

Landscaping becomes a challenge as Mother Nature changes

By Linda Fine Conaboy

Nearly five years ago as I drove my SUV from Reno to South Lake Tahoe to cover the aftermath of the Angora Fire for a Reno magazine, the farthest thing from my mind was the vegetation.



Angora Fire --
5 years later

My photographer and I were assigned to interview residents and bring back a firsthand report on the devastation that we had only heard or read about in Reno.

As we edged our car into the long line of returning evacuees, we accepted rubber gloves and masks from one of the many volunteers at one of the checkpoints, not knowing exactly how and if we would use them.

It didn't take long before we realized the masks were important gear as we entered what looked very much like what I expect a war zone may look, including the shell-shocked expressions on many of the faces of the people inspecting their once pristine property.

Smoke streamed lazily upward as if it were escaping from

unseen vents drilled into Mother Earth, making the air unpleasant enough that we decided to wear the masks, like many of the returnees.



Houses in the Angora burn area were featured on a 2010 home tour. Photos/LTN

Some still-smoking trees stood but no underbrush was visible. In the place of the once heavily forested and landscaped yards were the bodies of non-recognizable cars resting on their frames along with melted bicycles and shards of glass and pottery strewn about.

Now, though, the tables have turned and because of the grit and tenacity of the returned residents, houses have popped up, albeit with little or no visible vegetation. Trees are widely spaced, many with scarred, blackened burn marks snaking up the tree meeting greenery about two-thirds of the way up.

The houses stand naked against the landscape where once grew a lush, mountain forest, where the trees would act as shields and wind screens protecting the privacy of those who live there.

According to Rita Mustatia, silviculturist (a person who looks after trees in the forest) with the U.S. Forest Service, the expression devastation is a misnomer. "I would use the word devastating in reference to the homes that were lost and lives

that were changed because of the fire, but not to the forest itself," she said.

"Fire in the forest is a natural thing and depending on factors such as location, climate, forest type, fire or some other disturbance, [fire] is needed for vegetation, including trees, to exist as part of a healthy functioning ecosystem," Mustatia told *Lake Tahoe News*. "Disturbances such as fire eliminate competition between trees by reducing density and creating openings for regeneration."

However, Mustatia said, most of the Angora Fire burned at high intensities leaving vast areas of little to no vegetation including trees. But about 40 percent of the fire burned at low to moderate intensities, she said, resulting in still living trees and some surviving vegetation.



The high water table had roads in the burn area undriveable in 2011.

Some of these trees have subsequently died because of the damage caused during the fire as well as insects that have attacked them. But, Mustatia said, most of the survivor trees are healthy today.

"In some areas where the fire burned," she continued, "it stayed on the ground as a surface fire resulting in mortality, mainly in smaller, shade-tolerant trees. The Jeffery pine, with its fire-adaptive traits, survived for the most part, resulting in a relatively healthy, post-fire condition. In other areas, where there was heavy fuel loading, the fire burned on the surface as well as through the crowns."

Susie Kocher, natural resources advisor for the UC Extension Service, agreed with Mustatia. "Some forests are set up to burn every few years, like the Yellowstone fire in the 1980s."

She said forests in the Lake Tahoe Basin are used to frequent, low intensity fire, but that has not been happening. "Now we have a high density of fuels and trees; consequently, we now have high intensity fires over a larger area killing a large number of trees."

"Part of it is that we're good at putting out forest fires. But we kind of have a perfect storm in a way," she said, attributing climate change and less snowpack to a longer fire season.

The question now for homeowners is, according to Kocher, do they want a forest or do they want a shrub field? "If you leave the forest that is located in a south-facing area on its own, not a lot of trees will come back soon – for about 60 years."

Kocher stated the obvious: the Angora Fire killed a lot of trees in a large area. "There are no naturally, regrowing trees; there's no seed source because there are no trees. If you want a forest, you need to replant or wait 60 or 70 years."

She said areas without what she called "treatment" will see fire adaptive shrubs return; plants such as manzanita and white thorn. "And yes, the mushrooms are back, along with lupine and other wild flowers," Kocher said. "After a

wildfire, it's a great time to collect mushrooms."

But along with the good plants, invasive species like bull thistle make themselves at home too.

