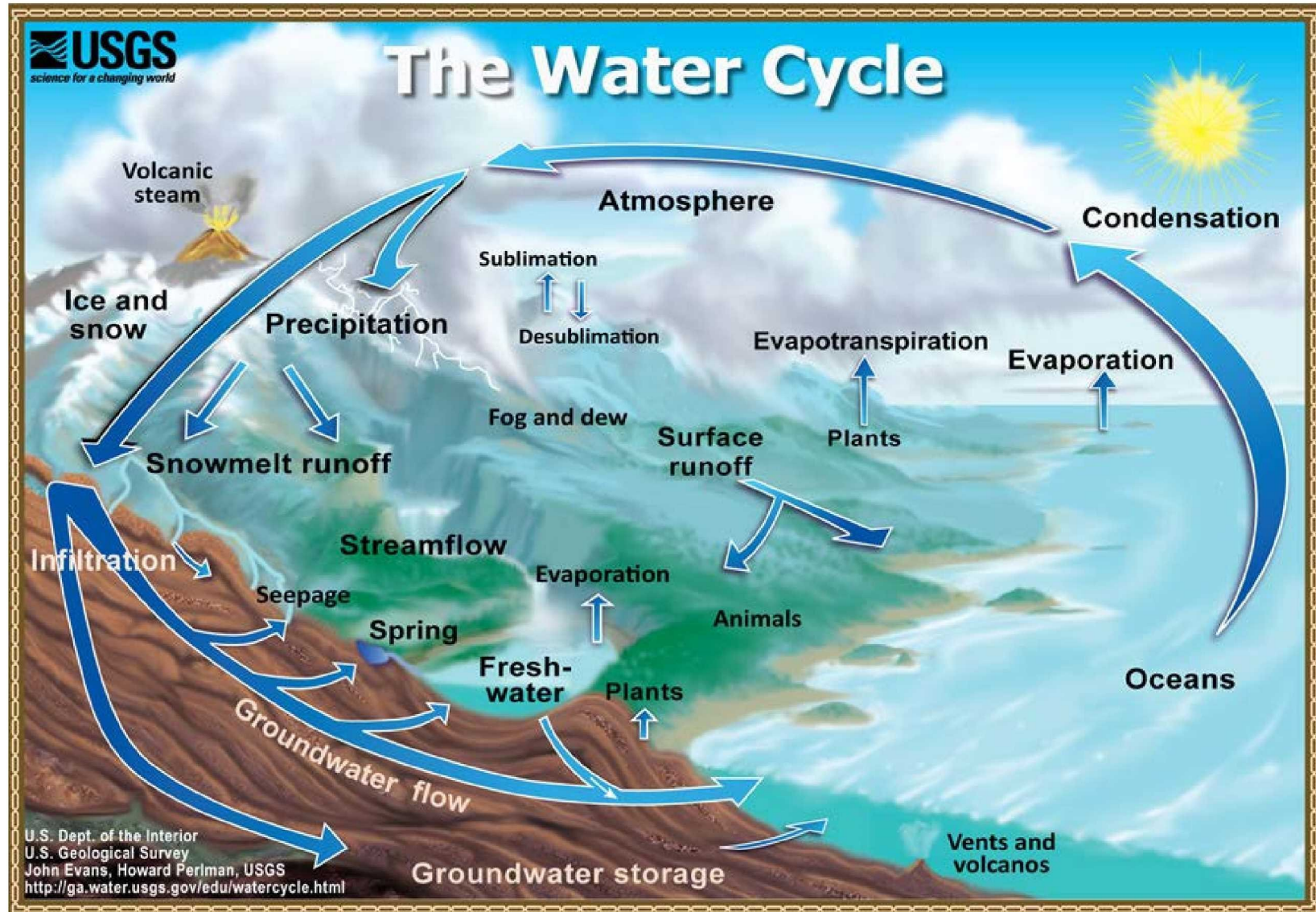


Important Water Facts

H₂O - polar molecule – universal solvent
essential for all forms of life
only 2.5% fresh
water cycle – use and re-use



we need to examine the
physical-chemical-biological
aspects of water, separately
and together

