Good afternoon everybody:

Happy Canada Day!

Life is starting to resemble the "old normal". Hair cuts, patios, and even some preliminary plans for some day camps are rolling again in the city. That said, the news from the U.S. is not as positive. Florida, Texas, and California are just some of the states that are having problems now. There is more and more discussion of a second wave coming and there are plenty of examples where people are not doing their part, not distancing, and not being responsible. We are collectively not out of the woods yet, but life is getting a wee bit more "normal".

We are all so very lucky and blessed to have our escape from reality at Bass Lake. However, it is vital that we continue to be responsible and obey the rules. We still need to isolate, we should wear masks in public settings, and we need to respect social distancing. I want to thank each of you for your patience and manners during this pandemic. I have seen neighbours checking in on each other, people supporting the local businesses and donating monies to the foodbank. Very simply, Bass Lake is being respectful.

Unfortunately, COVID is preventing us from hosting an AGM this year. Your executive agreed that the best solution was to distribute this email. We have prepared this link (click here) which will review all of the items that we would have addressed with you this year. We are discussing the following items and we strongly encourage you to review all of them:

- Membership - What the BLA Does With Your $75
- BLA 2020 Financials
- Report To BLA On Water Quality (please see attachment)
- Septic Systems - Understanding and Maintaining
- Boating Guidelines
- Renting the Cottage in General and During COVID
- 2020 BLA Activities

We trust that you find this to be informative and we are happy to address your questions or concerns.

I also want to thank your executive. The past year has been extraordinary but each executive has stepped up and you should be very thankful. At the end of last year, Bass Lake was impacted by the blue-green algae. We will discuss this further in our

newsletter, but your executive dedicated many hours over the past year to resolve the issue. We were then faced with COVID and we have been working hard to maintain our communication and services to you. Membership is crucial and we need everyone on the lake to join. Please help us by joining and making sure your neighbours have joined. If everyone could do this, it would be greatly appreciated. As you know, you can join the Bass Lake Association by visiting our home page.

These are unprecedented times and unfortunately, it is not over yet. Whether you are a permanent resident on Bass Lake or a seasonal one, we all need to remain sensible, courteous and kind to each other.

Thank you,

Jeff MacDonald
President
Bass Lake Association

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BLA Membership

The Bass Lake Association has been operating for over 45 years. Since it's founding, the main objective of the Association was to oversee issues and protect our beautiful Bass Lake.

Of utmost importance is the monitoring/testing of the water quality in Bass Lake. In the recent past, we have been partnering with the MLA (Muskoka Lakes Association), which oversees water quality testing on many of the lakes in the District of Muskoka and provides yearly reports of water quality for all of the lakes. This year, due to Covid 19, this program has been suspended by the MLA. Due to the water quality issues from last fall, Chris Turney and Chris Bodanis have already collected samples (on the May 24 weekend) and will continue with our own water quality program for this year. All members will be kept informed of results as the season goes on.

As part of the water monitoring, the association has to monitor and arrange for yearly beaver relocations. Beaver dams are a very regular occurrence at both ends of Bass Lake where an upstream lake flows into Bass Lake and then again at the north end of the lake where it exits into Lake Joe.

The BLA is a member of the Federation of Cottagers Association (F.O.C.A.) As we all know, a united voice carries a greater weight on issues that matter. This larger association

provides to its members important information on “hot topics,” and provides valuable resources and guidelines for:

- Political Issues – what is happening in Ontario, the District and the Township of Muskoka Lakes.
- Safety Risk and Management such as, water quality/quantity issues and boating safety.
- Waterfront Living Issues such as waterfront etiquette for renters, visitors and residents.
- Environmental Concerns such as invasive species and climate change.
- Lowering Insurance Rates for the BLA

An advantage of belonging to the Bass Lake Association is the ability of the Association to quickly and efficiently communicate to keep everyone informed of urgent happenings on Bass Lake such as water quality issues, missing children or pets (our own amber alert system), and even not so urgent happenings such as lost and found postings. We even post contacts for “what to do or who to call”.

The Association helps keep everyone safe by purchasing and maintaining the navigational buoys but the most fun and rewarding thing the Bass Lake Association has always done is to bring everyone together and be part of a “community”. The BLA is always looking for ways to include everyone in some fun by providing fun lake events such as the yearly poker run, lights out event, Canada Day dock decorating and the end of summer Parade of Lights.

For the $75 yearly membership fee, you are really getting a good deal and more importantly, you are keeping Bass Safe and the best it can be. We hope you will keep being a member and that you will encourage your neighbors to become a member of our association and the wonderful community it is.

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BLA Financials

See summary table over the page…

Bass Lake Association
July 1, 2019 to July 1, 2020

Receipts		
	Dues	$6,995.00
	Poker Run (collected from Poker Run)	$240.00
	MacTier Food Bank Donations	$875.00
	Total	**$8,110.00**
	Dues for 2019/20 (incl. in total)	$3,600.00
Debits		
	Insurance 2019	$1,152.36
	F.O.C.A.	$359.50
	Beaver Relocation	$2,020.08
	($405 from 2018/19 work)	
	Water Quality Testing	$528.00*
	Bank Charges	$4.95
	Donations – Kelly Shires	$240.00
	Donations – MacTier Food Bank	$850.00
	Poker Run Expenses	$357.07
	Total	**$5,11.96**
Balance Chequing Account		**$12,510.01**
Balance Savings Account (incl $8.87 interest)		**$8,854.87**
Total		**$21,364.88**

*Pending Debits (cheques not cashed as of June 28, 2020 and not included in above totals)

1. water testing $227.13
2. food bank - $25.00

Items of Interest:

Insurance costs stayed the same.
FOCA membership less due to fewer members signed up as of Jan. 1, 2020
Beaver Relocation Up – due to water quality concerns
Bank Charges no longer an issue – stopped charging us last August
Water Testing charges down slightly - MLA directed
Dues up but may be due to paying before July 1st this year – need to keep on increasing with our water issues

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Water Quality Report

See separate file appended to the end of this document… Will appear as Page 14 of the finished PDF file.