Homeowner Tony Colombo, who lives on Mount Olympia Circle, in a large, green, newly rebuilt Victorian, is angry about the fire for several reasons, not the least of which is his inability to re-establish his landscaping.

Colombo, and his wife, Tara Brennan, lost not only their home to the Angora Fire, but also all of the naturally occurring evergreens and vegetation that made their yard beautiful. "The soil was burned and contaminated," he said. "And two-thirds of my new trees and shrubbery have died."

Blaming the high water table in his area on his inability to grow anything except lawn, Colombo said the water on his property is so high in every month except during the summer, it is literally drowning his new trees.

Colombo's high degree of frustration boils over as he talks.



Natural regrowth in May 2012 near the ignition point of the Angora Fire.

"I've spent \$45,000 of my own money for landscaping. Now we need a hydrologist out here. I don't have the money for a professional landscaper, so we're doing it ourselves. It seems nobody wants to address the water problem.

"The conundrum is now it's really windy because there are no trees. When it's hot, it's barren, but in the winter, during rain and snow storms it floods. The water doesn't sink into the ground."

Enter John Fellowes, the owner of Aspen Hollow Landscape Nursery, who concurs. Yes, there is a high water table in some of the area where the Angora Fire burned. And, yes, now it's windy and presents somewhat of a barren landscape.

"Myself and a few others have pointed out that this area is full of water. It sits on a glacial moraine – Angora Ridge. Springs come out of the mountain from the glaciers. The reason it never showed up in the past is because the lodge pole pine was as thick as hair on a dog's back. There was a mix of about 80 percent lodge pole, with the rest being pine and a mix of incense cedar, white fir and Jeffery pine."

Fellowes said he has concluded that in year's past there were aspens and willows in the area, but over the years pines, the tree of choice by homeowners, have slowly replaced them. He said before the fire, these thick stands of pines made good use of the water coming out of the mountain, mitigating the high water problem.

Now that they're gone, the water is back, playing havoc with some of the new gardens and especially the trees, although high water doesn't seem to be a universal problem throughout the entire subdivision.

"My theory," Fellowes said, "is the whole site, except for a few areas, should be replanted in a more riparian fashion. If willow and aspen had been planted [directly after the fire], they would have gotten started, made habitat and screens for

people's houses. Then, at a certain rate, the evergreens would have come back naturally.

"Unfortunately, the Forest Service planted most of what had already burned, probably conifers. If they're dry, they won't grow and if they're wet, they get root rot and die. In the Gondola Fire (near Heavenly), they did the exact same thing and had 100 percent mortality – there was no resource to hand water [the new trees]."

Fellowes said he believes aspen and willows should have been planted where the natural water sites are, instead of the evergreens. He added that the Forest Service is now looking at using other species of trees.

Another problem at the Angora site is a lack of good fill dirt in which to grow healthy plants. To rid the area of hazardous material caused by the fire, nearly everything natural was removed from the burn sites.

"The contractors dug too deep and too wide. They were overly zealous. They took at least 50 percent of the topsoil and in many cases, 100 percent. Our problem is that fill dirt and good soil needs to be brought in; however, TRPA frowns on that.

"You couldn't mimic an old natural site if you wanted to. Natural things like bitterbrush, manzanita and white thorn aren't what people want. They don't appreciate that they're evergreen. You need everything to grow in the forest so you can trap the matter and assist the tree seedlings to grow.

"It's extremely difficult to grow things now and I'm proud of the people who've persevered. Some have become apathetic and some have moved away. Some have been able to pull it off."

Unlike Colombo, Lisa and Joe McAvoy were able to secure professional help to assist them with their landscaping issues. Fellowes was their man.

The McAvoy's spent untold hours rebuilding their home, although not on their original lot. The result is an attractive craftsman style bungalow built and designed by them with a little help from their friends. But as the McAvoy's said, the sweat equity was worth it; they knew what they were getting and got exactly what they wanted.

Yes, there is a high water table now, Joe McAvoy said, adding that before the fire, high water wasn't what he worried about. But in order to alleviate the problem, they innovated as they went along.

"We have a dry creek bed that diverts a lot of water from our house," he said. "We poured a curb around the foundation to divert water and waterproofed the foundation. We also have French drains."

With Fellowes' assistance, they augmented their soil and because of the steep street in front of their home, did a lot of water channeling. "We knew it was going to be a moonscape, so we worked hard to make it beautiful."

