

A photograph of a forest floor covered in a dense carpet of blue lupine flowers. Several dark, charred tree trunks stand in the background, indicating a fire recovery site. The scene is brightly lit, suggesting a sunny day.

**RIM FIRE
RECOVERY
UPDATE**

August 2014

What is Salvage Logging?

In the aftermath of the Rim Fire, over 154,000 acres of the Stanislaus National Forest suffered from various degrees of burn severity and tree mortality. As snags and fire-damaged trees weaken and fall, they pose an immediate danger to the lives, safety and property of people in the area. It is critical to provide a safe environment for both public use and the administration of affected roads and facilities.

The Rim Fire Recovery Project includes the salvage of fire-killed trees to capture their economic value. This removal process is the first of multiple recovery and restoration projects that will be undertaken over the next several years.

While retaining old forest structure such as large snags and downed logs is important, the tremendous number of dead trees across a vast landscape creates the need for harvesting portions of this perishable commodity in a timely manner. Leaving all dead trees would create a large and dangerous fuel load, making it more prone to future high-intensity fires as standing dead trees fall and accumulate on the forest floor.

Dead tree removal after the Rim Fire is expected to continue for up to five years. If removed as salvage logs for lumber within the next two years, the value of the dead trees would pay for this work and potentially for other future restoration treatments. After two years the dead trees could still be used as clean electrical cogeneration fuel, rather than being left as fuel on site for future forest fires.

Rim Fire salvage logging will leave burned forest areas across the landscape with enough habitat for wildlife species such as the Black Backed Woodpecker which are dependent on post-fire environments. The project will also leave a deer connectivity corridor linking Yosemite National Park to wintering grounds favored by local deer herds at lower elevations. Removing salvage and non-merchantable material would also achieve desired forage and cover ratios while clearing the way for the migrating deer as well as other wildlife.

Future projects will address reforestation, ecosystem restoration, fuels treatments, and other resource management activities.



Salvage timber sales can help defray costs of a fire recovery.

TIM HUGHES



Pinecrest benches were crafted locally from cedar trees killed in the Rim Fire.

Community Spirit

Many might call the Rim Fire a disaster and yet good things often come out of the most trying circumstances. Attitude and the spirit of a community are what really count. In Tuolumne County, people have chosen to rise to the occasion.

Consider the beautiful park benches at Pinecrest Lake. Eighty incense cedar benches were hand-crafted from wood recovered off the Rim Fire. Ron Sherrod, a Vietnam veteran out of Newcastle, California, headed up the project. The wood for the benches was milled in Twain Harte by a family business run by Brian Garber. According to Sherrod, all of the employees hired on the project came from within a 50 mile radius of Pinecrest Lake. Materials were also purchased within neighboring communities, making this a true local success story.

Christina, David and Bethany Wilkinson also chose to make a difference. With an awe-inspiring smoke column looming over their backyard, they knew they had to help the forest recover. By working through the Groveland Area Involved Neighbors non-profit organization, they were able to raise \$12,132 by selling Rim Fire T-shirts. On June 17, they turned over the check in that amount to the Stanislaus Na-

tional Forest for use in recovery projects. The Tuolumne River Trust matched their donation dollar for dollar.

In May residents helped U.S. Forest Service botanist Margaret Willits with an invasive weed pulling event in the Mi-Wok area. Non-native plants often take advantage of disturbed soils. Removing non-native plants gives native species a chance to flourish. Pulling Tumble Mustard, before it could seed, is another way residents have teamed up with the Forest Service to improve conditions.

Not only are locals involved, but regionally the forest is receiving support as well. The U.S. Forest Service Regional Office in Vallejo ear-marked \$170,000 for trail repair on the Stanislaus. Recreation drives the economy of the area and attracting hikers can boost local businesses. Repairing trails in the backcountry is yet another example of how the forest is literally rising from the ashes of the Rim Fire. *Good things happen when people get involved.*

BE PART OF THE RECOVERY EFFORT!
VISIT OUR WEBSITE
www.fs.usda.gov/main/stanislaus/workingtogether
to learn about upcoming Rim Fire Recovery volunteer opportunities.