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Septic Systems - Understanding & Maintaining

It is always necessary, but the occurrence of the Blue Green Algae has emphasized the extreme importance for everyone to review the best practices for maintaining our septic systems. Please refer to the BLA Water Quality report in the previous section.

When not performing properly, these systems release phosphorous which is the main nutrient loading for the Blue Green Algae. It is the responsibility of each property owner to maintain and monitor the functioning of their system. These systems are not like a municipal sewage system which is maintained by the municipal government. These systems are designed to handle waste from showers/tubs, laundry, dishwashing and human waste. The size of the tank and leaching bed is based on the expected number of people using the bed on a regular basis. Issues occur when repeated overloading of the system happens (when too many people are using the system), and when major repairs are required due to poor maintenance and age of the system.

To Keep Your System Working Properly:

- Use detergents, cleaners and soaps that are phosphate free and septic system safe to avoid harming the septic system and degrading water quality. Dangerous chemicals (this includes things like bleach) can kill the bacteria in the system that breaks down the waste.
- Ensure that the number of cottage occupants does not exceed the capacity of the septic system,
- Reduce water usage by limiting the number of showers, loads of laundry, and dishes to avoid harming the septic system and degrading water quality.
- Maintain the leaching bed by keeping it free from tree and shrub roots which will clog the tiles in the leaching bed, causing the tank to back up and overflow.
- Check the septic tank annually to ensure no blockage of the baffles, no roots have creeped in and that it is working properly.
- Pump out the septic tank every few years to remove the solid waste that builds up in the system. A good rule of thumb is “when in doubt, pump it out!”
- Any systems over 20 years old will be most at risk and should be inspected.
- The Township of Muskoka Lakes will be doing a Septic System Survey and inspection for Bass Lake, hopefully, later this summer or fall. This will help us identify areas that could have been contributing to our algae issues. If you are unsure if your system is working properly, please let us know at the BLA executive and we will try to place you higher up on the list of inspections and/or link you up with qualified contractors. Major repairs must be done by a licensed contractor. Also, a good rule of thumb is “when in doubt, pump it out!”

Please check out the links below to help you understand and maintain your septic system. It is critical to keep our water clean and safe for all of our uses and enjoyment.

- https://foca.on.ca/septic-systems
- https://www.youtube.com/watch?v=5VeTGVnkYA4
- http://foca.on.ca/wp-content/uploads/2014/02/septic_101___denis_orendt__oowa.pdf

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Boating Guidelines

- Ensure that all boat operators have the necessary Pleasure Craft Operators Card.
- Understand local water hazards or other dangerous conditions.
- Ensure that wakes are appropriate to the distance from shore and speeds are reduced in narrow areas to produce no wake. Wakes can accelerate damage and erosion to fragile shorelines and bird nesting areas.
- It is illegal to operate at greater than an unposted speed limit of 10 km/h (6 mph) within 30 metres (100 feet) of the shoreline.

- Follow all applicable boating regulations, particularly those restricting speed close to shorelines. Boaters must keep at least 30 metres (100 feet) away from the shoreline when moving at speed and reduce speed to dead slow near docks and swimming areas.
- While waterskiing or towing, the towing boat may reach towing speeds but only if taking off with or dropping a skier by heading directly away from or into the shore at a 90° angle.
- Ensure the safety of swimmers and other boaters, particularly when water skiing and tubing.
- High speed, high powered and excessively noisy boats are strongly discouraged.
- Ensure that floating water toys and swim rafts do not impair boating safety.
- Avoid fishing close to neighbouring docks and swimming areas.
- Personal Watercraft Operators - please respect the speed and distancing rules but also try to be considerate of others on the water. If you need to practice your hours of endless turning and jumping of wakes, please try to take it away from others trying to enjoy the quiet of the shoreline, dock areas and from other boats.
- Wake jumping or following of any boat that is towing someone is extremely dangerous and will not be tolerated!!!!

The BLA has purchased and installed navigational markers for everyone's safety, please refrain from mooring to them or hitting them with boats or tubers.

The white buoys mark rocks and shoals and "AT THE RED AND GREEN, GO BETWEEN!"

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RENTING the COTTAGE - in General

As the number of cottages rented out continues to increase, so to does the possibility for conflict.

Renters sometimes have different expectations and understandings of what a weekend - or a week - at the cottage means.

If you are renting our your cottage, you have certain legal obligations under the Occupier's Liability Act… particularly that you are providing an environment where your renters are 'reasonably safe' while they are in residence.

But please also consider that you have 'community obligations' to the larger Bass Lake Cottager's Community as well.

Attached to this e-mail please find copies of two important documents courtesy of your Bass Lake Association:

- The **Bass Lake Code of Conduct**
- Set of community expectations and agreements that have been arrived at over the years as a cottage community
- Two page document that can easily be printed out and left in an information binder or posted in a visible location - like the front of the fridge!

- The **Bass Lake Cottage Guide**
- An information pamphlet
- The pamphlet contains much of the information from the cottage guide as well as additional information about emergency services
- Again, can be left for your renters

RENTING the COTTAGE - in the time of COVID

The Township of Muskoka Lakes (TML) - and Muskoka more generally - has been very fortunate to date, having experienced almost no COVID-19 cases. The Township of Georgian Bay (TGB) - where Mactier is located - has had zero cases of COVID -19.

