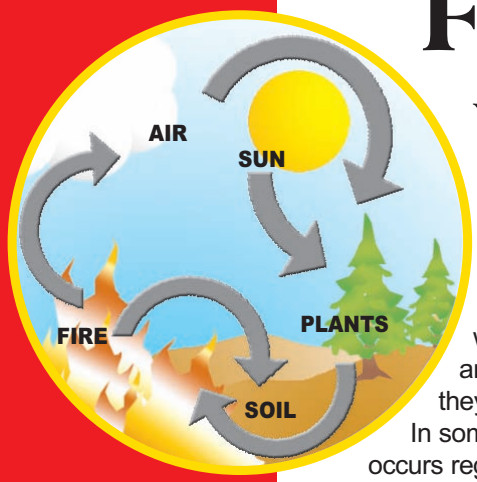

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"It's not just a water planet, it's also a fire planet."

Fire Recycles

Wildland fire is an ecological process affecting almost all of the earth's vegetation. Underwater plants are generally an excpetion, although when seaweed or algae are left onshore to dry, they too, can become fuel. In some places, wildland fire occurs regularly enough that species depend on it.

The length of a fire return interval, or "fire cycle" varies based on the climate, vegetation, and ignition frequency of a particular location. Ignitions are mainly caused by lightning, volcanic ash, lava, or a variety of human sources, both planned and accidental. Without humans, the most significant ignition source is lightning. Almost all of Marin's wildland fire is human-caused.

Fire recycles energy and nutrients from plants back into the soil and atmosphere.

The energy from the sun that powers plant growth is released when vegetation burns. During photosynthesis, plants use carbon from carbon dioxide and hydrogen from water to make new cells. Energy stored in countless carbon-hydrogen bonds is released as heat during a wildland fire.

Photosynthesis means "building with light." Combustion is a way of "breaking with fire". Water and carbon dioxide are released as components of smoke. Smoke also contains tiny unburned plant particles while the larger material remains as ash.

Ash returns nutrients from plants back into the soil, especially calcium, potassium and phosphorous. Nitrogen is returned by the nitrogen-fixing plants that flourish after a fire and begin the process of regrowth. Without nitrogen, proteins cannot be made, and DNA cannot be reproduced.

Most of the earth's nitrogen is in the air, but can't be breathed in. Nitrogen-fixers host bacteria in their roots which convert atmospheric nitrogen into a form plants and animals can use.

Plants in the pea family (legumes) are notorious for their nitrogen fixing abilities. Many farmers rotate their crops with soybeans (a legume) because they replentish the soil with nitrogen. Important nitrogen fixers in Marin's ecosystems include ceanothus, lupine, alder, lotus, and the bluegreen algae in some lichens.

Some species are highly adpated to survive fire. Redwood and and coast live oak, for instance, have very fire resistant bark. Oaks can even resprout from the top part of the tree. These are excellent plants for fire-wise landscaping around your home.

Jennifer Chapman,
Fire Education Specialist, National Park Service

Like many hardwood trees, shrubs and other flowering plants, this California bay survived a wildfire by resprouting at the base.

Fire recycles. It is not inherently good or bad. It's a physical earth process.

Anything that burns is fuel, including homes, especially homes made of wood. If you live in a heavily vegetated area, don't let your home be recycled too. Reduce fuel by removing and separating vegetation. This creates defensible space. Make your home more fire resistant with less flammable roofing, siding and decking. In the wildland-urban interface we can prevent loss by being **FIRE WISE** and **FIRE SAFE**. Thick bark can protect trees.

DEFENSIBLE SPACE CAN SAVE YOUR PLACE

Break the Cycle of Repetitive Loss

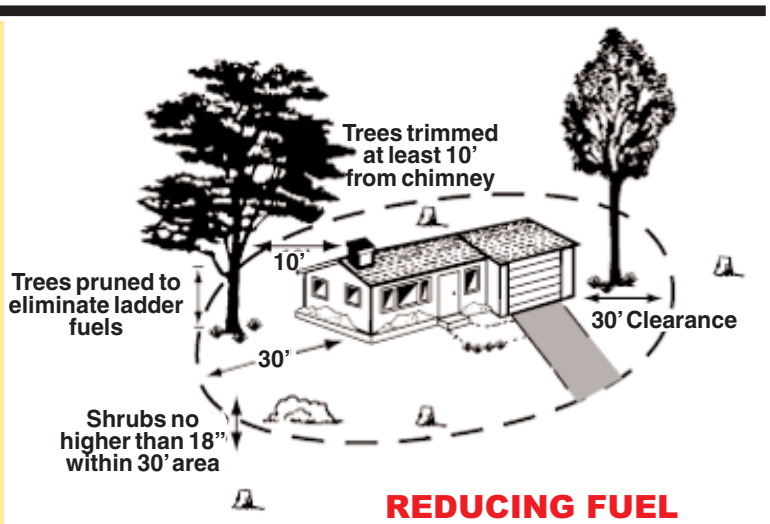
Homes Lost, Homes at Risk

From 1985 to 1995, over 9,000 homes in the U.S. were lost to wildfire.

In 1999, 817 sturctures burned; in 2000, 861 structures burned; in 2001, 731 structures burned; in 2002, 815 structures burned.

In California, 585,254 homes are at "extreme" risk from wildfire. The cost of rebuilding these homes and replacing their contents is over $106 billion. There are 7,000,000 homes at "high to extreme".risk.

(sources: National Fire Protection Association, National Interagency Fire Center, California Department of Forestry and Fire Protection).



REDUCING FUEL INCREASES SURVIVAL

Defensible Space is a Human Adaptation to Fire