CALIFORNIA FOREST STEWARDSHIP PROGRAM SPRING 2010

FORESTLAND STEWARD

WORKING TOGETHER FOR HEALTHY FORESTS

Angora Fire: Lessons Learned

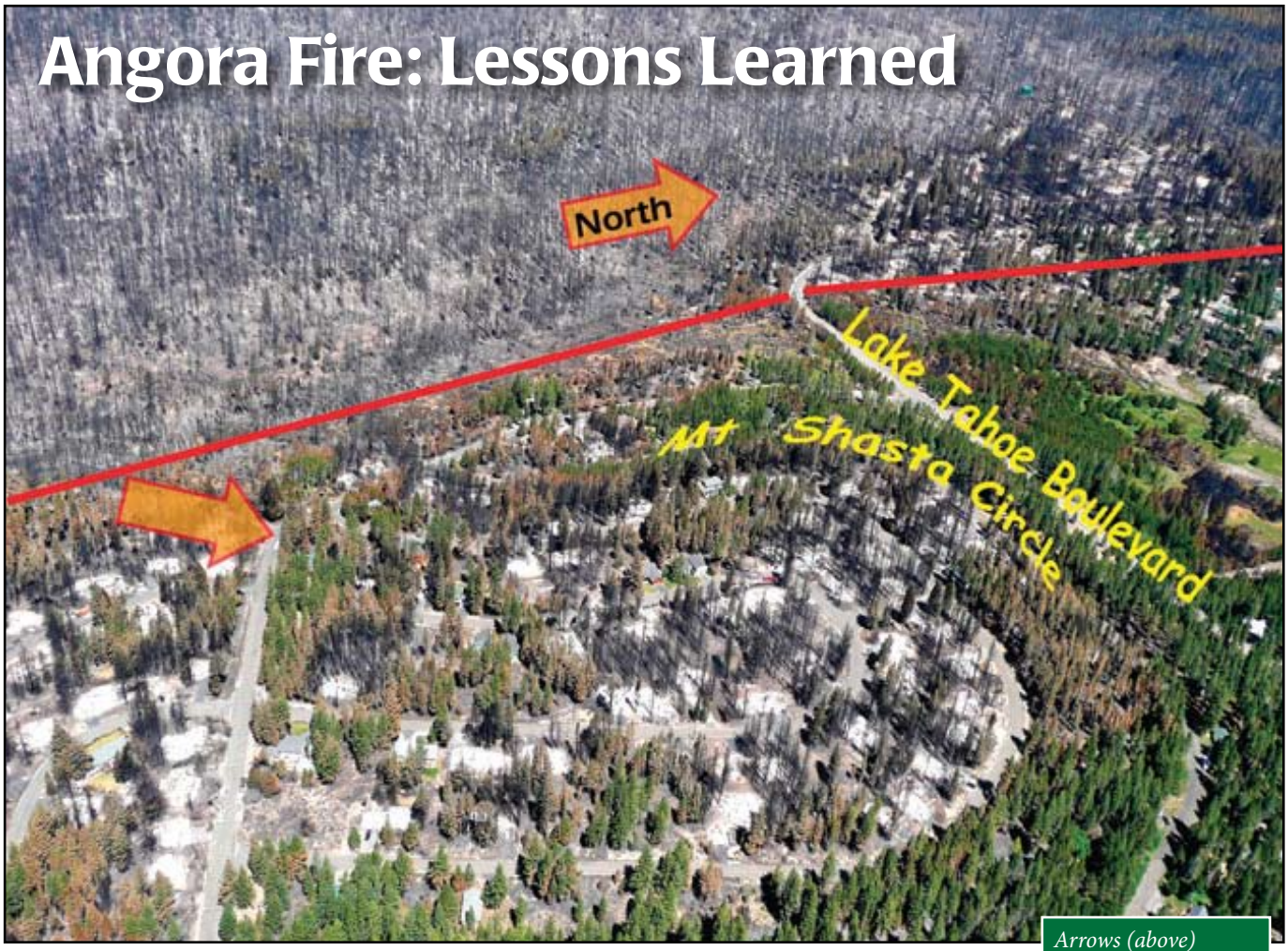

Photo courtesy US Forest Service

Arrows (above) indicate fire spread. Note the green trees between Mt Shasta Circle and Lake Tahoe Boulevard. Fire spread and intensity was reduced in this area primarily due to urban lot hazard fuel treatments, reduced concentration of houses, and safer access by firefighters.

—http://www.fs.fed.us/r5/angorafuelsassessment/dat/angora-entire.pdf

On June 24, 2007, the Angora Fire broke out in the Lake Tahoe Basin and burned 254 homes. Although the fire lasted 3 days, most of the major damage was done in the first 4 to 5 hours.

It could have been worse. Some homeowners had established their defensible space (see p. 2), and fuels treatments in surrounding public lands helped get the fire under control (p. 4).

Many of the lessons learned from the Angora Fire are applicable to forested areas throughout the state, including data on how fuels treatments fared when actually challenged by fire. There were textbook examples of defensible space saving homes and other examples where perfectly defensible homes burned up. The story of what worked and what didn't has provided valuable information for everyone concerned about wildland fire.

Like every community, the Tahoe Basin has its own unique issues. Before the fire, concerns about lake water clarity were paramount. Finding a balance and learning to cooperate across agencies were among the lessons learned. A large research project is currently underway to investigate the effects of various fuels treatments (p. 6).

Numerous organizations and agencies—RCDs (p. 8), CAL FIRE, UC Cooperative Extension (p. 9), US Forest Service (p. 4), and others—are working throughout the state to minimize the damage of the next big fire.

FORESTLAND STEWARD

Forestland Steward is a joint project of the CA Dept of Forestry and Fire Protection (CAL FIRE), Placer County Resource Conservation District, UC Cooperative Extension, and USDA Forest Service to provide information on the stewardship of private forestlands in California.