TML had 3 cases of COVID early on - two of which were related to returning travellers - and all of which cleared by the beginning of April.

- Track local cases at the Simcoe Muskoka District Health Unit Website
- http://www.simcoemuskokahealthstats.org/topics/infectious-diseases/a-h/covid-19

In the last week - June 19 to June 25 - since things have really opened up in Ontario, TML has already had 3 new cases confirmed… after having had no cases for two months.

COVID-19 is ready to find its footing in Muskoka. It is incumbent upon all of us to do everything we can to prevent that from happening.

All cottagers, and especially renters, should be aware of, and following, any and all of the public health recommendations while at Bass Lake.

- Most important of all is to maintain impeccable hand washing practices, and to maintain social and physical distancing.
- Most retailers in Muskoka are asking that you wear a mask when entering their premises.
- Many retailers continue to offer curbside pick-up and take-out options… Call ahead before you venture out.

- Everyone… please, if you are only here for a few days, minimise your outings into the wider community.

TESTING for COVID-19 in Muskoka

If you think that you might have come in contact with someone who has COVID-19 or are showing any troubling symptoms… please note the following:

- The COVID-19 assessment centres in Muskoka are not open for walk-in visits, they are by appointment only.
- You may book an appointment by calling the assessment centre 1-888-383-7009.
- If you call the assessment centres to book an appointment, you are strongly encouraged to follow-up with your Doctor or Nurse Practitioner.

- **Assessment Centre Locations:**
    - Huntsville District Memorial Hospital, Building B, 100 Frank Miller Dr., Huntsville, ON P1H 1H7
    - Rotary Centre for Youth Bracebridge, 131 Wellington St., Bracebridge, ON P1L 1E2
    - Hours: Phones are answered Monday to Friday 9:00 a.m. to 5:00 p.m.

If you think you need to get tested over a weekend… there is a drive thru assessment centre in Orillia.

- **Location**: OSMH, Kiwanis Building, 170 Colborne Street West, Orillia, ON (Volunteer Drive Entrance). The drive thru clinic can be accessed from the Volunteer Drive entrance. Volunteer Drive has temporarily been designated a one way street and the public are asked to enter from Mississauga Street.

- **Hours**
    - Monday to Friday 11:00 a.m. - 7:00 p.m. (The last patient will be seen at 6:30 p.m.).
    - Saturday and Sunday 11:00 a.m. - 3:00 p.m.

- **Process**:
    - You will be assessed by a nurse from your vehicle to determine next steps. Walk up patients will be asked to wait outside in line until they are assessed by a nurse. Please make sure you are 2 metres apart from others in line.
    - The nurse will make a clinical determination if a test is required.
    - If a test is required, the patient will go inside the Kiwanis building to be swabbed and the sample sent for processing.
    - While awaiting results, patients will be given instructions on how to self-isolate at home.
    - For the safety of staff and patients – you will be asked to stay in your car until you are screened and receive further instructions.

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2020 Activities

Bass Lake Association Photo Contest Summer 2020

Eligibility

- Open to all Bass Lake cottagers and family members
- Photos must be original.
- Photos must be taken during the 2020 calendar year.
- Photos must not have been submitted for entry, or have been cited or won, any other photo contest.
- Photographers retain ownership over their photographs.
- Photographers must ensure that they have any and all necessary permissions from any third parties (people or property) that might appear in the submitted photographs.
- Photographers agree to allow the Bass Lake Association to use their photos for purposes related to the activities of the association.

The Categories

- Children and Youth
- Adult
- Wildlife
- Action
- Landscapes and Nature

The Photos

1. Technical requirements

- Take a photo with any device
- JPG files only
- No watermarks
- No cropping
- No filters applied

2. Important reminders

- If you're using a mobile device, ensure your camera is set to the highest resolution possible. (This is the default setting unless you've changed it)
- Avoid adding filters on photo editing apps. These filters can compromise the quality of the photo
- Cropping images taken on mobile devices can also compromise the quality of the photo

How To Submit Your Entry

1. Upload your photos to the all new Bass Lake Association Instagram account: https://www.instagram.com/basslakeweb

Judging

1. The jurors

- Members of the Bass Lake Cottager's Association will be invited to apply to be juror's for the contest
- Watch for a link to the application form in an upcoming Bass Lake Update.

2. Announcing the Shortlist

- The juror's will announce their shortlist of photos approx. one week after the contest closes.
- The final announcement of the winning photos will be made via the Bass Lake Association website at or near the end of September.
- Winners will also be announced via the regular Bass Lake Update e-mail blast.

The Winners

1. The winner in each category will receive a gift certificate to a local retailer or restaurant… and bragging rights.

BLA Golf

If anyone is interested in playing golf over the summer, Brian McConnell has volunteered to coordinate. If there is enough interest, we could even organize a golf league. If you are interested, please click here to be connected to Brian.

Parade of Lights

Everybody on the lake is invited to decorate their boat with christmas lights, glow sticks, or whatever you want.

Date: Saturday, September 5th, 2019 (If it rains, we will do it the following day)

Time: Approximately 8:30pm

Location: Out in the big bay

Report to BLA on Water Quality

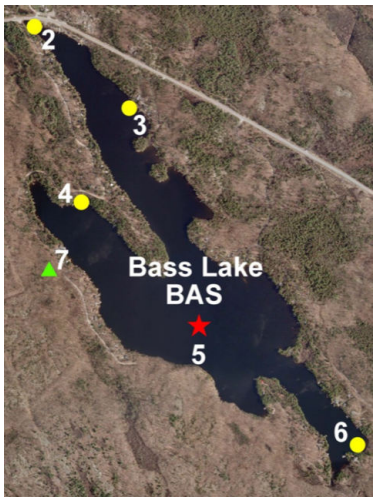
There are two parts to this report. The first is on the water quality of the lake as measured by total phosphorous and secchi depth. This year, the Muskoka Lakes Association suspended their lake monitoring program because of Covid-19. All of the water quality sampling, analysis and interpretation for this year was undertaken by the Bass Lake Association directors. The second part is on the cyanobacteria bloom observed in October/November 2019. The management of information and reporting of the bloom involved considerable effort by the Bass Lake Association directors.