Plant Ecology After a Sierra Wildfire



DUSTIN VAUGHN

California poppies create a splash of color in the foothills burned by the Rim Fire.

Ecology is the study of the interactions between living organisms and their environment. Human beings are key players in that evolving story. Not only do we get to witness priceless occurrences in the outdoors, but we also act as great agents of change.

An event such as the Rim Fire can leave behind a devastated landscape. Charred areas can show signs of life but it may be many years before they return to their pre-fire state, if they don't burn again before the recovery is complete.

The terrain in the Stanislaus National Forest rises from 870 to 11,540 feet. Sandwiched between those elevations are tangled fields of chaparral, oak woodlands and conifer forests with towering Sugar and Ponderosa Pines. Above that, alpine meadows give way to the high country. Plants in each zone are adapted to those elemental forces that have forged the environment over time.

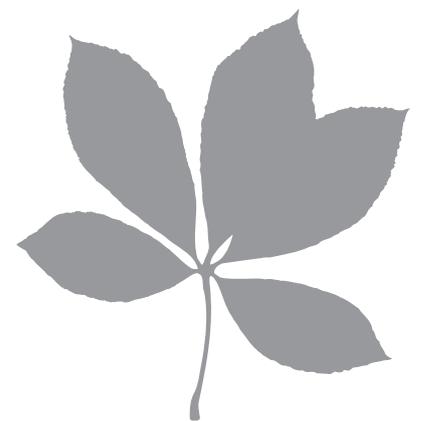
In modern times, we have come to view fire as a scary, unnatural element; something we used to think we had to suppress at all costs. Places where we recreate are suddenly closed. It threatens our homes, our timber and it leaves a black scar on the landscape. Increasingly, people live on the edge of the wildland urban interface (WUI) and when wildfires get big, homes and lives are threatened. Firefighters

are put at risk each summer to battle blazes in the WUI zone.

There is, however, more to this story.

Though wildland fires can be destructive, they are also great nutrient recyclers. Where some plant species suffer, others thrive. Plant life often flourishes following a forest fire, increasing biodiversity. Fields of bicolor lupine readily colonized the area burned by the Rim Fire. Gilia, Indian Paintbrush and morel mushrooms sprang up as well, using the more open habitats that were created. Mushrooms take advantage of the new soil substrate and absorb nutrients from dying trees. Fire, as a disturbance, kick starts ecosystems.

Following a fire, nutrients are released into the ash. Forbs such as Soap Root survive underground as bulbs. After the flames have passed, it responds quickly to the nutrient flush by sending up large strap-like leaves.



Seeds from an uncommon form of Bleeding Heart, called Golden Ear Drops, lurk dormant in the seed bank for many years. When charate and other nutrients are released by fire, this triggers the plant to bloom. Scorching causes a similar reaction in other species, increasing germination. Fire sends a clear message to vegetation: reproduce or die.

Chaparral is a plant community designed to burn. Volatile oils in one of its components, chamise, also called greasewood, promote

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STANISLAUS NATIONAL FOREST OPEN AREAS AS OF JULY 9, 2014

For more details on openings and closures, please contact the pertinent district office by using the phone numbers listed below. Closures are also listed at: www.fs.usda.gov/detail/stanislaus.html

Mi-Wuk Ranger District
209-586-3234

Summit Ranger District
(not affected by fire)
209-965-3434

Groveland District
209-962-7825

Calaveras District
(not affected by fire)
209-795-1381

For information on hunting zones, maps and open seasons visit: www.dfg.ca.gov/wildlife/hunting/deer/deermaps.html

CA Dept. of Fish & Wildlife
209-234-3420

GLOSSARY OF TERMS

Transect – a sample area that is marked, allowing for repeat visits to gather valuable information over time such as the presence of certain bird species, plants and seedling data.

Allotment – an area of land designated for grazing via tenured permits. Some grazing allotments have been passed down from one generation to the next.

WUI – wildland urban interface; an area of land where fuels from wild areas intermingle with communities raising the danger of wildland fires to homes.

