



# ALGAE

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Phycologist

Division of Water Quality

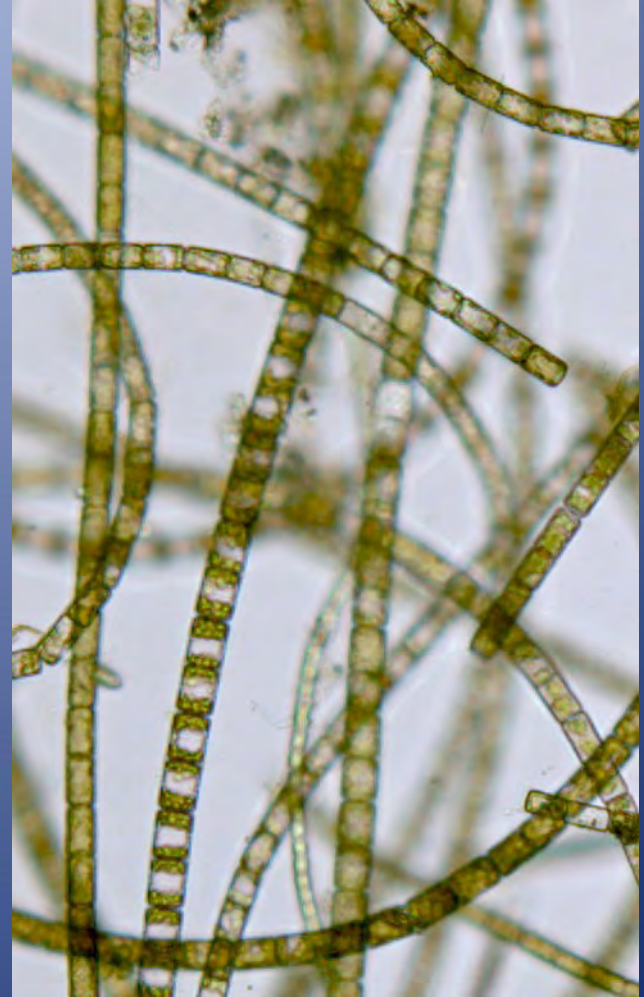
# Algae are:

- Artificial classification
  - microscopic and macroscopic “plants”
- Most Autotrophic
  - self feeders
  - CO<sub>2</sub>, O<sub>2</sub> and pH
- Some Heterotrophic
  - feed on others



# Phylums, Division or Groups

- Diatoms (golden)
- Chlorophytes (greens)
- Cyanophytes (bluegreens)
- Cryptomonads
- Chrysophytes (golden)
- Rhodophytes (red)
- Dinoflagellates
- Euglenoids



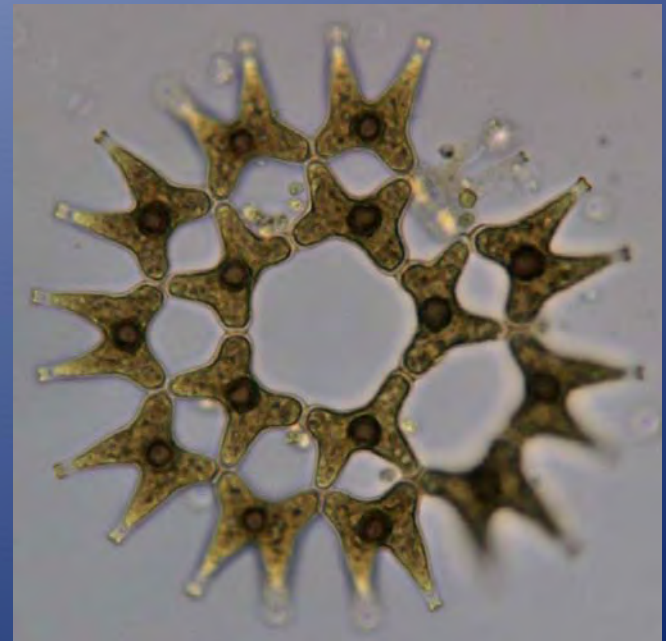
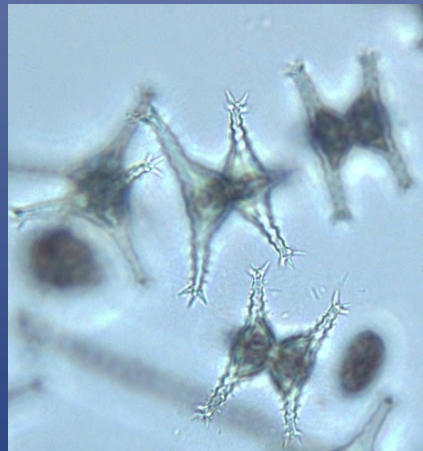
# Algae can be:

