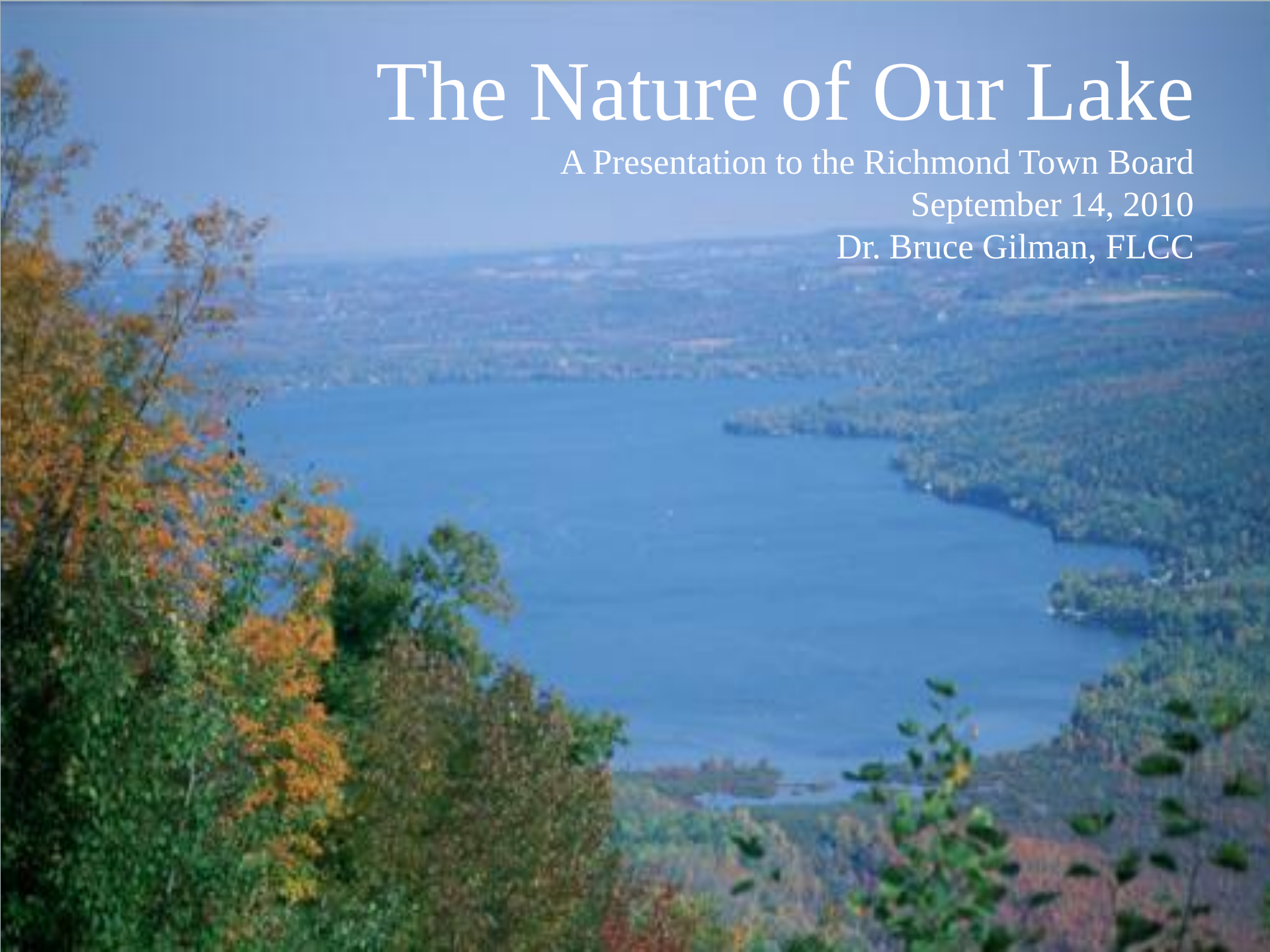


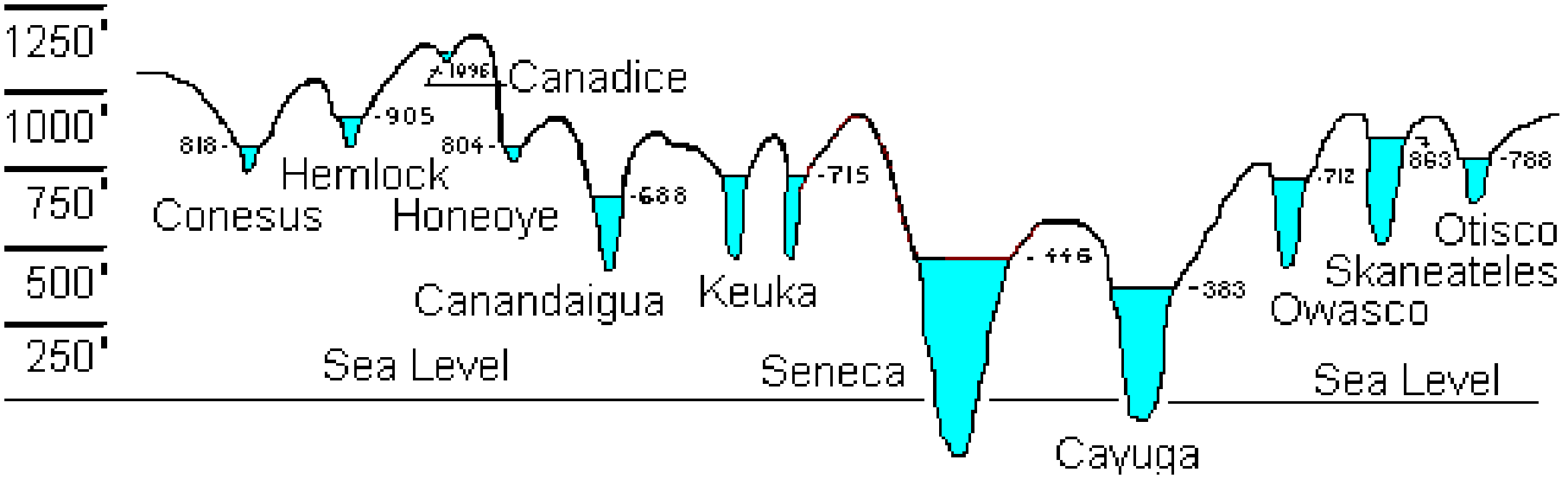