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Placer Co. RCD

Defensible space: a vital part of fire safety

Fire safety is like a three-legged stool, explains Jessica Mahnken, now Project Coordinator for the Nevada Fire Safe Council. In order to function properly all three legs are necessary: 1) wildland treatment around the wildland urban interface (WUI), 2) defensible space to 100 feet of structures, and 3) proper home construction. Each is required to do its part to protect a home from wildfire. If any one leg is weak or missing the stool will collapse.

Jessica knows the issues and is passionate about fire safety. The year before the Angora Fire her job was to help landowners implement the easiest and most cost effective part of the stool: defensible space around the property. Of those homes that had done their defensible space, 76% in the Angora Fire burn area survived.

Not only is defensible space the smart thing to do…it's the law. Public Resources Code (PRC) 4291 requires property owners in California to modify the vegetation around their homes to 100 feet, or to the property line.

Two zones are required by the PRC, but the "Living With Fire" guidelines now used throughout the Lake Tahoe Basin take the concept a little further. They define 3 zones.

The first, from 0 to 5 feet, is the rock moat or lawn of well-irrigated low herbaceous plants—a completely noncombustible zone. This is critical to protect the home from ignition. Embers from a wildfire will bounce off the house onto this area, and any pine needles or other flammable materials can ignite and bring fire in direct contact with the home.

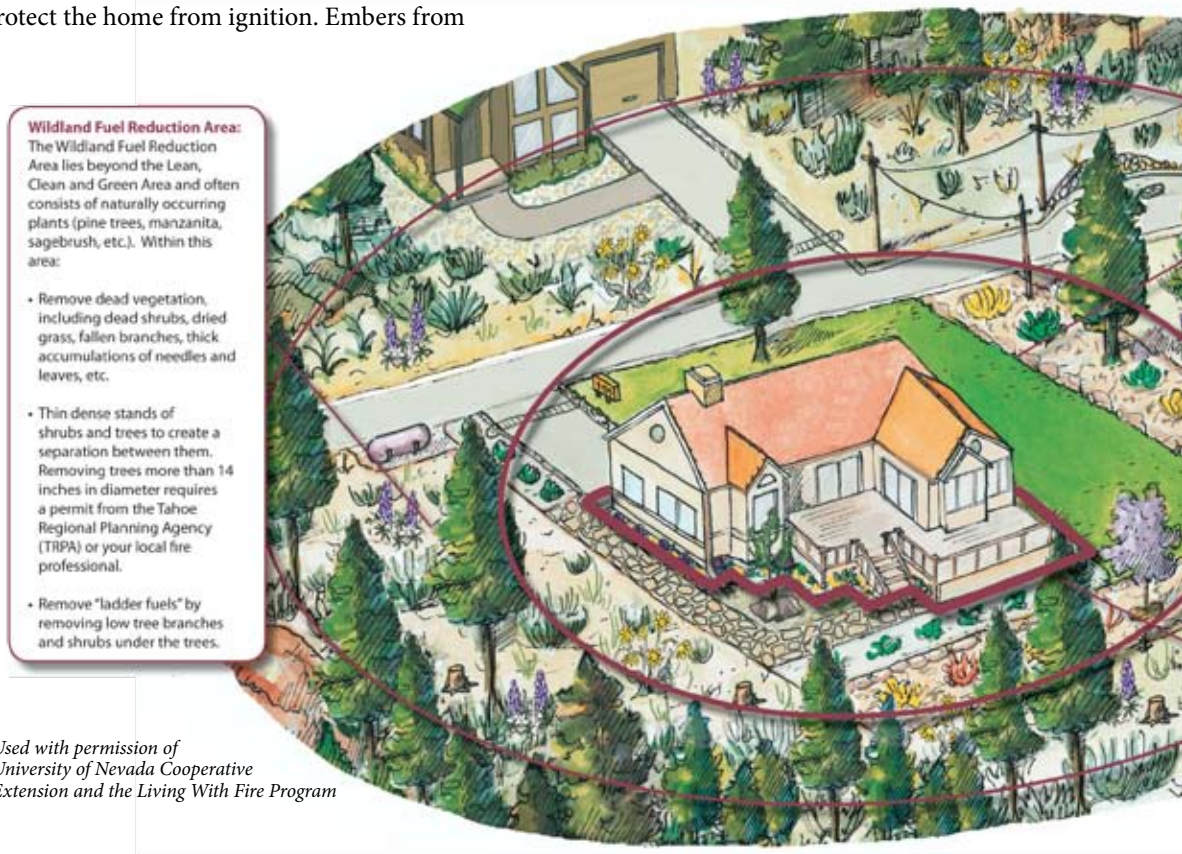
The second zone, from 5 to 30 feet, is known as the "lean, clean, and green" zone. Vegetation in this area should be modified to prevent a ground fire from reaching the house. This means planting less flammable plants that are separated in space and contain a high moisture content. Remember, though, that any vegetation will burn under certain conditions.

For those fortunate enough to have more than 30 feet of property, the third zone out to 100 feet is the reduced fuel zone. In this area dead trees and plants should be removed, with trees separated in space and limbed up.

However, there is no guarantee that defensible space will protect a home from an out-of-control wildfire. Many factors play a role, including luck.

Whether neighboring houses do their defensible space can make a huge difference in a home's survival. In a wildfire, homes can be considered one large structure—all are in it together. During the Angora Fire, there were house-to-house ignitions where the houses themselves became the fuel type driving the fire.