AREAS OPEN TO THE PUBLIC (7/9/2014) MI-WUK RANGER DISTRICT

- 1 Hull Creek OHV Riding Area
- 2 Crandall Peak and Deer Creek Riding Areas
- 3 River Ranch Campground
- 4 Hull Creek Campground
- 5 Frasier Flat Campground (not pictured)
- 6 Riverside Day Use Area
- 7 North Fork Day Use Area (Tuolumne River)
- 8 Frasier Flat Day Use Area (not pictured)
- 9 Lyons Reservoir Day Use Area (on PGE land)
- 10 Cottonwood Road (1N04) is open until it hits the closure area
- 11 3N01 is open to the Bourland Meadow and Box Springs trailheads

SUMMIT RANGER DISTRICT

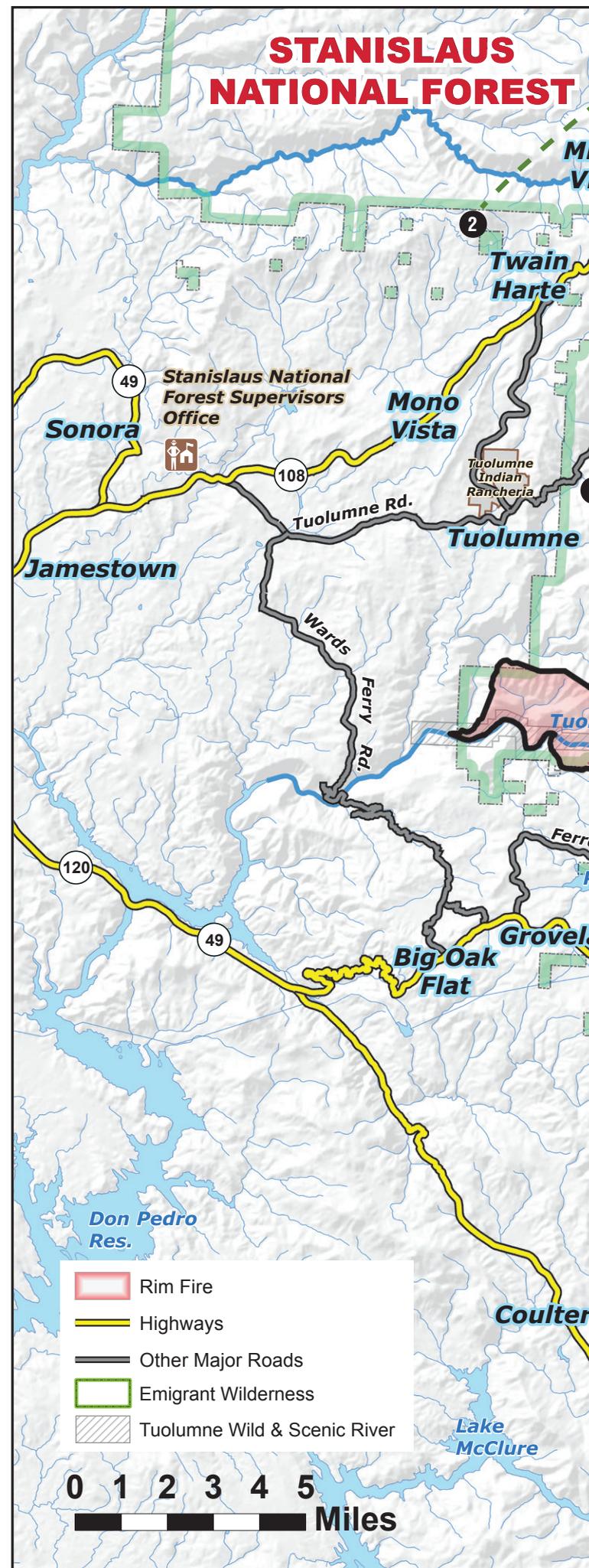
- 12 Clavey River from 3N26 above Hull Creek Campground (North end only)
- 13 Aspen Meadows Pack Station (not pictured)

