FACT SHEET JUNE 5, 2008

INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

Blue-Green Algae

www.idem.IN.gov

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Description:

- Blue-green algae, also known as Cyanobacteria, are a group of bacteria found in a wide range of water bodies throughout Indiana, the United States, and the world.
- When ideal temperature and water conditions coincide, periods of significant algae growth, or algae "blooms", may occur – commonly from May to October in Indiana.
- Factors promoting algae growth can include sunlight, warm weather, low turbulence, and nutrient sources, such as phosphorus and nitrogen. Still, some types of algae prefer turbid, or cloudy, water with low levels of light.
- Water containing high levels of blue-green algae may appear in all shades of yellow, brown, red, green, or blue-green and some can appear to have a thick, paint-like scum on the surface.
- Blooms may appear for only a few hours or remain unchanged for weeks depending on water and wind conditions.
- There are more than fifty (50) major types of freshwater blue-green algae, but only about one-third (1/3) of them are capable of producing toxins. Blue-green algae of concern in Indiana are in the group *Cyanophyta.*
- In toxin-producing blue-green algae, toxins may be produced in response to dying after natural bloom conditions or to the treatment of affected lakes with an algaecide.
- Algae can be toxic or non-toxic and may develop or lose toxicity at any point. The State of Indiana is researching algae to gain a better understanding of its behavior, relative toxicity, environmental impacts and management.

Environmental Impacts:

- All Indiana lakes contain algae; however, the concentration and type of algae varies greatly.
- Because most algae blooms do not produce toxins, significant environmental impacts are infrequent.
- When algal blooms die off, they sink to the bottom and absorb available oxygen in the water. In some high concentrations, the depletion of oxygen may be great enough to result in fish kills.
- In extremely rare instances, toxin-producing blue-green algae have resulted in the sickness or death of some other animals, including livestock. There have been no such reported cases in Indiana.
- High-density algae blooms can create taste and odor issues for public drinking water supplies. However, these are considered secondary drinking water standards. In some cases, these algae blooms can impair drinking water supplies that use a surface water source.

IDEM's Role:

- The Indiana Department of Environmental Management (IDEM) is responsible for protecting our environment through the monitoring and managing of Indiana's water quality.
- IDEM manages water quality through the regulation of point and non-point sources that run into waterways, monitoring of permit compliance, enforcing protective regulations, and the implementation of various prevention programs.
- As part of a new approach to watershed management, IDEM's Office of Water Quality (OWQ) will focus available resources to monitor and improve water quality in two watersheds: the South Fork Wildcat Creek and the Upper Fall Creek Watersheds.
- In the Upper Fall Creek Watershed alone, IDEM will conduct a baseline assessment of the watershed through the sampling and testing of:
    - Seventy-three (73) sites will be sampled three (3) times for nutrients, metals, and chemistry
    - Thirty (30) sites will be sampled monthly during the summer of 2008 for pesticides, nutrients, and E. coli.
- In addition to sampling, IDEM will be reviewing discharge permits and conducting compliance inspections within the watersheds to measure water quality improvements. While IDEM will continue its compliance inspections throughout the rest of the state, a more comprehensive inspection schedule will be implemented in these two watersheds.
- After gaining a baseline assessment, IDEM will work with watershed groups to propose and implement solutions for improving water quality in the Watershed.
- IDEM is coordinating with Indiana University-Purdue University Indianapolis (IUPUI) and the Indiana Department of Natural Resources (IDNR). They will sample water conditions, types of blue-green algae and potential toxins between mid-May and mid-October.
- Together with other state agencies, IDEM will provide updates and information via the Web site http://www.algae.in.gov.

Citizen's Role:

- Citizen involvement has been and will continue to be a vital component in the effort to manage algae blooms.
- There are a number of actions every citizen can take to reduce the influx of nutrients into the watershed and improve overall water quality:
    - Do not over fertilize. Most established lawns need few nutrients to be healthy.
    - Check soil nutrient levels prior to applying fertilizer to ensure correct application. Soil test kits can be purchased from some local hardware stores and through online distributors.
    - If applying fertilizer, use phosphorus-free lawn fertilizers. Lawn-fertilizer packaging is labeled with three (3) numbers for nutrient content. Look for a zero (0) as the middle number (phosphorus content) to indicate phosphorus-free fertilizer.
    - Do not fertilize up to the edge of a waterway. Check with your local government for any specific setback requirements.
    - Do not dispose of grass clippings or leaves in or near a waterway.
    - To prevent nitrogen input from human waste, have your septic system inspected and tank pumped out at least every two years
    - If conducting land disturbing activity, prevent soil and organic matter from washing into waterway as soil can carry nutrients into the waterway.

    - The use of aquatic weed control can have unintended consequences for algae development and the potential release of toxins and, therefore, is not recommended.
- Public health officials suggest avoiding contact with waters visibly impacted by algae, and rinsing with fresh water after recreational contact with raw or untreated water, such as reservoirs, lakes, rivers, and streams.

More Information:

- For more information on the most recent levels of blue-green algae toxins (if any), environmental impacts, health guidelines and other information, please visit the Web site at: http://www.Algae.in.gov.