Firefighter access and safety is another



Used with permission of University of Nevada Cooperative Extension and the Living With Fire Program

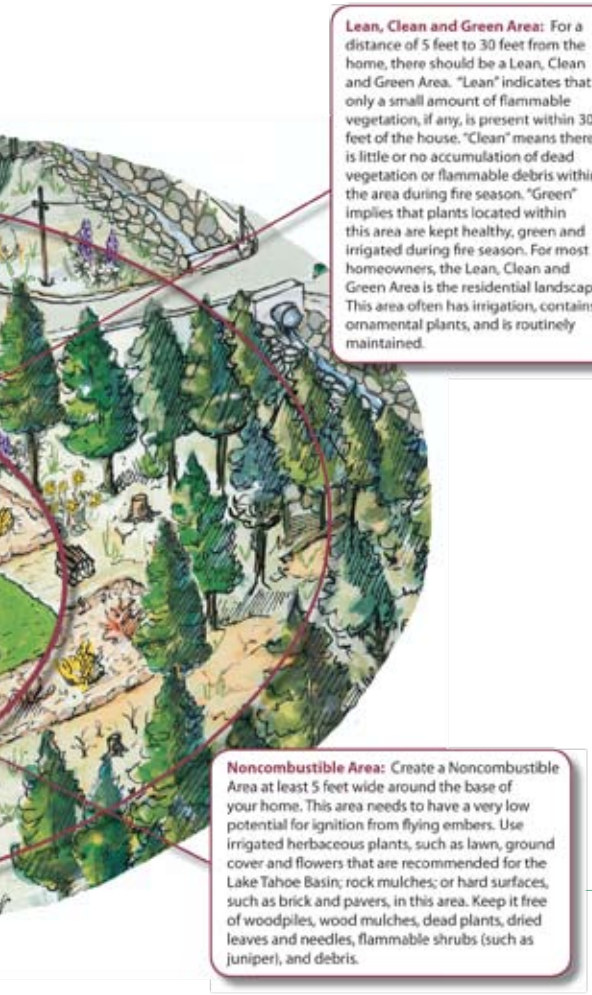
factor. One group of four well-treated homes were protected by two fire engines because the firefighters felt safe taking a stand there.

A major challenge in Lake Tahoe is the prevalence of second homes, 70–90 percent in some areas. Non-resident owners are less likely to feel part of the community or understand the need to manage fuels on their property.

Lake Tahoe Basin is fortunate in that there is a lot of assistance, both technical and financial, available to homeowners. At this time property owners in the Lake Tahoe Basin can receive rebates for implementing vegetation management recommendations (details at ***http://nvfsc.org/nvfsc/about-2/nvfsc-rebate-program-for-tahoe-basin-residents***). This program is being replicated in some other areas of the state as well.

In the Tahoe Basin, Fire Districts provide free defensible space inspections and tree removal permits. They can answer questions about fire hazard and suggest ways to implement defensible space, appropriate species to plant, and home construction changes.

In other communities, information on defensible space is available from your local CAL FIRE unit or Fire Safe Council.



Quick fixes…do them now!

The following fixes are relatively inexpensive and easily accomplished. These should be done immediately; don't wait until a fire is approaching.

Plants very close to your house (within 6 feet) are by far the greatest risk to your house. There are four actions you should consider:

- Remove older, larger, or dying plants. Vigorous, smaller, and leggy plants are better.
- Maintain plants in good condition. Make sure they are watered regularly, preferably with a drip system. Get rid of dead material.
- Minimize any plants under windows, near decks, or at inside corners.
- Add new plants that are "fire safe" (see UC Extension publication *Home Landscaping for Fire* at ***http://anrcatalog.ucdavis.edu/FreePublications/8228.aspx***).

Other plants and trees on your lot:

- Cut tree branches within 6 feet of your roof (or remove tree if necessary).
- Create islands of vegetation so fire does not have a path to your house. Make sure there are no large bushes under trees.
- Minimize the depth and area of landscaping bark and mulch.
- Cut annual grasses before they die. Annual grasses are a major hazard in the fall, especially on a slope leading up to your house.

Other combustibles:

- The area around the home is especially hazardous. Do not store firewood or burnable material there, especially under decks or against outside walls.
- Be prepared to move propane tanks far away from the house quickly if a wildfire is reported.
- To protect an aging roof, keep the roof clear of vegetation and debris and eliminate overhanging branches.
- Protect aging siding by carefully maintaining nearby vegetation (remove dead material, irrigate, etc.).
- Clean gutters regularly, especially when the rainy season is over. Better yet, cover gutters with metal screening and keep them cleaned of debris. Two areas need special attention: 1) upper-story gutters that are difficult to reach, and 2) the portion of lower gutters fed by the roof covering (such as barrel-type tiles) rather than downspouts. Roofs also need to be cleaned of debris (e.g., leaves). Fall cleaning may have to be done several times to assure minimum debris during peak fire season.
- Check for decayed wood. Some key places to look are at the bottom corner of wooden window sills, the perimeter of decks, and any other area where water can be trapped in wood gaps or seams. A small amount of decay can be chiseled out and the gaps filled with water-proof fillers and caulk. Larger amounts might require replacement of the wood.
- Make sure your chimney has an approved spark arrester. Sparks from the chimney can ignite your neighbor's (or your) house.
- Add screens to windows. Metal screens provide protection from radiant energy from fires and possibly some protection against wind-blown debris. While fiberglass screens can also reduce radiant energy, they are easily melted and not strong enough for impact protection.

—abridged from the UC Homeowner's Wildfire Mitigation Guide Appendix A. ***http://groups.ucanr.org/HWMG/programs.htm***

Fuels treatments seek to emulate the beneficial effects of natural fire

David Fournier, US Forest Service, (Acting) Staff Officer for Silviculture, Vegetation, Urban Lots, Fire and Fuels on the LTBMU

Treatments are conducted to emulate the beneficial effects of natural fires—they reduce surface and standing fuels, and thin the standing trees.

Genesis Of a Strategy

The year was 1998 and the Lake Tahoe Basin Management Unit (LTBMU) had recently completed removal of dead trees from a bark beetle outbreak (Jeffrey pine beetles to be exact). Given the amount of widespread mortality and the fact that not all areas of the Lake Tahoe Basin could be treated, fear began to grow among forest management professionals that the addition of this mortality to the surface fuel loads, and the still high density of trees, would result in catastrophic fire to the communities around the Lake.

Management and regulatory agencies began to collaborate and, by 2001, had established wildland urban interface (WUI) zones following the guidelines in the Sierra Nevada Forest Plan Amendment (2001). This effort kicked off more coordinated treatments of hazardous fuels and overly dense forest stands around communities.