The Nature of Our Lake

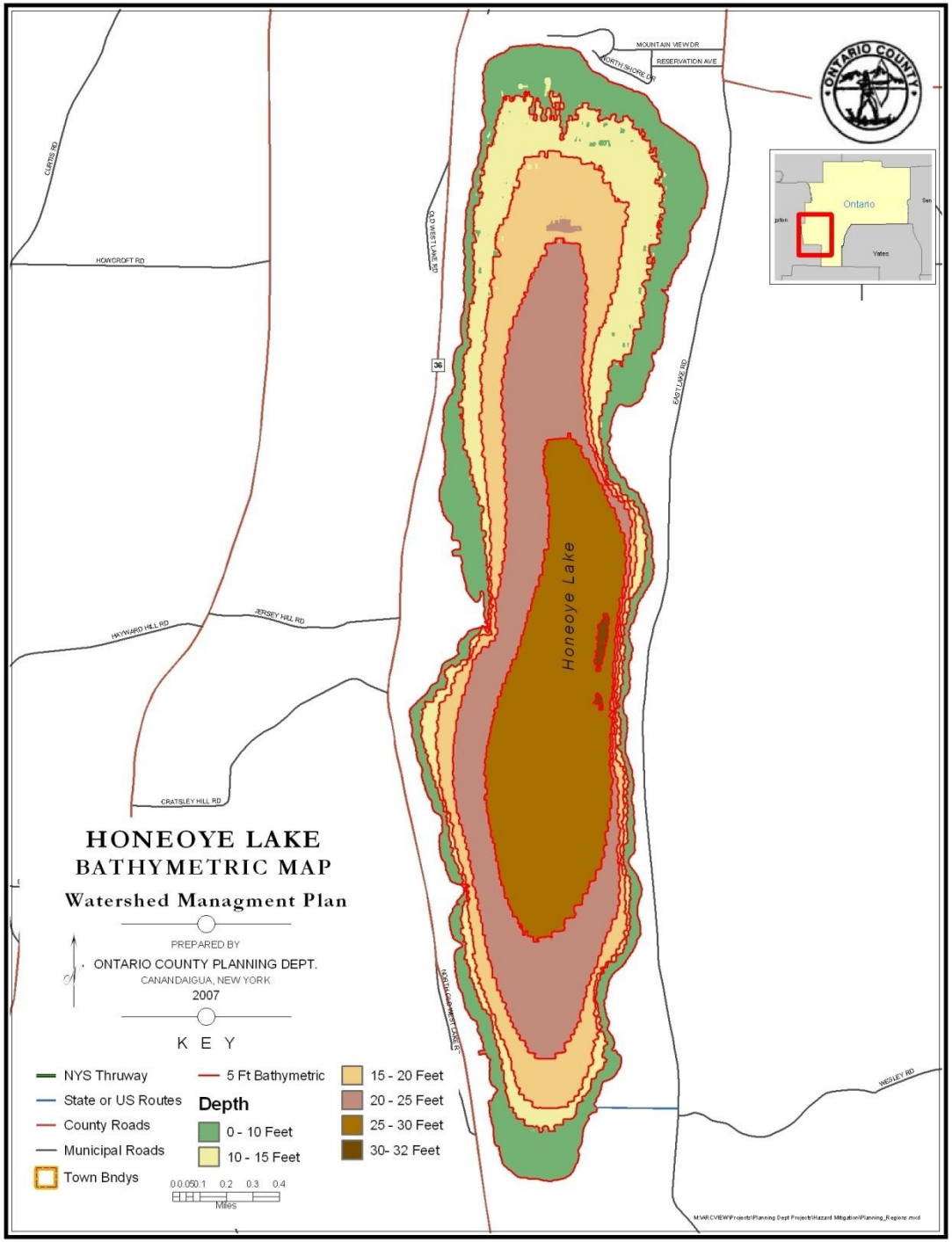
A Presentation to the Richmond Town Board

