How to combine
Fire Defensible Space and
Best Management Practices
PREPARE
Protect Your Home For From Wildfire.

To learn how visit: LivingWithFire.info/Tahoe

Lake Tahoe Wildfire Awareness Month
May 1 - 31, 2014

GET DEFENSIVE
Reduce the Fuels - Reduce the Risk
Lake Tahoe Wildfire Awareness Week
May 25 - June 1, 2013

IMPROVE YOUR ODDS
Prepare For Wildfire!

Learn how at LivingWithFire.info/tahoe

Support for this project provided by the Tahoe Fire & Rescue District in cooperation with University of Nevada Cooperative Extension, an EEO/AA institution.

DO IT.
DO IT NOW!
Fire Adapted Communities

Based on UNCE ‘Living with Fire’

1. Fire Ecology
2. Defensible Space
3. Evacuation
Fire Ecology

Do You Know What It Takes To Survive Wildfire?

**Fire Adapted Community:**
A community located in a fire-prone area that requires little assistance from firefighters during a wildfire. Residents of these communities accept responsibility for living in a high fire hazard area. They possess the knowledge and skills to:
- Prepare their homes and property to survive wildfires.
- Evacuate safely and effectively.
- Survive, if trapped by wildfires.

**Lake Tahoe Basin at Risk**
There is more wildfire in our future and for many areas, it is not a matter of "if" wildfire is going to occur, but "when." Unfortunately, many residents in the Lake Tahoe Basin and their homes are not prepared to survive wildfires. Faced with the growing potential for loss of human life and property due to wildfires, the Lake Tahoe Basin's firefighting agencies and University of Nevada Cooperative Extension have come together to promote the Fire Adapted Community concept. They believe this is the best opportunity to decrease the wildfire threat. There are proven steps that homeowners can take to improve personal safety and home survival during wildfires. The purpose of this publication is to promote and teach these steps. Once implemented at the neighborhood level, these recommendations will assist communities in becoming fire adapted.

Who Wins, Who Loses
Why do some houses survive a wildfire while others are destroyed? Research findings prove that house survival during wildfire is not random, accidental or dumb luck. Rather, it is the features of the houses, the characteristics of adjacent vegetation and other fuels, and routine maintenance that often determine which homes burn and which survive. These types of actions are called "prefire actions." When these actions are accomplished before a wildfire occurs that improves the survivability of people and the homes, the winners are the people who implement prefire actions. When everyone in the neighborhood completes these prefire actions, they start becoming a Fire Adapted Community.

"The only viable, long-term response to wildfire threat in the Lake Tahoe Basin is a commitment to the Fire Adapted Community concept."

Mike Brown, Chief
North Lake Tahoe Fire Protection District

Fire is Natural to the Lake Tahoe Basin’s Environment

Fire has been a natural part of Lake Tahoe’s environment for thousands of years. These historic fires were frequent, of low intensity and a major influence on the appearance of Tahoe’s forests. Beginning in the 1870s, Tahoe’s forests and the occurrence of fire started to change.

Much of the Lake Tahoe Basin is considered a "fire environment." It contains flammable vegetation and a flammable landscape to support fire. Fire is a natural process in the Lake Tahoe Basin, and many of the plants growing here have adaptations to survive and thrive in the presence of frequent fires. In fact, it is unnatural for fire to be absent for very long periods of time in the Lake Tahoe Basin.

The map presented at right (Page 18) shows the occurrence of fire in the Lake Tahoe Basin prior to European-American settlement. During this period, much of the Lake Tahoe Basin burned, on average, every five to 10 years. These areas are shown as pale yellow on the map. Because these areas burned so often, large amounts of wildlife fuels could not build up. Consequently, these fires were usually of low intensity.

The frequency and intensity of fire affects the type and health of Lake Tahoe’s forests. The frequent, low-intensity fires prior to European-American settlement created an open, park-like forest. The photo at the bottom left corner of (Page 3) taken in the 1870s, illustrates a good example of what Tahoe’s original forest prior to European-American settlement looked like.

The low-intensity fires burned the tops of small pines, as well as larger, older, thick-barked trees. This type of fire controlled a variety of age classes of trees, including large, mature trees with a sparse understory. The low-intensity fires also maintained a diversity of ground cover and shrubs. In the 1870s, a variety of ground cover and shrubs remained under the forest canopy.

This is no longer the case for Tahoe’s forests.

Original Forest
During the 1870s to 1890s, much of the Lake Tahoe Basin was logged. Prior to logging, Lake Tahoe was known as "the Sagan of Lake Tahoe" states, for the tall fir remaining at incline but stripped forest town.

Logging Era
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The New Forest
A new forest establishes in the aftermath of the logging era. A new forest establishes in the aftermath of the logging era.

