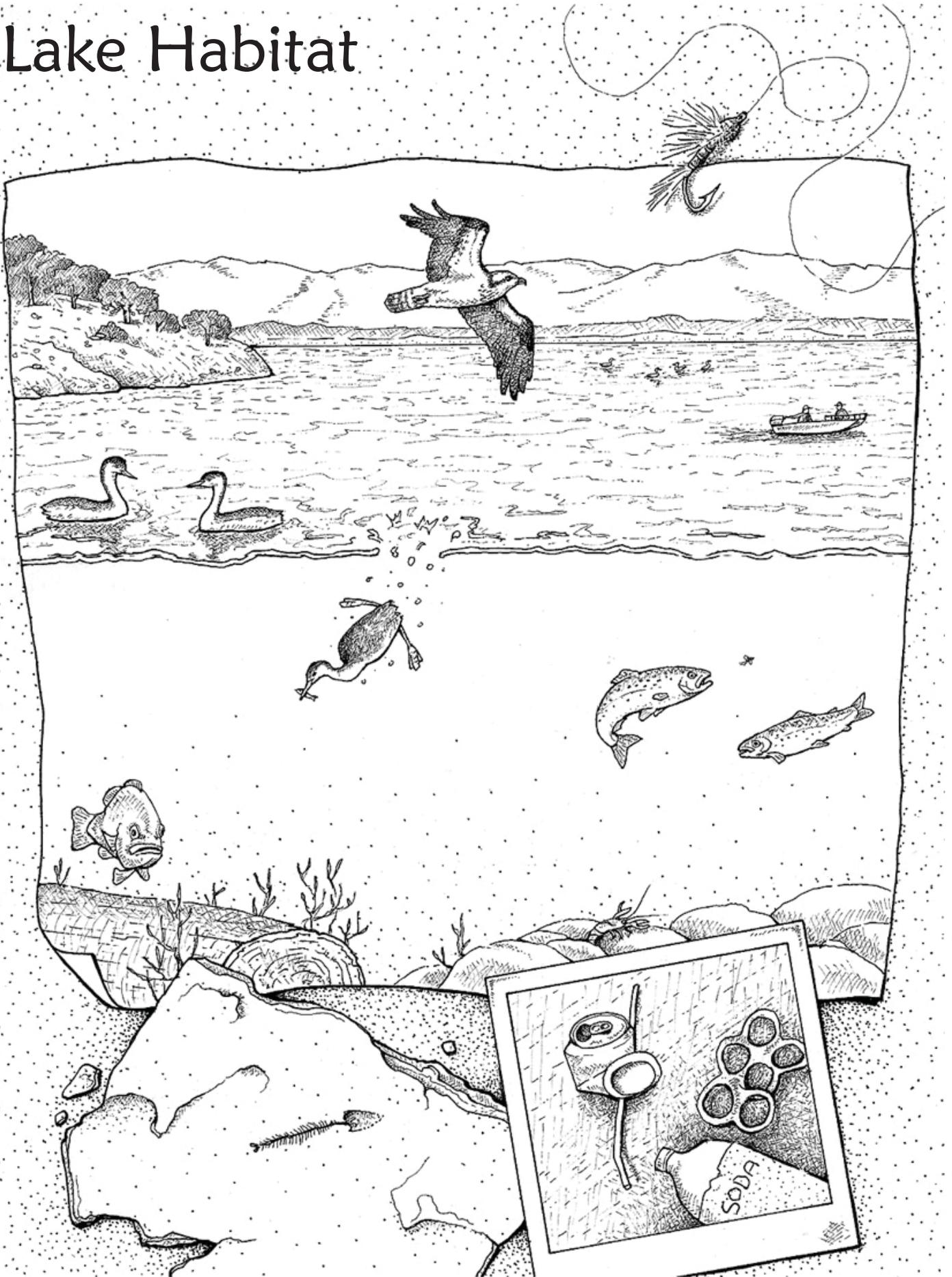


# Lake Habitat



# Lake Habitat

From land, a lake looks like one big pool. Under the surface of the water, lakes can have different habitats, just as the land does. We say that the lake is “heterogeneous,” (het-er-ah-JEE-nee-us), which means, ‘many different kinds’.

From the top of the lake to the bottom, the water is layered, like a cake.

