



living
with

WILDFIRE

in southwest colorado



Summer Heats Up!

Public land agencies have identified 22,000 communities in the wildland/urban interface at risk of wildfire.

Is your home among them?

By Ann Bond

Federal, state and local firefighters have already been busy responding to wildfires in southwestern Colorado. So far this summer, all fires have been brought under control before they had time to grow to a dangerous size.

But last year's wildfire season proved that conditions in the West are ripe for burning. Nationwide, almost seven million acres were charred and more than 850 structures destroyed. In response, Congress has increased funding for firefighting readiness by the U.S. Forest Service (USFS) and Bureau of Land Management (BLM).

Although the predictions for this year's fire season are not yet

dire, fire officials are watching the weather closely. Current long-range forecasts for our region call for a summer of above-average temperatures but near-normal precipitation.

Locally, about a dozen new federal firefighters and support staff have been hired to meet the demands of an active wildfire season.

The Dolores Public Land Center (USFS/BLM land in Dolores and Montezuma counties) has three fire engines on standby, each staffed with a crew of five.

The Columbine Ranger District/Field Office (USFS/BLM land in La Plata, San Juan, and Archuleta counties) has one engine with a crew of five and a

new six-person fuels-suppression crew ready to go.

The Pagosa Ranger District/Field Office (USFS/BLM lands in Archuleta, Mineral, and Hinsdale counties) is equipped with two engines, each manned by five-person crews.

This is all in addition to local and state firefighting resources.

An interagency helicopter is available at Mesa Verde National Park (MVNP) for use in fire detection and firefighting, and a new helicopter based in Towaco covers Bureau of Indian Affairs (BIA) land.

The Durango Helitack crew, based at La Plata County Airport, is a national resource with a crew of eight.

Interagency Dispatch

Mission: Wildfire Response

Members of the Durango Interagency Fire Dispatch Center help to make fire response efficient, quick and effective.

The USFS, BLM, BIA, MVNP, and Colorado State Forest Service contribute staff and resources to operate the full-time facility in the San Juan Public Lands Center.



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Map to Rate Fire Danger

By B.J. Boucher

Ponderosa pines shade our front yards, sometimes overhanging roofs. Oak thickets huddle up to wooden houses and decks. Our subdivisions are intertwined with acres of public land dense with undergrowth and small trees.

These volatile conditions have prompted production of computerized maps to rate fire risks on public and private lands in southwestern Colorado. The goal is to give homeowners, fire departments, and public-land managers a clear view of the areas that are most at risk from wildfire, so that preventive actions can be taken.

Research has shown that low- to middle-elevation ponderosa pine forests, where many rural housing developments are located, tend often to burn naturally.

"Fire would sweep through ponderosa forests regularly, burning dead twigs, pine needles, and some small trees, but it didn't kill the big trees," says Bill Romme, a former Fort Lewis College professor nationally recognized for research on the natural process of fire in western ecosystems.

"Human intervention has changed that pattern, and unless appropriate steps are taken, many private-property owners will be susceptible to wildfire in the next decade."



Fire managers burn brush near a home to reduce the fuel available for a potential wildfire.

Romme is leading the fire-risk mapping project for La Plata County. He hopes to extend the study to surrounding counties. Through the Geographic Information Systems (GIS) process, Romme is delineating natural features, such as topography and vegetation, then overlaying a map layer showing homes, bridges and other susceptible structures.

"There are places in La Plata County that are just as vulnerable as Los Alamos, New Mexico, to serious fire loss," Romme said. "This map will rate locations for high to low probability for fires occurring, then superimpose indications of the potential in-

tensity or destructiveness of a fire if it does occur."

The La Plata County Fire Risk Map will help public officials and private landowners identify areas of concern, where prescribed burning, vegetative thinning, or landscaping alterations could be used to lower wildfire risks.

The La Plata County effort is funded through a partnership between the Fort Lewis College Office of Community Services, San Juan Public Lands Center, and Colorado State Forest Service. The map is expected to be out by this fall in both hard copy and electronic form.

Covering the Bases

Air Tankers Get a New Home Base in Durango



Senator Ben Campbell (right) addresses participants at the ground breaking.