So beautiful in fact, that the McAvoy's' home will be featured on the Lake Tahoe Historical Society's annual garden tour to commemorate the fifth anniversary of the Angora Fire. The tour is July 29.

STPUD tested as it keeps

water flowing during fire

By Dennis Cocking

The South Tahoe Public Utility District was formed in 1950 to provide wastewater collection and treatment for the then very small community of South Lake Tahoe. Drinking water in South Tahoe's early years was supplied by private domestic wells or from small privately owned water companies. Well more than two dozen private companies existed on the South Shore in the 1960s and three of them still exist today.



Angora Fire --
5 years later

With the passage of the Safe Drinking Water Act of 1974, many of these privately owned systems realized the cost and difficulty meeting the act's requirements and sought to sell their companies to the district. Since joint water and wastewater agencies are commonplace in California, the district was the likely entity to purchase these smaller systems. Slowly these small systems were cobbled together into the system the district operates today.

Unfortunately, little thought was given to adequate water flows for firefighting since many of the systems were built with surplus 2-inch galvanized steel pipe available in large quantities after World War II. The flows provided by these systems were adequate for domestic use, but woefully inadequate for structure or wildland fires.

Fast forward to Oct. 19, 1991, in the Oakland Hills. An incompletely extinguished grass fire explodes in a three-day fire storm that ultimately consumed 1,520 acres, 3,354 single family dwellings, 437 condos or apartments, injured 150, and killed 25 individuals. Economic damages were estimated in excess of \$1.5 billion. Water agencies across the state and beyond had a wake-up call and realized they could be in a similar situation with regards to fire flows.

While fire flows are not mandated by law, in early 1992 the district's board of directors proposed an aggressive water infrastructure replacement program to increase the firefighting capability of the systems that it had inherited as a matter of sound public policy. Public meetings were held, public support obtained, and the district embarked on a system-wide replacement of undersized waterlines, installation of fire hydrants, construction of new larger water storage tanks, construction of booster pump stations, and auxiliary power generation capability projects that continues to this day. While the district's Engineering Department estimates at least an additional decade to complete this undertaking, the district is light years from where it was in the early 1990s.



South Tahoe PUD crews on June 25, 2007, check on the Boulder Mountain water storage tank. Photos/STPUD

The experience the district gained during the Angora Fire has shaped future water supply projects, operational procedures, and long-range planning as it pertains to water supply. The district, like the vast majority of South Tahoe residents, had never experienced a wildfire of this magnitude and maintaining fire flows became priority No. 1. The Angora Fire, generally regarded as the worst fire experienced within the Lake Tahoe Basin in well over a century, tested the water distribution system as well as the dedicated employees who maintain and operate it. District employees literally were in the middle of the firefight trying to make sure water tanks and fire pumps continued to work and supply water to the fire crews. By the luck of the draw, in the decade prior to the fire, more than \$18 million of district customer funds were spent on water supply infrastructure improvements in the Angora area including, most significantly, the auxiliary fire pump station located at Lake Tahoe Boulevard and Boulder Mountain Road. This critical pump station, which has emergency power generating capability, continued to operate despite the almost immediate loss of power due to the fire. Had this significant investment in upgraded infrastructure not been made, it is likely the fire could have been far worse than it was.

During the 24-hour period from the start of the fire on June 24, 2007, until June 25, the district produced 17.6 million gallons of water. Average water production at that time of the year is about 10 MGD. From June 24 through June 30 the district produced a record 89.91 million gallons of water. Even with that volume of production on June 24 the pumps continued to run at full capacity just to maintain demand levels. Early on the morning of June 25, district crews, following firefighters' observations, discovered the reason that the pumps could not keep up with demand was that each home that was destroyed was an active three-quarter inch (the most common residential connection size) water leak. Multiply that by 254 and it becomes very significant. District crews immediately began to shut off water services that could be

quickly located and crimp off those that could not be readily located.



The fire nearly consumed the STPUD pump and control building at Boulder Mountain.

Within hours, water storage tank levels and water pressures began to rise to more normal parameters. USFS Angora Fire Incident Commander Rich Hawkins stated at a fire status briefing that it was highly unusual, at a fire of this size, to *not* completely run out of water at some point. He noted that the district was able to keep firefighters in water, albeit some low pressures at times, for the duration of the fire. When the fire threatened to move behind Gardner Mountain and jump Highway 89, it was a challenge to access our facilities as residents attempted to evacuate their homes. Nevertheless, once the fire was fully contained, demands on the water distribution system returned to normal.

