Blue Green Algae Appearance in Minnesota Lakes

Matt Lindon, Howard Markus And Steve Heiskary
Outline

- Examples and Characteristics of Blue Green appearances in the field
  - Blue Green Clues and Characteristics
  - What is not Blue Green
  - Variation within lakes and through summer
- Little Rock Lake Example
  - Photos and results
Gelatinous
Filaments
Color
Caking
Foam Slurry
Mixed
Piling
Skin – Scums
On aquatic plants
Fish kills
Algae & other aquatic plants that might be mistaken for blue-green algae

“Duckweed” (not an algae)
Algae & other aquatic plants that might be mistaken for blue-green algae

“Duckweed”
“Wolffia”
(not an algae)
Algae & other aquatic plants that might be mistaken for blue-green algae Continued.

Chara, may float near surface; often found in lakes with high clarity.

Filamentous green algae – may form mats on surface.
Varies within a short time

North Phalen July 16th 06

North Phalen July 20th 06
Varies during open water season

Near Shore

Mid Lake

May
June

Nearshore

Mid-Lake
July

Nearshore

Mid-Lake
Early August

Nearshore

Mid-Lake
Late August

Nearshore
September
Nearshore
Diatoms 95%
Anacystis 5%

Madison Lake May 2006
Anabaena 5%
Anacystis 10%
Aphanizomenon 5%
Microcystis 80%
Microcystis 40%
Anabaena 25%
Oscillatoria 30%
Diatoms 5%

Madison Lake Aug 8th 2006
Little Rock Lake

- July 25, 2007 visit by Steve Heiskary, David Tollefson and Harold Wiegner conducted sampling and observations;
- Response to numerous water quality complaints;
- Strong wind from south by southeast so algae were piling on the north and west shores.
- Samples collected at four sites:
  1. Lake access/beach area (north side)
  2. Little Rock Creek inflow
  3. West shore near 105th Ave.
  4. Little Rock Lake outlet at Highway 10 (south side)
- All four will be analyzed for microcystin and saxitoxin. Water samples to be analyzed for TP and chlorophyll-a at sites 1 and 4.
Little Rock Lake: 05-0013. Sample sites noted.
Site of Sample #1 at lake access
Benton County Beach and Lake Access area. Adjacent to site of sample #1
Beach
Little Rock Creek on North side; site of sample #2
Little Rock Creek backwater area
West shore @ 105th
- sample #3
Little Rock Lake Microcystin

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Air quality standard not to be exceeded more than two times in a five consecutive day period
Summary

- Appearance
- Characteristics
- What is not Blue Green Algae
- Little Rock lake example
Take home message

- Blue Green Algae can have a variety of appearances
- Good assessment can be beneficial
  - When to test
  - What message to give