However, funding and capacity were severely limited to address the high intensity of treatment needed and large scope of the problem. By 2007, a 10-year strategy was developed to get funding from the Southern Nevada Public Lands Management Act. When implemented, this would be a way to: 1) provide greater opportunities for more effective wildfire suppression to protect communities and forest resources, and 2) restore forest health and improve the resiliency of the forest to recover from wildfire or bark beetle infestations.

Treatment Effectiveness

The LTBMU implemented fuels reduction and forest thinning treatments between 2000 and 2007, prior to the Angora Fire. Although these treatments reduced fire behavior as expected, the fire still caused the loss of more than 250 homes.

Follow-up studies showed that a large number of homes were lost due to open attic vents through which embers entered, igniting the home. They also indicated that regulatory constraints were an issue. For example, excluding stream zones and buffer areas from treatment left a treated distance from the community of only 0.125 mile instead of the 1.5 mile width stated in the guidelines. The narrower treatment width did not allow the time to deploy suppression tactics that a wider treatment would have afforded.

A number of changes have now come about to allow treatment of the stream zones. These changes were accomplished through the efforts of a Bi-State (CA/NV) Fire Commission and Basin management and regulatory agencies. Teams of foresters, botanists, and specialists in wildlife habitat, soils, and water worked to ensure that these treatments can be accomplished with minimal effects to other resources.

Past Management Influences Current Forest

The initial treatments are the first step towards restoring forest health in the WUI, an area greatly affected by the Comstock silver mining era logging (1880-1920) and fire exclusion that began about 1900.

Instead of a natural mosaic of different sized stands and ages, there is essentially one stand age over 92 percent of the lower elevation forest within the Lake Tahoe Basin. In addition, instead of fire weeding out the shade tolerant trees of the understory or burning up patches of emerging saplings, everything grew.

In the past, the WUI area burned frequently from lightning strikes with a historic return interval of between 7 and 15 years. This means that from 1900 to 2008 this area should have burned at least 7 times, with some lightning-prone areas burning upwards of 15 times.

However, very little of this forest has been burned. Stands of forest now 80 to 120 years of age have been impacted by two bark beetle outbreaks as a result of high tree densities and years of drought (1980s and 1990s).

The combination of high tree density and heavy surface fuel loads require a tremendous investment to restore health and resiliency to the forest stand.

Typical untreated stand with high tree density, fuel ladder, and surface fuels

Treated stand near Cayuga Street following Angora Fire.

Photos by LTBMU staff

The treatments are surrogates to emulate the beneficial effects of natural fires. They reduce surface and standing fuels, and thin standing trees. The following methods are used:

HAND THINNING. Hand crews use chainsaws to buck and pile surface fuels, and cut and pile small diameter fuel ladders. Canopy trees are thinned up to 14 inches in diameter and piled, or where feasible left in rows along roadsides for firewood cutters. Piles are burned by USFS crews usually two years later when the wood is cured for quick and complete combustion, which generates the least amount of smoke. Hand thinning is a cost-effective initial treatment option. It is employed on steep slopes generally above 30 percent or in sensitive areas where ground-based mechanized equipment is prohibited.

MECHANICAL THINNING. Ground-based mechanized equipment thins and removes standing trees and surface fuels. Two systems of mechanized equipment have been employed on the LTBMU in the past 10 years of treatments:

Cut-to-Length (CTL): A CTL harvester thins stands, simultaneously processing logs and bunching biomass for removal. A forwarder self-loads logs for transport to a landing as well as biomass that will be removed, usually in the form of chip. A chipper at the landing processes removals into clean chip for manufacturing into oriented stand boards, biomass energy utilization, or hog fuel. Generally after the removals, a masticator grinds small trees and shrubs not processed by the CTL. In earlier (more than three years ago) CTL treatment areas, a mobile chipper spread materials not removed by the forwarder. Although NEPA decisions include underburns to follow this treatment, none have been implemented thus far. Generally there are few piles to burn subsequent to this treatment either in the landing or the understory.

Whole Tree (WT): Whole tree harvesting thins stands by felling and bunching cut trees and larger surface fuels, and then skidding bunches to a landing. At the landing the limbs and tops are either chipped for removal or piled to be burned later. Following the removals a masticator generally grinds small trees and shrubs.

MASTICATION. Using a variety of rotary or drum cutters, small trees and surface fuels are rearranged by grinding and spreading, thereby disconnecting surface fuels from the tree canopy. Although this method does not reduce the net fuel load, a fire is more likely to remain on the ground instead of moving into the forest canopy.

PRESCRIBED FIRE. This provides for both fuel reduction and restoring fire-dependant relationships in the ecosystem. Where hand or mechanical treatments create piles, prescribed fire is used to burn piles. Following the initial fuels reduction and forest thinning, prescribed underburns are then used to maintain the surface fuel treatments and restore fire to the ecosystem.

Research into impacts of these treatments clearly illustrate two things. First, when the treatments are implemented with accompanying best management practices, impacts to soil and water quality are minimal to non-existent. Second, the most effective pre-fire treatment includes prescribed fire. Without this full suite of treatments including prescribed fire, the chances increase for higher intensity wildfires, not to mention a shorter timeframe before it is necessary to return to maintain the treatment.

Research illustrates two things: 1) when treatments are implemented with best management practices, impacts to soil and water quality are minimal to non-existent; 2) the most effective pre-fire treatment includes prescribed fire.

Reducing wildland fire impacts: research to learn what treatment strategies work best

Kimberly Ingram,
SNAMP Northern Site Representative

Learn more about SNAMP, the Sierra Nevada Adaptive Management Project, at ***http://snamp.cnr.berkeley.edu***

Can reducing forest fuel loads in small areas help reduce the severity of wildfire over an entire landscape? What are the effects of treatments on water, wildlife, and forest health? How can the public be involved in forest management in meaningful ways? These are just a few of the questions being addressed by the Sierra Nevada Adaptive Management Project (SNAMP).