In the wake of the Angora Fire, California Gov. Arnold Schwarzenegger and Nevada Gov. Jim Gibbons commissioned the Blue Ribbon Fire Commission. One of the commission's recommendations was greater funding support by federal and state agencies for improved water infrastructure for firefighting in the Lake Tahoe Basin. In 2009, the district

acted as lead agency to form the Lake Tahoe Community Fire Protection Partnership. The partnership is comprised of the public water agencies in the Lake Tahoe Basin, both in California and Nevada. The mission of the partnership is to seek federal funding to replace undersized and inadequate water supply infrastructure in the Tahoe basin. Since 2009, the partnership, in concert with the U.S. Forest Service, has secured \$12 million in federal funding. Matched 50-50 with local funding, nearly \$24 million in critical water supply projects all with a nexus to fire protection, have been completed. Lake Tahoe is a safer place as a result of the success of this local-federal partnership.



District crews crimp water supply lines in the burn area.

Operational-planning lessons learned:

- Waterline replacement projects took on a higher priority in overall Capital Improvement Plan
- Increased emphasis on water distribution and redundancy of the water system
- Increased water production capacity became a higher priority
- Order of projects were changed in the CIP
- Viewed distribution vulnerability more critically

- Added water storage projects and increased sizing of water storage projects
- Moved to install fire hydrants at 500 foot intervals on all lines 6 inches or larger
- Re-evaluated and reprioritized waterline replacement projects
- Determined in future emergencies to insert district staff into incident command structure earlier

While no water agency wants to have their emergency management plan challenged in the real world, the district has taken the opportunity to learn from the events of the Angora Fire and made planning and operational changes that reflect the lessons learned.

Dennis Cocking is the public information officer for South Tahoe Public Utility District.

University study delves into specifics of Angora Fire

By Susan Wood

A first-of-its-kind study examining behavior and protocol surrounding a major wildland blaze features Lake Tahoe's most significant – the Angora Fire of 2007, which consumed 254 homes, forced the evacuation of more than 3,000 residents and caused about \$160 million in damage over nine days starting June 24.



Angora Fire -- 5 years later

As the five-year anniversary approaches, South Shore residents will be asked in a 30-minute phone survey their views of how well the community responded to and coped with the disaster. This is for the University of Colorado study that is funded by the National Science Foundation. The research also examines the Lake Arrowhead area, which endured its own large fire disaster in 2007. Both regions are considered rural, remote and tourism-based economies.

“What we were looking for were two rural communities that had a significant event and comparable character,” study analyst Jeannette Sutton, who works in the Colorado Springs-based university’s Trauma, Health and Hazards Center, told *Lake Tahoe News*.

Sutton spearheaded the research, which last year wrapped up its participant questionnaire of which this reporter took part in. The Q&A brought the study group to South Lake Tahoe where selected participants within categories from public safety and mental health to media and leadership were asked about the effectiveness of fire prevention efforts before the major blaze and how well the town recovered. The research also evaluated a predominant theme: whether information dissemination was adequate enough.

“Information online was a really big question,” Sutton told *Lake Tahoe News* in a recent phone interview. “Then, we had to look at how people could get information if they can’t access the Internet.”

While the Angora Fire peaked that Sunday, the research discovered citizens failed to get emergency broadcast updates, and no local radio stations covered the disaster. In addition, perceptions were expressed by people in the two study areas who believed print newspapers “lacked significant online presence, real time information” and concentrated more on “human interest stories”.

At the time of the Lake Tahoe disaster, the Sierra Nevada Media Group of which the *Tahoe Daily Tribune* is a part of tried to keep up online with pertinent, real-time updates but split its time on its print versions. (*Lake Tahoe News* did not exist in 2007.) There were times when citizens voiced concerns of feeling lost. At the outset, even initial phone calls channeled to the California Highway Patrol Truckee dispatch center within minutes of seeing the huge plume of smoke were met with pessimism over whether the wildfire sparked by an illegal campfire near Seneca Pond along the North Upper Truckee Road was actually a control burn.