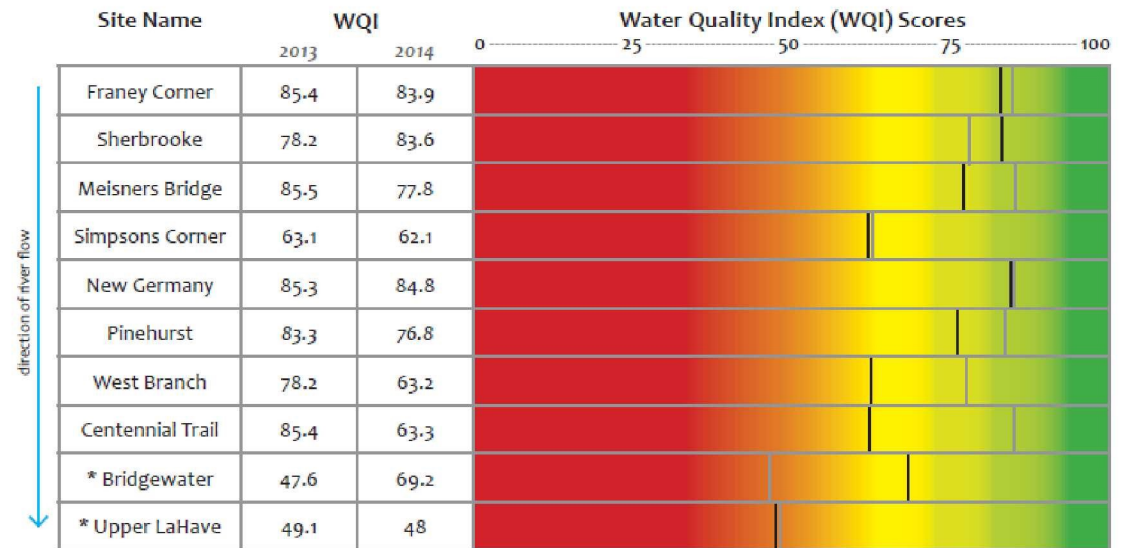
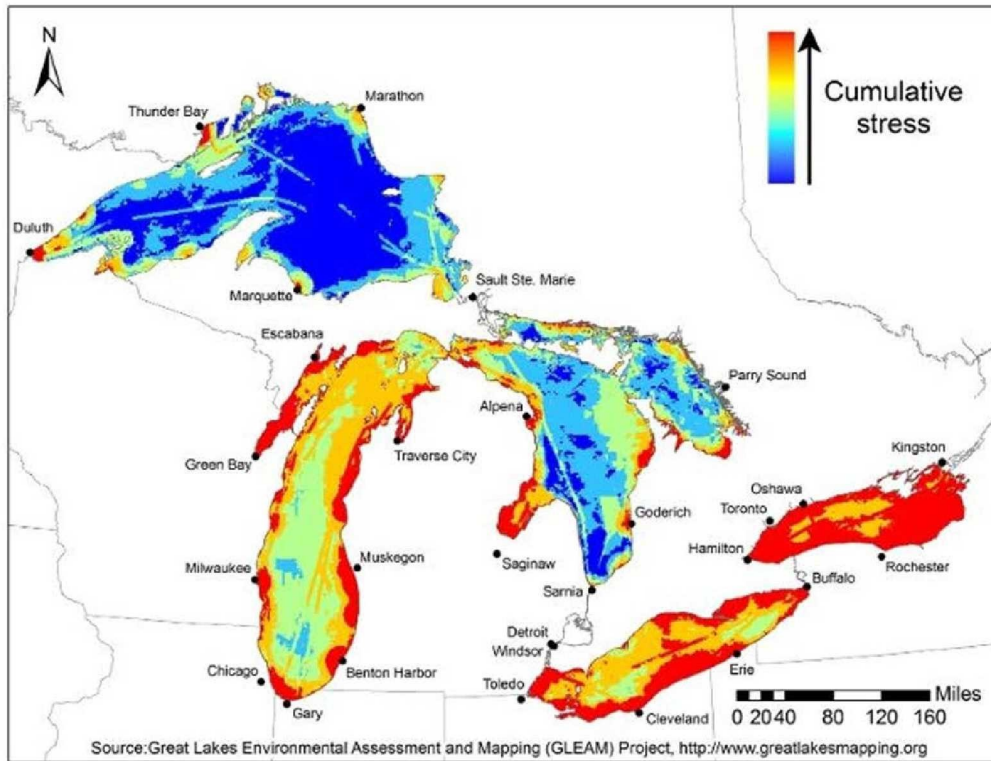


