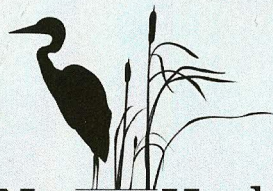


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Helping Nature Heal
ECOLOGICAL RESTORATION

ALGAL BLOOM INFORMATION PAMPHLET

A guide to algal blooms in Mattatall Lake and the options property owners have to improve water quality.



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What Causes Algal Blooms?

Mattatall Lake is experiencing harmful blooms of algae and cyanobacteria. These bloom events can impact fish populations and wildlife in the area that use the lake as a source of food or water.

There are 5 factors that contribute to algal blooms:

- Water Velocity
- Temperature
- Water Turbidity
- Light Intensity
- Available Nutrients

Of these 5 factors, property owners can control two: Available nutrients and light intensity.



Available Nutrients

Nutrients like nitrogen and phosphorous are essential for plant health and contribute to the growth of algae. These nutrients can come from many sources including decaying plant matter and soil erosion.

Humans are also a source of these nutrients; we apply them to our lawns and gardens in the form of **fertilizers**, they can leach out of **septic systems** that aren't properly maintained, and they are even in household products such as **laundry detergent!**

Because the species of cyanobacteria in Mattatall Lake has the ability to fix atmospheric nitrogen into a form that algae can use to grow, limiting phosphorous in the system is very important to limit the growth of algae.

Light intensity

Algae are photosynthetic and require sunlight to grow. Mattatall Lake has a surface area of over 100ha, it isn't possible to shade the entire lake. But individual property owners can plant native tree and shrub species along the shore to increase the shade in the most shallow parts of the lake which can have a significant impact.

How Can I Reduce My Impact?

- **Reduce the use of fertilizers on your property** or eliminate them entirely. Add nitrogen fixing plants to your gardens and add clover seed to your lawn to increase soil quality instead.
- **Have your septic system inspected regularly** by a certified professional and follow the prescribed maintenance procedures.
- **Reduce or eliminate the amount of grass on your property** and replace it with native species that will absorb excess nutrients as rain water flows over your property. They will clean nutrients out of water and soil and reduce soil erosion.
- **Keep a 10m buffer of vegetation along the lake shore that doesn't get mowed or fertilized.** This is especially helpful if you want to keep the rest of your lawn and fertilize parts of your yard. This buffer strip will slow and absorb the overland flow of water and use the excess nutrients from the fertilizer.
- **Plant tall native species near the waters edge** to help shade the shallow edges of the lake.
- **Switch to laundry and dish detergents that are free of phosphates** and check your hygiene products for phosphates as well.

What Should I Plant?

Any of our native species are well suited to the Nova Scotia climate and soils and will require the least amount of maintenance. Planting along the shore to create a 10m wide buffer will help to slow and absorb overland flow before it can carry sediment and excess nutrients into Mattatall Lake.

- Red maple
- Tamarack (larch)
- Black or red spruce
- Willow
- Speckled alder
- Red or yellow osier dogwood
- Mint
- Sensitive fern
- Irises
- Marsh marigold
- Swamp milkweed
- Labrador tea
- Rhodora



Nitrogen Fixing Plants

Some species of plants have the ability to take nitrogen from the atmosphere and convert it into usable nitrates with the help of bacteria. While these nitrogen fixing plants are growing they release very little nitrogen into the soil, but when they are done growing and they die their decomposition releases the stored nitrogen into the soil for other plants to use. Adding nitrogen fixing plants to your gardens and lawn can lower the amount of chemical fertilizers you need on your property and reduce excess nutrients in the system.

All legumes (Beans, peas, alfalfa etc.) are nitrogen fixing plants, but so are some of our native species and perennials. Some examples are:

- Speckled alder
- Clover
- Lupins
- Locust trees
- Vetch
- Sweet fern
- Wisteria
- Bayberry

To make the most of your nitrogen fixing plants, allow them to grow to maturity. When they begin to die back in the fall, cut them down and place them on top of the soil around your gardens. Cover them with mulch if your garden has it, and allow them to decompose back into the soil. If your gardens don't have mulch, bury the plant debris under a thin layer of soil. This will add nutrients to the soil for your other plants to use in the spring.

Adding clover seed into your existing lawn is a great way to reduce the amount of fertilizer your lawn will need. Clover is a soft plant with small flowers that are edible to us and are beneficial for bees. Clover fixes nitrogen and doesn't require mowing. Allow the clover to stay in place and break down during the winter or leave your clippings behind when you mow the lawn to improve your soil quality.

Remember to keep a 10m buffer by the shore that isn't mowed or fertilized to catch any excess nutrients that are swept up in overland flow.