By B. J. Boucher

Senator Ben Nighthorse Campbell joined national, state and local fire officials in June to turn the first shovelfuls of dirt at a ground-breaking ceremony for a new air tanker base in Durango. Scheduled for completion in 2002, it will become a hub for aerial-firefighting resources in southwest Colorado and one of only four full-time bases in the five-state Rocky Mountain Region.

The base will be built on 7.5 acres of land leased from the Durango-La Plata County Airport. Campbell was instrumental in securing national funding for the project. He joined USFS National Air Tanker Base Coordinator Ed Gililland, San Juan National Forest Supervisor and BLM San Juan Resource Center Manager Cal Joyner, and USFS Deputy Director for State and Private Forestry Steve Pedigo to celebrate the initiation of construction.

"The base will house office space, a warehouse, an air operations building, four water and retardant tanks, and two loading pads for loading aircraft with retardant," Joyner said. "It will give us much quicker response time locally, and allow us to help other areas in the Four Corners as well."

Air tankers can load 500 gallons of fire retardant per minute and hold 3,000 gallons. They can be ready to go in six minutes. Retardant is used to cool hot spots on fires and lay firelines to slow fire movement.

The Durango base will allow tankers to double the volume of retardant available for immediate firefighting and ensure greater safety for the firefighters on the ground. A contract for construction will be awarded this summer.

Just What the Doctor Ordered

USFS and BLM Work to Reduce Fuels

By Ann Bond

Almost 40 million acres of the 191-million National Forest System are at risk for wildfires due to heavy fuel buildups. In response, land managers are planning preventive actions, especially on public land next to communities—where human lives and property are most at risk.

Often, prescribed burning is “just what the doctor ordered” for a forest ill with the symptoms of dense stands, thick brush and



Firefighter becomes fire manager to light a prescribed fire on the SJNF this May.

heavy ground debris. The “prescription” is to ignite a ground fire when weather and moisture will keep flames at light intensity.

Reintroducing the role of fire into these ecosystems reduces ground fuels, prunes lower branches of trees, recycles nutrients, and encourages natural regeneration and biological diversity.

The San Juan National Forest has had a prescribed-burning program for years, but only about 6,000 acres of the almost two-million-acre forest were treated annually. As the National Fire Plan kicks in, the San Juan plans to double that figure in the short term, and perhaps triple it in the future.

Most prescribed burns on the San Juan are conducted in middle-elevation ponderosa pine forests, which historically depended on fire for ecological health.

Spring burning this year took place within a short “window of opportunity” between snowmelt and greenup: a time when the forest floor and shrubs have dried out from winter but haven’t yet leafed out.

The Pagosa Ranger District/Field Office burned 1,730 acres; the Dolores Public Lands Center, 1,450 acres; and the Columbine Ranger District/Field Office, 1,250 acres.

Selective thinning of vegetation can also be used instead of, or in concert with, prescribed burning. In May and June, the BLM cleared 300 acres of fire breaks in the Grandview Ridge area, east of Durango.

“We used a hydromower to clear oak



A hydromower thins brush to create a mosaic in the Grandview Ridge area.

brush, piñon pine, and juniper in random mosaic patterns,” said Randy Lewis, BLM fire management officer. “A huge benefit is that the machine mulches the vegetation, which helps retain moisture and prevent erosion.”

A similar thinning project began in June on a mesa overlooking the Dolores Rim Canyon, southeast of Dove Creek, where both a hydromower and hand crews are thinning vegetation. The area will be treated with prescribed fire in following years to control regrowth, reduce accumulation of fuels, and help prepare the soil for pine regeneration.

Prescribed burning and thinning can improve wildlife habitat. Creating openings in dense stands of trees allows more sunlight and water to reach the grasses, forbs, and shrubs that deer and elk depend upon for forage. The goal is to create healthy, diverse stands of trees and shrubs, interspersed with open parks, that produce both cover and food for a variety of species.

Cooperation Is Key

Federal Agencies and Locals Team Up

By Tim Richard

Fire protection in southwestern Colorado counties is a cooperative effort among local fire districts and state and federal agencies.

Local fire departments are responsible for responding to and fighting fires on private land. Federal and state agencies cover fires on public lands. But because private and public land are so often adjacent and intertwined, firefighters from all jurisdictions usually work side by side to help each other out.

