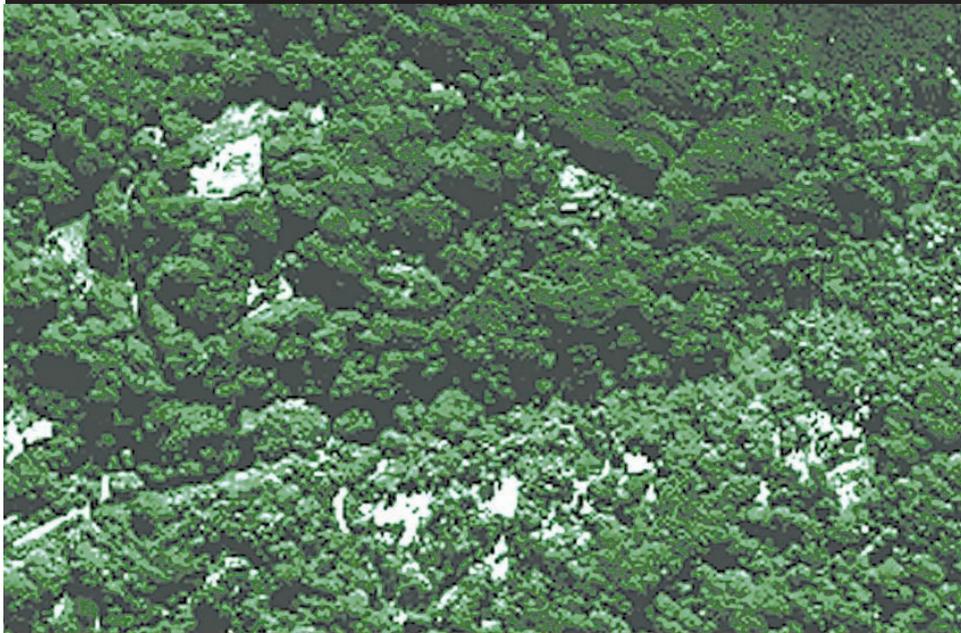
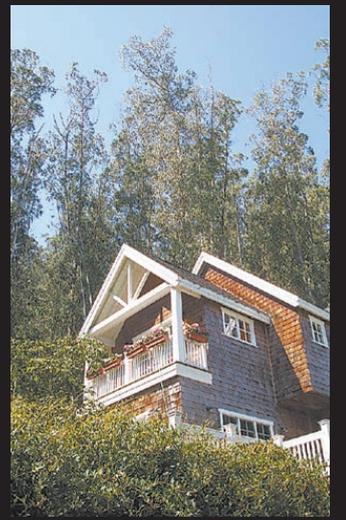
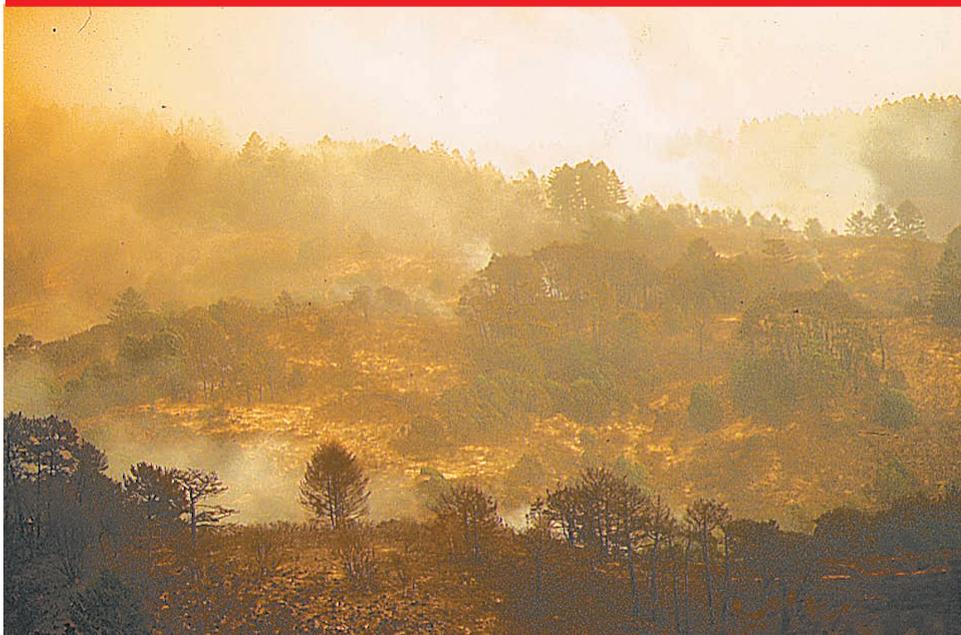


People, Parks & FIRE



Building Partnerships in the Wildland-Urban Interface



A Fire Safety Supplement from Marin's Firefighting Agencies
With Support from Sponsors and the Marin Independent Journal Advertising Department

Fire Safety = Shared Responsibility

Wildfire History in Marin

1859 - Mt. Tamalpais

a wildland fire burned on Mt. Tamalpais for 3 months.

1865 - Bolinas Bay

the woods along the shore of Bolinas Bay burned for 2 weeks.

1878 - Nicasio

1,000+ acres burned near Nicasio.

1881 - Mill Valley

a 65,000-acre fire was started in Mill Valley by a man who set fire to a brush pile.

1890 - San Rafael-to-Bolinas

over 8,000 acres between San Rafael and Bolinas burned.

1891 - Ross-to-Mt. Tamalpais

a fire started near Ross burned 12,000 acres on Mt. Tamalpais.

1893 - Mt. Tamalpais

a fire, probably started by campers, burned over 3,000 acres of Mt. Tamalpais and Mill Valley.

1904 - Bolinas Ridge

15,000-20,000 acres burned on the west side of Bolinas Ridge.

1913 - Rock Springs-to-Larkspur

over 1,500 acres burned, probably started by railroad sparks.

1923 - Bolinas Ridge-to-Fairfax

a fire burned from Bolinas Ridge to near Fairfax covering 20,000 - 30,000 acres.

1929 - Mt. Tamalpais

"Great Mt. Tamalpais Fire", 2,500 acres burned, 117 homes destroyed.

1945 - Kent Lake

an 18,000 acre fire began at the entrance to Kent Lake.

1995 - Vision Fire

13,000 acres burned from Inverness Ridge to the ocean, 48 homes destroyed.



National Fire Plan Wildland-Urban Interface Program

Federal funding is available for community-based wildland fire protection projects. Proposals are submitted to the Sacramento Regional Foundation for BLM Wildfire Prevention Grants or to the National Park Service, for projects near Point Reyes National Seashore or Golden Gate National Recreation Area.