September 14, 2010

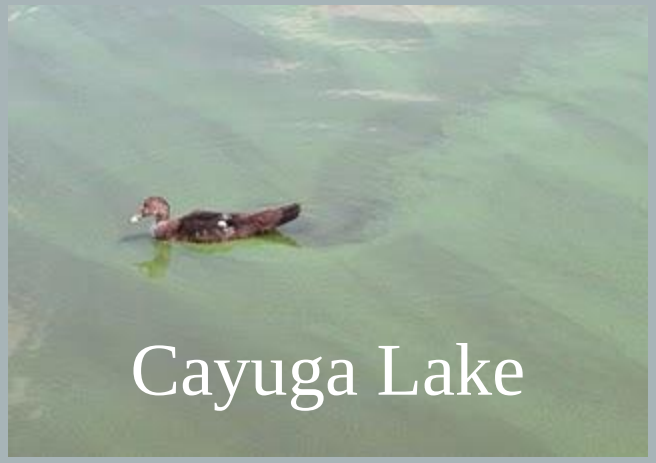
Dr. Bruce Gilman, FLCC

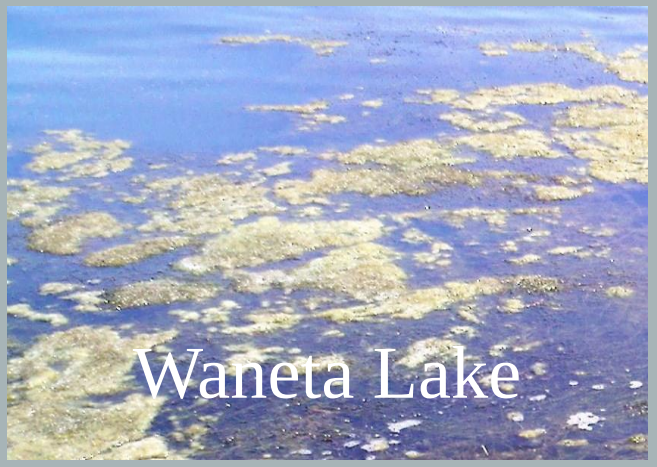
COMPARATIVE DEPTHS AND LEVELS OF THE ELEVEN FINGER LAKES




MOUNTAIN VIEW DR
RESERVATION AVE
NORTH SHORE DR
CURTIS RD
HOWCROFT RD
OLD WEST LAKE RD
EAST LAKE RD
36
HAYWARD HILL RD
JERSEY HILL RD
CRATSLEY HILL RD
Honeoye Lake
WESLEY RD
ONTARIO COUNTY
Ontario
Yates
HONEOYE LAKE
BATHYMETRIC MAP
Watershed Managment Plan
PREPARED BY
ONTARIO COUNTY PLANNING DEPT.
CANANDAIGUA, NEW YORK
2007
K E Y
NYS Thruway
State or US Routes
County Roads
Municipal Roads
Town Bndys
5 Ft Bathymetric
Depth
0 - 10 Feet
10 - 15 Feet
15 - 20 Feet
20 - 25 Feet
25 - 30 Feet
30- 32 Feet
0 0.05 0.1 0.2 0.3 0.4
Miles