“I’ve been to places across the state, and the relationships we have here are some of the better ones,” said Allen Clay, chief of the Animas Volunteer Fire Department in Durango. “We all know each other; we keep in touch.”

The relationships were formed about 15 years ago when La Plata County entered an agreement with the Colorado State Forest Service that includes the San Juan National Forest, BLM, and Bureau of Indian Affairs.

The agreement allows government agencies to be flexible in their response to wildfires.

For example, local firefighters may respond first to a fire on federal land and fight it for the first few hours. Once federal firefighters arrive, the locals can elect to either stay or leave. If they remain, the federal government will reimburse the county or city for services.

In turn, when wildland fires start on private land next to public land, federal agencies are often “very cooperative” with local fire departments, which often don’t have the resources to fight fires on their own, Clay said.

“A lot of times, they give us the services free of charge,” he said, referring to a fire that started on private land on Fort Lewis Mesa in 1996. It scorched only a quarter-acre of Southern Ute Indian Land, but the Bureau of Indian Affairs contributed dollars to the whole effort.

Last year’s Trapper’s Crossing Fire, southwest of Durango, is another example of inter-agency cooperation. Clay’s crew had to hike in over a steep ridge behind the residential development to battle the flames.

The USFS pulled an air tanker and two heli-



Animas Fire Chief Allen Clay

copters from the Mesa Verde fires to offer air support, then sent federal firefighters over to help. As a result, nearby homes were saved, and the fire was controlled at 20 acres.

“The key is, we know each other and meet regularly,” Clay said. “I’ve gone to places where county people don’t even know federal agency people.”

Lessons Learned

Can Fire Be a Friend of the Forest?

By Tim Richard and Ann Bond

Research shows that the wildfires of today have their roots in the firefighting practices of the past. The history of tree rings reveals that, before European settlement, fire played a regular role in western forests for thousands of years.

As towns grew, and war was waged against wildfire to save commercial timber and private property, well-intentioned efforts to suppress all fires inadvertently increased the danger of wildfire.

The past century of fire suppression offered only a temporary safety net that, in the long term, has left us with forests primed to burn at the strike of a lightning bolt or escape of a campfire ember.

Fuels—such as dead pine needles, fallen trees and branches—have piled up on the forest floor. Unchecked by fire's cleansing, dense stands of small trees have grown into homogeneous landscapes with few fire breaks.

"In the most extreme of these conditions, little can be done to stop a wildfire until the fire drops by itself in intensity," says Rosalind Wu, San Juan Public Lands fire ecologist, "but we've also learned through methods like tree-ring dating that fire behaves differently in different types of forests."

Tree rings in dead stumps and from bores of living trees also show that, in forest ecosystems of the same type, fire occurs at similar intervals and intensity, cover similar amounts of territory, and burn for similar lengths of time.

This natural variability creates land-



Tree rings tell ecologists when a fire burned, for how long, and how intensely it burned.

scapes with diverse ages of trees, species composition, and stand densities—all factors that determine wildlife habitat.

Most of the data available today have been gathered on mid-elevation ponderosa pine and mixed-conifer forests bordering neighborhoods and communities. Fire histories suggest that pre-suppression pine forests were different than they are today because they were sculpted by regular intervals of wildfire.

According to tree-ring data, ponderosa pine forests tended to burn every six to 30 years before suppression efforts. This prevented the buildup of fuels on the forest floor and trimmed lower branches on larger trees. It opened stands by thinning brush and shrubs. This meant these regularly occurring

fires had less to burn, so they burned with less intensity. Historic pine fires also covered less territory, because they ran out of fuels faster and encountered fire breaks more often.

Wu says that further research is needed in higher-elevation western forests.

"Our limited data suggest longer intervals between fires because these forests tend to be more moist in character," she says, "but when fire burned, it covered more territory in these typically heavy, contiguous canopies."

This resulted in fire intervals in mixed-conifer forests that were decades apart, while the time that elapsed between fire occurrences in the spruce-fir ecosystems may have been measured in centuries.

Fire's Footprint

Different Forests,
Different Fires

SPRUCE-FIR

Subalpine forests of Englemann spruce and subalpine fir at higher elevations.