Novato Independent Elders Program

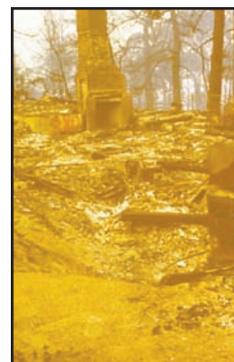
NIEP, a project of the City of Novato, provides assistance to senior citizens on fixed incomes. NIEP helps work toward fire safety by identifying seniors who need assistance with defensible space. Then, the Novato Fire Department develops a prescription for vegetation treatment. Marin Conservation Corps (MCC) crews typically do the work through the CalFIRE program, and FIREsafe MARIN helps provide additional funding.

CalFIRE Program

A state-funded fuels reduction vegetation management program developed by the Marin Conservation Corps in response to a call for proposals by the Governor's Initiative in 1996. MCC uses these funds to reduce fuels in Marin through partnerships with fire districts and neighborhood organizations. CalFIRE also educates the public through model fire safe homes and trains crews statewide to do fuels reduction and defensible space work.

Fire Flow Project

A capital improvement program for the Marin Municipal Water District, funded by an annual parcel fee approved by voters in 1997. The project replaces old small pipes with larger diameter pipe to increase the amount of water and hose pressure available when fighting fires. Storage tanks are also being retrofitted to improve their ability to withstand an earthquake.



Free Fire Safety Inspections

Local fire departments offer fire safety inspections at no charge within their service area. These inspections include advice on fire safe landscaping, vegetation management, and other kinds of fire hazard reduction. If you would like assistance with assessing hazards on your property, call your local fire department. *See also fire safety checklists on pages 10-11.*

2002 Marin County Fire and Life Safety Fair

Saturday, October 12, 10am-3pm
Northgate Shopping Mall

This annual event features safety demonstrations and activities. Explore fire engines. Practice Stop, Drop and Roll. See Search and Rescue Dogs. Slide Down the Inflatable Fire Engine. Visit Pluggie the Fire Hydrant. Learn About Helmet Safety. Learn about Car Seat Safety. Visit the Safety Trailer. And much more!

The Fire and Life Safety Fair is sponsored by the Marin County Fire Prevention Officers, Northgate Shopping Mall, and San Rafael Fire Department.



PG&E

SafeTree Program

A program to create greater public awareness about safety issues concerning proper tree and vegetation placement near electric power lines. Provides educational materials for children and adults, and grants for community projects that involve "planting the right tree in the right place."

Site Stewardship and Habitat Restoration Programs

Non-native plants often create fire hazards by increasing fuel loads. They also can rapidly invade areas that have been burned. The Site Stewardship Program of the Golden Gate National Parks Association and the Habitat Restoration Program at Point Reyes National Seashore offer many volunteer opportunities for the public to participate in ecosystem monitoring and restoration projects.

Project Learning Tree "Burning Issues" Program

Curriculum-based education materials for teaching about fire management and fire ecology are available through Project Learning Tree. PLT workshops train teachers to use materials which complement fire education field trips in Marin's wildlands. Project Learning Tree is a national program, hosted in California by CDF, the California Department of Forestry and Fire Protection.

Public Resource Code

California law defines minimum vegetation management requirements for fire safety in the following sections of the Public Resource Code:

- 4291 - Reduction of Fire Hazards Around Buildings
- 4292 - Power Line Hazard Reduction
- 4293 - Power Line Clearance Required

Marin County has additional vegetation management requirements for roads.

Photo Credits

Cover

Sue Van der Wal, Bruce Farnsworth, Bolinas Fire Protection District, National Park Service

Inside Pages

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Fire Department pg. 7
National
Park Service . . pgs. 2, 4, 7, 8, 9
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USDA Plants pg. 4



FIRE Safe MARIN, 1992-2002

Celebrating the Past, Preparing For the Future

FIRE Safe MARIN was one of California's first fire safe councils. Today, there are nearly 100 similar organizations throughout the state, and a California Fire Safe Council based in Sacramento.

The Oakland-Berkeley Hills Fire in October 1991 resulting in the loss of more than 2,000 homes was a wake-up call to many communities, especially those close by in the San Francisco Bay Area. Soon after this event, the Marin County Board of Supervisors issued a resolution to create a fire safety council. Supervisor Hal Brown became the Chairman of FIRE Safe MARIN and continues to serve in this capacity. The Marin County Fire Marshall began to examine a similar group in San Mateo which was involved in both public education and vegetation treatment.

Meanwhile, Marin Municipal Water District was also starting a community fire prevention organization. It wasn't long before the common ground between fire departments and natural resource agencies in Marin led to a formal partnership. These two efforts converged in 1992, and the group called itself "FIRE Safe MARIN".

By January 1993, FIRE Safe MARIN meetings open to the general public were being held at the Kentfield Fire District. The group relocated to meet in the offices of the Marin Conservation Corps for several years, and eventually established an independent office at the Marin Nexus volunteer center in San Rafael where the group continues to meet monthly.

From the beginning, it was clear that fire safety efforts needed to involve both the public and private sectors. PG&E, consulting firms, and several insurance companies soon became involved. The County Board of Supervisors, Marin Community Foundation, Fireman's Fund

Insurance Co., and PG&E provided financial support which sustained the organization. The Marin Conservation Corps developed specialized programs for fire hazard reduction, and was an important partner in many Fire Safe Marin projects.

Chipper Days were organized so residents could easily dispose of vegetation debris from around their homes. Fire inspectors were trained by to assess vegetation fire hazards during routine property inspections. Training in fire safe landscaping and construction was conducted for community planners and homeowners. FIRE Safe MARIN developed education materials, assisted neighborhoods with funding fuel reduction projects, and participated in the Marin Home Show, as well as several wildfire conferences.

Then, the Vision Fire occurred on Inverness Ridge in 1995. Like the Oakland fire, it was accelerated by the hot, dry, high-velocity Santa Ana-type winds characteristic of the region in the fall. The Vision Fire was started by an unextinguished, illegal campfire on state park land, then moved to national park lands and privately owned lands, and finally consumed nearly 12,000 acres in Point Reyes National Seashore and 48 homes on Inverness Ridge. This event illustrated once again that fire management needed to be a public-private endeavor, conducted cooperatively throughout adjacent wildlands.

In 1996, FIRE Safe MARIN, found itself developing an endorsement policy when it was called upon to support two pieces of local legislation, Measures A and L. Measure A, was a sales tax increase for management of county parks, open space and agricultural lands, including vegetation programs aimed at fire hazard reduction. Measure L was a per parcel fee to fund the "Fire Flow"

project, an upgrade of the MMWD water system to ensure water resources could be pumped adequately during a fire, and to make the system more resilient to earthquakes. At the time, the system included 850 miles of pipe, 92 of which would be replaced over a 15-year period.

The California Fire Plan established a framework for minimizing costs and losses associated with wildland fire. Assets at risk included real estate, as well as cultural, ecological, and recreational assets that could be damaged. This plan emphasized the need for fire safety zones around communities prone to wildland fire.

