

"Green Slime"

A Resource Perspective

Dean M. Campbell

Technical Program Manager

LSRJB Management Program - SJRWMD

What is it?

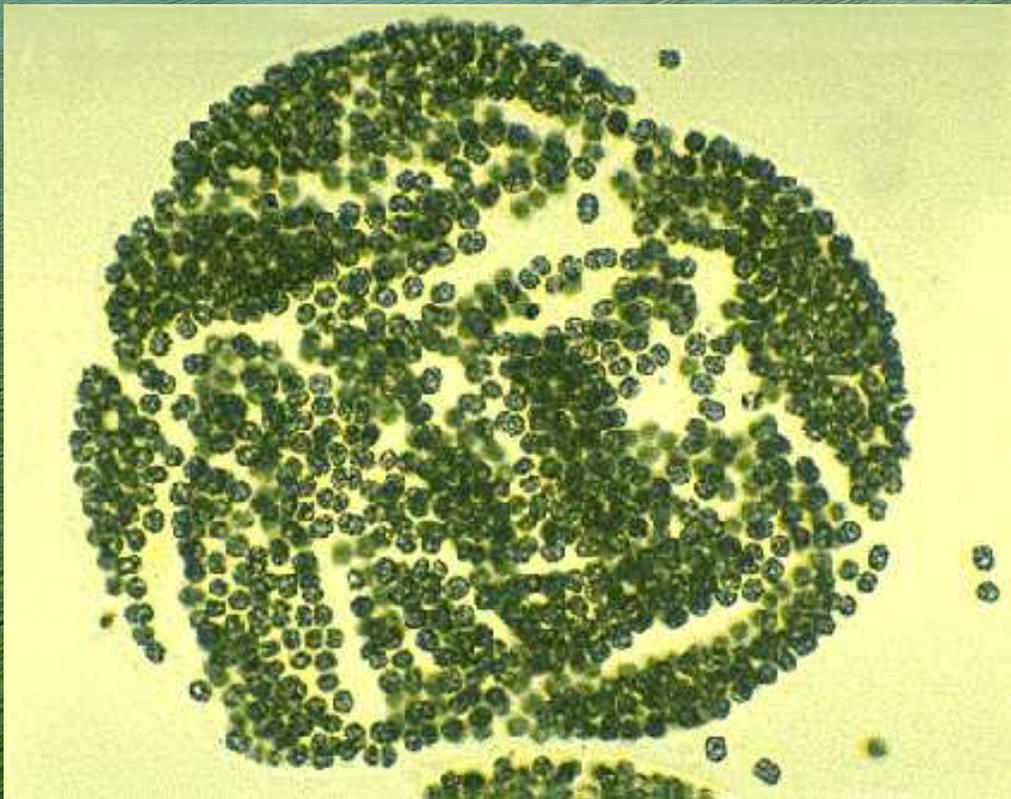
- Cyanobacteria - a phylum of photosynthetic bacteria
- Called blue-green algae
- Not true algae, but so called because of their appearance and ecological role.
- Mass reproduction results in bloom formation
- Primarily *Microcystis*, *Cylindrospermopsis* and *Anabaena*



Anabaena sp.



Cylindrospermopsis



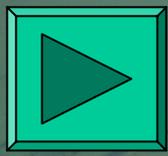
Microcystis sp.

Why the concern?

- Capable of secreting cyanotoxins, but do not always do so
- Cyanotoxins can be in various forms, most notably:
 - Microcystin (most common) - affects the liver
 - Cylindrospermopsin - affects the liver and other organs
 - Anatoxin - affects the nervous system
- Ingestion - primary mode of exposure

Resource Impacts

- Potential for fish kills (primarily related to oxygen depletion)
- Toxic effects on wildlife
- Water quality impacts - violation of DO standards
- Loss of SAV beds due to shading



SJR at Cunningham Creek, NW St. Johns County

Aesthetically Undesirable



- Unsightly
- Unpleasant odor - especially during last stages of decomposition



Chicago River, St. Patrick's Day

Causes

- Climate
 - Long summer days (plenty of sunlight)
 - Warm temperatures
- Conditions
 - Broad shallow river
 - Plenty of nutrients ("plant" food)
 - Low flow and low salinity
 - Competitive advantage