Fresh-Water Quality and Human Activity

Strong negative correlation – **people** ↑ **WQI** ↓

Best WQI in Arctic Canada and Siberia Worst WQI in China and India

Water-Quality Stressors include global warming, habitat destruction, shoreline development (cottages, marinas), agriculture, animal farms, pesticides, forestry, industrial pollution (chemicals, hydrocarbons), pharmaceuticals (e.g., estrogen, antibiotics), plastics, microbeads, faulty septic systems, atmospheric deposition (S, N, Hg), sedimentation, invasive species



Parameters Used to Calculate WQI:

- Total Nitrate
- Dissolved Oxygen
- pH
- Water Temperature
- Fecal Coliform
- Total Phosphorus
- Total Dissolved Solids
- Total Iron (estuarine sites only)

people ↑ **WQI** ↓ | = 2013 | = 2014

* estuarine sample site
+ Iron was only sampled once in 2014

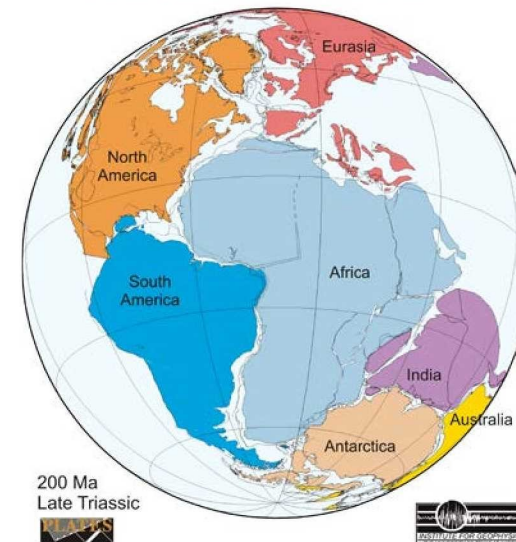
IN COMPLEX NATURAL SYSTEMS, IT IS RARELY POSSIBLE TO PREDICT, OR EVEN DETERMINE, WHAT SPECIFIC STRESSOR MAY BE RESPONSIBLE FOR ANY GIVEN DROP IN WQI

A Few Examples of (Human-Caused, Unidirectional) Invasive Species

	Unintended	Deliberate
Global	<i>Poa annua</i> (European grass in Antarctic)	rabbits and cane toads (Australia)
	<i>Cryphonectria parasitica</i> (American chestnut)	wolfsnail (Hawaii)
	<i>Boiga irregularis</i> (snake in Guam)	
	zebra mussels (North American lakes)	
Nova Scotia	<i>Geomyces destructans</i> (kills bats)	starlings
	green crab	<i>Fallopia japonica</i> (Japanese knotweed)
	purple loostrife	small-mouth bass
	<i>Haplosporidium nelson</i> (MSX, kills oysters)	chain pickerel

most invasive species of all time – *Homo sapiens*
 single-handedly responsible for the “NEW PANGEA”
 chief architect of “The Sixth Extinction” (Elizabeth Kolbert)