The SNAMP project is looking at the effects of two fuels treatments on the Tahoe and Sierra National Forests to reduce the spread and consequences of catastrophic wildfires. Led by the University of California (UC) and conducted by the US Forest Service, other SNAMP collaborators include US Fish and Wildlife Service, CAL FIRE, California Department of Water Resources, California Department of Fish and Game, and Sierra Nevada Conservancy. Local Resource Conservation Districts, Fire Safe Councils, and non-governmental organizations are also involved.

The 2004 Sierra Nevada Forest Plan Amendment says that the Forest Service must manage the national forests to protect forests and communities from catastrophic wildfire using the best information available. But what is the best available information?

Due in part to conflicts over the size and number of trees that could be harvested, methods for reducing fuels, and possible impacts on wildlife, water, and forest health from treatments, the University of California was brought in as an independent third party to study the effects of fuels treatments.

UC Berkeley professor and forest ecologist John Battles shows tree cores to SNAMP public participant Lynn Lorenson at a Fire and Forest Health Field trip in August 2009.
Photo by Susie Kocher

The SNAMP Process

Past research has focused on the impacts of fuels treatments across hundreds of acres. SNAMP research is focusing on thousands of acres, or firesheds, with the hope that this will help resource agencies better address large-scale forest/fire management.

The two SNAMP study sites are located near Foresthill and Oakhurst in California. These were chosen because they are large enough to support fireshed-scale research and represent the major biogeographical features of the Sierra Nevada, including mixed conifer forests with watersheds and old forest habitat for species at risk.

There are six teams within SNAMP: fire and forest ecosystem health, water quality and quantity, wildlife (California spotted owl and Pacific fisher), public participation, and spatial analysis. Each team will work for 7 years (starting May 2007) to collect and analyze data before, during, and after treatment. At the end of the project UC will provide a report that will be used to develop management recommendations to the US Forest Service through the SNAMP process, which includes public and stakeholder involvement.

Treatments to Test the 30% Hypothesis

In each study area, the US Forest Service has planned a fuels treatment project based on the hypothesis that by treating ~30% of the landscape, fire spread and intensity will be lessened over the entire landscape. The treatments will be implemented in 2010.

Treatments consist of a combination of cable thinning, tractor thinning, mastication, and low intensity surface fires. Though the theoretical design calls for regular spacing and arrangement of treatment areas across the landscape, in reality they tend to be concentrated in areas with urban interface and topography that allow mechanical harvesting and away from areas with steep

terrain, wildlife dependent on dense forests, and archeological sites. Input from local stakeholders can help identify areas of concern.

Fire and Forest Ecosystem Health Team

SNAMP's Fire and Forest Ecosystem Health team, led by UC Berkeley researchers Dr. Scott Stevens and Dr. John Battles, is investigating the effects of strategic treatments on fire behavior and tree health and mortality. Pre-treatment data have been collected on forest structure and composition, shrubs and fuels, fire history, and growth using forest inventory plots and tree coring. The team is using these data to run fire behavior models to test the predicted effectiveness of the treatments to reduce the spread and severity of wildfire. After implementation, data will be collected to test the actual effectiveness.

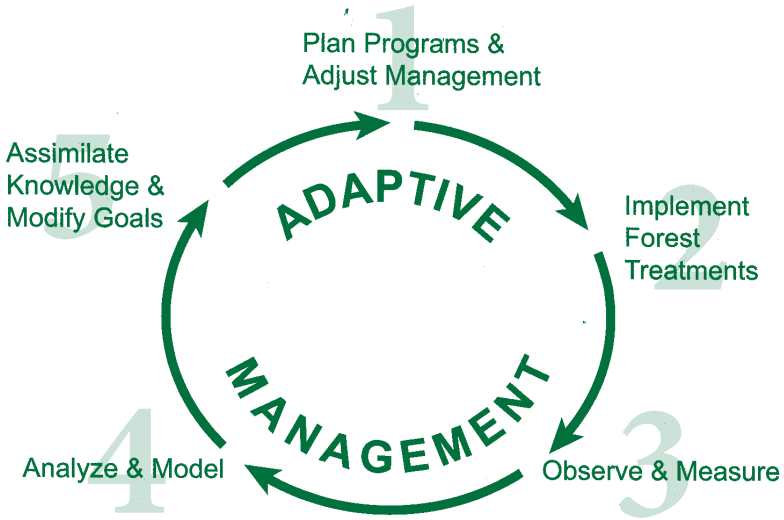
In addition, the team is looking at the effects of treatments on forest health. To do this, over 4,000 tree cores from the study areas are being analyzed to detect changes in tree ring growth as a result of the treatments. (See the primer on forest health at ***http://snamp.cnr.berkeley.edu/documents/285/***.)

A spin-off study will compare the effectiveness of fuels treatments for moderating wildfire behavior at the landscape scale and how they last over time using different spatial arrangements, including Strategically Placed Landscape Area Treatments (SPLATs) and Defensible Fuel Profile Zones (DFPZs). Preliminary results show that both are successful at changing modeled fire behavior. Therefore, resource managers may not need to choose a specific strategy to change fire behavior at the landscape level, but can use a combination of approaches that fits local fuel conditions and management constraints.

Public Participation

The SNAMP project includes substantial public participation. There are goals to engage the public at every step and to assess the project's effectiveness at achieving adaptive management (*see sidebar*).

SNAMP is committed to working with the public and interested stakeholders in designing research, interpreting and learning from research results, and formulating recommendations to the Forest Service on how to adapt future management. Involving the public is expected to make research and management outcomes better and more relevant. Participation goals include reducing conflicts and misunderstandings, and also improving the quality of information used and provided by SNAMP.



To encourage public involvement, UC Cooperative Extension (UCCE) uses many outreach tools, including open public meetings with each science team annually and one large formal public meeting with all of the SNAMP teams. Science team meetings allow for mutual learning about research questions and results. Where possible, all meetings are webcast.