Wildfires are rare because of high moisture and mild temperatures. However, during severe droughts, fires that start in these forests can result in stand-replacement conflagrations, as evidenced by remnants of the Lime Creek Burn of the late 1800s on Molas Pass.



MIXED CONIFER

Upper middle-elevation forests where pines give way to Douglas-fir and white fir trees.

Historic fires may have occurred here on the average of every few decades. Research also suggests that suppression of fire has resulted in an increase of white fir in the understory, increasing the ability of wildfires to spread and intensify.



PONDEROSA PINE

Middle-elevation forests typified by an understory of Gambel oak, with ecosystems adapted to dry summers.

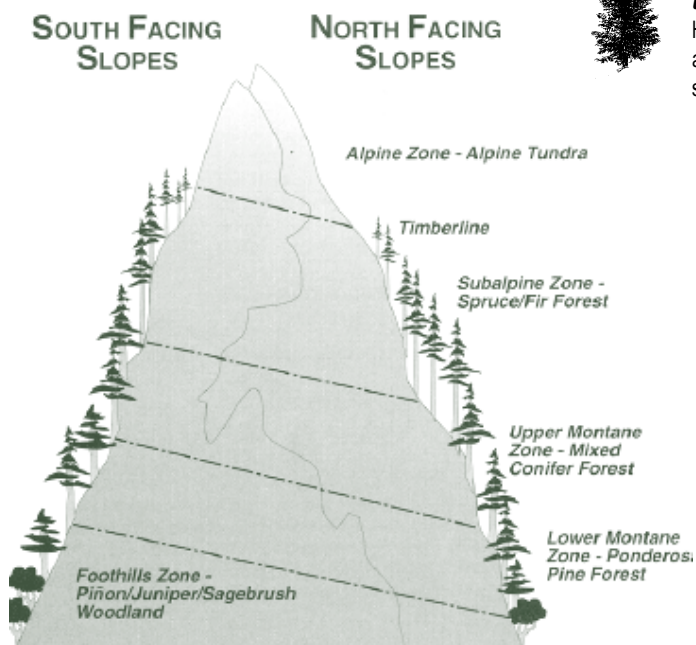
These forests historically burned frequently (on average every 6-30 years). Many communities are found in this life zone. Prescribed burning on public land during spring and fall reintroduces the benefits of fire and reduces the threat of catastrophic fire.



PIÑON-JUNIPER

Arid, low-elevation areas where hardy species of trees are interspersed with desert shrubs.

This kind of fire occurred at Mesa Verde National Park last year. Today's stands have dense canopies of even-aged trees, a situation that allows fires to burn in a destructive, dangerous manner. When fire burns here, it is often a "stand replacement" event where everything is charred.



Not-So-Wild Fire

Early Spring Wildfire Produces “Resource Benefits”

By Robbie McAboy

Firefighters respond to lightning strikes in remote backcountry as quickly as possible, but sometimes when they arrive, a decision is made to monitor instead of suppress the fire. When conditions are deemed safe, fire officials may opt to manage the fire to benefit the ecosystem, while reducing the threat of future, more destructive wildfires.

Such a wildfire occurred this May in the remote Piedra Area of the San Juan National Forest. The Second Box Fire became the season’s first “Resource Benefit Fire.”

Federal officials followed a plan that allowed them to use the smoldering, high-elevation fire to reintroduce the benefits of fire to the forest.

Under close watch by a special Wildland Fire Use Management Team, the fire burned slowly for about two weeks on slopes above the Piedra River 20 miles northwest of Pagosa Springs, growing to about 150 acres. Its flames stayed close to the ground, clearing the forest floor of downed logs, branches, and pine needles that could later have contributed to a more intense wildfire.

While flames occasionally climbed into



The Second Box Fire burns slow and low this spring, reducing the risk of catastrophic fire and cleaning the forest floor of unwanted debris.

white fir trees, the fire killed very few ponderosa pines. The fire died out when it exhausted the pine stands and reached into more moist aspen stands.

“This is the kind of ecosystem that would have experienced relatively frequent

fires in the past,” said Rosalind Wu, San Juan Public Lands fire ecologist. “When wildfire can be safely managed in this type of situation, it can play its natural role of helping maintain the pine’s competitive advantage in the mixed-conifer zone.”