This report is for BLA members information and use only and contains information that has been taken from Muskoka Lakes Association (MLA) reports for previous years as well as from government and other sources. The information is believed to be accurate but has not been independently verified by the BLA Executive and is provided without any liability.

Total Phosphorus and Secchi Depth Measurements

Description:
Bass Lake is a small, shallow, moderately developed lake with an area of 0.96 km^2 in a watershed area of approximately 6.92 km^2. It has a maximum depth of approximately 10 m. Flow from the lake through the culvert under Hwy 169, is controlled by a natural rock weir close to Lake Joseph. During the summer and early fall the water level for Bass Lake is typically below the top of the rock weir resulting in no flow from the lake and the water at the north end and in the outflow channel being stagnant. The duration of this stagnant flow period can be controlled or minimized by placing sandbags on the rock weir. In the past, Ben Roberts has taken care of this responsibility on behalf of the BLA. Ben now advises the BLA on this activity. Bass Lake was formerly classified as moderately sensitive by the District Municipality of Muskoka (DMM). Monitoring with the Muskoka Lakes Association program started in 2005. All stations shown in the lake map were not sampled each year. The sampling includes Total Phosphorus nutrient and Secchi disk measurements. The DMM description and importance of these measurements is described at the end of this section.

Water Sample Collection Team: Chris Bodanis, Chris Turney, and Bev Turney.



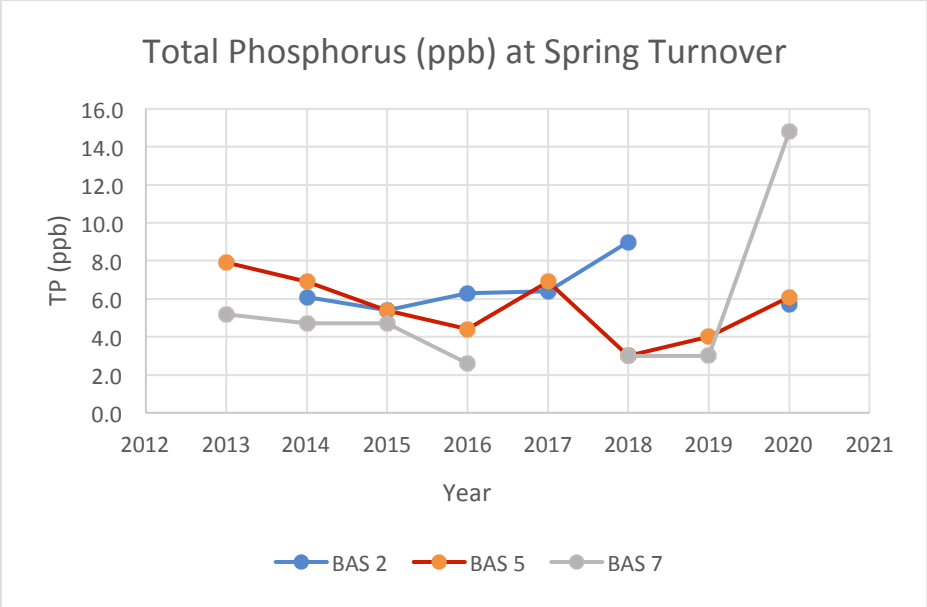
Location of Sample Points

	BAS 2	BAS 5	BAS 7
2013		7.9	5.2
2014	6.1	6.9	4.7
2015	5.4	5.4	4.7
2016	6.3	4.4	2.6
2017	6.4	6.9	
2018	9.0	3.0	3.0
2019		4.0	3.0
2020	5.7	6.1	14.8*

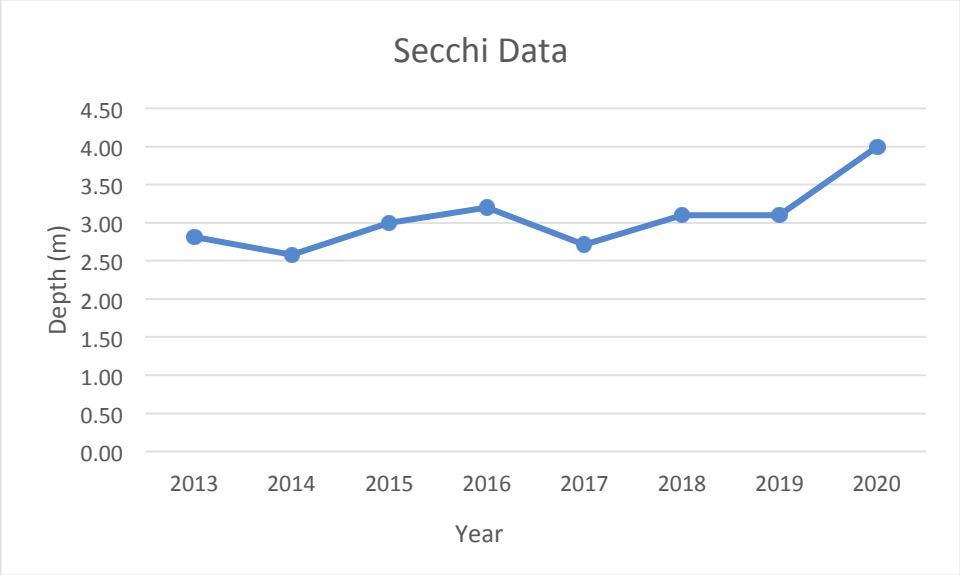
Measured Total Phosphorus (ppb) at Spring Turnover – May