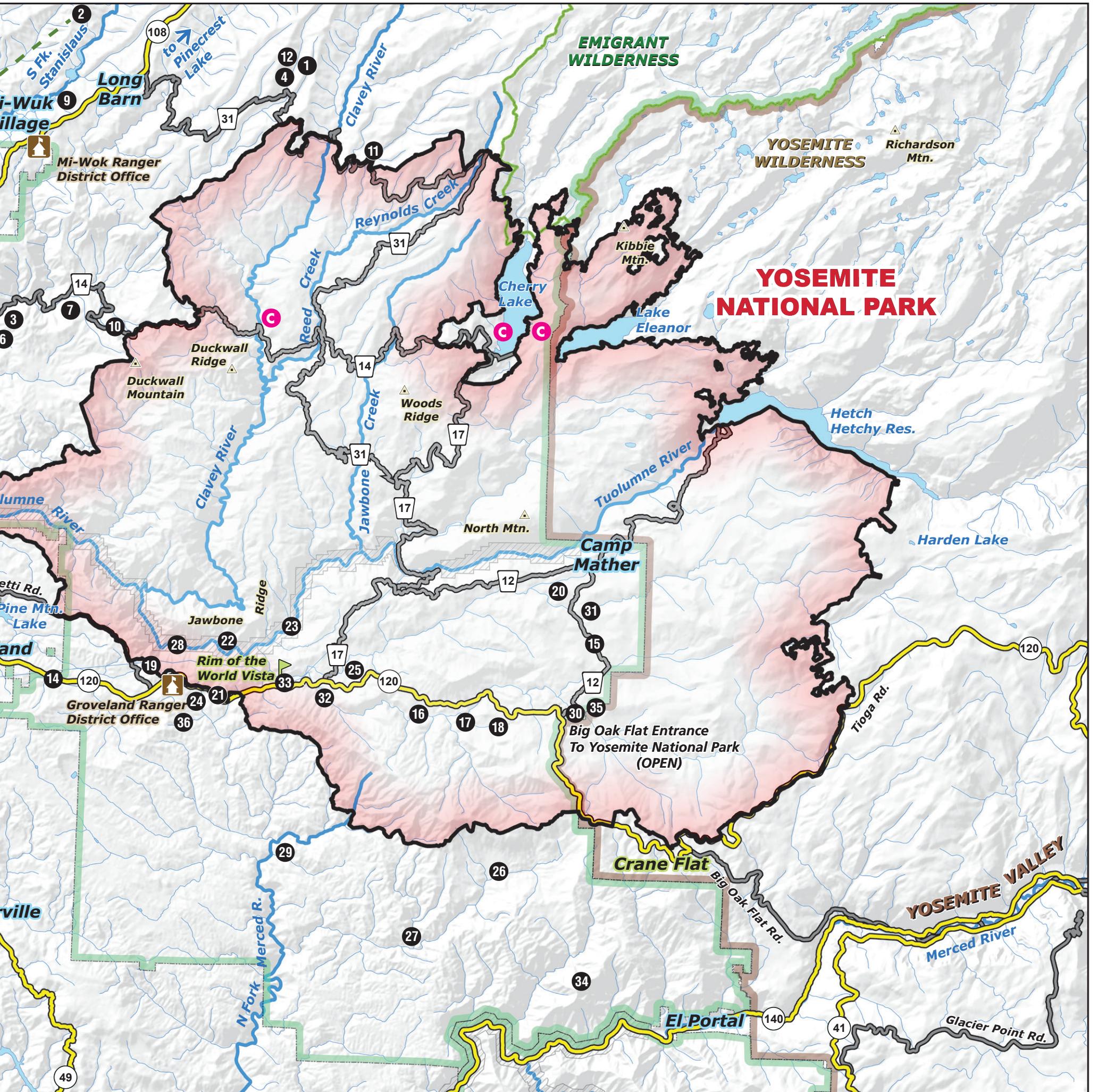
GROVELAND RANGER DISTRICT

- 14 State Highway 120
- 15 Evergreen Road (county road)
- 16 Harden Flat Road – west of Yosemite Lakes Road to Highway 120
- 17 Yosemite Lakes Road (county road)
- 18 Access to Sunset Inn via Golden Arrow Road to Harden Flat Road
- 19 Lumsden Road (Forest Route 1N10) between Ferretti Road and Lumsden Bridge Campground
- 20 Dimond O Campground
- 21 Lost Claim Campground
- 22 Lumsden Campground
- 23 Lumsden Bridge Campground
- 24 Pines Campground
- 25 Sweetwater Campground
- 26 Anderson Valley Dispersed Camping Area
- 27 Montgomery Gulch Dispersed Camping Area
- 28 Tuolumne Wild and Scenic River open for boating
- 29 Bower Cave Day Use Area
- 30 Carlon Day Use Area
- 31 Middle Fork Day Use Area
- 32 Rainbow Pool Day Use Area
- 33 Rim of the World Vista Day Use Area
- 34 Trumbull Peak Day Use Area
- 35 Carlon Fall Trailhead
- 36 Little Golden Forest Trailhead

NOTED CLOSURES (see website for complete list)

- Ⓢ Sand Bar Flat Campground and Day Use Area are CLOSED (not shown)
- Ⓢ God's Bath, Cherry Lake and Trailheads to the East are CLOSED







ALLEN JOHNSON



MORRIS JOHNSON

Fuel treatments provide defensible space.

Fire Adapted Communities

Lighter fuels are evident around this Hwy. 120 fuel break.

PARTNERSHIPS AT WORK

(SWIFT) Southwest Interface Team

For over 15 years, The Southwest Interface Team (SWIFT) has been actively protecting communities in our area. SWIFT is a group comprised of a variety of government and external partners, including the U.S. Forest Service, that works collaboratively to create fire adapted communities. Strategically protecting homes in the Wildland Urban Interface (WUI) is their goal. Prescribed burns, fuel breaks and ground mastication efforts are the tools they use to achieve that objective.

Fuel treatments buy firefighters a margin of safety. Punching in dozer line is faster and easier when heavy fuels have already been removed. Holding a fire is easier where fuels are lighter. Backfires can be conducted off of treated areas.

Once a fuel break has been created, it is important to maintain that safety zone. Fire danger resumes as fuel stacks up over time. Homeowners can help by removing cured grass annually. Dead woody debris and ladder fuel must be mitigated to keep fuel loadings light so fire doesn't move from the ground into the tree tops.

