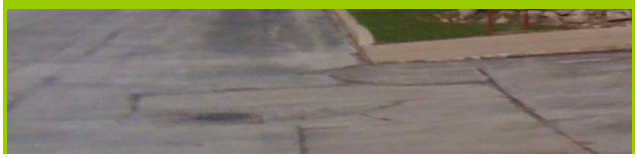
Management of Harmful Algal Blooms (HABs) Prevention Fact Sheet 1 of 2

Temperature, oxygen and nutrients are the most important factors!

Stormwater Runoff



DO:
Follow stormwater best practices!

Direct water so it can infiltrate. Use rain barrels, rain gardens, swales and other stormwater retention structures.

DON'T:
Put stormwater running off of roof and pavement directly into our surface water.

- In Michigan, the most common source of warm water is surface runoff.
- HABs out compete other beneficial microorganisms when the water temperature is above 70 degrees Fahrenheit.
- Warm water holds less oxygen than cool water. HABs out compete other algae species under low oxygen conditions.
- Surface runoff is often mixed with oil, grease and soil particles washed off of roads and other paved surfaces. The material mixed in surface runoff uses or binds oxygen so it is not available for beneficial organisms.

Impoundments

DO:
Plan for unrestricted movement and soft shorelines between areas of surface water.

DON'T:
Restrict mixing and water flow with dykes, dams or undersized culverts.

- Shallow, impounded water can become too hot for beneficial organisms to live. They are breeding grounds for HABs.
- When impoundments are connected to recreational waters, the impoundment becomes a ready-made source of HAB.
- HAB toxins can kill other organisms, increasing their competitive ability.
- The warm water discharge can shock temperature sensitive organisms.

Nutrients (Fertilizer)

DO:
Volunteer with local Lake and River Partnerships to find out how you can help clean up old sites.

Know where your sewage is going.

DO:
Leave a buffer between lawn and surface water.

Keep yard waste and clippings out of storm drains.

Use native plants selected for the existing conditions.

DON'T:
Use fertilizer or pesticides on sand or near surface water.

Produced by Public Health – Muskegon County in cooperation with the Michigan Department of Environmental Quality 2011

Management of Harmful Algal Blooms (HABs) In Recreational Water During a Bloom Fact Sheet 2 of 2

Bloom Mixed in Water Column

DO:
Advise users to avoid contact. Posting at access points and municipal newsletters are good sources for contact.

Closing access points is not recommended because the bloom will move based on sunlight and water temperature.

DON'T:
Attempt to kill or rupture the bloom. This can release toxins and make the bloom dangerous.

Application of an algaecide such as Copper Sulfate is not recommended as they will break open the cells, releasing possible toxins.

The bloom is floating on the surface and washing up on land:

Individual organisms in the bloom are capable of traveling up and down in the water. When stratification occurs in the lake, they can be trapped in the warm water at the surface. Regular winds will push the floating organisms together into mats. Sometimes the organisms die, and the mat begins rotting.

Bloom Floating on Surface

Bloom Washing Ashore

DO:
Close the area for body contact.

Recommended: Physically remove the solid material. The material can be removed for composting in an upland location where it won't be washed back into the water.

NOTE: The material can kill vegetation and have a strong smell. Most managers choose to dispose of concentrated material (not mixed with grass or aquatic plants) to the garbage.

DON'T:
Drive boats or equipment through the floating mats to break them up. This can rupture the cells, potentially causing toxin release. This technique doesn't work; it makes it harder to collect the material; and can disperse it to other areas of the lake.

How to Prevent a Bloom

The organisms that produce a HAB generally need warm, still water to produce large populations.

Equipment that stirs the water such as bubblers, fountains and circulators have been found to inhibit HAB growth in small areas.

Produced by Public Health – Muskegon County in cooperation with the Michigan Department of Environmental Quality 2011