Since then, local leaders and public safety officials have agreed systems need to be put into place to prevent the lack of real-time information from not reaching citizens from happening again. At least South Lake Tahoe city police dispatch was on top of the catastrophe with all hands on deck and longtime dispatch supervisor Leona Allen demonstrating grace under pressure while her home burned.



A university study is looking into various aspects of Angora, including response time. Photos/Lake Valley Fire

Stories abound of how citizens and their leaders coped with the stress and angst of such a disaster, and the study served to examine that.

As the city put up a command center at Lake Tahoe Airport in council chambers, an evacuation center was set up at the city Parks and Recreation building. Within days, town hall meetings were scheduled at the South Tahoe Middle School. Lake Tahoe Community College posted a list of houses that had burned, partially or completely. LTCC also collaborated with the American Red Cross on recovery efforts. A communitywide fund to aid in the recovery was established, and fundraisers with donation centers were organized for those in need.

Help was there, but this was no easy time for the community.

"We were looking at different themes in both areas and will survey the two communities to see the contrasting of how the community adapted," said Jessica Lambert, who created the study as part of her post-doctoral work at the Colorado university.

Another theme presented itself in the research. For both lake areas, factors influenced the magnitude of the fires. Lake Arrowhead had a massive bark beetle infestation in 2007. The South Lake Tahoe area endured "restrictive environmental policies aimed at protecting natural resources," the study's summary concluded.

For that, a bistate Blue Ribbon Commission was formed to evaluate such policies with then Republican Govs. Arnold Schwarzenegger of California and Jim Gibbons of Nevada

overseeing the effort.

Years later, the U.S. Forest Service has worked with local fire agencies and councils to conduct fuel reduction projects. Shortly after the Angora Fire started, “slash piles” – the buildup of brush and ladder fuels to be set in control burns – became the enemy of the community vernacular as citizens complained they contributed to increasing the wildland blaze.



Residents of Lake Tahoe will be part of a study about wildfires.

Resilience stood out in the research as the psychology of dealing with a disaster also concluded the two communities' citizenry accepts catastrophe as part of its life for “hearty mountain folk” who “choose to live remotely, while connected to the land, trees and mountains.” Those interviewed painted a picture of resiliency; as even “strong fluctuations in (a) tourism economy requires a resolve to remain (here) during difficult periods.”

When the study is complete, which will be after the citizen surveys are taken, the document is intended to serve as a model for other fire-prone communities of how to prevent a wildfire, but also how to respond when it does happen.

According to Lambert, “The goal is to learn more about factors that contribute to resilience in rural communities that face

disasters. I think the hope is that findings could be used to inform policy.”

Snippets about Angora



- Tucked off on the right side of Lake Tahoe Boulevard near Angora Creek just before Dead Man’s Curve is a labyrinth on a parcel that backs to the burn area that was created by Jay Newburgh.
 - When deciding what clothes to evacuate with, take your dirty laundry – those are the clothes you wear most often.
 - Emergency Preparedness Guide helps people think about what to do before a tragedy strikes.
 - The Community Disaster Resource Center that was established during the Angora Fire is still alive as a nonprofit in case another disaster on the South Shore occurs.
 - During the Angora Fire more than 5,000 meals were cooked in the St. Theresa kitchen. Breakfast, lunch and dinner were available to anyone needing nourishment.
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Angora Fire – 5 years later part 3 coming June 17

Day 3 of *Lake Tahoe News'* four-part series on Angora Fire – 5 years later will run June 17.



Sunday's stories will be about the water supply provided by South Tahoe Public Utility District, landscaping issues, a university study that includes the Angora Fire, and TRPA Executive Director Joanne Marchetta's point-of-view.

If you missed the June 10 installment, here are links to those stories:

Dealing with insurance companies.

Annual garden show focuses on Angora properties.

Cutbacks would challenge future wildland firefighting resources.

Importance of defensible space.

Supervisor Norma Santiago talks about El Dorado County.

If you missed the June 3 installment, here are links to those stories:

Susan Wood was the first reporter on the scene.

Forest Supervisor Nancy Gibson looks forward.

A garden grows from the ashes.

No arrests made.

State senator to host Angora forum.

What is the best thing to come out of the Angora Fire?

Cutbacks would challenge emergency response for the next Angora

By Jessie Marchesseau

If another Angora Fire happened today, would there be enough resources available to fight it?