Then, the National Fire Plan, resulting from the devastating fire season of 2000, and over a decade of increasing losses in the wildland-urban interface, made federal funding available to assist communities with wildland fire protection. In 2001, FIRE Safe MARIN Projects began to receive funding from the National Park Service and the Bureau of Land Management. A cooperative agreement was formed between the National Park Service and FIRE Safe MARIN to establish a fire prevention partnership. Projects in Marin were also funded through the Sacramento Regional Foundation which administers a wildfire prevention grant program for the Bureau of Land Management.

FIRE Safe MARIN is a network of many organizations and individuals who work together to reach the common goal of reducing wildland fire hazards and improving fire safety in Marin. Vegetation management to reduce hazardous fuels, water systems for fire suppression, road improvements for emergency access, and public education continue to be primary endeavors for FIRE Safe MARIN. New members are always welcome.

FIRE Safe MARIN the First 10 Years

1992 - A small group of concerned fire & vegetation professionals begins meeting to discuss fire issues.

- 1st Chipper Days offered by Marin County Fire Department.
- "Green Can" program in conjunction with Mill Valley Refuse Co. offers bi-weekly pick up of vegetation debris.

1993 - FSM meetings open to general public.

- 1st fire safe landscaping training for fire inspectors.

1994 - FIRE Safe MARIN logo designed.

1995 - Vision Fire burns 12,354 acres.

1996 - Fire Flow Project is launched.

- FSM establishes fire safety guidelines for welding crews.
- FSM is featured in the Fire Safe California Community Action Kit.
- Fire safe landscaping guides published in cooperation with UC Cooperative Extension.
- California state funds MCC's CalFIRE fuel reduction program as part of the Governor's Initiative.

1997 - 501-C3, Non-Profit Status established.

- Independent office established at Marin Nexus.
- FSM is the subject of a 15 min. video on fire safety which is broadcast by Marin TCI on Channel 31.

1998 - Special liability insurance policy acquired for board members and officers.

- California Fire Plan implementation adds forestry and fuels specialists to the Marin County Fire Department staff.
- 1999 - Homeowner's Fire Protection Guide printed in the Marin Independent Journal.
- FSM presents fire safety messages in Marin movie theaters.

2001 - National Fire Plan provides federal funding to many Fire Safe Marin projects.

2002 - FSM Council Coordinator hired

- 10th Anniversary, FIRE Safe Marin
- 20th Anniversary, MCC
- 40th Anniversary, Point Reyes NS
- 50th Anniversary, Tomales Bay SP
- 90th Anniversary, MMWD

FIRE SAFE MARIN EXECUTIVE COMMITTEE

Chair - Hal Brown, *Marin County Board of Supervisors*

President - Kent Julin, *Marin County Fire Department*

Vice President - Mike Stone, *Southern Marin Fire Protection District*

Treasurer - Carey Lando, *Marin County Dept. of Public Works*

Secretary - Pete Martin, *Marin County Fire Department (retired)*

BOARD MEMBERS

Chris Bramham, *Marin County Parks and Open Space District*

Don Gasser, *Pacific Gas & Electric Company*

Mike Groshong, *Ross Valley Fire Department*

Mary Ellen Irwin, *San Rafael Fire Commission*

John Lando, *Marin Fire Chiefs Association*

Jim Huckins, *Dominican Neighborhood*

Casey May, *Marin Municipal Water District*

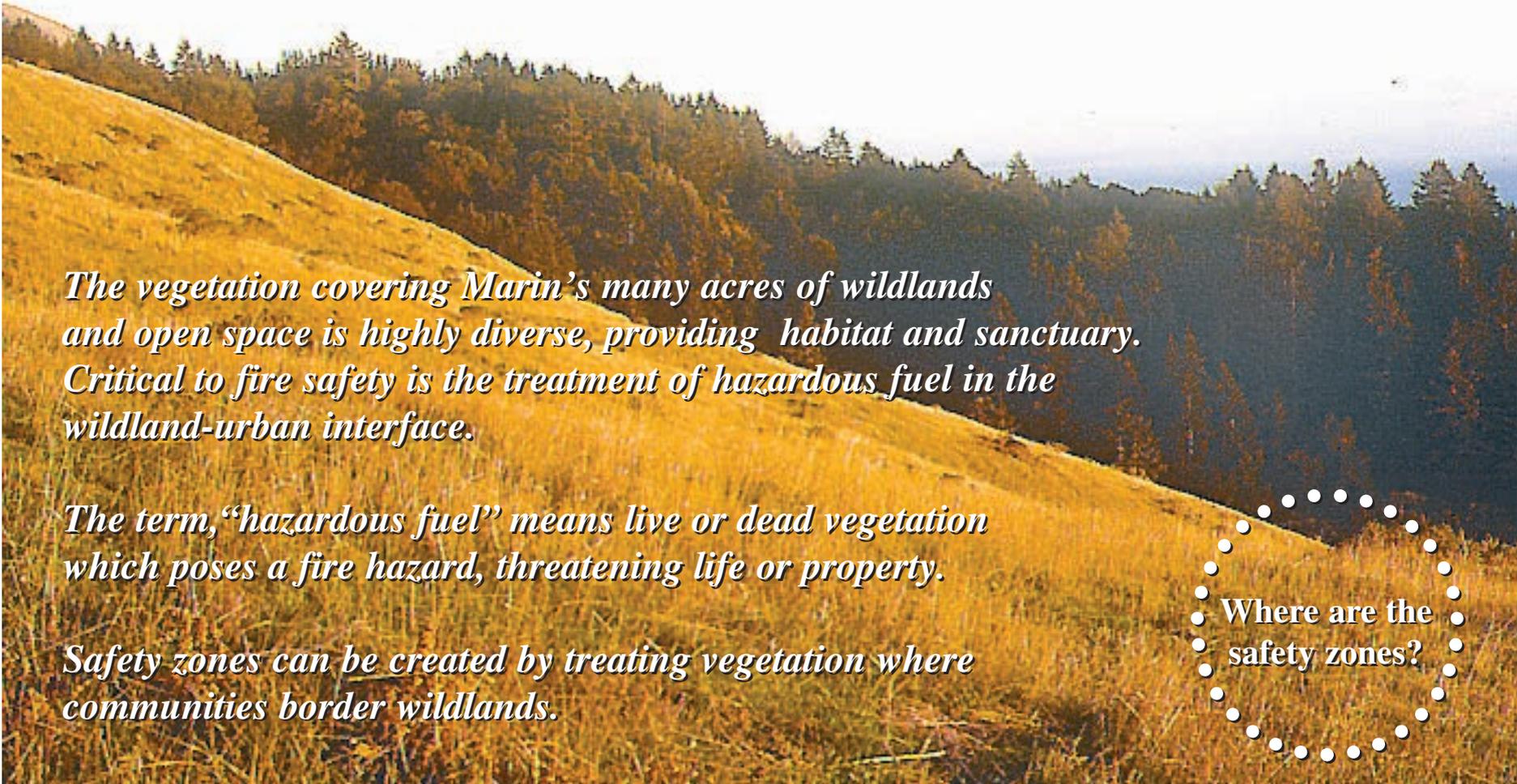
Mike Meszaros, *Inverness Public Utility District*

Keith Parker, *Marin County Fire Department*

Carl Sanders, *Marin Conservation Corps*

Hank Washow, *Marin County Sheriff's Dept. Office of Emergency Services*

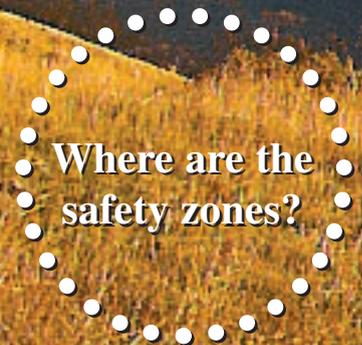
Wildlands in Marin



The vegetation covering Marin's many acres of wildlands and open space is highly diverse, providing habitat and sanctuary. Critical to fire safety is the treatment of hazardous fuel in the wildland-urban interface.