- Phytoplankton
  - Suspended, floating or swimming in water column
- Periphyton
  - Attached or living on a substrate
- Filamentous
  - Attached or free floating
- Macroalgae
  - Plant-like



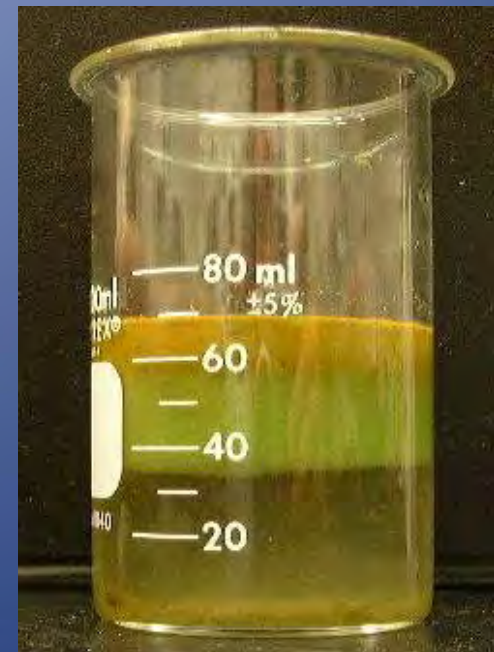
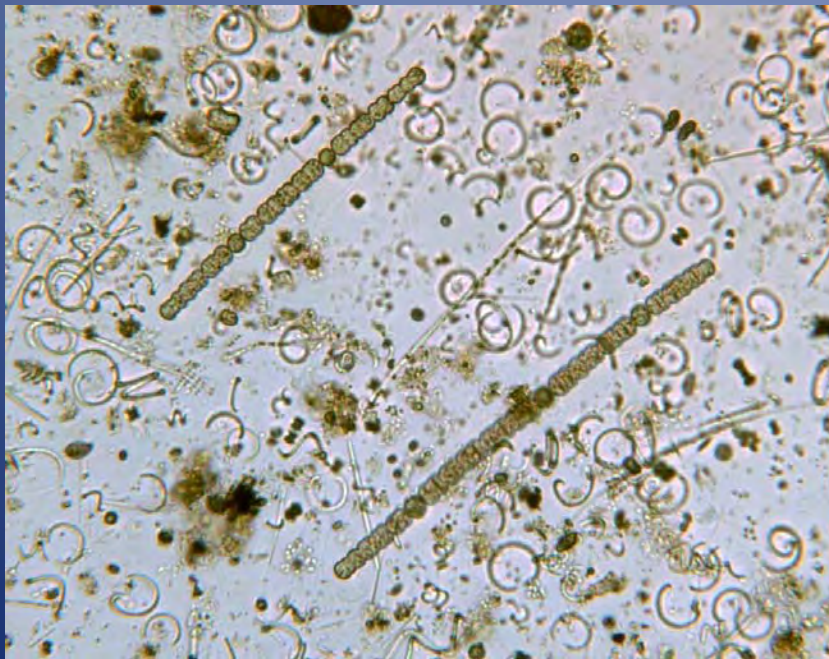
# Phytoplankton

- Most elegant
  - Desmids, diatoms & dinoflagellates
- Easily measured
  - Counted
  - Pigment analysis (i.e. chlorophyll-a)
- Water Quality Standard
  - Chl-a > 40 ug/L



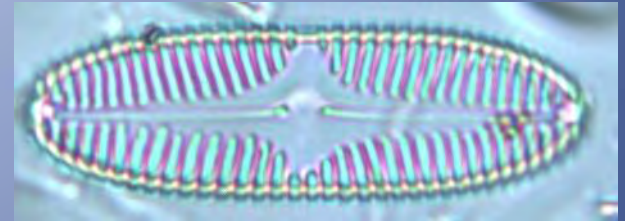
# Phyto characteristics

- Discolor water
- Surface blooms
- Stratified sub-surface blooms
- Taste and odors in drinking water



# Periphyton

- Biological indicators (metrics)
- Alter habitat
- Measurable?
- No water quality standard

