



Water Services

Storm Pond Maintenance Program

August 2018

Maintaining storm ponds in your community

Storm ponds are a functional part of the drainage system, working every day to protect our rivers by helping remove sediment, fertilizer, pesticides and other pollutants, as well as protecting our communities from flooding.

How does a storm pond work?

In your community, roads, gutters, swales and catch basins direct runoff and surface drainage to the underground piping system, and eventually to a storm pond. Storm ponds slow down water long enough to settle out sediments and pollutants, helping to return cleaner water to our rivers and streams. It may help to think of a storm pond as a natural water treatment facility that helps protect the rivers by slowing water down, and filtering out some of the contaminants that are picked up along the way. Certain types of aquatic plants and algae aid in that treatment process, and also play a positive role in pond ecosystem health.

How does algae help a storm pond treat storm water?

Some algae are good for a pond. Algae are tiny aquatic plants that grow in the shallow areas of ponds and help filter nutrients, metals, suspended particles, and organic matter from the water. As they grow they consume nutrients and trap contaminants in the pond, improving the water quality before it enters the rivers. In addition, algae increase the oxygen levels in the water, allowing

microorganisms to consume more organic material in the pond. This helps reduce the frequency of sediment removal.

One form of green algae called cladophora is prevalent in the Calgary area. It looks like stringy, fibrous mats that can be seen floating on the water's surface. It poses no safety concerns for humans, animals, or birds, and is a natural part of a healthy storm pond.

When does algae cause a problem?

At certain times of the year, especially during warm dry periods, storm ponds can experience excessive algal growth (blooms) which can become unsightly. In addition, as the algae ages and decays, it releases odours, which can be unpleasant for those who live close to a storm pond.

What about cattails?

Cattails also play a role in our storm ponds. They protect the shoreline from erosion, remove contaminants in runoff, and provide important wildlife habitat (for shelter, cover for fish, and habitat for insects and fish that birds feed on). Cattails also trap sediment and silt in runoff. However, cattails grow fast and can form extremely thick stands.

Dense stands of cattails growing around the shoreline can restrict access, becoming a safety concern. In addition, water cannot flow easily through these dense stands, and the physical presence of the vegetation reduces the useful operating volume of the stormwater

pond. They need to be periodically managed by cutting or removing up to 75% of the vegetation. The stormwater ponds in your area may be thinned out this summer to insure that they can function as intended. Protection and enhancement of the waterfowl nesting habitat are important and will be incorporated in thinning operations.

What is the City doing to control algal blooms??

Working with residents, community associations, and shoreline stakeholders, The City responds to numerous 311 calls through the summer months to monitor pond algae levels and odours. Recent research efforts have resulted in an enhanced understanding of algae's role in storm water treatment, and the climactic factors that influence algae growth. Over the past two years, extensive field tests have also been conducted to assess the overall effectiveness of established treatment options to manage algal growth.

The City does not intend to remove algae from storm ponds as algae serves a critical purpose in the functionality of storm ponds; however, The City is dedicated to improving how algae growth blooms are managed to mitigate aesthetic and odour concerns for those who live near the storm ponds. Our work includes improving predictive models (understanding when we can anticipate growth blooms, year over year), focused assessment criteria for acceptable and unacceptable algae coverage, and mechanical collection methods that remove decaying algae at reasonable effort and cost.

The City is also committed to ongoing education to share information about storm ponds with community members.

The results of this research are also being shared with developers, community associations, and other interested municipalities in southern Alberta who are responsible for the operations and maintenance of storm ponds. We will continue to assess and adapt our practices with the help of our community partners as climactic conditions change.

What are some of the tools and techniques The City is using to address these concerns?

- Floating rakes will be used to gather the algae from the pond shore. The material will be dewatered and disposed of when the bloom reaches a critical mass or it starts to decay (i.e. turn brown). Staff training is occurring in the first weeks of August.
- Mechanical harvesters have been trialed in several ponds across the City to understand their capability in dealing with rooted plants, floating plants, and algae and may be deployed depending on the vegetation type and severity
- Sediment blankets (large mats that block out sunlight) have been trialed in several ponds across the City to understand their impact is disrupting the algae growth lifecycle. New techniques for easy deployment are being tested and staff training will be required.

What can you do to reduce algal blooms and maintain the effectiveness of your community storm pond?

The best way to prevent algae growth in storm ponds is to limit or omit lawn fertilization. Excess fertilizer can be washed into ponds and in turn, fertilize pond weeds.

- Use native plants as they do not require fertilizer and they are more adapted to local conditions.
- Properly dispose of all pet waste from your yard and in public spaces.
- Sweep road gravels and sediment from your driveway and sidewalks instead of washing it into the street or catch basin.
- Avoid washing cars or other equipment in your driveway.

Please contact 311 if you have any questions or concerns. You can also visit www.calgary.ca/stormpond for more information on Calgary's stormwater system.