The term, "hazardous fuel" means live or dead vegetation which poses a fire hazard, threatening life or property.

Safety zones can be created by treating vegetation where communities border wildlands.



Fire Prone Natives

These plants are part of a natural system which includes periodic fire.



Bishop pine

Examples:

- California bay
- Douglas fir
- Tanoak
- Coyote brush
- Manzanita
- Huckleberry
- Chamise
- Chinquapin
- Coffeeberry

Fire Prone Non-Natives

These plants increase fuel loads and make wildland fires burn hotter.



Broom



Pampass grass

Examples:

- Eucalyptus
- Monterey Pine
- Gorse



Velvet grass

Fire Resistant Natives

These plants are ideal for fire safe landscaping.

Examples:

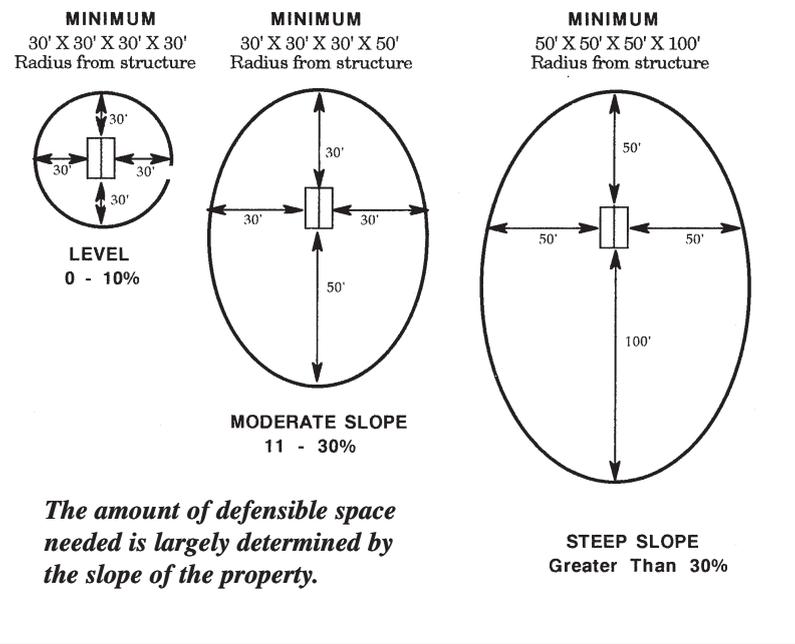
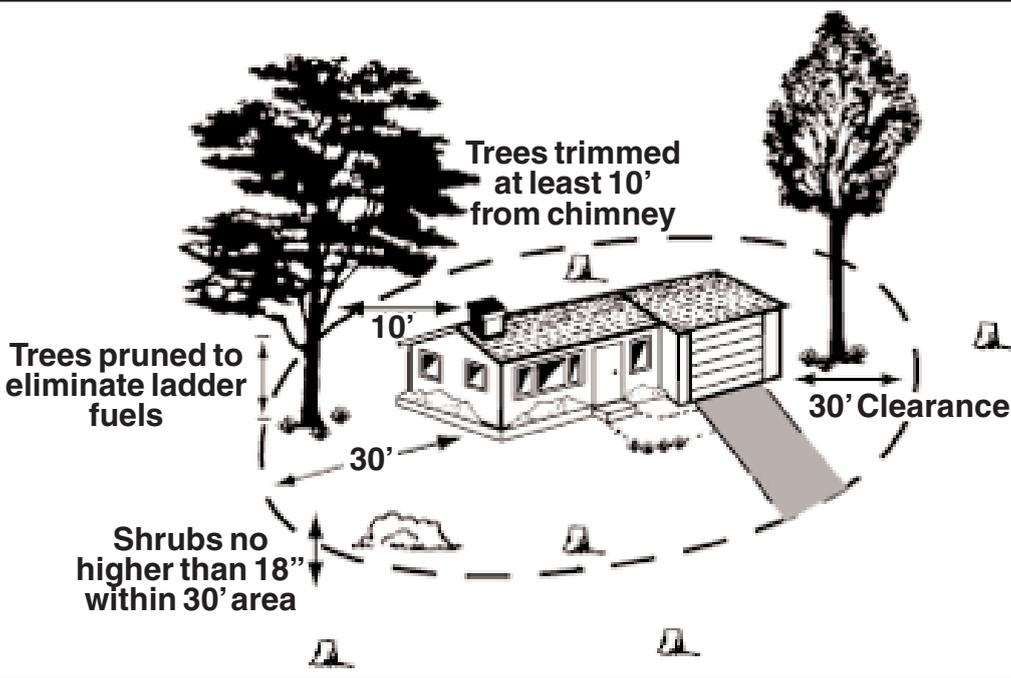
- Coast redwood
- Geranium
- Star jasmine
- Yerba santa
- Salal
- Red flowering current
- Stickey monkey flower
- Big leaf maple
- Buckthorn



Coast live oak (and other native oaks)

Defensible Space

Space between structures and vegetation which makes it possible for firefighters to safely defend a structure.

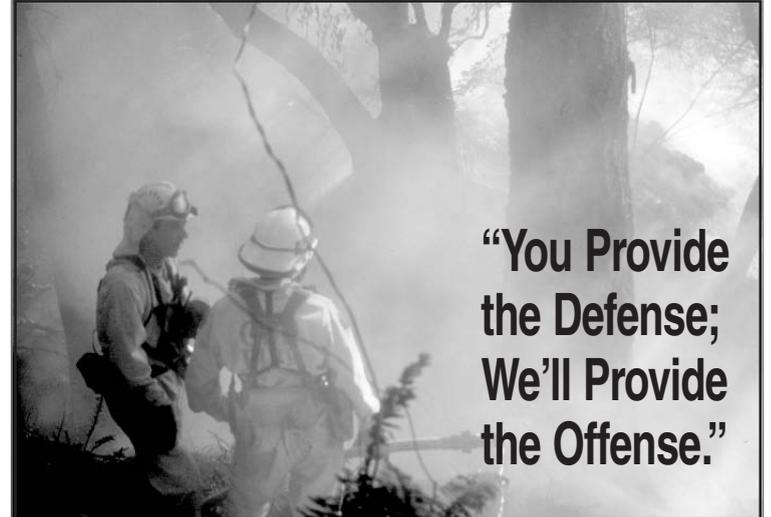


Reasons People Don't Do It

- "I didn't know I was supposed to."
- "It [wildfire] won't happen to me."
- "It's all a matter of fate."
- "It's not my responsibility—I pay taxes."
- "I don't have the time or the money."
- "If I lose my house, my insurance company will cover it."
- "It won't look good."
- "It's wrong to cut trees."
- "If it was important, my insurance company would give me a break on my premium."
- "I don't have an easy way of getting rid of the stuff."
- "I don't want to do the work."
- "It's not my house."