TP Sampling at Other Locations in 2020: BAS 4 6.5 ppb; BAS 6 25.5* ppb

*** Resampling recommended as concentrations appear to be outliers based on historic data. The higher reading at BAS 7 was probably due to concentrations of plant life and debris in the sample.**



Change in TP with Time at BAS 2, BAS 5 and BAS 7



Yearly Change in Secchi Depth

Interpretation of Water Quality Data:

- **The Total Phosphorus in Bass Lake at Bas 5 is typical of that measured in most small lakes in Muskoka**
- **Based on long term Total Phosphorus results, Bass Lake is oligotrophic. The District of Muskoka, based on their 2017 assessment, considers the lake to have moderate sensitivity**

From the District of Muskoka Lake System Health Water Quality Monitoring Program:

1. **Spring phosphorus** Phosphorus is the nutrient that controls the growth of algae in most Ontario lakes. For this reason, any increase in phosphorus in a lake will tend to increase the quantity of algae that can grow. High levels of phosphorus can lead to algal blooms that detract from recreational water quality and in some cases affects the habitat of coldwater fish species such as lake trout. A sensitivity rating is given to each lake in Muskoka based on the lake's responsiveness to phosphorus inputs and the mobility of phosphorus within the lake's watershed. A lake can have either a low, moderate or high sensitivity to phosphorus. Phosphorus samples are collected in the spring during a period called "spring turnover". This is the best time to sample for phosphorus because the lake is completely mixed and a water sample represents the phosphorus concentration throughout the whole lake. By sampling spring phosphorus each year it is possible to detect a change in the nutrient status of a lake. Several years of data must be collected to first observe the normal and between-year differences, before a trend can be identified. Phosphorus enters a lake naturally through sediment and precipitation. Human inputs of phosphorus enter a lake primarily through surface runoff from sources such as septic system seepage, lawn fertilizer runoff,

agricultural runoff and municipal wastewater. Lakes with phosphorus concentrations below 10 micrograms per litre (μg/L) are considered oligotrophic or nutrient-poor. Those with a phosphorus concentration falling between 11 and 20 μg/L are termed mesotrophic or moderately enriched, while lakes with a phosphorus concentration exceeding 20 μg/L are called eutrophic and are considered enriched. Each lake has a threshold concentration, which is equal to the background level of phosphorus plus an additional 50%. If a lake's measured and modelled (value calculated using a water quality model) phosphorus concentrations over a 10-year period are greater than its threshold value, then the lake is considered "over threshold" and more restrictive development policy will apply. Associations will also be encouraged to develop remedial action plans for their lake. A complete list of lakes classified as Over Threshold is available in Appendix K of the Muskoka Official Plan. A review of the Recreational Water Quality Model has been completed. This review addressed recent changes in the existing provincial approach and the related scientific background to the model since its last update was completed in 2005. The results of the review have led to proposed changes to planning policy. Learn more about these proposed changes at http://www.muskoka.on.ca/en/work-and-invest/Water-QualityModel-and-Policy-Review.aspx. 2017 Lake System Health Water Quality Monitoring Program Data Report 8

2. **Secchi depth measurements** Secchi depth is a measurement of water clarity. In Muskoka, the major determinant of water clarity may be either natural colour or an increase in nutrient input from the surrounding watershed. A lake may naturally be a brown colour due to high levels of dissolved organic carbon (DOC) that comes from the wetlands in a watershed. DOC colours lakes brown and reduces water clarity, but is not an indication of nutrient enrichment. Examples of lakes with naturally high DOC content include Brandy Lake and Tea Lake. Water clarity can also decrease as nutrients from the surrounding watershed enter and enrich the lake, resulting in high levels of suspended sediments or algal growth. Water clarity can change weekly or yearly as a result of weather, length of winter ice cover, shoreline development, natural seasonal trends or other impacts. However, when the primary determinant of water clarity is a function of nutrient enrichment, a long-term trend that indicates a reduction in water clarity is an indication of reduced water quality. In general, where a lake is not coloured by DOC, the higher the Secchi depth reading, the clearer the lake and the less nutrients it contains. Lakes with Secchi depth measurements over five metres are considered oligotrophic or nutrient-poor. Those with a Secchi depth measurement falling between three and five metres are termed mesotrophic or moderately enriched, while lakes with a Secchi depth measurement below three metres are called eutrophic and are considered enriched.

Cyanobacteria (Blue-Green Algae)

In October 2019, Blue-Green Algae was observed in the outflow channel between Bass Lake and Stills Bay in Lake Joseph. Specifically, the bloom was between the Culvert under Hwy 169 and a beaver dam under the old bridge just north of the culvert. The observation was reported to the Simcoe Muskoka District Health Unit (SMDHU). They asked Kim Pietz of the Barrie District Office of the Ministry of the

Environment, Conservation and Parks (MECP) to confirm that the observation was cyanobacteria. Kim collected two water samples from Bass Lake on October 21, 2019 and her report was as follows:

1. **Sample site just off Hwy 169:** Analysis of the sample was indicative of a bloom of blue-green algae (specifically: Anabaena (aka Dolichospermum)). Observations included particles that were not identified as algae: debris, Protozoa, zooplankton.