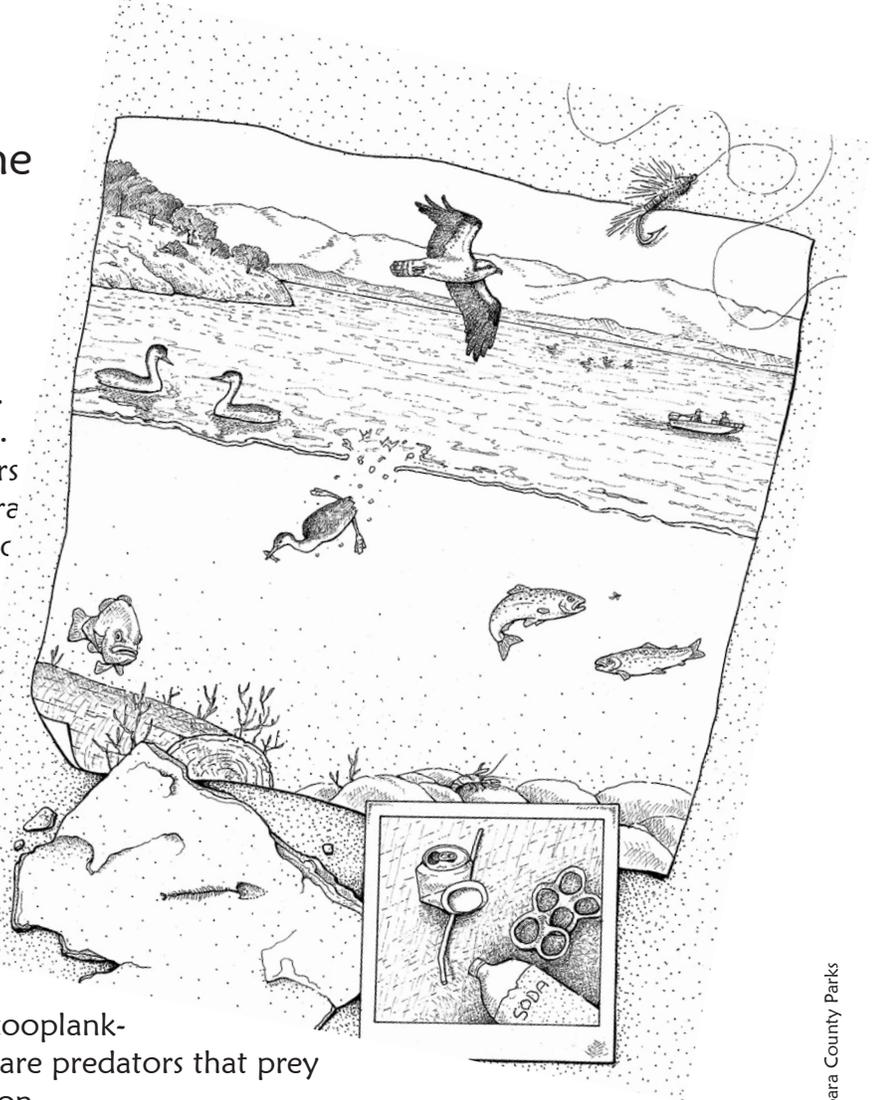
Sunlight brightens the top layers, but it does not reach the bottom. Where light reaches, phytoplankton, such as algae, live and grow. They are the first link in the lake’s food web. Different living organisms use different layers of the lake. Some organisms can live in several different layers, depending on the season and water temperature.

Phytoplankton are called primary producers in the food web.

Primary producers (like plankton) apply photosynthesis by using sunlight energy and carbon dioxide in the water. They are eaten by primary consumers (like zooplankton). Secondary consumers (like bigger fish) are predators that prey on the smaller organisms that eat the plankton.

**Cachuma Lake is a drinking water reservoir.**

The lake stores water for us. It is not a natural lake. It was formed by building Bradbury Dam across the Santa Ynez River. This “fake lake” has habitats and food webs for living organisms, just as natural lakes do.