Reasons Why They Should

- Firefighters cannot defend houses engulfed in flaming vegetation because it is too unsafe.
- Fire hazard reduction can increase property value.
- Your defensible space helps protect your neighbors too.
- It's required by California law.
- Usually whole trees don't have to be removed, just the lower branches.
- Insurance companies may challenge a claim or cancel coverage.



"You Provide the Defense; We'll Provide the Offense."

Help Firefighters Protect Your Home.

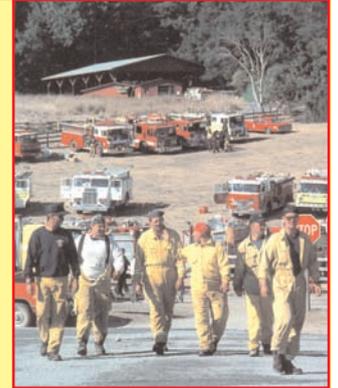
Wildland-Urban Interface Initiative Marin Community Projects



U.S. Department of the Interior
Wildland-Urban Interface Program

National Park Service-FIRESafe MARIN Fire Prevention Partnership.....Funded by NPS

- 1 - Vision Road Fuel Buffer, \$46,000 - Create a fuel buffer along 1.1 mile of Vision Road; improve road turnouts for emergency access & evacuation.
- 2 - Seahaven Fuel Reduction, \$159,000 - Plan and construct a shaded fuel break to create defensible space between park lands and residences.
- 3 - Shell Beach Wildfire Protection, \$47,400 - Increase fire suppression capability near heavily forested park lands.
- 4 - Inverness Public Utility District Chipping Program, \$20,000 - Create and maintain defensible space on watershed fire roads.
- 5 - Keith Way Fuel Break, \$15,000 - Create a 1/2 mile shaded fuel break by treating vegetation 10 to 30 feet along both sides of Keith Way.
- 6 - Inverness Defensible Space Program, \$12,000 - Coordinate a community chipper program and maintain Vision Road fuel buffer for 3 years.
- 7 - Dreamfarm Rd. Fuel Reduction & Emergency Access, \$15,000 - Reduce fuel along roads to improve emergency access & evacuation.
- 8 - Redwood Drive Fuel Reduction & Emergency Access, \$15,000 - Reduce fuel along roads to improve emergency access & evacuation.
- 9 - Laurel St. Fuel Reduction & Emergency Access, \$15,000 - Reduce fuel along roads to improve emergency access & evacuation.
- 10 - Silverhills Fuel Reduction & Emergency Access, \$20,000 - Reduce fuel along roads to improve emergency access & evacuation.
- 11 - Fox Lane-Noren Way Fuel Reduction & Emergency Access, \$10,000 - Reduce fuel along roads to improve emergency access & evacuation.
- 12 - Drake's Summit-Balboa Fuel Reduction & Emergency Access, \$15,000 - Reduce fuel along roads to improve emergency access & evacuation.
- 13 - Paradise Ranch Estates Fuel Management, \$237,500 - Plan and implement roadside vegetation management, fuel management zones, and public education.
- 14 - Olema Chipping Program, \$20,000 - Provide a temporary transfer site and chipping program for disposal and processing of organic, hazardous fuel material.
- 15 - Bear Valley-Olema Fire Protection, \$61,000 - Increase fire suppression capability to enhance fire protection for several hundred homes adjacent to park lands.
- 16 - Nicasio Volunteer Fire Department, \$25,000 - Provide support to the volunteer fire program in Nicasio.
- 17 - Wish Creek Fuel Reduction, \$46,000 - Remove approximately 300 tons of biomass including planted trees and highly flammable duff.
- 18 - Resource Recovery Project, \$52,500 - Expand and operate a community-based composting operation which reduces hazardous fuel around residences.
- 19 - Bolinas Mesa Defensible Space Program, \$20,000 - Assess defensible space needs for homes in Bolinas.
- 20 - Muir Beach Chipping Program, \$85,000 - Equipment & staffing to operate a community chipping program.
- 21 - Camino Del Canyon Fuel Reduction, \$60,000 - Treat 60 acres by removing eucalyptus and brush to create defensible space around 10 structures.
- 22 - Pacheco Fire Road Fuel Reduction, \$15,000 - Remove and chip vegetation fuels along the Pacheco fire road, and improve road to allow safe emergency access.
- 23 - Panoramic Pines Fuel Reduction, \$30,000 - Remove cultivated trees and convert 2 acres to grassland to reduce fire hazard.
- 24 - Muir Woods Remote Automated Weather Station, \$16,400 - Purchase and install a computerized weather station for use in fire management.
- 25 - Homestead Valley Fuel Reduction, \$60,000 - Remove trees and brush to reduce hazardous fuel conditions near residences.
- 26 - Headlands I & II Fire Protection, \$132,000 - Provide vegetation fuels management for fire hazard mitigation affecting 235 homes.
- 27 - Marinview Hazardous Fuel Reduction, \$30,000 - Treat 25 acres to reduce hazardous fuels in a subdivision with 250 homes.
- 28 - Alta Ave. Fire Road Fuel Reduction, \$25,000 - Remove and chip vegetation fuels along 3/4 mile of the Alta fire road, and improve road for safe emergency access.
- 29 - Sausalito Shaded Fuel Break, \$60,000 - Construct a shaded fuel break to reduce vegetation density along a 7 mile border between the City of Sausalito & GGNRA.
- 30 - Alexander Ave. Fuel Reduction, \$18,000 - Remove fire prone exotic eucalyptus and Scotch broom to protect high property values.
- 31 - Marin County Sudden Oak Death Map, \$25,000 - Create a GIS map of trees affected by Sudden Oak Death Syndrome to plan hazard fuel reduction projects.



Firefighters during the Vision Fire.

Bureau of Land Management-FIRESafe MARIN Wildfire Prevention ProgramFunded by BLM

- 32 - Fairfax Road Clearance, \$75,000 - Reduce hazardous fuels along selected roadways.
- 33 - San Anselmo Road Clearance, \$75,000 - Reduce hazardous fuels along selected roadways.
- 34 - San Rafael Federation of Neighborhoods, \$23,400 - Reduce hazardous fuels around homes.
- 35 - Marinview Vegetation Management, \$37,000 - Reduce fuels on Tamalpais Valley Elementary School, Marin County Open Space District and Tamalpais CSD lands.
- 36 - FIRESafe MARIN Laptop Projector, \$4,300 - Purchase a laptop projector to use for presentations on fire safety.
- 37 - FIRESafe MARIN Laptop Computer, \$2,500 - Purchase a computer for fire safe council use.
- 38 - FIRESafe MARIN Coordinator, \$72,000 - Hire a part time fire safe council coordinator for two years.