ORIGINAL PANGEA



Sherbrooke Lake – Physical

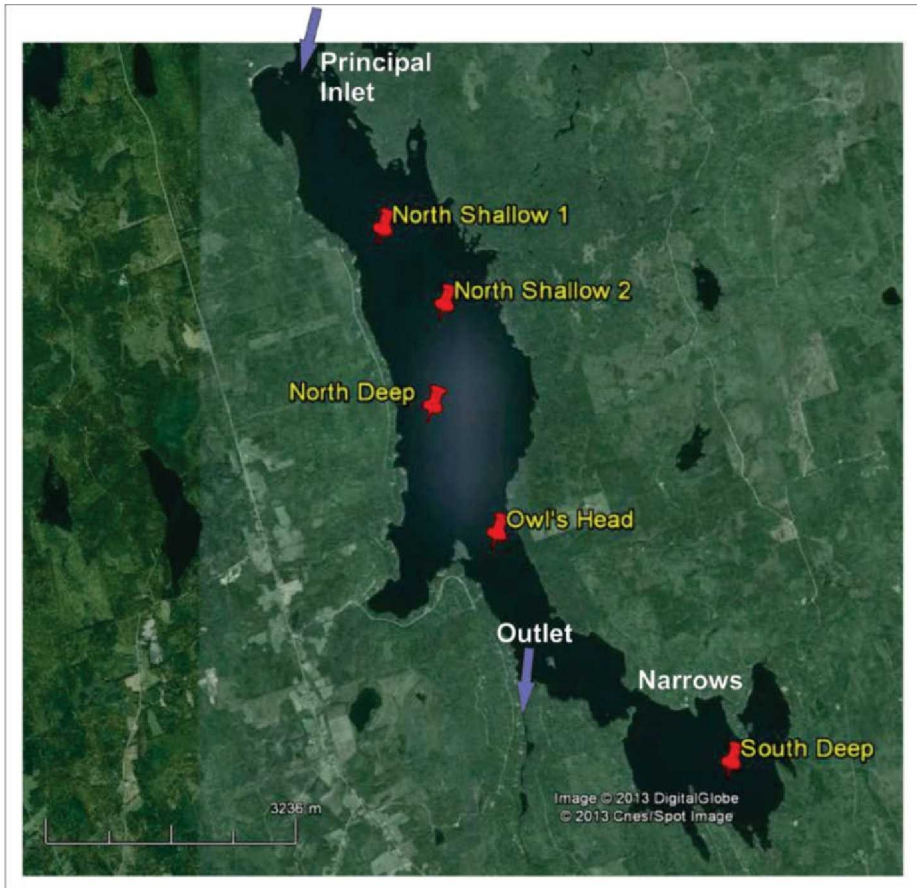
Temperature – must be increasing with global warming

Volume – 141,000,000 m³ (~47,000 Olympic swimming pools)

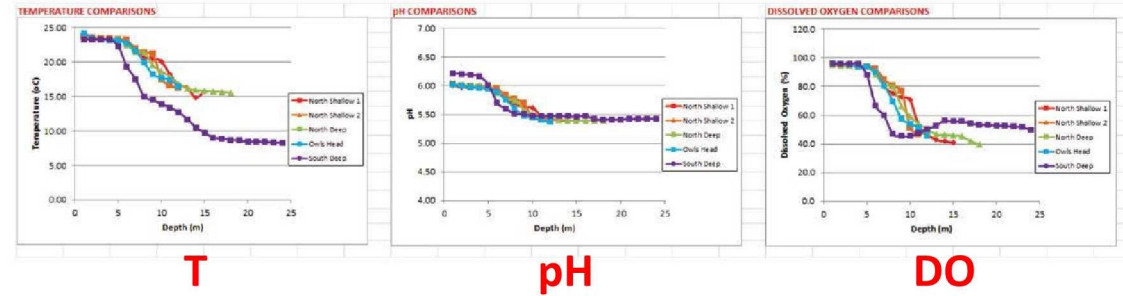
Mean Residence Time – about 6 months (but must be highly variable depending on location on the lake)

