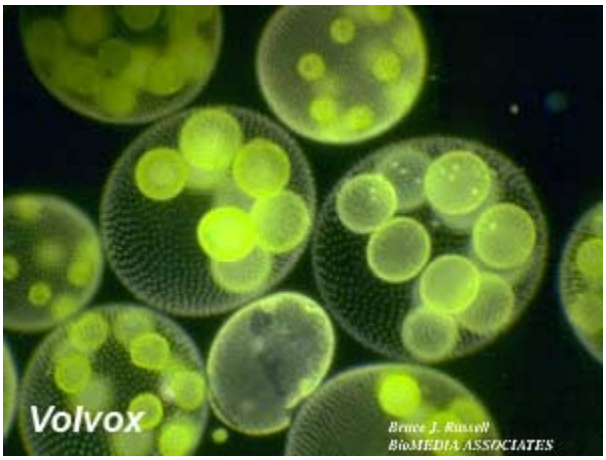

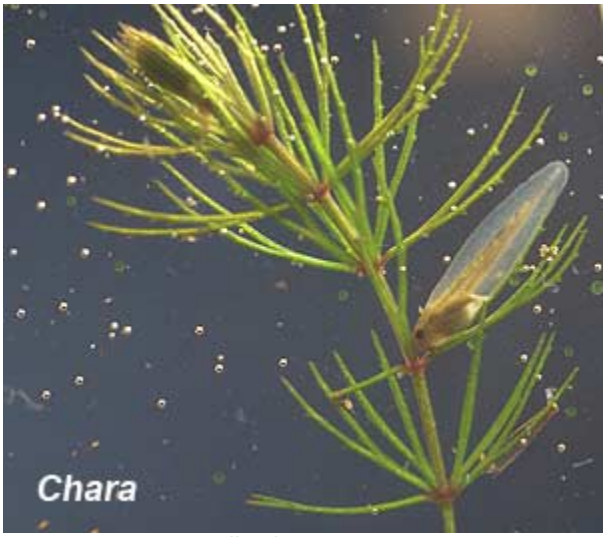

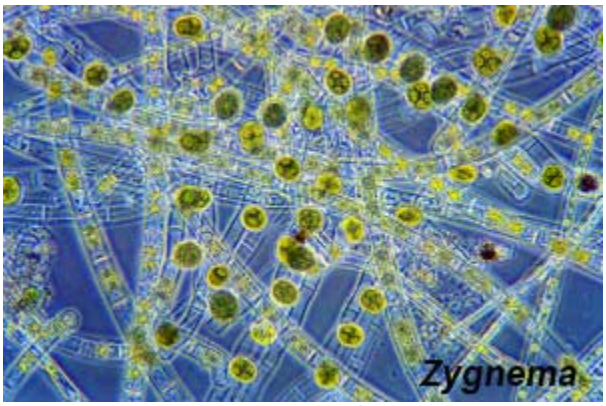

common name	Algae
scientific name	There are thousands of species of freshwater algae. Three vernal pool algae are: *Volvox*, *Chara* and *Zygnema*.
classification	Most algae are plants. Some are in a special group that is neither plant nor animal.
habitat	most aquatic habitats on Earth
size	mostly microscopic
description	Algae live in water and come in many shapes and sizes. They are shades of green, golden brown, red, or brown. Like other plants, algae are made up of cells like building blocks. You can see the cells only under a microscope. Algae cells contain green chlorophyll. Chlorophyll captures the sun's energy and turns it into food through a process called photosynthesis.

Some species of algae are just a single cell that lives alone. Other species live together in groups. The cells of some algae, such as the *Zygnema* in vernal pools, are linked together to make long threads. Big clumps of *Zygmena* look like green clouds floating in the water. Some vernal pools are totally green with *Zygnema*.

fun facts

A beautiful algae called *Volvox* is really a colony of algae cells living together in a sphere. It looks like a green globe spinning slowly through the water. It is macroscopic, so you can see it with a hand lens. Sometimes you can find a microscopic critter called a Rotifer living inside of a *Volvox*. This species of Rotifer is a parasite. It munches away on the cells of the *Volvox* and lays eggs. The damage slowly destroys the perfect globe shape of the *Volvox*. When the Rotifer has eaten enough, it escapes and swims off to find and parasitize another *Volvox*.

life cycle

Most Algae divide to reproduce. They simply split in half to become two Algae. Other species have male and female reproductive parts. Algae in vernal pools can produce spores that can survive harsh, dry conditions for many years.

ecology

Algae are important in the vernal pool food web. With their green chlorophyll and carbon dioxide from the air, Algae capture the energy of sunlight to make their own food. The food that Algae produce is a form of energy that other species can use. Algae are eaten by Protozoa, Rotifers, Water Fleas, Seed Shrimp, Flatworms, Copepods and many small aquatic animals. Not only do Algae pump energy into the vernal pool ecosystem, they also pump oxygen into it. When Algae make food, they also make oxygen. This oxygen dissolves into the water, where other vernal pool critters can use it.

Clouds of Algae give Tadpole Shrimp and aquatic insects a place to hide from birds. When the pools begin to dry up, the clouds of Algae can no longer float. Then, Algae forms a thin mat on top of the young vernal pool plants. When this algal mat dries, it makes an umbrella or canopy above the ground.

investigate

Zygnema can form algal mats in some pools. Young frogs, toads and other species can be found under the algal mats even in July, long after the pools have dried. Take a peek under the canopy and see what species depend on the mat for shade, dampness and shelter.

Scientists use special meters (electronic measuring tools) to measure the amount of oxygen dissolved in water. If you had a dissolved oxygen meter, would you expect to find more oxygen in a vernal pool during the day or at night? Why? Hint: When do algae and other plants make food (and oxygen)?

What is an algae bloom?

Some algal species are very sensitive to the pollution in runoff, especially fertilizers from lawns and gardens. The number of algae in polluted water can grow quickly into an "algae bloom." This knocks the food web out of balance, damaging other aquatic species.