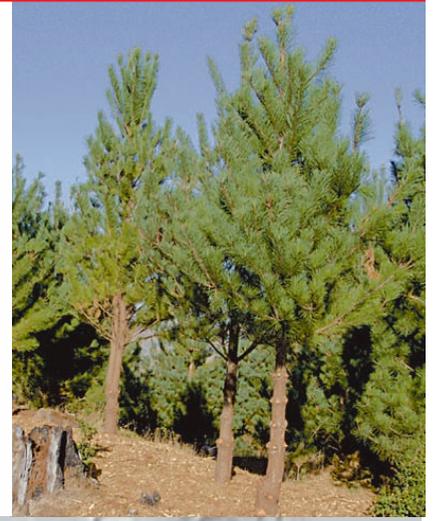
National Park Service-Golden Gate National Parks Association Site Stewardship Program..... Funded by NPS

- 39 - Alta Ave. Fuel Reduction, \$90,000 - Reduce fuels along Alta Avenue and improve habitat by removing non-native vegetation and initiating native plant restoration.



The Wildland-Urban Interface Initiative (WUII) was authorized by Congress in 2001 in conjunction with the National Fire Plan. It provides funding to reduce hazardous fuels on federal lands and to assist communities with wildland fire protection. WUII funding is allocated through both the Department of the Interior and the Department of Agriculture. Projects in Marin have received funding through the National Park Service, and the Bureau of Land Management, two agencies in the Department of the Interior. Elsewhere, WUII funds are also administered by the U.S. Fish and Wildlife Service, the Bureau of Indian Affairs, and the U.S. Forest Service.

The National Fire Plan at work.



Roadside fuel treatment showing limbing of lower branches to separate ground fuels from the tree canopy. The burned stump in the foreground is from the 1995 Vision Fire. (See #13)



Removal of non-native Monterey pines. (See #23)

Fire needs three things to keep burning; oxygen, heat, and fuel. Removing fuel is a basic firefighting strategy.

“These projects are part of a comprehensive plan to treat interface lands from Sausalito to Inverness.”

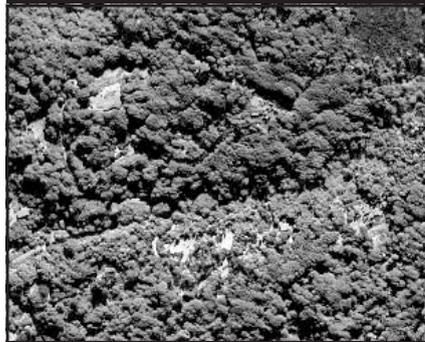
Ken Massucco, Chief
Marin County Fire Department

“Every treatment is different, but they all create some kind of defensible space in a systematic way.”

Don Neubacher, Superintendent
Point Reyes National Seashore

Wildland-Urban Interface Project Highlights

Fire Hazard Assessment



Many neighborhoods in Marin's wildland-urban interface are surrounded by dense vegetation. Fire hazard assessment projects identify areas within and surrounding a neighborhood where vegetation presents a

Fire hazard assessment is an important first step in developing fire protection strategies for many neighborhoods in Marin. The open spaces in this photo are homes located within a heavily forested area.

critical fire hazard. This may include vegetation along driveways, roadsides, homes or on undeveloped property.

Fire hazard assessments make recommendations for vegetation treatment which typically involves thinning understory vegetation, limbing branches and in some cases removing trees. Assessment projects in Inverness

Ridge and Bolinas neighborhoods include defensible space surveys, resulting in a hazard rating for each property.

The assessment process also considers whether road improvements are needed to improve emergency access, and whether the existing water system can provide sufficient fire suppression capacity.

Chipping & Composting

Part of fire safety is a recycling issue. County-wide we need to think about how green waste can be easily disposed of on a year-round basis.



Several projects provide programs for disposal of vegetation debris. "If we didn't have places like this, I think a lot of this stuff would get dumped in the road," commented a West Marin resident about the Olema chipping program.

In order for homeowners to create defensible space, they need a way of getting rid of all the branches, brush, leaves, needles and other vegetation removed from around their homes. As with other solid waste, there are basically three choices: burn it, landfill it or recycle it.

Burning requires permits from fire departments and the air quality board. These are most readily available during the winter.

Landfilling is costly. Many residents have favored using the disposed vegetation for mulch or compost.

Bolinas-Stinson Beach Resource Recovery Program

Open for drop off Tuesday through Saturday, Noon-5.

Located in Bolinas next to 16 Olema-Bolinas Road at the site of the old creamery.

Costs: \$15 / cubic yard for brush dropoff. \$20 / cubic yard for material to be chipped. Free chips when available. \$20 / cubic yard to buy compost.

Inverness Defensible Space Chipper Days

The Inverness Public Utility District offers door-to-door chipping to all Inverness residents with a \$40 fee for up to 10 cubic yards of material. Chips are left onsite as mulch.

Each year a notice is sent to residents offering them to sign up. Debris piles must be ready on pre-scheduled days which are usually in early August.

Olema Chipping Program

Marin County Fire Department offers free brush drop-off for 3 consecutive weekends per year at a site in Olema. Material is transported to and unloaded at the site by residents. Later it is chipped and hauled to a landfill or composting site. The chips are free for the taking.

For the past two years, the site has been located on National Park Service land at Beebe Ranch on the corner of Sir Francis Drake Blvd. and Highway 1.

Muir Beach Community Chipping Program

One day a month, free drop off of woody debris at the pump house on Frank Valley Road,

for branches up to 4" in diameter. The chipper cannot process soft material such as leaves and needles. For large loads, arrangements can be made to have the chipper brought to the residence to chip onsite. A wood splitter is also available.

Marin County Fire Dept. Community Chipper Program

The Marin County Fire Department's chipper is available for community projects within its service area. To organize a neighborhood project, contact your local Marin County Fire station to develop a plan that helps you reduce fire hazards. This service is provided year-round.

More Debris Disposal In the Future

The Department of Public Works and Marin County Fire Department are developing plans for a year-round yard waste disposal site. The site being considered is Marin County Public Works Corporation Yard on Nicasio Valley Drive where brush drop off is currently offered several weeks each summer.

"If we didn't have places like this, I think a lot of this stuff would get dumped in the road," commented a West Marin resident about the Olema chipping program.

Top: Debris disposal involves heavy equipment such as chippers and loaders.

Middle: Almost 300 truck loads of debris were dropped off this summer at the Olema site alone.

Bottom: Debris piles are separated by size at the Resource Recovery Center. Woody material is chipped. Softer material is grinded to begin the process of composting.