2. **Sample site on Kendon Road:** Small amounts of the following types of algae were observed in the sample, at levelsconsidered too low to contribute to a bloom: blue-green algae (specifically filamentous blue-green algae, Aphanocapsa, Anabaena (aka Dolichospermum)) diatoms (specifically Asterionella, Tabellaria, Navicula) golden-brown algae (specifically Synura, Chrysosphaerella, Dinobryon) green algae (specifically Scenedesmus). Observations included particles that were not identified as algae: Protozoa, debris, pine pollen.

Based on this report, The SMDHU issued a cyanobacteria advisory notice for Bass Lake on October 24, 2019. The BLA directors then immediately went into action and investigated the cyanobacteria problem contacting the MECP, the SMDHU and the Township of Muskoka Lakes. In two rounds of water sampling of Bass Lake by the MECP in October/November 2019, there was no evidence of Microcystin LR, the toxin of concern in cyanobacteria, above the drinking water standard or maximum acceptable concentration (mac) of 1.5 ppb. Most measurements were below the detection limit of equipment. As a result, the SMDHU lifted their advisory for Bass Lake on November 28, 2019. The details of the observed cyanobacteria are presented in the following question/answer format.

What conditions in a lake are associated with cyanobacteria blooms?

Cyanobacteria flourishes in shallow, stagnant water and requires the nutrients phosphorus and nitrogen for their growth. Phosphorus occurs naturally in Bass Lake with the source being plant matter, sediments and septic system effluent. In most of our lakes the nitrogen is often in the form of nitrates with the source being septic systems. Nitrification and denitrification are important processes that occur in the septic system tile bed and result in the change of ammonia in waste to nitrogen. Nitrification is an aerobic process that changes ammonia to nitrate while the denitrification is anaerobic with bacteria reducing the nitrates to nitrogen gas. From the literature: “Nitrogen removal rates for conventional septic tank systems may vary from 0% to 35%”. Hence much of the nitrate will migrate to the lake unattenuated. This is particularly true in our shield setting where the overburden is relatively permeable as is the underlying weathered rock zone; transit times to the lake are relatively quick. Worsening the problem is that some of the septic systems on our lake are undersized or are too close to surface discharge points. The denitrification process where nitrates are reduced to nitrogen in the septic system tile beds does not occur before the nitrates make it to the lake. How do cyanobacteria react to the levels of nitrogen and phosphorus in the water? When there is a deficiency of nitrogen in water relative to the level of phosphorus, cyanobacteria have the ability to produce microcystin to “store” nitrogen. The toxic microcystin is only released when the cyanobacteria die. Research in Canada indicates that the formation of the toxin microcystin by cyanobacteria requires an N:P ratio less than 20 with 95% of instances with microcystin above 1 ppb (the drinking water standard) having P > 26 ppb (eutrophication level) and N > 658. Bass Lake’s last P measurement by DMM was 5.5 ppb while N was about 261 ppb yielding an N:P of slightly more

than 40. Typically then, the production of microcystin LR by cyanobacteria occurs in eutrophic lakes and ponds and not the lakes of Muskoka where the nitrogen and phosphorus levels at times are sufficient for the flourishing of the bacteria but not at levels where they need to produce microcystin. Note that the SMDHU advisories are based on the observation of cyanobacteria. The water sampling that follows the observation is to determine whether the cells are producing the toxic microcystin.

Where was the location of the cyanobacteria bloom that triggered the drinking water warning by Simcoe Muskoka District Health?

The cyanobacteria bloom was on the northeast side of Hwy 169 in the outflow channel from Bass Lake to Stills Bay; flow from Bass Lake to the channel is through a recently upgraded culvert under Hwy 169. The cyanobacteria were trapped behind a beaver dam under the old bridge. The beaver dam was cleared soon after the SMDH notice. Normal Fall flow from Bass Lake then flushed the cyanobacteria from the channel with the result that it was transported to Stills Bay, quickly clearing the channel. Any microcystin LR that might be released by the cyanobacteria would impact Stills Bay and not Bass Lake. The cyanobacteria from this bloom would have absolutely no impact on Bass Lake. The possibility of a reoccurrence of a bloom in the channel in following years can be reduced by the following:

- ensuring that flow is not interrupted by a beaver dam;
- as much as possible regulate the flow in the channel by reducing the Spring outflow by placing sand bags on the natural rock weir at Stills Falls; stored water can be slowly released throughout the Summer and early Fall providing a flushing of the channel;
- ensure that nitrate release is minimized from septic system tile beds

Was cyanobacteria observed at any locations in Bass Lake?

Yes. After SMDH issued their cyanobacteria notice for the north end of Bass Lake in late October, following good lake stewardship, a complete and thorough inspection of the lakes shoreline was completed with the lead being Enid Wray; very small concentrations of cyanobacteria were observed in several shore areas with stagnant water. The area of these blooms were less than several square meters. Cyanobacteria occurs naturally in water bodies from the equator to the poles. It is thought to be responsible for the first generation of atmospheric oxygen more than 2.5 billion years ago. Without question, if the shoreline of <u>all</u> lakes in Muskoka were inspected in the same manner that Bass Lake was, cyanobacteria blooms would be discovered in some shore areas of <u>every</u> lake. Exceptional lake stewardship such as that exercised on Bass Lake is our practice. However, careful assessment of the risk of any identified water quality deficiency is required. Characterizations based on either no or minimal data are not appropriate.

What is the risk associated with a cyanobacteria bloom?

