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FUN FOR KIDS

A COOPERATIVE PROJECT OF THE SANTA BARBARA NEWS-PRESS AND THE EDUCATORS' ROUNDTABLE, PUBLISHED MONTHLY TO PROMOTE LEARNING AMONG YOUNG READERS IN NATURAL SCIENCE, HISTORY, TECHNOLOGY, AND ART

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Wild California: What Happens After Fire?

Every late summer and fall, we hear about large wildfires burning in the chaparral and forests of California. Wildfires often start during the hot, dry winds of autumn. This is when the vegetation is also very dry.

Evidence from fossils and rocks tells us that fires have been part of the California scene for a very long time. Lightning starts some fires, and others are started by people. In our area, most fires are caused by humans. As our population grows, the number of fires that are started accidentally by people increases.

In many cases, fires burn in remote areas, but when they come close to towns and cities they threaten houses and people. Sometimes homes and other buildings are destroyed. Firefighters work hard to keep the fire away from communities and to minimize the damage to sensitive features in the backcountry.

Large fires can cause big changes for wild animals and plants. If we study chaparral, a type of shrubby vegetation that is common in fire-prone areas, we can observe some interesting things.

Chaparral is made up of many species of drought-tolerant shrubs including

Ceanothus or California lilac, manzanita, chamise, holly-leaved cherry, and various sages. Many of these plants contain flammable chemicals that, when ignited, will burn very hot. As chaparral plants age, some of their branches die. These dry limbs are a source of fuel for a fire.

Often in the spring following a chaparral wildfire there are spectacular displays of wildflowers. Areas that were covered by thick brush before the fire are now open to plenty of sunlight. Many kinds of beautiful wildflowers spring up. Some are "fire followers" like the beautiful red/orange fire poppy that is usually seen only after a fire.

Seeds of many plants lie dormant in the soil for a very long time. Chemicals from smoke and ash cause some of these seeds to sprout. Other plants, like lilies that have underground bulbs, and the wild cucumber or manroot that have big roots, have lots of stored food, and can grow very quickly once rain dampens the earth. Soon, shrubs like chamise and some species of *Ceanothus* and manzanita sprout new shoots from their burned and blackened stumps. Some shrubs are killed by fire, but they are replaced by new seedlings that grow quickly in ash-enriched soil.

In the years after the first spectacular wildflower displays, many interesting smaller shrubs fill the spaces. Deerweed with its many small yellow flowers and sticky snapdragon with lovely pink blossoms are two of these. Not too many years later the land will again be covered with a thick tangle of tough shrubs and will look much as it did before the fire.



U.S. Forest Service

Wildfires have short- and long-term effects on native plants and animals.



Sally Isaacson

Fire Poppy

Animals, Habitat, and Fire

Hot Property!

Animals that live in chaparral communities are adapted to fire, just as plants are. When you hear about a wildfire you may wonder: "Where do all the animals go?" Animals have different strategies for escaping fires. Deer, bears, and mountain lions are good runners and use this skill to escape the flames. Sometimes they may get trapped, but if there are pockets of unburned brush, they can hide safely. Small animals such as mice, snakes, lizards and turtles can burrow under the soil, which is a good insulator against heat. Frogs and toads can stay cool and protected in a nearby creek or bury themselves in wet mud or sand. Birds can fly to a safer area until the flames have passed.

Fire brings dramatic change to these animals' habitats. When they return to burn areas, some may find that their homes are gone. New growth begins quickly, bringing a variety of new plants with nutrient rich seeds and tender leaves that draw insects and birds. Eventually, small and large mammals will return as nature recycles, replenishes, and regenerates.



Sally Isaacson

Mule Deer

Patchy Post-Fire Places!

As wildfire burns across an area, its effect may be uneven. Fires create a mosaic or patchwork pattern, often leaving some areas unburned or lightly burned. This natural pattern provides for diversity of plants and animals and is very important for a healthy ecosystem.



Sally Isaacson

Bobcat

FIRE ESCAPE!

Find the path to safety for these animals escaping fire in the chaparral or forest.

Maze by Jennifer Gray

Fire ... Water ... Fast Food!

In heavy rainstorms, water can rush downhill at high velocity (speed) and cause erosion. Because a wildfire removes vegetation that holds soil in place, the rainwater carries nutrient-rich sediments with it downhill. The sediment eventually settles in flat areas like Cachuma Lake and Gibraltar Reservoir—our drinking water supplies.

Now the water is loaded with nutrients. The first living things that line up for this fast food festival are algae. When algae have an endless food supply

they reproduce fast. Algal populations can grow so fast that they can turn the water a solid green color. This is called an algal bloom.

Sometimes algae can grow so fast, they use up the oxygen in the water that is needed by other living things. When this happens, it can create a "dead zone" in which organisms have died because of lack of oxygen. Algae can even starve themselves of oxygen. Algae also can produce poisons, or toxins, that can affect other life in the water, but this isn't very common.

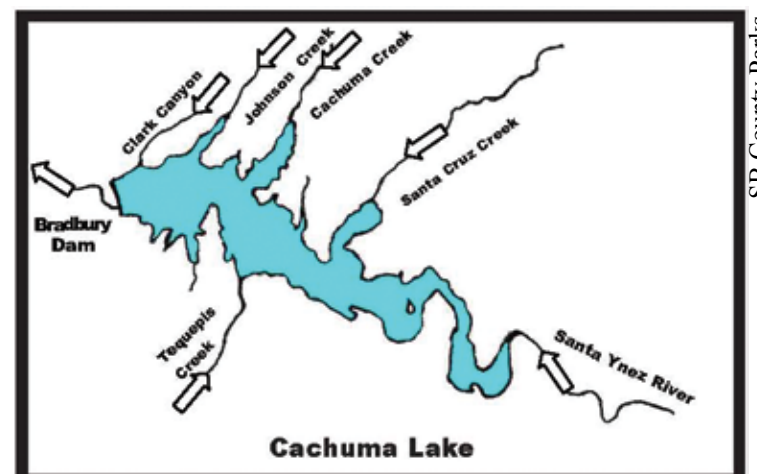
Cachuma Lake now has an algal bloom because of recent fire, but it's not too bad. You can see algae in the water, but the water is still pretty clear, and the fish are doing just fine.

This alga grows in colonies that can become "algal blooms."



SB County Parks

Examine this map of Cachuma Lake. Draw circles around areas that could deliver "fast food" to algae in the lake during the rainy season after a fire. The arrows indicate the direction that the river and creeks flow.



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