Annual public field trips to the study sites demonstrate the data collection methods of each science team. Researchers have made presentations at local elementary and high schools. UCCE staff also makes presentations to groups such as boards of supervisors, service clubs, fire safe councils, resource conservation districts, and professional societies. The project has established an interactive website (***http://snamp.cnr.berkeley.edu/***) with a discussion board for a diverse public and for project transparency.

Researchers with the UC Public Participation Team are studying the effectiveness of SNAMP's third party, multi-stakeholder model, as well as monitoring the role the website plays in providing information, linking all participating parties, and its use as an effective means of communication. All of this information will be used to help assess the effectiveness of SNAMP and will be passed on to the US Forest Service to aid in their future management and outreach plans.

To learn more about SNAMP or how you can participate in our upcoming events, please go to the website ***http://snamp.cnr.berkeley.edu/*** or contact Kim Ingram at (530) 889-7385 or ***kcingram@ucdavis.edu***.

What is Adaptive Management?

Adaptive management is an approach to managing forests that incorporates the uncertainty about the resource and treats management as a deliberate experiment to enhance scientific understanding about those uncertainties.

Ideally, it is a participatory process that engages scientists, stakeholders, and managers in a long-term relationship grounded in shared learning about the ecosystem and society.

Treated forest area.
Photo by Marek Jakubowski

Tahoe Resource Conservation District

Backyard conservation assistance and more!

Sarah Ford, Conservation Planner
Tahoe Resource Conservation District

Tahoe RCD offers assistance to the public on a broad array of conservation issues. For more information about the Tahoe RCD and their services, visit ***http://www.tahoercd.org***

Residents of the Lake Tahoe Basin can find assistance on an array of backyard conservation needs from the Tahoe Resource Conservation District (RCD). Fire safe landscaping is one of their specialties.

Vegetation Consultation

After the Angora Fire, the Tahoe RCD created its Vegetation Consultation Program. Originally to help Angora Burn homeowners determine how to revegetate their properties using conservation and fire safe principles, the program has since expanded to include areas throughout the Basin.

During a Tahoe RCD Vegetation Consultation, staff provide a site evaluation of the areas to be planted, including information on plant selection and care based on soil type, moisture content, sunlight conditions, and landscaping needs.

Staff also survey properties for invasive weeds and, when found, create and implement a weed removal plan. Tahoe RCD provides Tahoe native and adapted plants to properties receiving vegetation consultations, especially those located within the Angora Burn. The consultations offer landscaping techniques that promote water conservation, soil erosion control, defensible space, and wildlife enhancement.

Angora Community Demonstration Garden

In addition to vegetation consultations to help homeowners with their backyard landscaping needs, the Tahoe RCD is constructing the Angora Community Demonstration Garden. Upon completion this summer, the garden will showcase conservation landscaping ideas tailored o benefit homeowners affected by the Angora Fire and other local communities.

Photo courtesy Tahoe RCD

Upon completion this summer, the Angora Community Demonstration Garden will showcase conservation landscaping ideas.

The Demonstration Garden includes examples of Tahoe native and adapted vegetation, fire defensible space, water conservation, and erosion control practices specific to the Angora Burn area. The surrounding neighborhood and community have been involved in constructing the garden and we all look forward to a beautiful area for the neighborhood to enjoy.

Restoration

Tahoe RCD isn't limited to conservation work on private properties. Last spring, Tahoe RCD and Nevada Tahoe Conservation District partnered with the US Forest Service to create the Angora Forest Stewardship Program. The goal is to involve the local community in restoring the long-term health of the forest burned in the Angora Fire.

During April and May of 2009, more than 1000 volunteers helped plant over 7000 trees on 35 acres of US Forest Service urban lots within the Angora Burn area. Many lots have been adopted by community members and groups for ongoing maintenance and monitoring.

An interdisciplinary elementary school forest health curriculum was a precursor to the stewardship program. Volunteer educators helped bring Project Learning Tree-based activities into almost every elementary classroom in South Tahoe. The curriculum reached over 1700 South Lake Tahoe elementary students (grades K-5).

Last April, over 600 3rd through 5th grade students helped plant trees, went on nature walks, and participated in junior botany activities led by local volunteers. Many of these students will be returning for years to come to maintain and monitor the trees they planted.

BMPs

Have you done your BMPs? What about those quagga mussels? These questions address two main focus areas of the Tahoe RCD.

Best Management Practices (BMPs) are required for all developed properties in the Tahoe Basin. BMPs mimic natural conditions by controlling soil erosion and infiltrating stormwater runoff. The goal is to ensure that precipitation that falls on a property permeates on-site rather than causing runoff, eroding soils, and carrying fine sediments into storm drains, rivers, and eventually into Lake Tahoe.

Due to fine sediment in stormwater runoff, the exceptional clarity of Lake Tahoe is decreasing by more than one foot every year. To address this problem the Tahoe Regional Planning Agency (TRPA) adopted the Best Management Practices Ordinance in 1992, which requires all landowners to install and maintain BMPs. These include such practices as paving driveways, armoring drip lines of buildings, installing infiltration systems, and securing bare soil with vegetation and mulches.

(*continued next page*)

Meet the Specialists

Susie Kocher: Community liaison

Find a natural resource need in Lake Tahoe area and Susie Kocher is probably involved. Be it invasive aquatic species, working with landowners after the Angora Fire, organizing a conference for second home owners, working on the SNAMP project, or bringing Project Learning Tree into the classroom, Susie Kocher is there.

It's an extraordinary job. As a Natural Resources Advisor for UC Cooperative Extension, Susie is a liaison between academia and the local community. She brings research results from the university to the real world and informs researchers about public information needs.

Susie has a unique and befitting background for her job: a BA in Anthropology and an MA in Forest Sociology. Three years working for UC Extension in Plumas County and seven years as a Staff Researcher doing policy assessment, writing publications, conducting workshops, and educating the public about roads and fishes gave her excellent credentials for the job in Tahoe. In 2008 she added to those credentials by becoming a Registered Professional Forester (RFP).