Summer 2010 Regional Algal Blooms





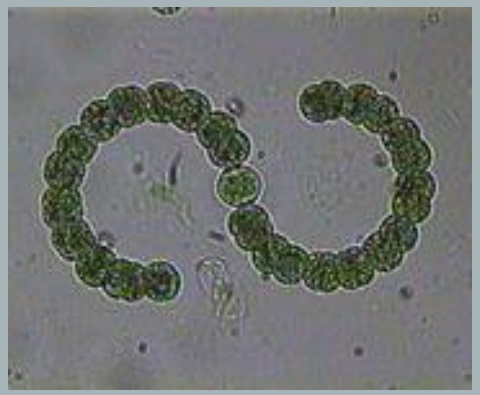
Sandy Bottom Beach Closed

August 29, 2010

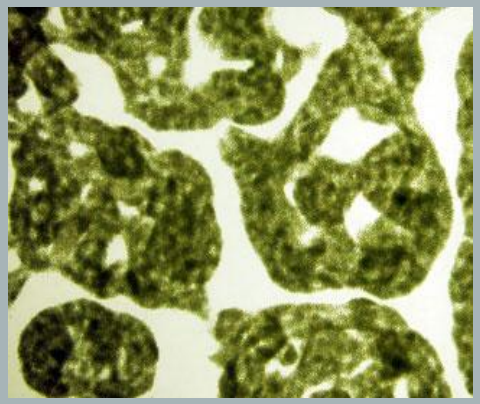
Images by
Steve Barnhoorn

Gleotrichia

Anabaena



Microcystis



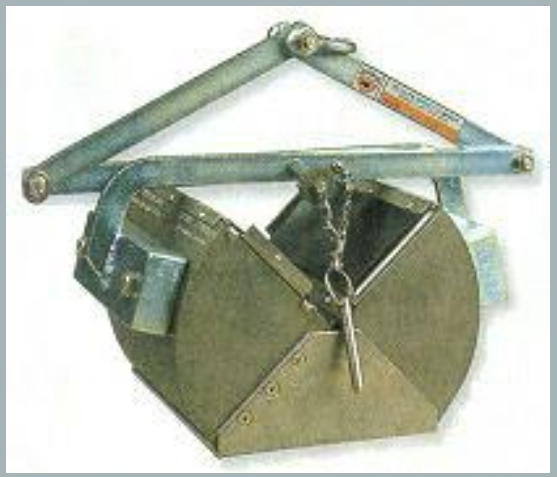
What are cyanobacteria?

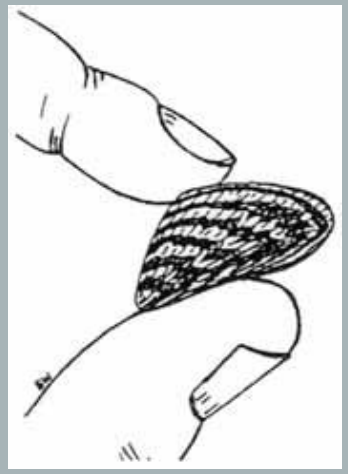
- Formerly known as blue-green algae
- Primitive, single celled organisms that can grow as filaments, chains or loose colonies
- Often surrounded by a gelatinous matrix
- Naturally present in lakes and streams, usually in low numbers
- Can form large scum layers, blankets and mats across the water surface