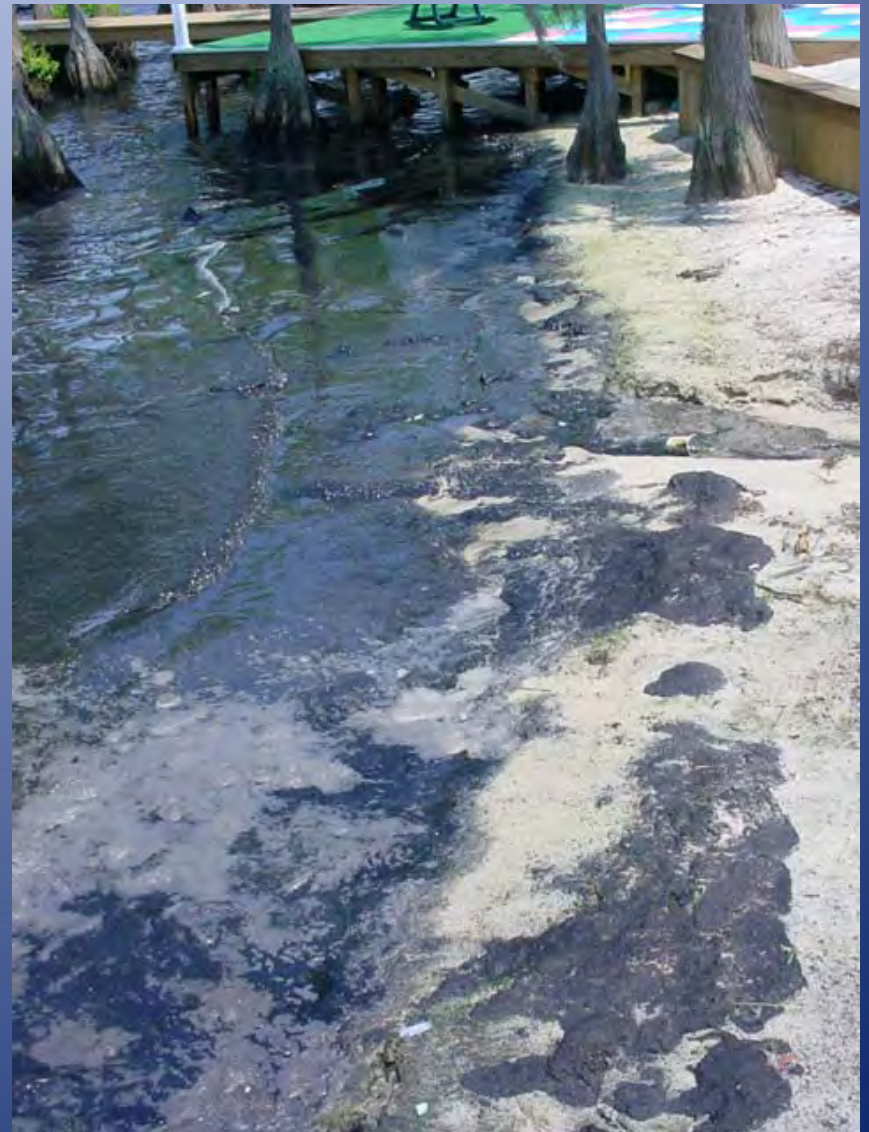


# Filamentous Algae

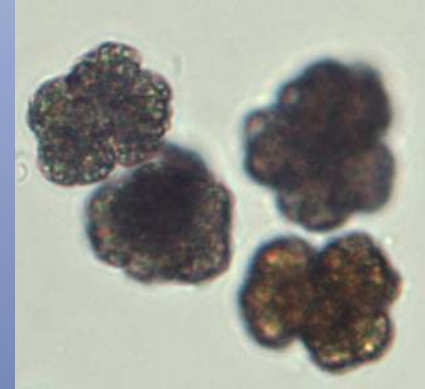
- Infestations hamper recreation
- Massive “die-off’s” stink
- Measureable?
- No water quality standard