Protecting homes and providing defensible space is what SWIFT is all about. By reducing fuel loads near high-risk communities, SWIFT hopes to make a difference in Tuolumne and Mariposa Counties.

The Rim Fire was the third largest fire in California's recorded history. What a lot of people don't know is how its growth and severity were somewhat mitigated by fuels treatments the U.S. Forest Service had in place before the flames even grew legs.

Lighter fuel loads create defensible space allowing firefighters to more safely suppress wildland fires. The Rim Truck Fuel Break is an example. This 15 mile long fire break treated approximately 420 acres near the communities of Pine Mt. Lake, Groveland and Big Oak Flat. Stainslaus National Forest and CalFire personnel, working under the cooperative umbrella of the Southwest Interface Team, were responsible for this effort. Four miles of the fuel break were constructed by the Forest and CalFire added an additional 11.

The Rim Fire progressed south into the Tuolumne River drainage quickly after its August start. Within two days, it was rapidly approaching the community of Groveland. Firefighters were able to establish a dozer line within the existing fuel break and were successful in holding the fire there, protecting the communities as intended.

The Peach Growers fuel treatment area is another good example. Lighter fuels allowed firefighters to easily construct dozer line near some recreation cabins and to burn out the area, starving the fire of potential fuel. Although high intensity fire behavior pushed

through the untreated fuels on the downhill side of a nearby road, the intensity of the fire front was reduced overall. This 742 acre project, completed by the Forest Service, had a significant impact on the area's safety.

Previous mechanical thinning and prescribed burns in the Bear Mt. area also resulted in reduced severity from the Rim Fire. Though flames swept through the area, it burned surface fuels with low flame heights instead of racing through the tops of the trees.

Are all fires necessarily bad? The answer to that seems to come down to timing and planning.