The first in a brand new Cooperative Extension position in the Lake Tahoe area, Susie started the job in September 2006. The first order of business was to find out what the community needed. After interviewing several dozen land managers she co-authored *Natural Resource Issues in the Lake Tahoe Basin: An Extension Needs Assessment* (***http://www.unce.unr.edu/publications/files/nr/2007/sp0720.pdf***), which identified three priority areas: 1) invasive species, 2) water quality, and 3) wildfire and forestry.

Her first year was spent working primarily on aquatic invasive species issues, including organizing a big conference about the threat.

Then, in June 2007, the Angora Fire hit. By chance, Susie was involved in a Firesafe Council event two weeks before the fire where she organized a demonstration of home component flammability in front of a house that subsequently burned down in the fire. Since then she has focused primarily on fire issues, including fuels treatment, defensible space, home vulnerabilities, and post-fire landscape recovery.

Susie Kocher is interviewed during a Board of Forestry tour of the Angora Fire in June 2008.
Photo by Mike DeLasaux

*Contact Susie Kocher at **sdkocher@ucdavis.edu** or go to the Extension website, **http://ceeldorado.ucdavis.edu/***

(*continued from previous page*)

Tahoe RCD staff conduct free BMP site evaluations for California single-family homeowners to determine what BMP treatments are needed to bring the property into compliance with the BMP Ordinance (the Nevada Tahoe Conservation District does BMP evaluations in Nevada). Staff meet with homeowners on-site to design erosion control plans specific to the property. By implementing BMPs, property owners can help slow the loss of lake clarity.

Invasive Species

The Tahoe RCD helps manage both terrestrial and aquatic invasive species issues. This includes Lake Tahoe's Watercraft Inspection Program, which inspects boats to prevent the introduction of zebra and quagga mussels and other non-native species into Lake Tahoe.

There are considerable ecological and economic problems associated with invasive and noxious species in the Lake Tahoe Basin. Invasive species can have detrimental effects on soil erosion, water quality, and native habitats. They often displace native species and can reduce biodiversity. Invasive species can even alter ecological processes (e.g., nutrient cycling, water cycling) that help maintain functioning ecosystems, and are a factor in the decrease of native wildlife habitat.

Working for the Tahoe Community

Whether inspecting boats for invasive species, planting trees with local students, or giving landscaping advice, Tahoe RCD staff are always busy working with the Tahoe community.

Located on the California side of the South Shore of the Basin, the Tahoe RCD is non-regulatory and grant funded, and works closely with federal, state, and local partners to deliver conservation programs and technical assistance to the Lake Tahoe community. Conservation districts across the country help people protect land, water, forests, wildlife, and related natural resources.

For more information, visit ***www.tahoercd.org***.

Photos courtesy Tahoe RCD

The Boys and Girls Club Green Team at a planting/environmental education day at the garden. They also decorated bird houses in the garden.

Resources

More homeowner wildfire mitigation ideas

"It is very important to realize that no (livable!) house is fire proof, but you can make it more fire safe!"

—Homeowner's Wildfire Mitigation Guide

Websites

Homeowner's Wildfire Mitigation Guide
http://groups.ucanr.org/HWMG/

Living With Fire
http://www.livingwithfire.info/tahoe/

Home Landscaping for Fire
http://anrcatalog.ucdavis.edu/FreePublications/8228.aspx

The Homeowner's Wildfire Mitigation Guide provides an incredible amount of information to help you make your home fire safe. It covers the most vulnerable areas of a property in great depth and then goes into even more detail in the appendices. Go to ***http://groups.ucanr.org/HWMG/Appendixes/****.*

Appendix A: Quick fixes (*see p. 3*)
These are relatively inexpensive and easily carried out by the homeowner. No matter what level of hazard these should be done immediately, not when a fire is approaching…DO THEM NOW!

Appendix B: Long-term actions
Some actions are complex and expensive, may require expert help, and take years to implement.

Appendix C: Pre-fire readiness
There are several options if a wildfire threatens your home that depend on your degree of readiness and capability.

Appendix D: Pre-evacuation checklist
Keep this list in an obvious place, preferably in your garage near your emergency supplies.

Appendix E: What is meant by "fire hazard"?
The first step is to visit your local fire authorities and ask for the level of "hazard" for your lot and structures. These vary depending on distance from wildlands or heavy vegetation, slope of your parcel (or adjacent parcels), history of damage from previous wildfires, and other factors.

Appendix F: Wood decay
Decay (sometimes called "rot") is typically found at joints that trap water and dry slowly. Decay occurs only where wood has contact with water, such as trapped rain or condensation of water vapor moving out of the house.

Appendix G: Defensive sprinklers
There are instances of where sprinklers have been of value in protecting houses in wildfires. As a defensive measure, you might want to consider adding sprinklers in strategically vulnerable spots.

Appendix H: Roof
The fire rating of roof coverings is determined for all materials used in code-compliant housing, and will be classified as either Class A, B, C, or "unrated."

Appendix I: Checklist
This list is intended to help you survey your surroundings and home for potential problems with items in bold the preferable condition. Details on specific problems and solutions can be found throughout the appendices.

Technical Assistance

Many agencies are available to provide technical assistance, referrals, information, education, land management plan assistance, and advice.

California Stewardship Helpline
1-800-738-TREE; ncsaf@mcn.org

California Dept of Forestry & Fire Protection
Forest Landowner Assistance Programs
Jeffrey Calvert
916-653-8286; jeff.calvert@fire.ca.gov

Forestry Assistance Specialists
Guy Anderson (Mariposa/Madera/Merced) 209-966-3622 x218
Jan Bray (Amador) 530-647-5212
Herb Bunt (Redding) 530-528-5108
Jill Butler (Santa Rosa) 707-576-2935
Ed Crans (Placer/Yuba/Nevada) 530-889-0111 x128
Brook Darley (Tehama/Glenn) 530-528-5199
Mary Huggins (S. Lake Tahoe) 530-541-1989
Patrick McDaniel (El Dorado) 530-647-5288
Dale Meese (Plumas) 530-283-1792
Jonathan Pangburn (San Benito/Monterey) 831-333-2600
Alan Peters (San Luis Obispo) 805-543-4244
Jim Robbins (Fortuna) 707-726-1258
Tom Sandelin (Fresno/King) 559-243-4136