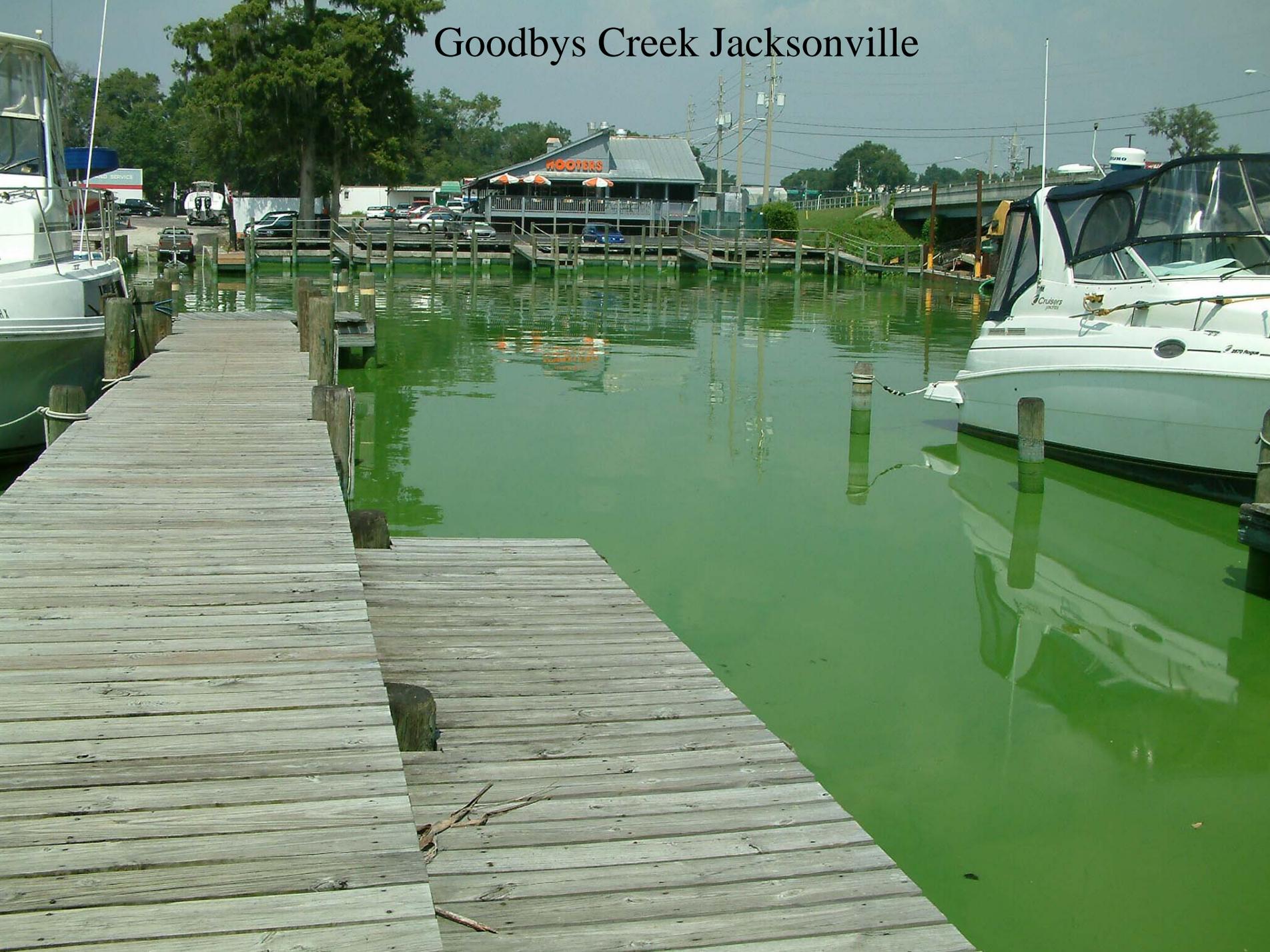
Preventative Measures

- Change in weather
- Change conditions
 - Reduce nutrient inputs
 - Limit upstream inputs
 - Reduce point source discharges - AWT and reuse
 - Reduce nonpoint source discharges
 - Urban stormwater runoff
 - Malfunctioning septic tanks
 - Agricultural stormwater runoff

HAB Response

- Routine phytoplankton community monitoring
- Bloom sampling
- Testing for algal toxins
- Providing test results to public health units
- Providing test results to media
- Special briefings
- Notices posted at public access points
- Statewide Harmful Algal Bloom Task Force

Goodbys Creek Jacksonville



Goodbys Creek Jacksonville