Stratification – in T, DO, pH – subject to mixing in high wind

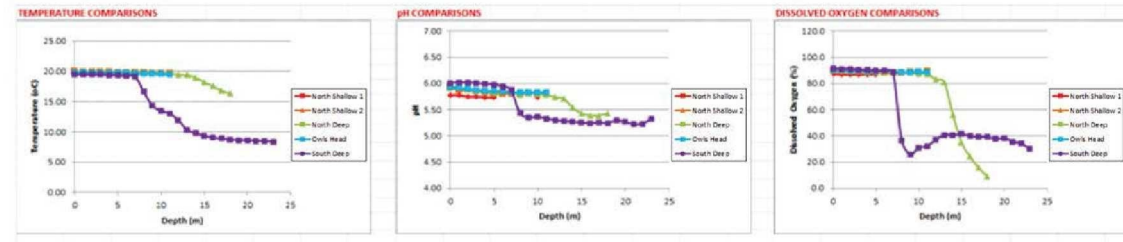
Circulation Patterns – little known, except that the southern end is almost a lake on its own



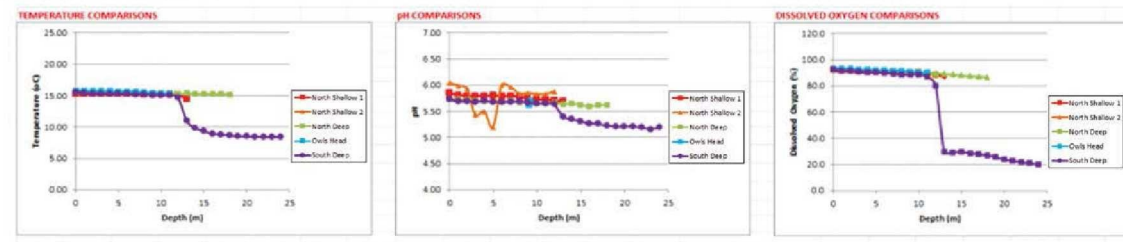
August 01, 2013



September 07, 2013



October 11, 2013



Sherbrooke Lake – Chemical

pH – generally low as a result of acid rain and poor buffering capacity of local geology

DO – surface waters normal, deep waters depleted

N & P – nutrient levels generally OK, but some spikes, and already accumulating in the lake

Many metals – acceptable CCME levels

Other metals – mercury, Al^{3+} complexes completely unknown

WQIs among highest in LaHave Watershed

$WQI_{out} \approx WQI_{in}$

	2010	2011	2012	2013	2014	Average
WQI_{in}	76	63	85	85	82	78
WQI_{out}	71	62	85	78	82	76
$N_{out} - N_{in}$ mg/L	-0.082	-0.073	-0.077	-0.117	NR	-0.087
$P_{out} - P_{in}$ mg/L	-0.002	-0.005	-0.007	-0.002	NR	-0.004

good news – cottagers are not causing a decrease in water quality in the lake

bad news – the lake is retaining/sequestering nutrients (may explain more algae)