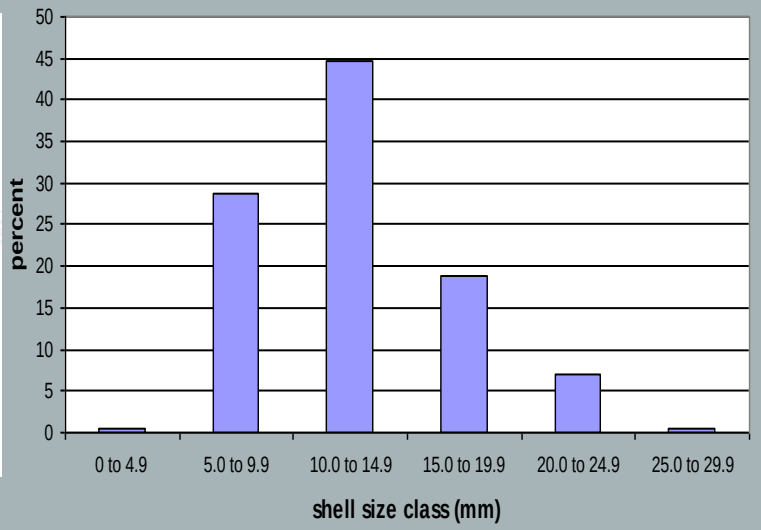
Why be concerned about cyanobacteria?

- May cause taste and odor problems in drinking water
- Some strains produce toxins that can be harmful in significant concentrations
- Blooms of cyanobacteria disrupt normal lake ecology, and large amounts of dissolved oxygen are consumed from the water when they decompose

Why have cyanobacteria become more common in recent years?







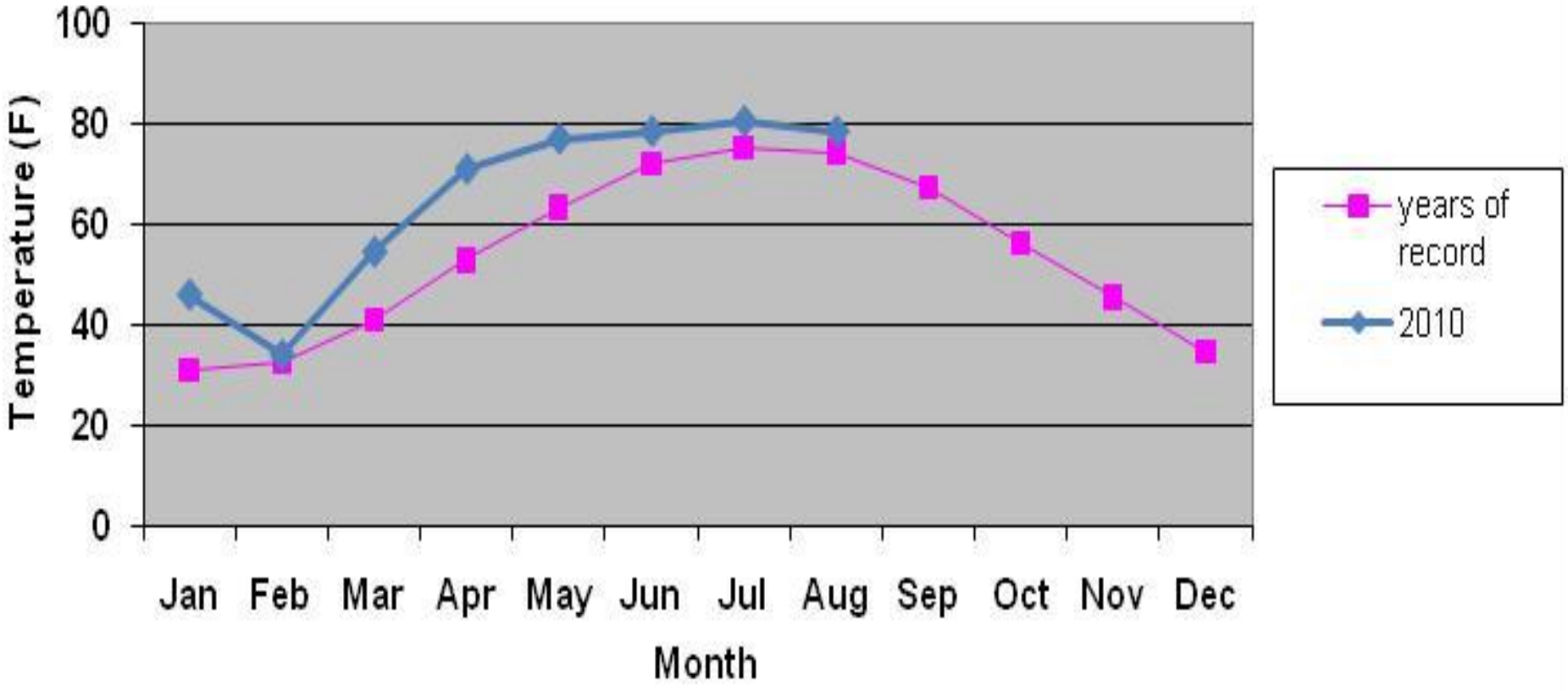
What influences the growth of cyanobacteria?