Not all cyanobacteria are associated with a negative health end point. Some cultures have used it as a protein source. However, cyanobacteria have the ability to produce microcystin which is associated with some cancers. The microcystin is bound in the cyanobacteria and is only released to the aquatic environment when the cells burst and die. The half-life for the microcystin in water is approximately 10 weeks. The maximum acceptable concentration (mac) of microcystin LR in drinking water is 1.5 ppb (parts per billion). This limit is usually associated with the probability of 1 excess cancer in a million people having lifetime consumption. The mac for microcystin in water used for recreation is 20 ppb. Whether cyanobacteria produce the toxin microcystin and the conditions for its production is the subject of much research. However, research investigating a large data base for cyanobacteria and microcystin concentrations in Canadian surface waters indicates that microcystin levels above 1.5 ppb are more commonly found in lakes/ponds fed by agricultural fertilizers such as phosphates and nitrogen. Levels of microcystin above the drinking water mac were rarely, if ever, measured in non-agricultural areas such as the Canadian Shield. Beyond the data base of the citable Canadian study, contacts at the SMDH and Ontario Ministry of Environment Conservation and Parks (MECP) have indicated that to date they have not measured microcystin LR levels above the drinking water standard of 1.5 ppb in the lakes of Muskoka even though cyanobacteria blooms have been observed; commonly the levels of microcystin were below the instrument detection limit of 0.1 ppb. In addition, no concentrations of Microcystin LR at or greater than the recreational standard of 20 ppb have been measured in the lakes of Muskoka. It is important to recognize that notices released by SMDH are based solely on the observation of cyanobacteria blooms; the notices are not based on microcystin levels. Based on the available data, the likelihood that an observed cyanobacteria bloom will produce microcystin in our lake is low.

Does the SMDH and MECP monitor all Muskoka Lakes for Cyanobacteria?

SMDH and MECP only monitor lakes where cyanobacteria have been reported to them. The BLA is not aware of a program for the monitoring of all lakes and shorelines of Muskoka. The filing of notices is thus somewhat ad hoc. A notice for cyanobacteria will be filed based on observation methods. Subsequent to the detection of cyanobacteria, microcystin LR concentrations will be measured at the location of the bloom with 2 rounds of water sampling usually taken. If access permits, the 2nd round of sampling is taken before the development of winter ice, otherwise the 2nd round occurs in the spring.

Is the SMDH notice of a cyanobacteria bloom on their website sufficient?

The notice of a cyanobacteria bloom on Bass Lake and other Muskoka lakes was posted on the SMDH website. Advising residents of the lake relied solely on “passing the word”. No written notice was given to property owners.

What practices should the residents of Bass Lake follow if the SMDH again files a cyanobacteria bloom notice in the same manner as the one filed this past Fall?

Post Walkerton, the SMDH and other associated agencies are very risk averse. However, for our use of the lake, common sense should be the rule. When a notice is filed and until its status changes by the measurement of microcystin concentrations below the drinking water standard of 1.5 ppb, residents should use bottled water for their consumption. Note that boiling water will not destroy the toxins, and home treatment systems should not be relied upon. While algae clumps may not be observed, dispersed Cyanobacteria may still be in the water column. Because microcystin levels above the 20 ppb recreational standard have never been measured in Muskoka and because there are no morbidity statistics for this level (reference Steve Rebellato of SMDH) residents should be able to continue their recreational use of our lake; but common sense is to not swim in an area with obvious cyanobacteria.

Other Reading:

https://www.ontario.ca/page/blue-green-algae#:~:text=They%20thrive%20in%20areas%20where,may%20form%20solid%2Dlooking%20clumps.

http://www.simcoemuskokahealth.org/Topics/SafeWater/bluegreenalgae_copy1.aspx

READ THE CODE

Bass Lake Code

The Bass Lake Code is a listing of generally accepted cottage practices that are to remind us and our guests of our responsibilities to the environmental health of our lake, to promoting a mutual respect amongst our fellow cottagers and ensuring that water safety is a priority of all. Please help us promote safety, preserve our water quality and maintain good neighbourly relations.

Swimming and Boating Safety

- **Boaters** – please keep at least 30 metres (100 feet) away from the shoreline when moving at speed and reduce speed to dead slow near docks and swimming areas.
- **Cottages** – please ensure that floating water toys and swimming rafts don't impair boating safety. Water skiing and tube boat drivers – please ensure the safety of swimmers and boaters around you.

Water Quality

- Please don't feed the waterfowl – they contribute to the production of "swimmers itch" – a very unpleasant rash.
- No washing in the lake! Soaps and shampoos – even if they are phosphate free – degrade water quality.
- Anti-bacterial and more commonly used soaps / cleaners can harm your septic and contribute to phosphorous build up in our lake over time. Please use phosphate free and septic safe products – they are readily available at our local stores.

Shoreline Preservation

- **From the land:** Plant, preserve and encourage natural vegetative growth along your shoreline to help filter storm run-off. Natural vegetation can absorb phosphorous before it gets to the lake.
- **From the water:** Wakes can accelerate damage to shorelines and docks (and make for a bumpy ride for people with floating docks). Please ensure that wakes are appropriate to the distance from shore. Reduce speed to produce no wake in narrow areas.

Lighting

- Please ensure that light does not shine beyond your property boundaries.
- Please join all Muskokans in promotion a dark-sky-friendly environment.

Noise

- **Amplified Sound:** Please control amplified sound so that it can't be heard beyond the bounds of your property.
- **Excessive noise:** It's important to respect the request for reduced sound levels from your neighbours. As well, when the wind is light, voices can be heard right down the lake. During the day, be mindful of the words you use as there are many young ears on the lake. After 11 pm, noise levels must drop significantly. Cottagers affected by excessive noise may contact the OPP (1-888-310-1122) for immediate action when noise has reached the level of a public nuisance. You may also telephone the Township of Muskoka Lakes By-Law officer concerning noise after 11:00 pm (705-765-3156). Please also submit a complaint on-line with the Township. Use the button on the Bass Lake Association homepage.
- **Boat Noise:** Boaters and Personal Water Craft (sea-doo's) – please don't circle repeatedly in one area.