The Second Box Fire was determined safe for management as a Resource Benefit Fire, because:

- Fire danger was low and the location remote;
- It burned above 7,600 feet where humidity and fuel moistures were high, keeping flames low;
- It was surrounded by natural barriers: the Piedra River Canyon, another steep side drainage, and moist aspen stands;
- No private property or structures were nearby;
- It burned in the Piedra Area, set aside in the Colorado Wilderness Bill to be managed for wilderness qualities; and
- Historically, such low-intensity fires have helped maintain forest health and continue to play an important role in natural ecological processes.



Fires are as diverse as the ecosystems they create, burning with different intensities to create a patchwork, or mosaic, of burned and unburned areas, and of young and old vegetation.

Benefits of Fire

Today, fire experts agree that fire is beneficial—even essential—to wild lands. Forest managers have recognized that ecosystems are always changing and fire is a major change agent.

For thousands of years, fire has dictated the types of plants and animals that inhabit forests. It returns nutrients to the soil, opens overgrown areas to sunlight, and stimulates new growth for wildlife food and habitat.

Fire also removes dead wood and other debris from the forest floor—fuels that can kindle larger, more dangerous fires.

Fires are as diverse as the ecosystems they create, burning with different intensities to create a patchwork, or mosaic, of burned and unburned areas, and of young and old vegetation. This results in diversity in the landscape and natural fire breaks that reduce the potential for catastrophic wildfires.

In some areas a fire may burn hot, leaving only ashes and charred trees, but a cleared seedbed that gives plants a better chance to sprout.

In other areas, cool fires stay low to the ground, burning grass, brush, dead logs, and lower branches. This helps to produce a diverse landscape with a variety of vegetation that offers food and shelter for wildlife.



“This is essential for our own—and our neighbors’—protection.”

—Marilyn Holland
Timberline View Estates
Durango

Where Forest and Town Meet

Property Owners Set an Example in Their Neighborhood

By Tim Richard

Many homeowners believe the landscape near their homes is beautiful just the way it is. Often, they don't want to thin brush or trim trees—even if it might make their property safer from wildfire. But Warren and Marilyn Holland like the looks of their property better now that they've thinned out thickets of Gambel oak around their Timberline View Estates home.

Their one-acre lot feels less closed in Warren says. The Durango couple has cleared 20 to 30 feet around their home so that no treetops are touching. By doing so, they've made it more fire resistant by creating a buffer zone between their home, neighboring lots, and a common greenway. The Hollands now have what's called "defensible space" that would allow firefighters to safely intervene if a fire threatens the house.

"We don't have perfect protection by any means, but we have a lot more than we

did," says Warren, who began cutting brush by hand each spring about two years ago. The couple said they didn't do it merely for their own protection but for the safety of the whole neighborhood.

"This is essential for our own, and our neighbors' protection," Marilyn said. "People don't seem interested until their houses burn down. Some of our neighbors even have brush growing up underneath their deck."

Worried about flames climbing into the tops of the 15-foot-high thickets, the Hollands cleared most of the underbrush, leaving the largest trees spread a few feet apart. They plan to continue removing more brush and new growth each spring.

Many of their neighbors aren't taking similar steps to make their property less vulnerable to wildfire because of the cost of clearing vegetation and the belief that their property won't look as "natural," the

Hollands say. Little do their neighbors know that overly dense stands of small trees of the same age and size are anything but natural in our area.

The Hollands have found that thinning their oak brush thickets has resulted in clearings that fill with flowers, grasses and wildlife.

At least one of their neighbors is following their lead. Next door, Steve Novacek has begun clearing brush away from his house. A huge mound of newly cut limbs and debris awaits pickup in his driveway.

The Hollands say their property would still be threatened if a fire were to move through the thick vegetation in the adjacent common greenway that winds through the subdivision. They hope to be able to convince their subdivision's homeowners' association to fund a thinning project to make everyone's home safer.

Fire Plan Also Helps Private Lands

By Tim Richard

Fire officials say it matters only so much how safe they make public land from wildfire if residents in the urban/wildland interface don't also work to protect their property.

This year, \$118 million became available for state fire assistance programs, national forest fire management, and community action plans.