These organisms respond to:

- warm water (hot summer days)
- sun light
- the nutrient phosphorus
- calm, stagnant water conditions

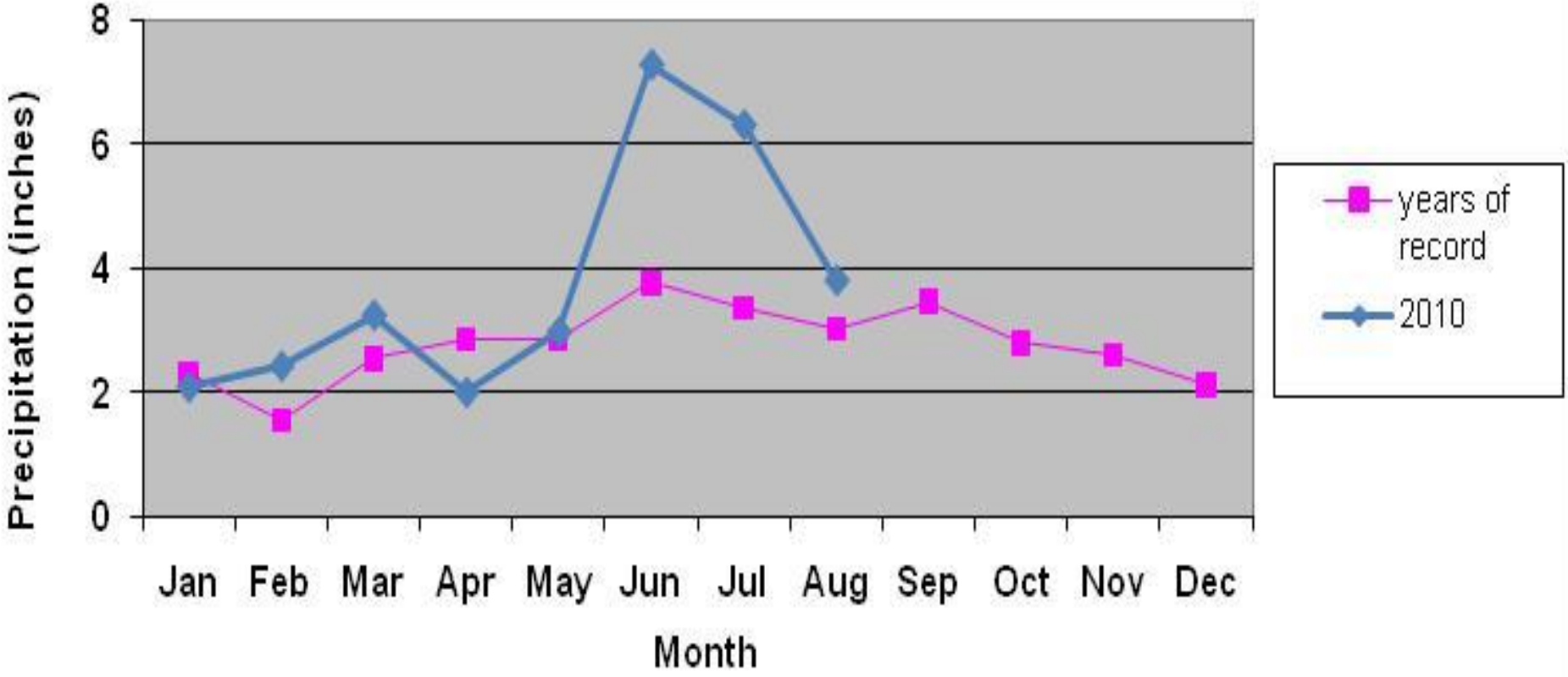
Average Daily HighTemperatures

Honeoye Wastewater Treatment Plant



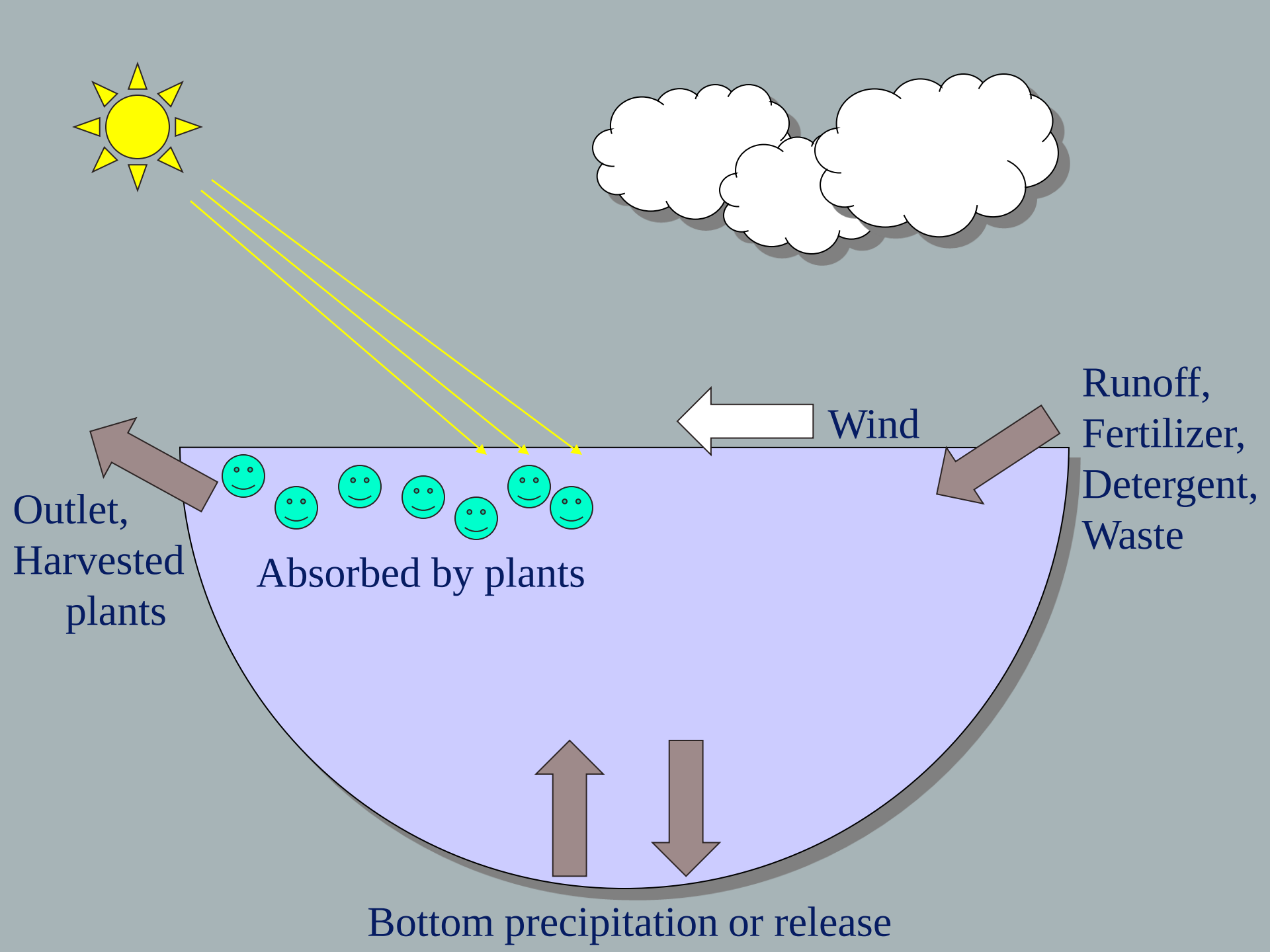
Monthly Total Precipitation

Honeoye Wastewater Treatment Plant



Phosphorus Cycle in Honeoye Lake

- Increases in phosphorus
  - Internal loading of “legacy” phosphorus
  - External loading from watershed and atmosphere
- Decreases in phosphorus
  - Chemically bound in deep,frequently anoxic bottom substrate
  - Removed in mechanically harvested plants
  - Lost downstream through lake outlet


Wind
Runoff,
Fertilizer,
Detergent,
Waste
Outlet,
Harvested
plants
Absorbed by plants
Bottom precipitation or release

Honeoye Lake and Watershed, 1940's