Fuel Reduction



In the Community

Hazardous fuels on privately owned lands in the wildland-urban interface can carry a wildfire into a residential area. A dense stand of Monterey pines planted on private property in the 1980s was infected with exotic pitch canker and created a hazardous fuel condition along Panoramic Highway. Panoramic Highway is a steep narrow corridor that provides access to more than 300 homes in Mill Valley. This project will convert approximately two acres of pine to grassland.

Vegetation treatments have also been funded on property owned by Homestead Valley Land Trust, the Marinview Community Service District, Mount Tamalpais Elementary School, the Headlands I & II subdivisions, and the San Rafael Federation of Neighborhoods.



Along the Interface

Several shaded fuel breaks between communities and adjacent wildlands are being developed to increase fire protection for neighborhoods in Sausalito and Inverness.

Shaded fuel breaks are zones of forest where vegetation density has been reduced. Trees are "limbed" to remove lower branches which may carry a ground fire to the tree canopy. Understory vegetation is also thinned, and ground fuels such as fallen branches and leaf litter are removed. This type of treatment reduces the intensity of a wildfire, and increases firefighter safety and effectiveness.

From the outside, it is difficult to see where a shaded fuel break is, but walking within it, there is more space, and less vegetation.



In Wildlands

The Alta Avenue Fuel Reduction project is in the process of removing over 10 acres of fire-prone, non-native broom and eucalyptus from a section of Golden Gate National Recreation Area which interfaces with Sausalito and Marin City.

Eucalyptus trees are extremely flammable due to the large amount of leaf litter they produce and the volatile oil in their leaves. Several of the eucalyptus stands about Marin City presenting a significant fire hazard.

Both eucalyptus and broom have displaced more fire resistant native plant communities. The eucalyptus sites will be revegetated with native oaks, shrubs and grasses.



Using Prescribed Fire

Fuel reduction on wildlands is also accomplished by prescribed fire. Many of Marin's wildlands have become overgrown because naturally occurring fires have been suppressed. Fire in nature is an ecological process which reduces fuels.

Prescribed fire to reduce hazardous fuels is central to the fire management plans for Point Reyes National Seashore and Golden Gate National Recreation Area as well as the the Marin Municipal Water District's Vegetation Management Plan for Mount Tamalpais.

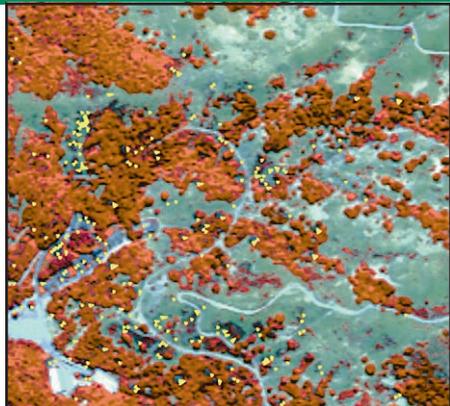
In one comparison, mechanical fuel removal cost \$1,500 per acre and prescribed fire cost \$500 per acre. Prescribed fire also has other important ecological benefits such as diversifying habitat, improving reproduction in some species and recycling soil nutrients.

Photos from left to right: 1) Monterey pines along Panoramic Highway. 2) Homes in Marin City. 3) Eucalyptus grove along Alta Avenue. 4) Prescribed fire at Point Reyes National Seashore.

Mapping Sudden Oak Death



Sudden Oak Death has produced a number of dead and dying trees throughout Marin. Part of this serious ecological problem is the fire hazard created by dead wood.



Satellite photography is being converted into a map to better understand where Sudden Oak Death is occurring in Marin. The yellow areas in this picture represent dead oak trees.

A county-wide effort is under way to create a Sudden Oak Death map in order to plan a series of fire hazard reduction projects and help researchers better understand why some areas may be more susceptible to the disease.

A series of high resolution satellite images is being combined and converted to a computerized map which distinguishes healthy and dead oaks. Dead wood is a fire hazard.

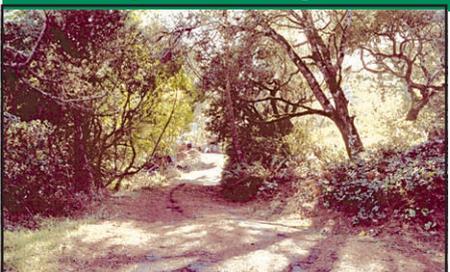
In addition to federal wildland-urban interface funding, this project has also received funding from the Marin Community Foundation, California State

Parks, Marin Municipal Water District and the County of Marin.

Sudden Oak Death is caused by *Phytophthora ramorum*, a water mold that acts like a fungus. Introduced Phytophthoras are affecting plant communities worldwide.

The disease is widespread in coastal California and is commonly found in tanoak in the understory of coast redwoods, and in evergreen hardwood forests dominated by oaks, madrone, and California bay. Cases of dying trees were reported as early as 1995 in Marin. Infection was recently confirmed in coast redwood and Douglas fir trees.

Improving Emergency Access



An unpaved road in a neighborhood near Tomales Bay State Park. This road could not provide safe transit during a wildfire if the vegetation was burning.

Many projects involving fuel reduction along roads are taking place in Marin communities. Road conditions are critical to both firefighter access and evacuation of residents during a wildfire. Roadside vegetation can create a tunnel of flames during a fire.

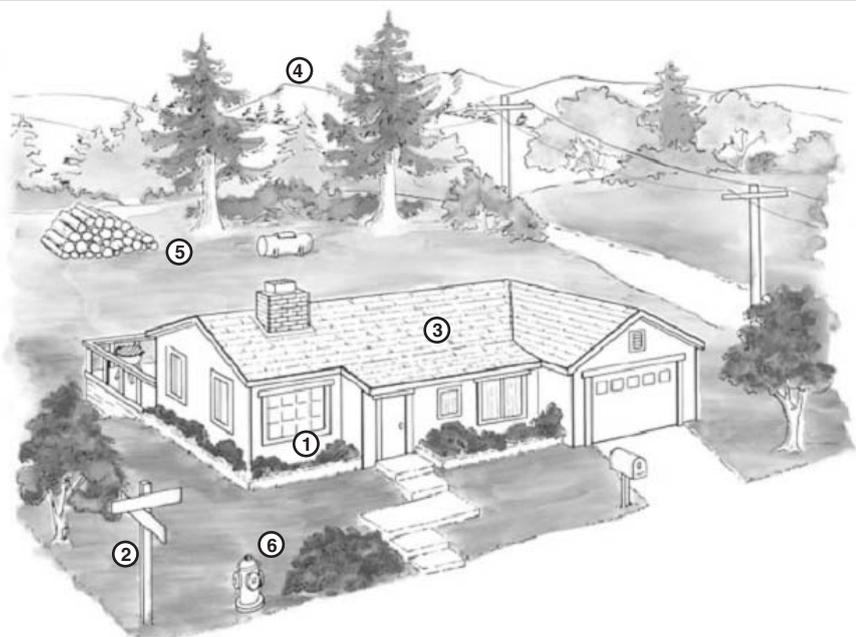
The public resource code calls for 10 feet of clearance on each side of roads and 14 feet of vertical space for emer-

gency vehicles. Turnouts and turnarounds are also critical and are often lacking on rural, non-county maintained

roads. Roadside vegetation management also increases the ability of a road to function as a fuel break.