Wildlife

- Please help avoid attracting bears, raccoons and other unwanted animals. Keep garbage in bear-proof containers, clean your BBQ's and don't leave pet food outside. Bird feeders in the summer are as likely to attract bears as they do birds.

Cottage Rentals and Renters

- Please ensure that all cottage renters have the necessary Pleasure Craft Operators Card before allowing use of your power boats.
- ***Renters*** – please support this code to make your Bass Lake experience a great one.

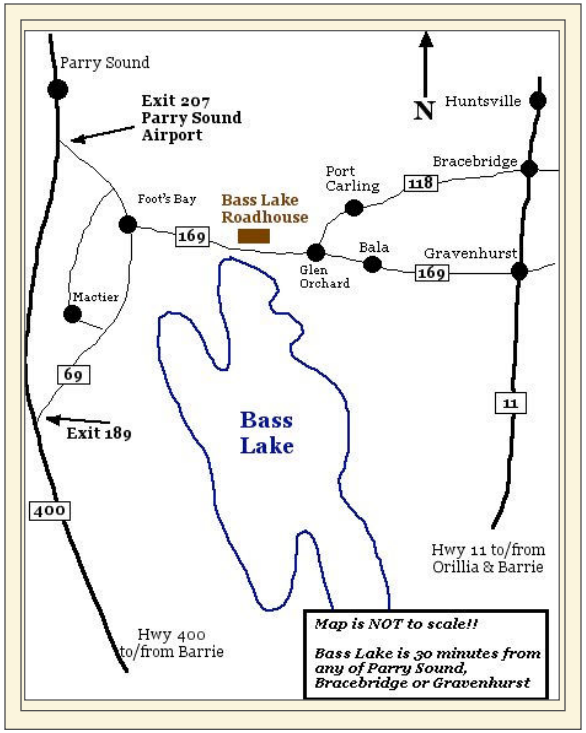
Watch out for our wildlife

No doubt you will encounter much of our wildlife during your stay. Please enjoy your viewing, but please do not actively engage our wildlife.

We have: nesting loons; mating pairs of merganser ducks; no shortage of chipmunks and red squirrels; birds aplenty; raccoons to go around; white tailed deer; moose; and, black bears.

During the summer months we ask you to refrain from feeding the birds (including the ducks!) and to make sure that household garbage is kept inside, in a car trunk or in a bear proof container.

Please be advised that there are also Massassauga Rattlesnakes in the area. They are a protected species and will not cause any harm unless they are actively provoked.



In case you need assistance during your stay on Bass Lake...

General emergency services are available by dialing **911**.

The **OPP** may be contacted directly by calling **1 888 310 1122**.

Fire Rating Status: 1 877 847 1577

Please don't hesitate to ask a neighbour if you need assistance. They're likely to be glad to help if they are able to.

Bass Lake Association
basslakeweb.com

Bass Lake

Guide for cottage owners and renters

Welcome

We are pleased and delighted that you have chosen to spend time on our lake. We hope that you enjoy your time here as much as we do.

Bass Lake is a family community with a strong cottagers association. We hope you find the contents of this pamphlet helpful in making your stay on Bass Lake as enjoyable an experience as possible.

BASS LAKE Association

Bass Lake: Code of Conduct

The Code of Conduct has been designed by our cottagers to help us promote safety, preserve our water quality, and maintain good neighbourly relations.

Swimming and Boating

Anyone driving a motorboat must have a valid Pleasure Craft Operator Card (Boater's Licence). Motorboats must remain 30m (100 ft) from shore at all times (unless picking up or dropping off a skier/tuber).

Please mind your surroundings. Noise generated by watercraft can be a nuisance. Large wakes, or wakes generated close to shore, can cause damage to shoreline vegetation as well as docks.

Water Quality

The water quality is tested on a weekly basis. Historically we have had no problems of any kind with our water quality.

Ways to ensure good water quality include:

- no use of soaps or shampoos in the lake (not even biodegradable ones!);
- no use of anti-bacterial soaps (if they get in the septic system they can kill the beneficial bacteria);
- use only phosphate free and septic-safe products (available at local stores);
- maintain the shoreline vegetation buffer zone
- mind the septic system (most systems on this lake are designed for use by no more than 6-8 persons on a continual basis)
- resist the urge to feed the ducks (they can contribute to swimmer's itch)

Muskoka Nights

Do enjoy your evening campfire... as long as it is in a defined pit, there are no fire bans in place, and the fire is out before you leave it.

Be sure to keep the noise down after 11pm. Sit out and enjoy the night sky, but please keep the lights and the volume set on low.

If you're really lucky you'll see the Northern Lights... or at least a shooting star!

VISIT THE BASS LAKE ASSOCIATION WEBSITE FOR SPECIFIC DETAILS REGARDING EACH OF THE FOLLOWING

Annual General Meeting (Canada Day weekend)
Lights Out Night (Dark sky event)
Music at the Bass Lake Roadhouse
Pink Garage Sale (charity fundraiser)
Poker Run (charity fundraiser)
Parade of Lights (Labour Day weekend)
Bass Lake Book Club
Bass Lake Little Free Library
Bass Lake Photo Contest

2020 Bass Lake PHOTO CONTEST

The Categories...

- Children and Youth
- Adult
- Wildlife
- Action
- Landscapes and Nature

The Rules...

- Have fun
- Take photos
- Upload original photos to the all new BassLakeWeb Instagram account

Contest Closes... - September 8th, 2020

Winners Announced... - End of September 2020

FULL DETAILS at www.basslakeweb.com

BASS LAKE Association