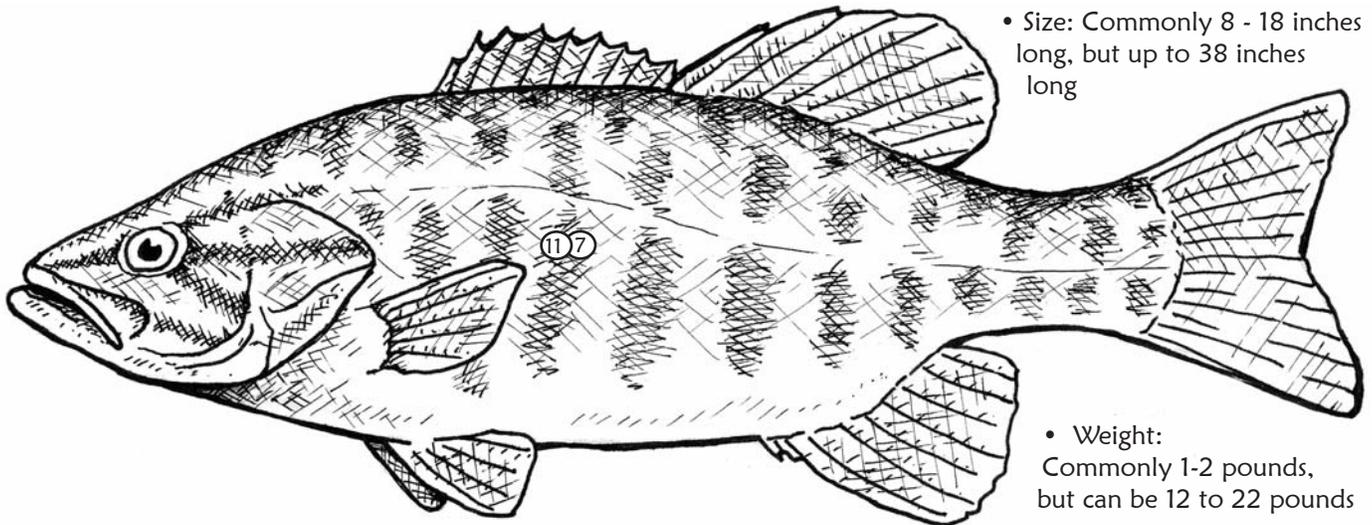
Lake habitat subjects in this book:

- Bass
- Osprey
- Plankton
- Western grebe

Habitat:  
Lake

## Bass Facts

- Habitat: cold, clear rivers and lakes
- Color: brownish-green with dark blotches along the sides
- Age: Up to 26 years
- Size: Commonly 8 - 18 inches long, but up to 38 inches long
- Weight: Commonly 1-2 pounds, but can be 12 to 22 pounds
- Diet: Crayfish, salamanders, insects, and smaller fish
- Nest: the male clears a circular area on the bottom of the lake in shallow water



## Bass

*Micropterus species*

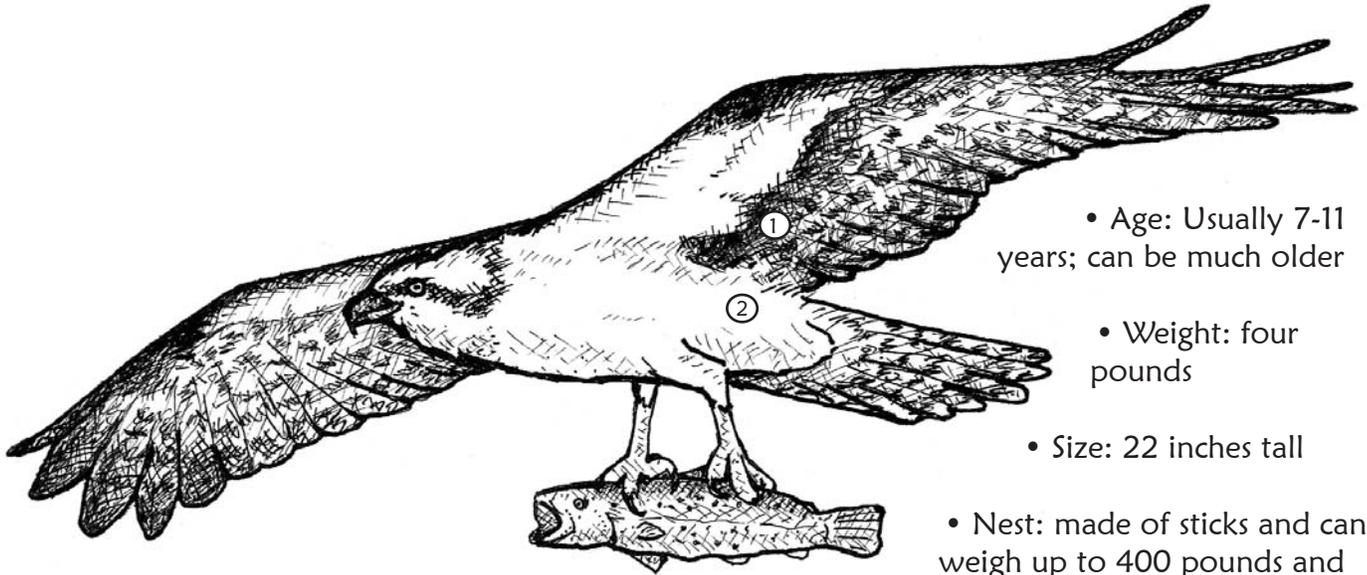
Bass are fish that live in lakes and rivers. They are found all over the world. Many people come to Cachuma Lake to fish for bass. They're fun to catch, and some people let them go afterward.