California Association of RCDs
916-447-7237; staff@carcd.org

California Dept of Fish & Game
Tina Bartlett
916-653-9834; tbartlett@dfg.ca.gov

U.C. Cooperative Extension Advisors/Specialists
Mike DeLasaux, Plumas-Sierra counties
530-283-6125; mjdelasaux@ucdavis.edu

Greg Giusti, Mendocino-Lake counties
707-463-4495; gagiusti@ucdavis.edu

Susie Kocher, Natural Resources Advisor
530-542-2571; skocher@nature.berkeley.edu

Gary Nakamura, Natural Resources Advisor
530-224-4902; nakamura@nature.berkeley.edu

Rick Standiford, Forest Management Specialist
510-643-5428; standifo@berkeley.edu

Bill Stewart, Cooperative Extension Specialist
510-643-3130, stewart@nature.berkeley.edu

Yana Valachovic, Humboldt-Del Norte counties
707-445-7351; yvala@ucdavis.edu

USDA Forest Service
Janice Gauthier
707-562-9167; jgauthier@fs.fed.us

Calendar

April 6–8
California Board of Forestry meeting
Location: Resources Building, Sacramento
Contact: (916) 653-8007
Website: http://www.bof.fire.ca.gov/

April 21; 4 pm
Amador Fire Safe Council—SNAMP Discussion
Location: 12200B Airport Rd, Jackson
Contact: Kim Ingram (530) 889-7385
Website: http://snamp.cnr.berkeley.edu/events/

April 29; 8:30 am–12:30 pm
Incentive programs, technical assistance, and emerging markets in forest carbon and biomass for farm, ranch, and timber landowners
Location: Smith River Community Hall (Del Norte)
Cost: $10
Contact: (707) 822-2242 for info and registration

April 30; 8:30 am–2:30 pm
Incentive programs, technical assistance, and emerging markets in forest carbon and biomass for farm, ranch, and timber landowners
Location: Ag Center, Eureka
Cost: $10
Contact: (707) 822-2242 for info and registration

May 4–6
California Board of Forestry meeting
Location: Resources Building, Sacramento
Contact: (916) 653-8007
Website: http://www.bof.fire.ca.gov/

May 5; 9:30 am–noon
Butte Fire Safe Council—SNAMP Discussion
Location: 5555 Skyway, Paradise
Contact: Kim Ingram (530) 889-7385
Website: http://snamp.cnr.berkeley.edu/events/

May 12 & 13
Sudden Oak Death Update for Foresters and Landowners
Locations: UCCE Office, Ukiah (May 12) and Agriculture Center, Eureka (May 13)
Contact: (445) 7351 for info and registration

June 2
Fire Summit 2010
Location: Diamond Bar, CA
Sponsor: So. Calif. Regional Area Safety Taskforce
Audience: Government officials, planners, builders, Fire Safe Council members, firefighting professionals, and others
Contact: South Coast RC&D, (951) 682-3956 or SouthCoastRCandD@gmail.com
Notes: This forum will help improve coordination for community and natural resource protection from wildfire and other natural disasters.
Website: http://firesummit.info/

June 8–10
California Board of Forestry meeting
Location: TBD
Contact: (916) 653-8007
Website: http://www.bof.fire.ca.gov/

June 16–19
Forest Guild National Meeting
Location: CalNeva Resort on the north shore of Lake Tahoe in Crystal Bay, NV
Contact: lois@forestguild.org, (505) 983-8992 x21
Website: http://www.forestguild.org/National10.html

July 3–11
Wildfire Awareness Week
Website: http://www.livingwithfire.info/tahoe/

July 9; 9 am–5 pm
Wildfire Summit for Second Home Owners
Location: Harvey's Casino, Stateline, NV
Contact: Susie Kocher, (530) 542-2571, sdkocher@ucdavis.edu
Cost: TBA

Get the version with live links

You can receive the e-version of this newsletter about a month earlier than the printed copy…plus, it has live links to all the web resources. Get an early peek at *Forestland Steward* by signing up for the electronic version (yes, you can still get the hard copy). Simply send a note to llitman@pacbell.net and specify whether you want to receive the e-version ***instead of*** or ***in addition to*** the paper version.

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❑ To save on printing costs and paper, we encourage you to get the internet version of Forestland Steward. Check here for an email copy of each issue instead of a hard copy.

Fill out this box and send it to CAL FIRE, Forestry Assistance, P.O. Box 944246, Sacramento, CA 94244-2460. Fax: (916) 653-8957; email: jeff.calvert@fire.ca.gov
For address changes, please send this box or contact Jeff Calvert via e-mail, standard mail, or fax…be sure to reference Forestland Steward newsletter.

CAL FIRE & Placer County RCD
Forest Stewardship Program
c/o P.O. Box 162644
Sacramento, CA 95816

ADDRESS SERVICE REQUESTED

Where is this home vulnerable to ember attack?

Used with permission of University of Nevada Cooperative Extension and the Living With Fire Program

During a wildfire, thousands of embers can rain down on your roof and pelt the side of your home like hail during a storm. If these embers become lodged in something easily ignited on or near the house, the home will be in jeopardy of burning. Embers coming into contact with flammable material is the most common reason homes are destroyed during a wildfire.

For more information on each ember attack point, go to the publication "Be Ember Aware" at ***http://www.unce.unr.edu/publications/files/nr/2009/fs0905.pdf*** or the interactive website of the same name at ***http://www.livingwithfire.info/tahoe/?click=ember*** (click on an ember).

—from Living With Fire in the Lake Tahoe Basin website, ***http://www.livingwithfire.info/tahoe/***

Discussion of each ember in the illustration above can be found at ***http://www.unce.unr.edu/publications/files/nr/2009/fs0905.pdf****. Or go to* ***http://www.livingwithfire.info/tahoe/?click=ember*** *and click on the embers.*