Angora Fire --
5 years later

The simple answer is no.

“There would be no number of firefighters that we could employ that would be able to fight that kind of disaster,” said Chief Brian Uhler of the South Lake Tahoe Fire Department.

Representatives from other fire districts in the basin seem to concur.

“That fire was conditions-based; it wouldn’t have mattered if we had helis waiting at the airport,” said Kit Bailey, forest fire chief for the USFS Lake Tahoe Basin Management Unit.

The helicopters that would have been used to attack the fire from the front were grounded. Crews were left to battle the blaze on foot and in engines with winds gusting up to 50 miles per hour. The helicopters eventually made it up, but by then the fire had gone from manageable to massive.



Helicopters from outside the area fight the Angora Fire.
Photos/Lake Valley Fire

In the end, 1,900 firefighters, and 12 helicopters fought the Angora Fire, not to mention numerous engines, dozers, water tenders and air tankers. They came from all over the Western United States. And if it happened today, they would come again.

In disaster situations such as the Angora Fire, fire

departments rely on mutual aid agreements with other fire districts. They essentially agree to help each other in times of need. In fact, Gareth Harris, fire chief for the Lake Valley Fire Protection District, said those agreements have been improved and streamlined since Angora, and response time from cooperating districts would be even faster today.

An automatic aid agreement within the basin ensures that every firefighter in the Lake Tahoe Basin will be available to help for the first 24 hours. This gives units from farther away time to arrive with no lag in initial response.

However, the help received from neighboring districts may not be what it once was. Recent budget cuts have taken their toll on fire departments. South Shore crews including LVFPD, SLTFD and the LTBMU have managed to keep the same number of firefighters on staff, offsetting the cutbacks elsewhere. While SLTFD did lose four upper management employees, they managed to retain the number of firefighters.



Lines of fire hoses can't extinguish each house on fire.

"The Forest Service hasn't seen any reduction in capability at the local level or the regional level," Bailey said. "I think we're as well positioned as we can be, not just on the federal level, but on the local level, too."

Other fire districts were not so lucky.

Three years ago, the North Lake Tahoe Fire Protection District had three 20-person wildland fire crews. That number is now cut in half. CalFire has had to reduce its number of seasonal firefighters from up to 3,000 in previous years to 1,700.

But Janet Upton, deputy director of CalFire, told *Lake Tahoe News* she believes this reduction will not impact their effectiveness.

Upton said the staff reductions are offset by improvements in technology since 2007. The 21 administrative units across the state can now track detailed weather patterns and predict those “perfect storms” like the one during the Angora Fire up to 72 hours in advance. The department can then shuffle resources from an area with low fire danger, to higher risk locations. They can cancel days off and have crews work overtime

“If the threat is there, we are staffed to meet it,” Upton said.

She does admit, however, that staff reductions will likely impact their initial attack on a fire. Transporting crews from the other side of the state takes time, and relying on mutual aid agreements means waiting on crews from other districts.

In the event of another major fire, some districts in the basin may have to rely on improved aid agreements combined with developments in fire and weather technology to combat reductions in manpower caused by budget woes. The South Shore, however, having retained its firefighting forces, can bank on an equal, if not improved ability to launch an attack on the next Angora Fire.

El Dorado County: Fire proved what the area is capable of

By Norma Santiago

Memories of the Angora Fire and its aftermath can renew feelings of pain, despair and loss. There are some of us who, with each anniversary, take time to reflect on the events of that day. Some look at the rebuilt homes, neighbors settled in, and new landscape with gratitude, but long for those special things that can never be replaced; a gift from a child, a family portrait, a treasured knick-knack. Each year, as we meditate or pray in gratitude, we also reflect with reverence.



Angora Fire --
5 years later

In the five years since the fire, some of us feel “healed”. With the exception of physical scars in the surrounding forests, we look very healthy. Some of the burned out lots have been replaced with neighborhood gardens or places of meditation created by property owners. Beautiful homes have been rebuilt a little larger than before and in record time (80 percent were rebuilt one and a half years after the fire – unprecedented in the state of California). Empty lots were sold to new families who wanted to build a new home in this

area. There are aspen groves along creeks once hidden in a thick forest that are now visible. Wildlife has returned with even certain species not seen for a while. And, the forest, thanks to many, is being replanted with not only the Jeffery pine, but also, cedar, and sugar pine so that over the course of many, many years the forest will be more diversified.