Some bass used to be found only in eastern North America. Because they are such a popular sport fish to catch, they have been put into lakes and rivers all over the world. Where animals and plants are found naturally in an area, they are said to be native species. When animals or plants are taken to new places, they are called introduced species. Sometimes introduced species can create big problems by spreading, taking over, using up food and shelter, or preying upon the natives. This can make it very hard for the native plants and animals to survive. Bass at Cachuma Lake are not a problem for native species, and many anglers come to Cachuma Lake to fish for them.

Habitat:  
Lake

## Osprey Facts

- Overall description: dark brown back, with white head and belly, and a dark line across the eye and face
- Wingspan: 4.5 to 6 feet



- Age: Usually 7-11 years; can be much older
- Weight: four pounds
- Size: 22 inches tall
- Nest: made of sticks and can weigh up to 400 pounds and last 40-45 years
- Nickname: fish hawk or fish eagle

## Osprey

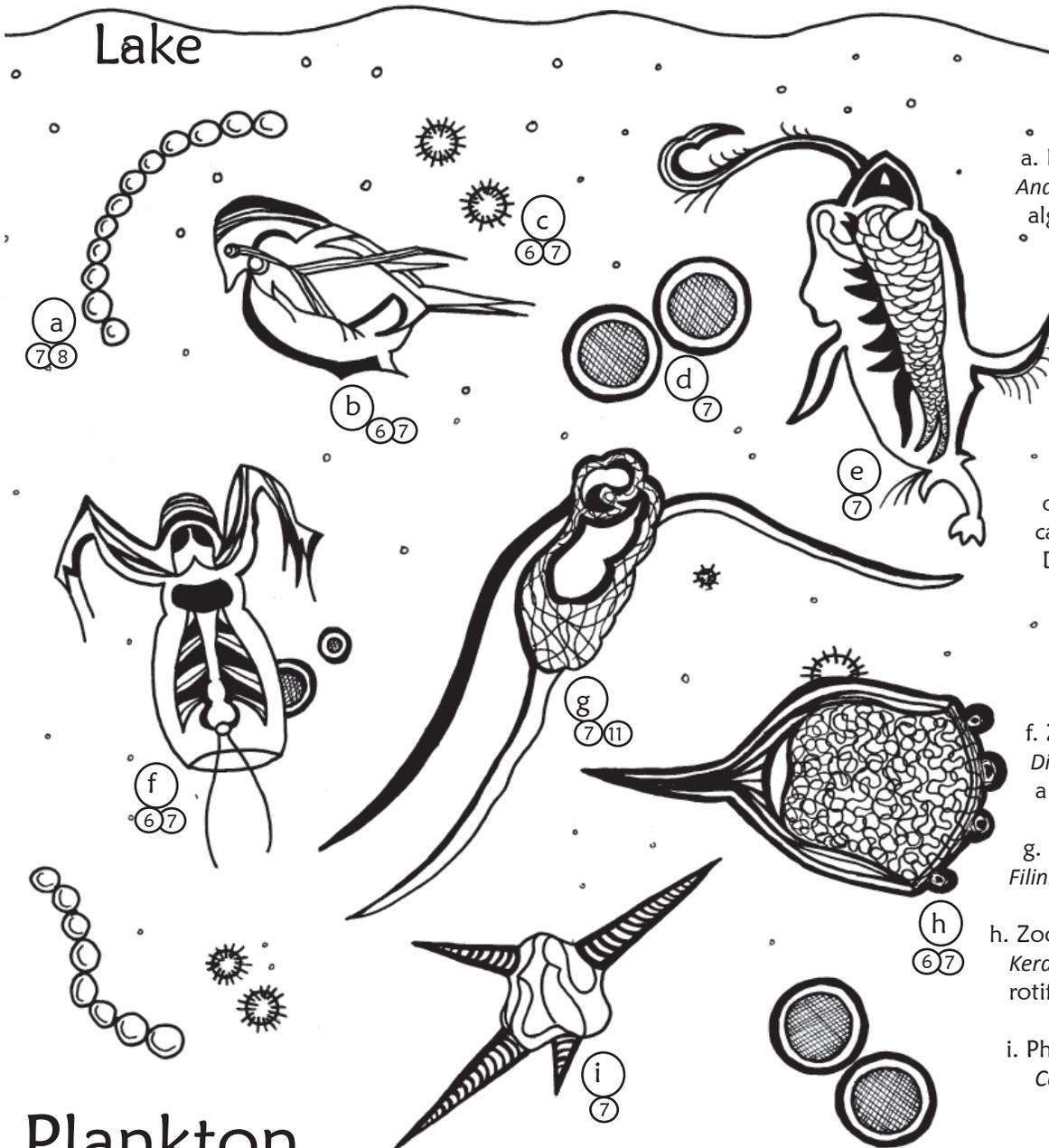
*Pandion haliaetus*

Osprey are large birds that eat fish. They live near rivers, lakes, or the ocean. At Cachuma Lake you might see an osprey dive in the water to catch a fish.

Osprey have several special tools that help them catch fish better than other birds. They have very large talons (claws), spiny foot pads, super eyesight, very oily feathers, and very long wings. These special tools are called adaptations, and they have developed over thousands, or even millions of years. An adaptation is any change in a living thing that makes it easier to mate, eat, hunt, escape, hide, or live more easily in a specific habitat. These changes get passed from parents to young.

Habitat:  
Lake

Plankton  
Facts



- a. Phytoplankton called *Anabaena*, a blue-green algae.
- b. Zooplankton called *Daphnia pulex*, a cladoceran.
- c. Phytoplankton called *Gloeotrichia*, a blue-green algae.
- d. Phytoplankton called *Cyclotella*, Diatoms.
- e. Zooplankton called *Diaptomus tyrrelli*, a copepod.
- f. Zooplankton called *Diaphanosoma*, a cladoceran.
- g. Zooplankton called *Filinia*, a rotifer.
- h. Zooplankton called *Keratella cochlearis*, a rotifer.
- i. Phytoplankton called *Ceratium*, a dinoflagellate.