Tahoe's Forest Timeline

1870
1900
2000

Emerald Bay - 1990s
Emerald Bay - 1990s
Emerald Bay - 1990s
Defensible Space

Five Steps to Creating an Effective Defensible Space

Step One
The size of the defensible space is usually expressed as a distance extending outward from the house in all directions. The recommended distance is not the same for every home. It varies depending on the dominant vegetation surrounding the home and steepness of slope. Use the Recommended Defensible Space Distance table to determine the right space for your home.

Once the recommended distance for defensible space is known, mark it by tying strips of cloth or flagging to shrubs. This becomes the Defensible Space Zone.

If the Defensible Space Zone exceeds your property boundaries, seek permission from adjacent landowners before doing work on their property. It is important to note that the effectiveness of the Defensible Space Zone improves when entire neighborhoods implement defensible space practices.

Step Two
Within the recommended Defensible Space Zone, remove:
- Dead and dying trees.
- Dead native and ornamental shrubs.
- Dead branches.
- Dried grass, weeds, and flowers.
- Invasive branches from fallen trees that are embedded into the ground and located more than 30 feet from the house. The embedded tree can be left in place.

Regarding fallen needles and leaves:
- Within 5 feet of the house, remove routinely throughout the season.
- Within 5 to 30 feet of the house, remove every spring by May 1. Nil ted and leaves that fall after the spring removal period can accumulate on the ground as long as they do not create a fire hazard.
- More than 30 feet from the house, do not allow fallen needles and leaves to extend a depth of 3 inches.

Step Three
Within the Defensible Space Zone, native trees and shrubs, Jeffrey pine, white fir, and manzanita should not occur in dense stands. Dense stands of trees and shrubs pose a significant wildfire threat. The dense tree and shrub stands tend to create more space between them.

Step Four
Sagebrush, Manzanita, Huckleberry Oak and Other Shrubs
On flat to gently sloping terrain more than 30 feet from the house, individual shrubs or small clumps of shrubs within the Defensible Space Zone should be separated by at least twice the height of the average shrub. For homes located on steeper slopes, the separation distance should be greater. For example, if the typical shrub height is 2 feet, there should be a separation between shrub branches at least 4 feet. For homes located on steeper slopes, the separation distance should be greater. Remove shrubs or prune to reduce their height and/or diameter. See Step Five for shrub management recommendations within 30 feet of the house.

Forest Trees
On flat to gently sloping terrain more than 30 feet from the house, individual shrubs or small groups of several trees should be thinned to provide an average separation between canopies of at least 10 feet. For homes located on steeper slopes, the separation distance should be greater.

Step Five
Within 30 feet of the house, the canopies of individual or small groups of several trees should be separated by 10 feet to 30 feet. A continuous tree canopy maintained as previously described is also an option for this area. Contact your local fire professionals (see Page 23) or TFPA to have your trees evaluated and marked for removal.

Vegetation that can carry a fire from low growing plants to taller plants is called ladder fuel. In areas where trees have been thinned as per Step Three, lower tree branches should be removed to a height of at least 3 feet. Shrubs and trees growing under the drip line should also be removed. Irrigated, well-maintained lawns and flower beds, as well as low-growing ground covers can be present under the tree’s drip line as long as they would not allow a fire ignition. Removal of tree branches should exceed one third of the total tree height. Removing more than this can be detrimental to tree health. For tips on proper tree pruning, contact your Cooperative Extension office.
Before

After
What is missing?
Fire Prevention and Defensible Space is **NOT** the only thing that matters

- Water Infiltration
- Lake Clarity
- Soil Erosion
- Nutrient Cycling
- Landscaping
Largely Due to a reduction of Phosphorus Loading

Phosphorous enters the lake on soil particles
1. Infiltration BMP’s

2. Driveway BMP’s

3. Slope Stabilization

4. Covering Bare Soil
Infiltration BMP’s

Very complimentary with Defensible Space

0-5’ - Remove leaves, needles, and other flammable materials and plants within 5 feet of a structure

5-30’ - Remove or isolate live flammable ground cover and shrubs

30-100’ - Thin Brush according to brush spacing guidelines

Infiltration pathways also serve and as fuel breaks
Slope Stabilization

Retaining Walls, terraces, and less flammable vegetation serve as fuel breaks
Covering Bare Soil with Vegetation and Mulch

- Gravel – It can be pretty
- Wood Chip – Isolate Continuity
- Duff – Partially Decomposed Needles
- Less Flammable Native Vegetation
  - Mahala Mat
  - Sierra Currant
  - Blue Elderberry
  - Wax Current
  - W. Serviceberry
  - Creeping Snowberry
  - Bitter Cherry
  - Woods’ Rose
  - Sierra Gooseberry
Conclusion

• Defensible Space and Best Management Practices go together quite well

• Fire Districts LOVE TRPA

• TRPA LOVES Fire Districts