

September 24, 2014

Presentation to Alberta Health Services Concerning Health Advisories for Blue Green Algae

Introduction

Blue green algae (cyanobacteria) are naturally occurring organisms found in most prairie lakes. It is thought that they have become more abundant in recent years because of careless land use practices in watershed regions. Clearing of land, destruction of the natural habitat in riparian areas, the existence of septic fields near water bodies and the use of fertilizers have all contributed to the eutrophication of our lakes and the resulting increased blooms of blue green algae.

Blue green algae have been found to produce toxins which can be damaging to human health. For this reason, water quality conditions are monitored throughout Canada for recreational lakes and notification is given when the recognized health guidelines are exceeded.

In Alberta, the current practice of issuing health advisories associated with the occurrence of blue green algae is resulting in many unintended consequences. When an advisory is issued, it applies to the entire lake and usually remains in effect until the end of the open water season. Signs are posted which warn of the dangers of blue green algae and include the international symbol for no swimming. News organizations have sensationalized the occurrence of this natural phenomenon using mislabelled file photographs depicting lakes with massive algae blooms. The end result of this process is that particular lakes are thought to be dreadful and dangerous swamps when in fact, are mostly presenting large areas of clear water. Property values have been impacted, local businesses are suffering and, worst of all, Albertans are fearing our lakes.

The Lake Monitoring Process

Initially the task of water monitoring was the responsibility of the health boards which reacted on a case-by-case basis but in 2009, it came under Alberta Health Services. Routine monitoring of most, if not all, recreational lakes became the norm. AHS reacts with a health advisory when a visual observation of the presence of blue green algae is made, when the cell count exceeds 100,000 cells per ml or when the concentration of microcystin exceeds 20 micrograms/L. It is usually the visual observation which triggers the advisory. Issuing an advisory includes posting the advisory on the AHS website and posting signs at beaches on the affected lakes. For Pigeon Lake, a review of all yearly data shows that since testing was initiated, there was only one

instance where the guideline for the toxin concentration was exceeded. And yet, advisories have been issued in every year since 2006.

Mixed Messaging

Blue green algae have been in lakes since prior to development. There are a significant number of people who ignore the advisories and continue to use the lake as always but with some degree of caution. People cannot understand why they cannot recreate in perfectly clear water and so they ignore the warnings. The problem with this is that when a real and serious threat exists, the health advisory will be ignored.

Proportional Response

When a concern over personal safety exists the action taken must be commensurate with the risk involved. If it is accepted that blue green algae are a naturally occurring substance in many of our lakes, and since we have previously enjoyed these lakes without undue concern, we must ask ourselves whether we are overreacting. Simply put, the situation appears to be (1) our lakes have always had “green” events, (2) no one has ever died from blue green algae in Alberta, and (3) general knowledge of the toxins produced by blue green algae is only recent. Unless we find a better way to administer this situation, and without sacrificing safety, we will be left with the situation where Alberta’s lakes will be no longer sources of enjoyment for all Albertans but will be a black mark on our environmental slate.

We do not issue Health Advisories for many other instances of natural dangers and we must ask ourselves what is the difference. Wasp stings present more of a health threat than blue green algae but we don’t let this inconvenience hamper our enjoyment of the outdoors. We all are knowledgeable of the risks and are able to apply sound judgment. So should be the case with algae occurrences.

What is Being Done about Eutrophication

Dr. David Schindler has given us ample warning over the results of using fertilizers and having septic fields near water bodies. At Pigeon Lake, the Watershed Management Plan created by the Pigeon Lake Watershed Association has recommended that all fertilizers be prohibited adjacent to the shoreline. This prohibition was supported by a vast majority (77%) of the residents. The Alliance of Pigeon Lake Municipalities passed a resolution favoring a lake-wide ban on fertilizers. And yet, only 3 of the 12 municipalities have bylaws prohibiting the use of lawn fertilizers.

Municipalities have also tried to get rid of septic fields adjacent to water bodies. Unfortunately, provincial legislation (the Safety Codes Act) prevents municipalities from carrying out this action. At present, a septic field may exist within as little as 50 feet of a water body.

Even the very act of compelling a resident to connect to a new sewer system remains a challenge. The Municipal Government Act does not seem to clearly give municipalities this right. As such, it is difficult for municipalities to apply proper stewardship principles in protecting their lakes.

Many residents and municipalities are taking extraordinary measures to protect their lakes but destruction of riparian areas, removal of aquatic vegetation and adding nutrients to the water continues throughout our province.

Recommendations:

Part 1 Direct Actions

Change the methodology of issuing advisories by:

1. Post permanent signs on lakes where blue green algae blooms are likely to exceed guidelines. These signs should include elements of education, caution and self-responsibility. As a starting point, an example would be:
Blue green algae, a naturally occurring substance found in most prairie lakes, is known to produce toxins which may be dangerous to health if consumed. Caution should be exercised by avoiding swimming and other water sports and control of pets from drinking lake water when algae blooms are present. Always rinse after entering the water. Enjoy your lake in a responsible manner. For more information, consult www.algae.gov.ab.ca.
2. Continue to monitor water quality and post the results on a newly designed website. Do not issue advisories when blue green algae are present. If in the rare instance the toxin concentration exceeds the guideline, post that particular part of the lake, or the entire lake if appropriate with a sign for the period of time when the guideline is exceeded, with the assurance that subsequent testing will occur within a week. Most people have a smart phone and can easily confirm the current situation.

Part 2 Indirect Actions

Since root causes of potential health concerns should always be removed, the following actions are recommended:

1. Request Municipal Affairs to change the regulations for private sewage systems (currently under review) to increase the minimum distance that a septic field may be located from a water body. At present, it appears that this minimum distance will remain at 90 metres with provisions that it may be reduced to as little as 15 metres under certain conditions (residence between field and water body). Septic fields are a known cause of nutrients entering lakes and with the abundance of health advisories being issued, they should not be allowed to be constructed within this distance. It is recommended that the minimum distance is at least 500 m.

2. Request Municipal Affairs to effect legislative changes in the Municipal Government Act which will allow municipalities the power to require septic fields to be removed where they exist in proximity to water bodies, such as in Summer Villages. At present, the Safety Codes Act prevents Municipalities from enforcing such bylaws, effectively stymying stewardship endeavors.
3. Request Municipal Affairs to effect legislative changes in the Municipal Government Act which will clearly allow municipalities to undertake wastewater projects and to clearly have the right to require compulsory residential connection from its residents. At present, this right is not abundantly clear. Provisions exist when a “local improvement” is made with recommendations from Alberta Health but this does not apply when the entire municipality is undertaking a wastewater project.
4. Issue Advisories to municipalities stating that fertilizers should not be used in proximity to water bodies as they are a direct cause of eutrophication. Dr. Schindler advises that the only effective means of restoring lake health is through proper watershed stewardship practices.
5. Issue a request to Alberta Environment and Sustainable Resource Development to increase surveillance of riparian areas in order to reduce the destruction of reed beds. Also, make the request that their approvals for shoreline development be made with greater concern of protecting the natural vegetation in the riparian areas. Besides the obvious benefit of protecting the shoreline, it will also preserve the right of access of all Albertans to traverse the shoreline, rather than be encumbered by massive obstructions.
6. Request Alberta Parks to immediately abandon the septic field in Zeiner Park and institute trucking of sewage to the Mulhurst lagoon as is being done by most of the lakeshore residents not connected to a wastewater system. We have been warned about septic fields and are now paying the price.

Respectfully submitted,

Don Davidson
Mayor, Summer Village of Grandview