# White Lake Algae



# Lake Waccamaw Algae



# Sewage leaks?

- Filamentous algae dried and bleached by sun
- White, paperlike



# Health Concerns?

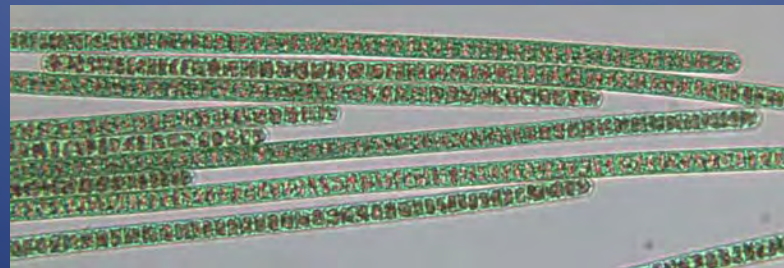
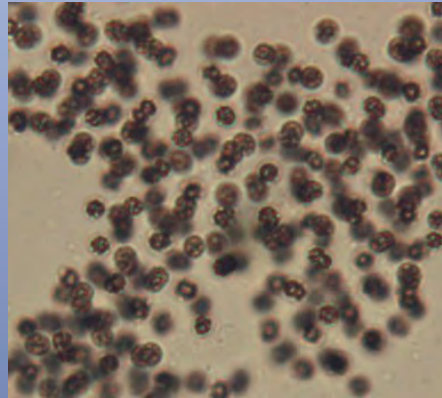
- Environmental
  - Dissolved oxygen and pH flux
  - Hypoxia = dead fish
- Human
  - Harmful algal blooms (HAB's)

Toxic bluegreen algae



# Potential toxin producers (freshwater)

- *Microcystis*
- *Anabaena*
- *Aphanizomenon*
- *Cylindrospermopsis*
- *Planktothrix*
- *Euglena?*

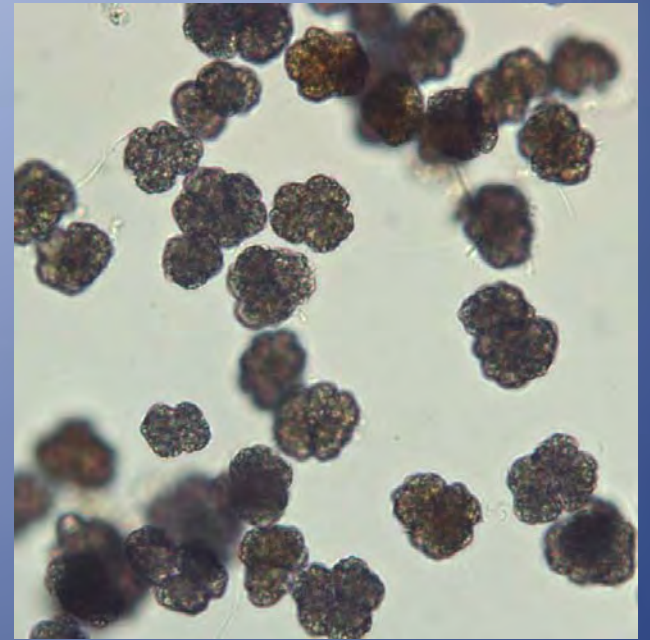
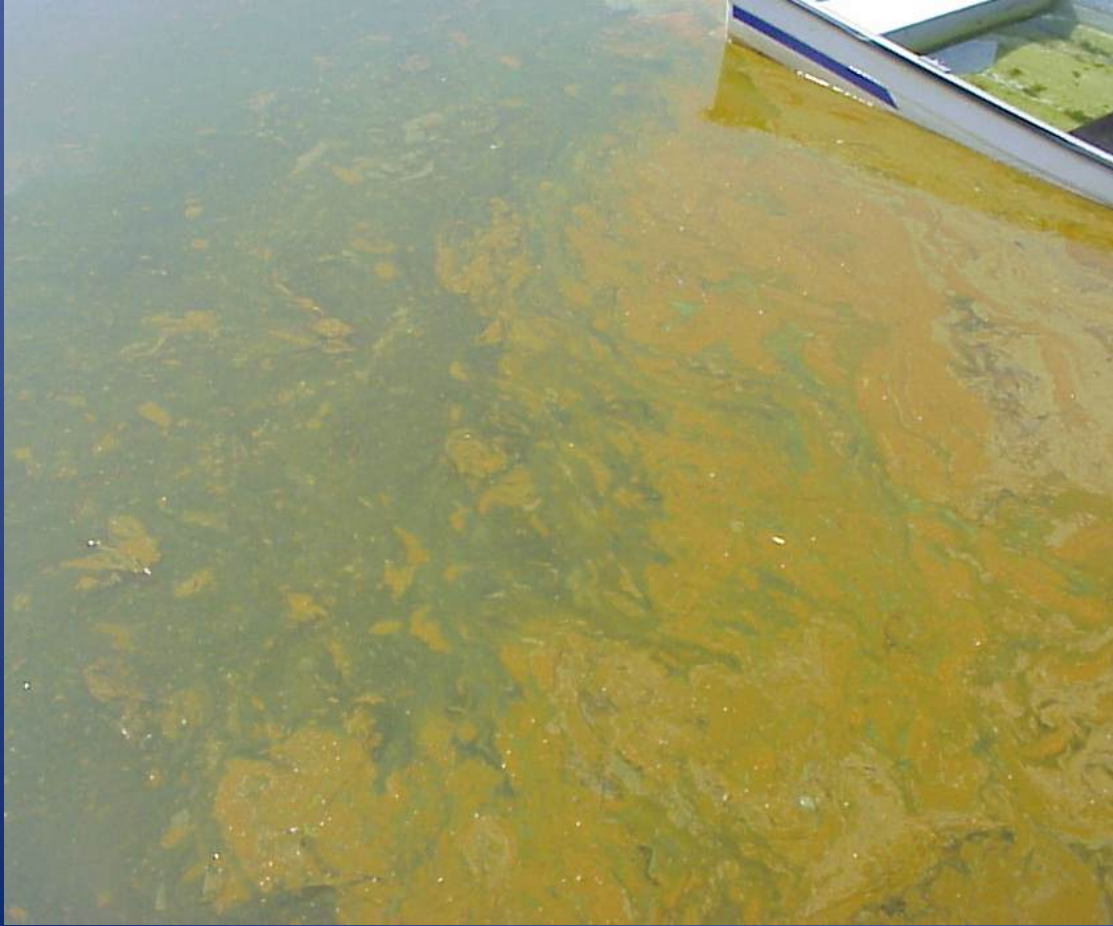