"Although funding isn't available for private landowners to hire crews to thin their properties, money is available for technical expertise and to help with planning," said Scott Steinberg, San Juan Public Lands fire team leader.

Some private-land benefits will result from recent grants to 13 fire districts in four southwestern Colorado counties. Five agencies—the USFS, Colorado State Forest Service, BLM, Bureau of Indian Affairs, and National Park Service—provided

\$75,000 of National Fire Plan funds to the districts to buy equipment, such as radios, portable tanks and protective clothing.

The Colorado State Forest Service (CSFS) offers consultations to private landowners. Dan Ochocki, CSFS forester in Durango, says he also has a list of local businesses from which private landowners can choose fire-risk reduction services.

Larger landowners can develop forest agricultural management plans and implement fire-risk reduction strategies, then receive property tax benefits in return.

Visitors are welcome to look at the many informative pamphlets, books and other tools available at the State Forest Service office on the Fort Lewis College campus in Durango, Ochocki said. Call (970) 247-5250.



For more information

Log on to the CSFS Web site at www.colostate.edu/Depts/CSFS/

or the National Fire Plan Web site www.na.fs.fed.us/nfp

Get Involved

What Do You Think?

By Tim Richard

During the first several years of the National Fire Plan, hopes will be high to progress quickly in reducing fire dangers. However, decisions must first be made about how and where thinning or prescribed burning should take place, say fire protection officials who plan to make critical choices with the help of area residents.

“Two or three processes are going on right now in preparation for reaching out to citizens,” said Mike Johnson, San Juan Public Lands fire plan coordinator.

Fire-risk assessments and community action plans will contribute to what USFS officials call a “scoping” of issues for Environmental Assessments (EAs). Scoping is the early information-gathering process employed to document issues and concerns.

The National Environmental Policy Act (NEPA) requires participation from the citizens when projects take place on federal lands. This allows agencies to include social concerns in assessments of conditions and selection of actions.

“We want to ask citizens for their reaction and ideas on improving the approach,” Johnson said. The USFS will also ask the public to review a draft EA of all proposed actions before final decisions are made.

National Fire Plan Goals

Congress has budgeted \$1.8 billion for the next few years, to:

- Ensure firefighting resources,
- Rebuild communities damaged in last year's fires and rehabilitate fire-damaged ecosystems,
- Thin vegetation in areas where private development adjoins public land, and
- Work with local residents to reduce fire risk and improve fire protection.

Public involvement and planning for implementation of the National Fire Plan in southwestern Colorado includes:

Fire-Risk Assessment

This first stage has been underway for nine months in La Plata County. Neighborhood informational meetings have been held and surveys distributed; field trips are planned to see results of fuel-reduction projects. A fire-risk map is expected by fall 2001. Similar projects will follow in other counties.

Community Action Planning

This process will bring together residents and fire officials in Pagosa Springs, Dolores and Durango to create action plans to increase firefighting preparedness and decrease fire danger in communities contiguous to public lands. For more information, call the Office of Community Services at Fort Lewis College, (970) 247-7333.

Scoping and Planning for San Juan Public Lands Managed-Fire Program

The previous two steps will generate descriptions of community values and concerns, and fuels-reduction priorities. The USFS and BLM will use the information as public input for NEPA analysis. Comments will also be taken on individual Environmental Assessments for vegetative-thinning projects.

Take Action

Make Your Home Safer

Do people believe wildfire is a danger to their property?
Perhaps.