I think back to a few weeks before the fire, the Tahoe Resource Conservation District had an outdoor community workshop on Boulder Mountain as an educational opportunity for the surrounding area to learn about best management practices, invasive weeds, and even defensible space. Kim Carr, then working for EDAW (a private environmental consulting firm), put together a poster showing the integration of BMPs, defensible space and water conservation. Attendees asked about their decks, pine needles, BMPs, and a host of other concerns and issues.

Another tragic irony is that just two weeks before the fire, I walked along Mt. Shasta with Jessica Mahnken, then with Lake Valley Fire Protection District, distributing "Living with Fire" information. It was painfully incongruent that this effort and the enthusiasm we shared in reducing the risk of wildland fire be followed so closely by the events of the Angora Fire.

Like any catastrophic event, I think we all remember where we were in those early moments when the fire began. It was almost disbelief as the fire grew so rapidly. The response from emergency services was nothing less than heroic. To evacuate homeowners, visitors, families, animals and organize an attack on the fire, to manage resources, and to do it without loss of life was a remarkable accomplishment. I was in the midst of true professionals who knew how to create, control and command a multi-jurisdictional arena. The fire was on county land with Lake Valley Fire Protection District first on the scene, and contingency crews rapidly joining in from the city, state,

federal, and outside districts and metropolitan areas. It was a war zone managed by professionals knowing exactly when, how and with what to proceed as components and elements constantly shifted. I will never forget being inside that circle as it developed into a sophisticated command center and communications operations. Everyone had a job and nothing was done outside of the information organizational chart. These professionals worked nonstop, slept little, ate only after hours of duty, were responsive, dedicated and put their lives on the front line to save people, homes, property, an industrial area, the high school and natural resources. I cannot provide praise enough for our emergency services personnel for what proved to be life saving measures for our community.

The community also deserves great praise. During the fire, what was created seemingly from chaos, was a community response to serve those who were immediately displaced and in shock. It was a beautiful collection of concerned service providers and city staff who immediately coordinated a shelter with food, supplies and support. The Lake Tahoe South Shore Chamber of Commerce jumped into action to set up a fund, nonprofits joined together to provide services and the South Shore community came to action to help one another. It was a truly spiritual moment in the history of our community. I have never experienced such gracious giving as when we tooled up to assist our neighbors. And, I will never forget it. This is what I know to be the real caring capacity of our community. That is a threshold that will never need redefining.

And, after the fire, when the smoke settled, what next? What happened was nothing less than historic. Never before have state, federal, county and private forces come together in such a way that allowed an immediate solution to the massive cleanup of the toxic remains of the Angora Fire. Ravaged homes, vehicles and furnishings now potentially impacted a watershed that could have devastated Lake Tahoe. Because the

state and county elected officials and departments worked together so closely on an immediate solution to clean up the sites and have it paid through the Office of Emergency Services and insurance companies, and by fast-tracking building plans and waiving fees, homeowners could settle with their insurance companies quickly and begin the rebuilding process. Recovery from the Angora Fire was an incredible display of possibilities with government facilitating a solution and then getting out of the way. The Angora Protocols, as they have been coined, were so proactive and responsive that other communities affected by devastating wildfires have had trouble organizing components of its success.



El Dorado County Supervisor Norma Santiago talks at the 2010 Environmental Summit. Photo/LTN file

And, in the last five years, county, state and federal crews have worked tirelessly to minimize the impacts of watershed damage by clearing devastated vegetation, replanting, and building stream restoration and erosion control projects to reduce the sediment flow into the lake. These efforts combined with best management practices and a new consciousness in our community will surely improve our chances to prevent and withstand another event such as the Angora Fire.

What I take away from this event in these five years is how immense our love is in this community, for each other and for our environment. If indeed the Chinese symbol for crisis includes both danger and opportunity, I contend that our community grew together, faced danger and built opportunity from the ashes. I am incredibly honored to be your representative.

Norma Santiago is on the El Dorado County Board of Supervisors representing the Lake Tahoe Basin.

Defensible space can save a house during a fire

By Jessie Marchesseau

Could you throw a smoldering ember the size of a softball anywhere in your yard and walk away feeling confident that it will not start a fire? If not, then it may be time to work on your defensible space.