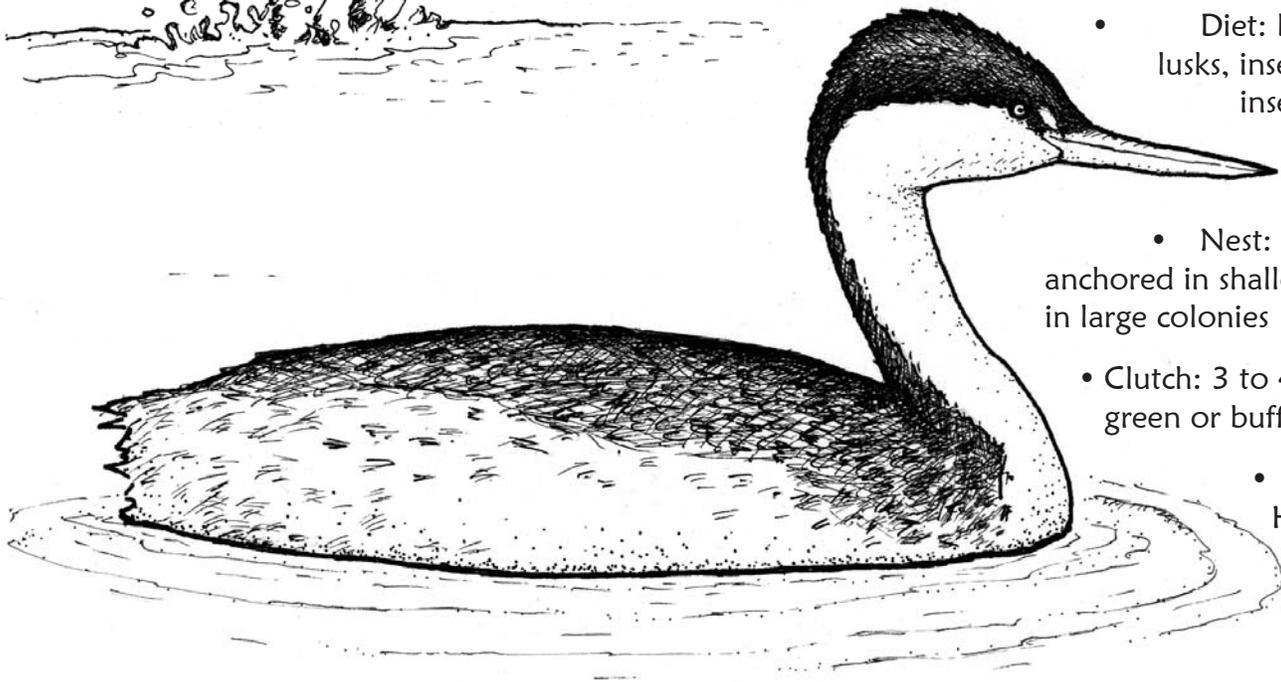
## Plankton

The water in Cachuma Lake is green. Why? Because it is full of plankton. Plankton are tiny living creatures. They live and float in fresh water like Cachuma Lake and in the ocean.

Plankton are so small we can't see them, but so important we can't live without them! Plankton are plants, animals, algae and other living things. Most plankton are microscopic in size--so small you can't see them. There are different kinds of plankton in many different shapes and sizes. One kind is plant plankton, or "phytoplankton". They use photosynthesis to make their own food using sunlight energy. Another kind of plankton is zooplankton--tiny animals that eat the phytoplankton (and other zooplankton). Zooplankton get eaten by bigger animals, like fish. Small things play a large role on the planet. Plankton are the base of the food web in freshwater and oceans.

Colors: 1/Black, 2/White, 3/Gray, 4/Red, 5/Orange, 6/Yellow, 7/Green, 8/Blue, 9/Pink, 10/Purple, 11/Brown

Habitat:  
Lake



## Western Grebe Facts

- Overall: Medium sized black and white bird with a long, slender neck and a long, pointed pale yellow bill
- Size: Wingspan, 24 inches; length, 25 inches
- Diet: Fish, mollusks, insects and insect larvae
- Nest: Floats anchored in shallow water, in large colonies
- Clutch: 3 to 4, pale green or buff
- Voice: High pitched "Cree-ee! Cree-ee!"

## Western Grebe

*Aechmophorus occidentalis*

Grebes live on the water. They eat, sleep, date, and build their nests on water. They float on water like a duck. They also dive under water to catch fish and other creatures.