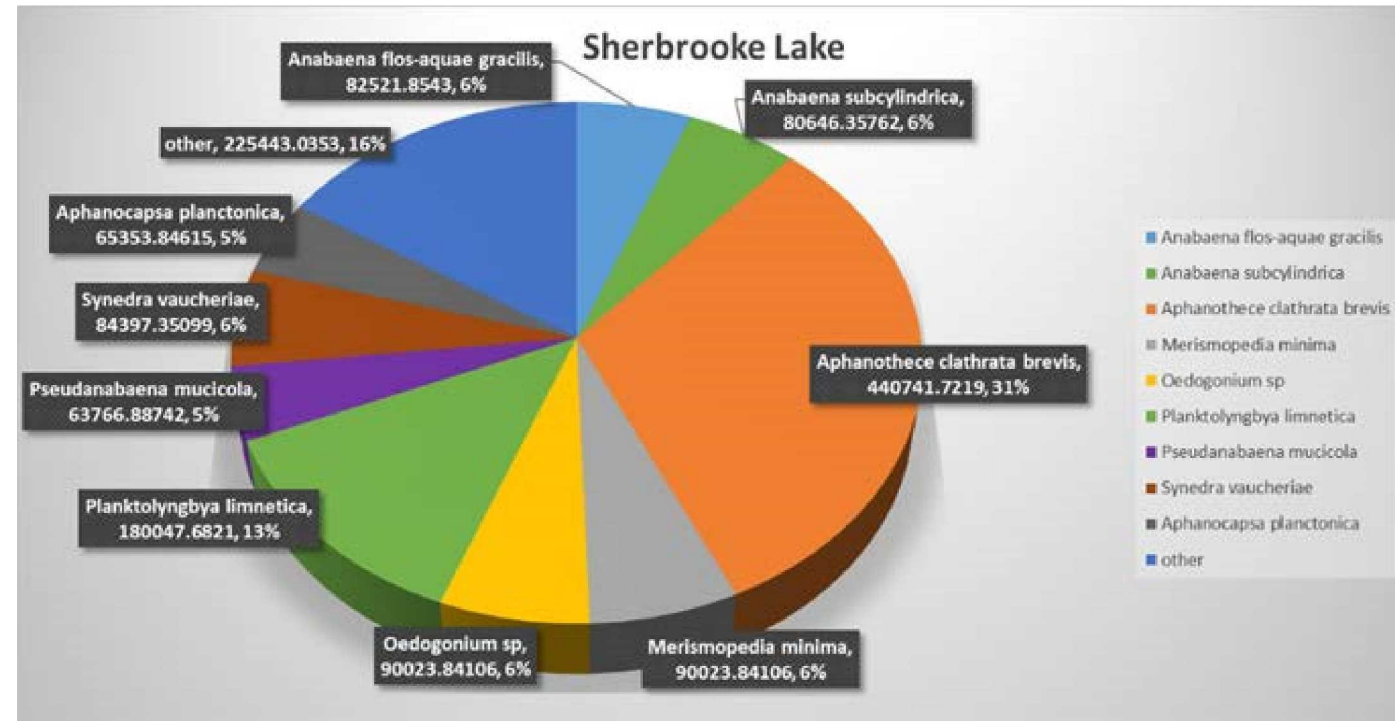
Sherbrooke Lake – Biological

Plants and animals living beside/on/in the lake are sensitive indicators of health of the lake