Angora Fire --
5 years later

Practically an everyday term now, defensible space was not

mentioned much in the Lake Tahoe Basin before the Angora Fire ravaged the South Shore in 2007.

Coined in the 1980s, the term defensible space refers to the area of vegetation and landscape management between a house and a potential oncoming wildfire. And not only is it a good idea, it's the law.

California Public Resources Code Section 4291 states:

"A person who owns, leases, controls, operates, or maintains a building or structure in, upon, or adjoining a mountainous area, forest-covered lands, brush-covered lands, grass-covered lands, or land that is covered with flammable material, shall at all times do all of the following: (1) Maintain defensible space of 100 feet from each side and from the front and rear of the structure..."

Even though your property may not back to open forest land, the law still applies. Nearly all of the Lake Tahoe Basin is located within what is known as a wildland urban interface, or an area where civilization meets and intermingles with the wilderness.

Nevadans are not off the hook, either. Legislation and building codes require Nevada properties to have defensible space as well.



Proper defensible space

spared this house in the
Angora area. Photo/Lake
Valley Fire

Some of the regulations have been altered since the Angora Fire, but they are far from new. Lake Valley Fire Protection District was enforcing defensible space requirements before signing occupancy permits for years prior to the fire.

Defensible space is not just for new and remodeled homes, either. It applies to all structures, residential or commercial, within the WUI zone. Owners can even be fined for non-compliance.

Fire Chief Gareth Harris of LVFPD said that all of the homes in the Angora burn zone had been contacted by defensible space technicians at least twice prior to the fire. Of those that did complete their defensible space, 75 percent survived.

So why were some owners reluctant to comply? Well, for a variety of reasons, including financial ones and difficulties with the TRPA. But after losing 254 houses to the Angora blaze, area fire districts and the Tahoe Regional Planning Agency agreed things had to change.

Together, the groups streamlined the defensible space process, and the TRPA loosened its grip a little on tree removal and erosion standards. Now defensible space inspectors from the fire districts can authorize tree cutting for fire safety, and property owners can remove pine needles from within 30 feet of structures once a year.

"I don't think it's a choice of a clear lake or a safe community," said Peter Brumis, public outreach specialist for the Tahoe Resource Conservation District.

The group focuses on erosion control and protecting lake clarity, forests and wildlife. Brumis admits there is a delicate balance when it comes to the issues of erosion

control and defensible space, but maintains that one is no more important than the other. In most cases, he said, both can be done effectively and simultaneously.

The financial burden of defensible space was also addressed. The Nevada Fire Safe Council was able to secure grants and offered up a rebate program starting in 2008. Property owners could recoup half of their costs to install defensible space up to \$1,000. Unfortunately, the entity lost its grant funding for 2012 and closed its doors at the end of April.

Making the permitting and financial aspects less burdensome may have contributed to the sharp spike in defensible space compliance immediately after the Angora Fire, but Forest Schafer, forester for the North Lake Tahoe Fire Protection District, thinks it was more than that.

The NLTFPD did 163 defensible space evaluations in 2006. In 2008, the year after the Angora blaze, that number jumped to 410, but has been steadily declining ever since.

“I think the Angora Fire was a very stark reminder of how important it is to do that,” he said. “It’s not in the front of everyone’s mind when smoke’s not in the air.”

NLTFPD, like LVFPD, the South Lake Tahoe Fire Department, and other fire districts around the lake, offers free defensible space inspections and evaluations. Experts will visit the property, make recommendations, mark trees for removal and even advise owners on the best types of vegetation to include in their fire safe zones.

The resources are available, and the effectiveness of defensible space has been proven time and again. But when it comes to wildfire, there are no guarantees. Even with the best landscape management, an ember that lands directly on a wood deck or shake roof can mean the end. So while defensible space is a good start, fire safety does not stop at the front door.

“Don’t be complacent,” advises Harris, “protect your property.”

Annual garden tour to feature Angora area

Lake Tahoe Historical Society’s annual garden tour will feature four gardens in the Angora burn area.

The event is July 29 from 10am-4pm.

The other three gardens are off Pioneer Trail.

Music and refreshments will be in town on Springwood in a garden.

Tickets are \$20 and will be available for sale on July 1 at the museum and at local garden centers.

For more information, call (530) 541.5458.