Wildland fires are unplanned and often occur during the hottest, driest months. Combine those conditions with steep slopes and a severe drought and these conflagrations can defy the best of fire suppression forces.

Prescribed burns and thinning operations are planned and conducted under set weather conditions. Smaller areas of land are ignited individually and control lines are established. Fuels near the fireline are removed to ensure that radiant heat and spot fires don't cross the line.

Helping neighboring communities stay safe involves wildfire response, resilient landscapes and creating fire-adapted neighborhoods. In the case of the Rim Fire, it appears that taking preemptive measures can make all of the difference.

Mending Fences

The modern history of the west is very closely tied to livestock grazing. Today, the Forest Service concentrates its efforts on managing vegetation resources across the landscape to serve a multitude of resource needs.

RANCHERS and cattle share our national forest lands across the country. During the Rim Fire, 14 grazing allotments were impacted by the blaze. Initially, grazing on six of these was suspended to allow the vegetation a chance to adequately recover. Forage was already impacted by severe drought conditions and then by the intensity of the fire. Range managers recommend taking allotments out of rotation if fire has heavily impacted more than 30 percent of the landscape in question. All six of the allotments met those criteria.

Post-fire on-site monitoring has continued. The Stanislaus National Forest recognizes the need to reinstate grazing rights on those plots that are showing signs of acceptable recovery. Grazing may resume in some areas this year, as conditions improve. More heavily impacted sites, that are not faring as well, will remain out of rotation until next year.

Plants need a full season to grow and set seed. Soils that were disturbed by the passage of the fire also have an opportunity to stabilize as vegetation colonizes the burned area. Non-use allows time for these elements to heal so they can once again support cattle grazing and the families that own these businesses which produce the beef that feeds the country.

Ranching in these mountains is a tradition that spans several generations. As a multiple

use agency interested in meeting the diverse needs of the public, the Forest Service is ensuring that the ranching infrastructure damaged by the Rim Fire is not overlooked in the recovery process. \$525,000 has been ear-marked for repairing 30 miles of fencing to keep grazing cattle within prescribed boundaries. Twelve water troughs will also be purchased.

Time and effort are needed to make this happen, with the help of volunteers.

Five Tioga High School students, employed by the Youth Conservation Corps, will stage equipment for the project. The California Conservation Corps (CCC) will spike

out two crews for eight to 10 weeks to build approximately 13 miles of fence along the border with Yosemite National Park. "Spiking out" means roughing it in the woods. Simple supplies, camping gear and a cook will help to make the backcountry camp successful. National Park Service sawyers and foresters will join the CCC to drop hazardous trees along the proposed fence line.

The Student Conservation Association (SCA) is providing additional workers to build interior fence lines near cattle allotments. Other groups may eventually pitch in as well. Mending fences with our neighbors is important to the Forest Service and we are busy doing that one fence post at a time.

To learn more about grazing on public lands, please visit: <http://svinet2.fs.fed.us/rangelands/uses/>



PHOTO: KEITH RIGGS

Plant Ecology & Fires

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the spread of a wildfire. Though chamise and other shrubs are top-killed in the burning process, many species resprout from the base.

Extreme lack of water is another factor that makes our California brush fields so flammable. And yet these hardy shrubs survive drought conditions that could wither a human in three days flat. How do they manage it? By early summer, they have entered a stuporous state of shut down to conserve moisture. Prior to that, their entire physiology was geared towards water conservation.

In the brush, thick, waxy leaves retain precious water. Breathing holes, called stomata, are located on the undersides of leaves where they are protected from sun-blast and the resultant evaporation. Manzanita even has vertically oriented leaves that minimize sun exposure.

Trees in the mixed conifer forest must also adapt. Fir trees are one example. With their conical shape they can readily shed a wet snow pack, known locally as Sierra cement, rather than breaking. Snow is just one dynamic force they contend with.

Lightning strikes have started wildland fires in the coniferous forest for thousands of years. Many tree species, such as Lodgepole Pine and Giant Sequoia are well adapted to fire. Stand replacing fires burn through large swaths of Lodgepole, clearing the way for new growth. Serotinous cones which open under intense heat reseed the area rapidly producing a forest of saplings.