Fecal coliform bacteria – occasional spikes exceeding CCME limits

Macroscopic algae – appear to be on increase

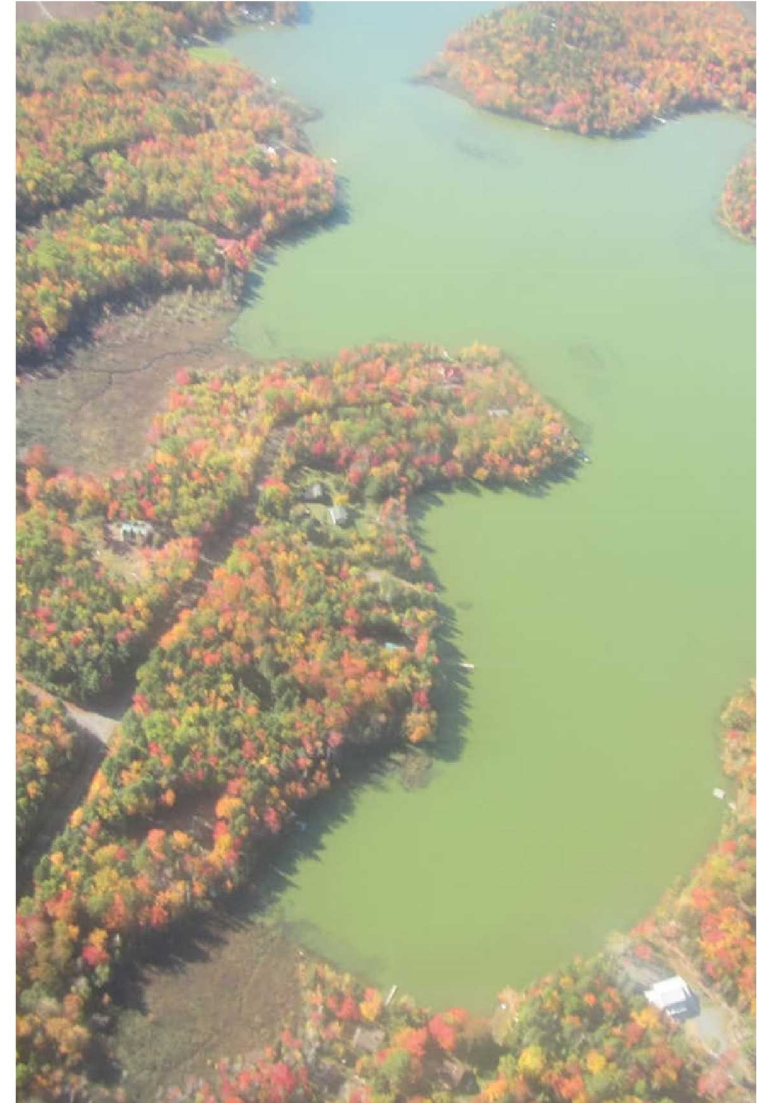
Microscopic algae – little known, except that cyanobacterial blooms are beginning
(no wish to duplicate the problem at nearby Lake Torment)



Experimental Lakes Area
NW Ontario



Mattattall Lake
Cumberland County



Signs of Stress in Sherbrooke Lake

Scientific Evidence (minimum 5 years to detect statistically significant trends)

DO decreasing – water T increasing? (global warming)

N-P nutrient sequestration – nutrient load increasing in the lake

Fecal coliforms – occasional exceedances of CCME guidelines

Anecdotal Evidence

Fish population decreasing in biodiversity – invasive species(?)

Amphibians (frogs) decreasing – invasive species(?)

Reptiles (snakes, turtles) decreasing – cause unknown

Loon chicks absent for years – mercury(?)

Macroscopic algae increasing – nutrient levels(?), temperature increases(?)

Microscopic algae (cyanobacteria) increasing – nutrient levels(?), temperature increases(?)

The historic population of animals and plants is a sensitive indicator of the health of a lake.

So many recent changes in the Sherbrooke Lake ecosystem suggest that it is under some stress.

The many question marks above need answers before permitting any additional stresses.

Recommendations

What we don't know about the physics, chemistry, and biology of Sherbrooke Lake is much more than what we do know. Human activity stresses entire ecosystems. If any party is going to propose more human activity on Sherbrooke Lake, that decision should be informed by solid scientific evidence and advice, involving the following steps:

1. forming a **Sherbrooke Lake Stewardship Committee**, with membership from each of the individual cottage associations and both municipalities (Lunenburg and Chester), to take care of the lake through a combination of research, education, communication, and remediation (if ever necessary)
2. maintaining the current **WQ monitoring** of inlet and outlet to Sherbrooke Lake
3. designing and funding a **new multi-year program of hydrological research**, specifically to understand flow regimes in the lake, and to examine the threat of macroscopic and microscopic algae in the lake
4. adopting a **long-term lake monitoring program**, as in King's County, for all major lakes in Lunenburg County
5. making an **informed decision about public access** to Sherbrooke Lake, and all other lakes in Lunenburg County, based on the capacity of those lakes to accommodate projected increases in human activity