# My Concerns

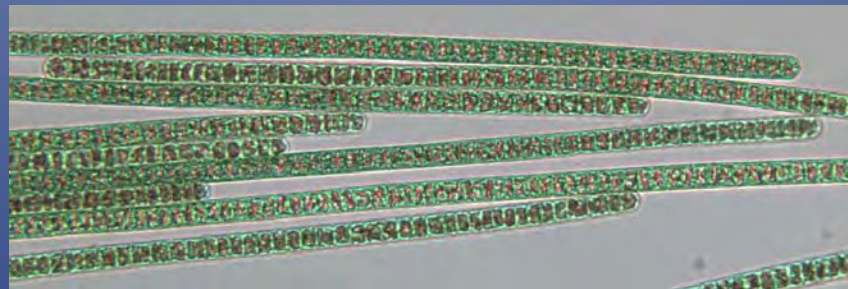
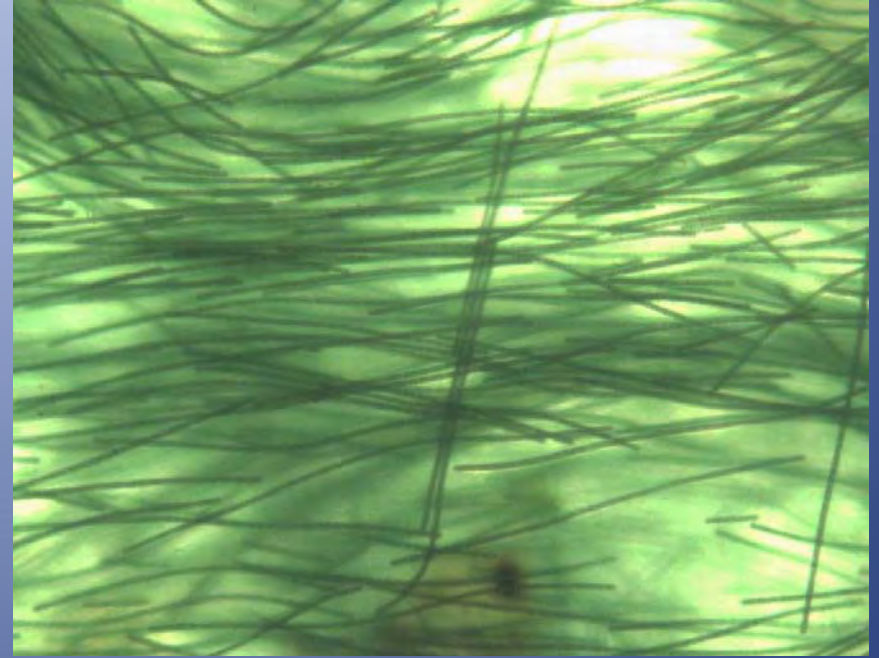
- Small lakes and ponds (most susceptible to blooms)
- Children and Dogs
- Ingestion
  - Affects liver and nervous system
- Contact
  - Causes dermatitis, rashes



# *Botryococcus*



# *Planktothrix*



# *Euglena*



# Contact Me?

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