



# SMART

## Angler's Notebook

by Carl Richardson

Phytoplankton are the first link in many aquatic food chains. They are almost invisible without a microscope. Yet, they are the keys to good fishing, especially in lakes, ponds, and large rivers. Small animals called zooplankton eat them. Young gamefish, especially fry, eat zooplankton. These very small fish need lots of zooplankton to survive and grow into big fish. Not enough phytoplankton means fewer zooplankton. In turn, less zooplankton means that fewer fish survive and grow big.

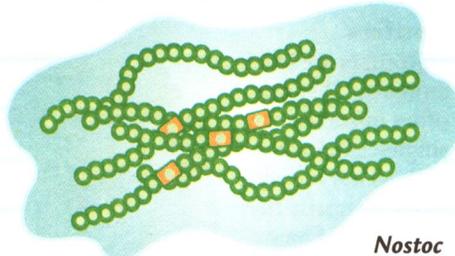
### Phytoplankton and zooplankton are two kinds of plankton.

Phytoplankton are very small, single-celled "plants." They have chlorophyll and can produce their own food—so we call them "producers." Most freshwater plankton are algae. But a few kinds of plankton, like a critter called *Euglena*, aren't. Some species cling together in long strings or mats. Others are free-living. Most just float around, but some do "move around." Some move as winds move the water. Others move up and down by controlling how much air is inside the cell. Still others squirt out cell fluid to "jet" around.

Phytoplankton are abundant in depths reached by sunlight. The amount of nutrients in the water controls the types and amount of phytoplankton. Phosphorus, nitrogen, and potassium are the key nutrients. When there aren't enough of these, especially phosphorus, phytoplankton aren't abundant. But too much isn't good, either. Many ponds, loaded with nutrients, grow large mats of phytoplankton. When these plants die and decompose, dissolved oxygen in the water decreases.

*Understanding plankton won't help you catch more fish. Still, knowing about these critters can help you figure out why some waters are more productive than others.*

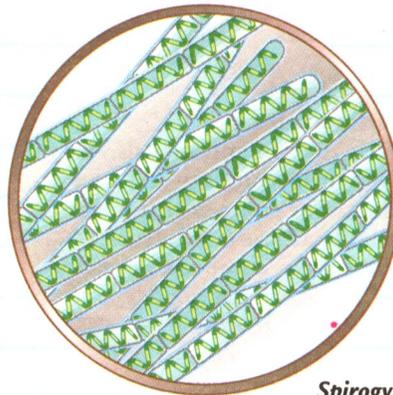
## Phytoplankton



*Nostoc*

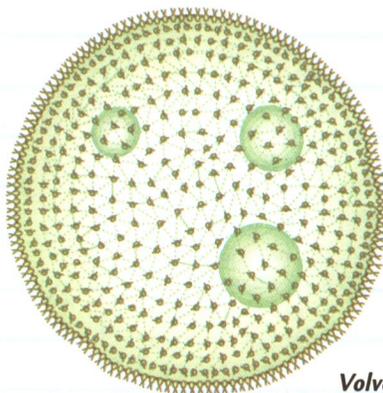
### Types of phytoplankton

● **Nostoc**, filamentous blue-green algae, can be enclosed in a large jellylike mass. This species is also found attached to rocks in streams (it's not called "phytoplankton" then).



*Spirogyra*

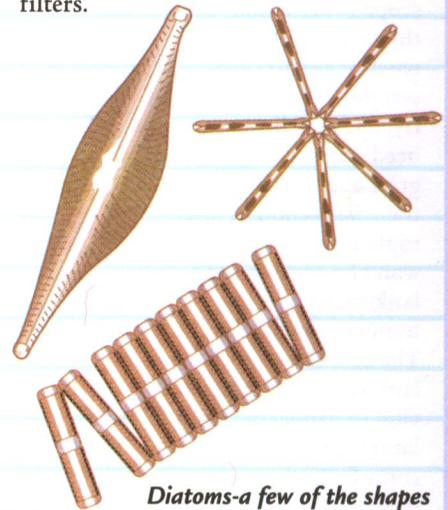
● **Spirogyra** is a filamentous green algae that forms large, green mats on ponds and lakes.



*Volvox*

● **Volvox** is green algae that clumps together in round colonies. Cells have tails, called "flagella," which move colonies around.

● **Diatoms** are single-celled yellow algae. They have hard cell walls made of silica. Some cling. Others squirt out liquid to move about. Diatoms are common in lakes and ponds. They are also found in slow-moving rivers. The remains of prehistoric diatoms make up diatomaceous earth, which we use in gardens and pool filters.



*Diatoms—a few of the shapes*

### Word Bank

**Filamentous**—a bunch of single cells clinging together in long strands, like spaghetti.  
**Plankton** (plank'-ton)—from a Greek word meaning "wandering" or "drifting."  
Small plants and animals found in water.

**Phytoplankton** (fi-toe-plank'-ton)—from a Greek word meaning "plant plus plankton."  
Small, even microscopic plants that float or drift around. They are found in fresh water and salt water.

**Zooplankton** (zo-a-plank'-ton)—from a Greek word meaning "animal," and the word "plankton."  
Small, almost microscopic animals that live in fresh water and salt water.