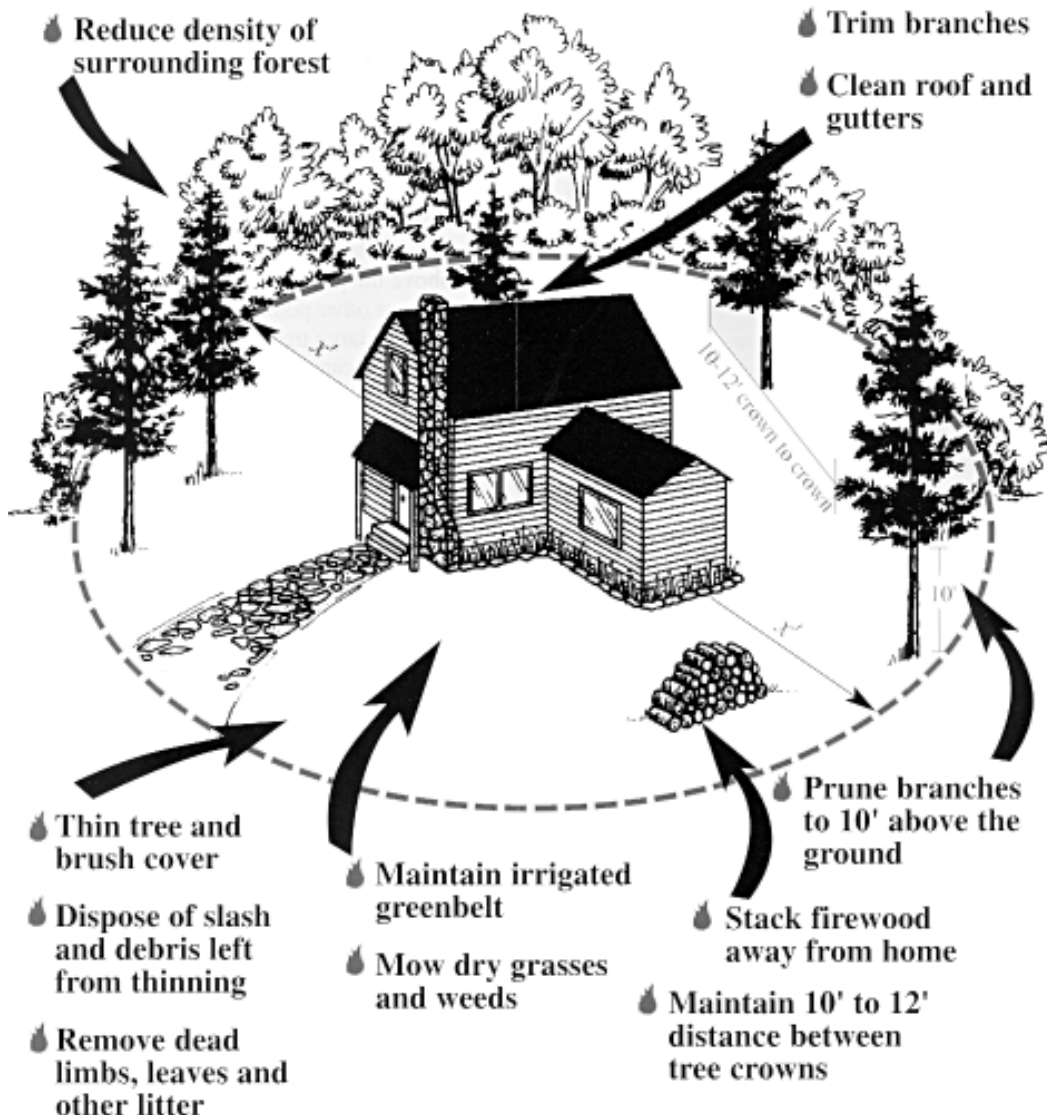
Do they care?
Maybe.

Do they do anything about it?
Not often.

Don't continue this dangerous trend.

Many ways exist to make your home more defensible from wildfire.

Begin with this diagram provided by the Colorado State Forest Service.



summer 2001

living with **WILDFIRE** in southwest colorado

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Want to Know More?

Websites Offer Information Galore

www.na.fs.fed.us/nfp — National Fire Plan Web site

www.fs.fed.us/r2/sanjuan/ — San Juan National Forest

www.firewise.org — Get started with this leading source.

www.nifc.gov — National Interagency Fire Center

www.ice.ucdavis.edu/afe—Association of Fire Ecology

www.fs.fed.us/fire/links2.shtml#aerially—Forest Service Fire & Aviation. Tons of resources.

www.wildfiremagazine.com/—International Association of Wildland Fire. Well known and has many resources.

www.anu.edu.au/Forestry/fire/firenet.html—The International Fire Information Network. Info on rural and landscape fires.

fire.org/perl/tools.cgi—Executable software.

library.thinkquest.org/C003603/?tqskip=1—Forces of Nature

www.colostate.edu/Dept/CSFS/index.html—Colorado State Forest Service

ocs.fortlewis.edu/Stewardship/index.htm—Community and Ecosystem Stewardship Website