Fact Sheet: Algae

What is Algae?

Algae are small mostly microscopic plants. They can be single or multi-celled depending on the species. There are thousands of algae species that exist. Algae are present in virtually all aquatic environments, whether they are visible or not, and contribute to taste and odour. Some algae are toxic and some are not. Regardless, they play a very important role in marine food webs.

If an aquatic habitat becomes eutrophic this can cause an algal bloom, which in turn depletes oxygen levels, produces toxins, and deteriorates the overall water quality. Algal blooms do not usually occur in deep lakes, but instead along bays and shorelines where water is shallow and phosphorus concentrations are higher. Common types of algae found in Ontario are listed below.

Filamentous Green

Filamentous green algae do not produce toxins. There are many different types of filamentous green algae. Some include cladophora, spirogyra, zygnema, and mougeotia. They can be attached or free-floating. They may also benefit the lake, along with other algae, to help purify the water and maintain a favourable oxygen level.

Diatoms

Some commonly found diatoms are Asterionella, Fragilaria, and Cyclotella. Depending on the species and environment conditions, diatoms can produce toxins. Also known as golden algae or brown algae, they are very common and abundant types of algae. Additionally, they are unique to other algae due to the silicon wall that encloses them. They also represent a main food source for many microscopic organisms, and can be found in low nutrient lakes (oligotrophic lakes).

Flagellates

Depending on the species and environment conditions, flagellates can also produce toxins. Flagellates are organisms with one or more whip-like organelles called flagella, which describes a means of motion. Some commonly found flagellates are synura, dinobryon and euglena.

Cyanobacteria

Also known as blue-green algae, cyanobacteria have inhabited the earth for over 2 billion years. They are photosynthetic bacteria, gaining their energy from sunlight. Cyanobacteria are the most common problem for algal blooms in Ontario, such as at Muskrat Lake. There are three common types of blue-greens that appear to be primarily responsible for most of these incidents: Anabaena, Microcystis and Aphanizomenon.

Duckweed

Duckweed is often confused with algae. However, duckweed will remove plant nutrients from water, block sunlight, and out-compete algae. While duckweed is an indicator that excessive nutrients exist in the water, it does not contribute to water quality problems. In fact, this plant improves water quality by removing phosphorus and nitrogen from the water and naturally filtering unwanted matter in the water. Duckweed growth is very desirable since algae tend to pose more problems for water use.