Even the mighty Sequoia likes fire. Bare mineral ash is the preferred substrate of this stately giant. Egg shaped Sequoia cones also open when heated and the seeds rain down in debris-free zones. Thick bark forms a defensive layer around the mature trunk, protecting it from the flames while the seedlings establish themselves in the ash.

Certain bird species like Black Backed Woodpeckers (BBWOs) and Lazuli Buntings do well following a fire. Unique physiology allows the BBWOs to capitalize on the structure of a burned forest. Snag patches above 5,500 feet are the preferred zones for these birds. In the Rim Fire area, an in-depth analysis shows that habitat such as this will be left for the woodpeckers, allowing up to 77% of the pairs to survive. Balancing the complexity of needs across the landscape following a fire becomes vital. Woodpecker habitat is one of many concerns.

Clearly these mountains are subject to powerful energies. Change and flux are normal. Carving out a piece of turf in this post-fire environment is critical. The flora and fauna in the Sierra have been adapting to these elemental forces for millennia. How are we, as humans, adjusting?





RYAN BURNETT

Black Backed Woodpeckers favor snag patches.

Audubon Visits the Stanislaus

One of *Audubon* magazine's key feature writers, Jane Braxton Little, visited the Stanislaus National Forest in May. Her mission was to observe the area burned by the Rim Fire to examine bird populations and how they are responding to the fire. Rolling out of the tent at 4 a.m. to be on the road by five takes verve but if you want to learn about birds, the old saying is true: The early bird does indeed get the worm.

Surrounded by morning mist and the first hint of a sunrise, Little's work takes her up rugged mountain slopes. By working with scientists on established transects, early morning hours are used to capture data on species inhabiting the footprint of the fire. Transect lines are sample areas laid out in advance, allowing biologists to revisit the same spot multiple times to gather information. Keenly trained ears help professionals to recognize and catalog 80-100 different bird calls along these lines with ease.

By watching these transects over time, scientists hope to gain insight into what happens with bird populations after a fire. They're looking at the issue from a wide perspective and have been visiting other large burned areas in the Sierras since 2009 including the Chips, Storrie, Cub and Moonlight fires.

Want to learn more? Jane's article will be available in *Audubon* magazine this July.

Know Before You Go

Lake Tahoe, Yosemite and the Stanislaus National Forest are cherished and accessible areas in the Sierra Nevada mountains for an overnight destination. The Forest offers a full range of year-round recreation opportunities. Three primary trans-Sierra routes traverse the forest, offering great views through a range of life zones (3,000' - 9,500+'). A network of forest roads and trails encourages discovery of nature and history. Visitors enjoy a variety of activities including wildlife viewing, hiking, fishing, camping, picnicking, and off-road vehicle use.

Whitewater rafting is another option. Running the rapids of the historic Tuolumne River can be thrilling, not to mention breathtaking. Portions of this waterway were designated as a Wild and Scenic River in 1984.

The Wilderness areas on the Forest host a spectacular landscape of volcanic vents, cirques and cinder cones as well as sheer granite cliffs. Fiery geologic forces from long ago forged this volcanic landscape. Even mudflows can be seen in Blue Canyon via a trailhead located near Highway 108. Before you grab your hiking boots, stop at a nearby ranger district office for maps and directions.

Knowing what Forest areas are open is particularly important this year since many Forest closures are still in effect because of the Rim Fire. For your safety, please obey these closures. Openings and closures are fluid. Contacting district offices prior to starting your adventure is the best way to stay safe, informed and in compliance.

More information is available at: www.fs.fed.us/visit/know-before-you-go. Type in Stanislaus National Forest for details on the closure order or review the centerpiece map. Calaveras and Summit Ranger Districts were not impacted by the fire and are fully operational, though not listed on the map.



PHOTO COURTESY OF OARS

Whitewater rafting trip on the Wild & Scenic Tuolumne River.

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Produced in cooperation with the USDA Forest Service, which is an equal opportunity service provider and employer.

This publication is also available online in PDF format at: www.3forests.us/rimfire
Front cover photo: Dustin Vaughn