Grebes are perfectly adapted to life on the water. Each of their toes is like a miniature paddle. Their feet propel them to swim on the surface or to dive deep under water to catch fish or aquatic insects. Grebes don't often go on land and they have soft, very thick feathers to insulate them on the water. Grebes even date on the water. A courting pair races across the water together, as if they are water-skiing. Male and female grebes look like each other, and grebe parents cooperate to build their nest, incubate the eggs, feed the chicks and carry them on their backs.

Colors: 1/Black, 2/White, 3/Gray, 4/Red, 5/Orange, 6/Yellow, 7/Green, 8/Blue, 9/Pink, 10/Purple, 11/Brown

# Lake Habitat: Think About It!

## Bass

- Why do you think some people catch, then release the bass they catch?
- Bass are originally from the Great Lakes south down to the Gulf of Mexico. Can you name ways you think introduced plants or animals might become a problem in a new place?
- If you got a turtle from a pet store, but it outgrew its tank, what could you do with it?

## Osprey

- In what ways do you think some of the osprey's adaptations help it catch fish better?
- What kind of adaptations do humans have that help them find food and live easier?
- Can you see ways that you are especially like your father or mother?

## Plankton

- What would happen to the planet if plankton suddenly became the size of dogs? Horses?
- Plankton are the most important source of oxygen on our planet. What would happen if plankton couldn't survive in the oceans?
- Plankton are critical to a healthy planet. How can you protect plankton?

## Western Grebe

The water level in Cachuma Lake may rise or fall due to rainfall, evaporation, water use and water releases into the Santa Ynez River. Grebes build their nests on the surface of the water.

- How do you think rapid water level changes can affect grebe nests?
- What item used in fishing can be deadly to diving grebes?
- Why do you think grebes race across the water in their courtship dance?