Roads are are critical during an emergency. Ironically, a large number of wildland fires are started along roadsides just from sparks coming off vehicles.

How FireSafe Are You?



OUTSIDE

1 Design/Construction

- Consider installing residential sprinklers
- Build your home away from ridge tops, canyons and areas between high points on a ridge
- Build your home at least 30-100 feet from your property line
- Use fire resistant materials
- Enclose the underside of eaves, balconies and above ground decks with fire resistant materials
- Try to limit the size and number of windows in your home that face large areas of vegetation
- Install only dual-paned or triple-paned windows
- Make sure that electric service lines, fuse boxes and circuit breaker panels are installed and maintained as prescribed by code
- Contact qualified professionals to perform electrical maintenance and repairs

2 Access

- Identify at least two exit routes from your neighborhood
- Construct roads that allow two-way traffic
- Design road width, grade and curves to allow access for large emergency vehicles
- Construct driveways to allow large emergency equipment to reach your house
- Design bridges to carry heavy emergency vehicles, including bulldozers carried on large trucks
- Post clear road signs to show traffic restrictions such as dead-end roads, and weight and height limitations
- Make sure dead-end roads, and long driveways have turn-around areas wide enough for emergency vehicles
- Construct turnouts along one-way roads
- Clear flammable vegetation at least 10 feet from roads and five feet from driveways
- Cut back overhanging tree branches above roads
- Construct fire barriers such as greenbelts or fuelbreaks
- Make sure that your street is named or numbered, and a sign is visibly posted at each street intersection
- Make sure that your street name and house number are not duplicated elsewhere in the county
- Post your house address at the beginning of your driveway, or on your house if it is easily visible from the road

3 Roof

- Remove branches within 10 feet of your chimney and dead branches over hanging your roof
- Remove dead leaves and needles from your roof and gutters
- Install a fire resistant roof. Contact your local fire department for current roofing requirements
- Cover your chimney outlet and stovepipe with a nonflammable screen of 1/2 inch or smaller mesh

4 Landscape

- Create a “defensible space” by removing all flammable vegetation at least 30 feet from all structures
- Never prune near power lines. Call your local utility company first
- Landscape with fire resistant plants
- On slopes or in high fire hazard areas remove flammable vegetation out to 100 feet or more
- Space native trees and shrubs at least 10 feet apart
- For trees taller than 18 feet, remove lower branches within six feet of the ground
- Maintain all plants by regularly watering, and by removing dead branches, leaves and needles
- Before planting trees close to any power line contact your local utility company to confirm the maximum tree height allowable for that location

5 Yard

- Stack woodpiles at least 30 feet from all structures and remove vegetation within 10 feet of woodpiles
- Locate butane and propane tanks at least 30 feet from any structure and maintain 10 feet of clearance
- Remove all stacks of construction materials, pine needles, leaves and other debris from your yard
- Contact your local fire department to see if open burning is allowed in your area; if so, obtain a burning permit

6 Emergency Water Supply

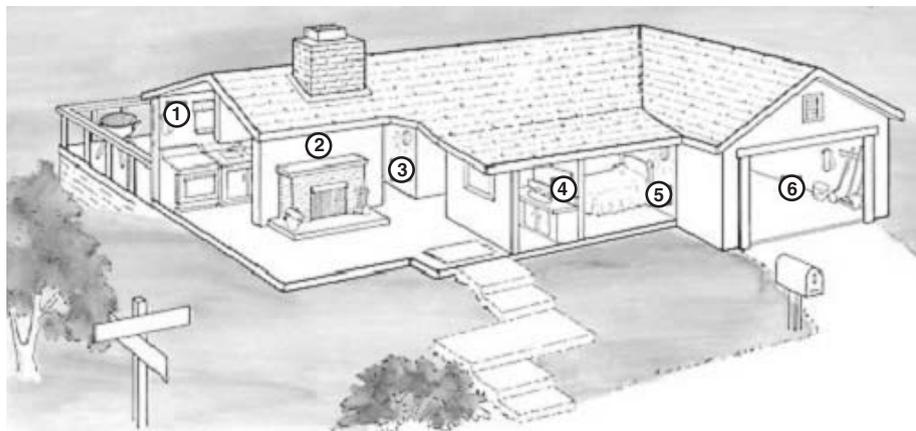
- Maintain an emergency water supply that meets fire department standards through a community water/hydrant system; a cooperative emergency storage tank with neighbors; or a minimum storage supply of 2,500 gallons on your property
- Clearly mark all emergency water sources
- Create easy firefighter access to your closest emergency water source
- If your water comes from a well, consider an emergency generator to operate the pump during a power failure

New Technologies Available to Homeowners

High-density protein foam and fire resistant paint are two new technologies that homeowners may consider for additional home fire protection.

Protein foam, made from natural materials, when sprayed onto structures will create a layer of insulation that effectively blocks heat. A standard foam system includes a water tank, stored air cylinders, a foam generator, and protein concentrate. Protein foam has demonstrated fire resistance at temperatures up to 1,700 degrees Fahrenheit.

Intumescent paint responds to fire by producing a char of approximately 100 times its original thickness which insulates and protects the surface it is applied to. The paint consists of a special polymer emulsion pigmented with titanium dioxide and other intumescent materials. Intumescence refers to swelling or expanding.



INSIDE

1 Kitchen

- Keep a working fire extinguisher in the kitchen
- Maintain electric and gas stoves in good operating condition
- Keep baking soda on hand to extinguish stove-top grease fires
- Turn the handles of pots and pans containing hot liquids away from the front of the stove
- Install curtains and towel holders away from burners on the stove
- Store matches and lighters out of the reach of children
- Make sure that electrical outlets are designed to handle appliance loads

2 Living Room

- Install a screen in front of fireplace or wood stove
- Store the ashes from your fireplace (and barbecue) in a metal container and dispose of only when cold
- Clean fireplace chimneys and flues at least once a year

3 Hallway

- Install smoke detectors between living and sleeping areas
- Test smoke detectors monthly and replace batteries twice a year, when clocks are changed in the spring and fall
- Install child safety plugs (caps) on all electrical outlets
- Replace electrical cords that do not work properly, have loose connections, or are frayed

4 Bedroom

- If you sleep with the door closed, install a smoke detector in the bedroom
- Turn off electric blankets and other electrical appliances when not in use
- Do not smoke in bed
- If you have security bars on your windows or doors, be sure they have an approved quick-release mechanism so you and your family can get out in the event of a fire

5 Bathroom

- Disconnect appliances such as curling irons and hair dryers when done; store in a safe location until cool
- Keep items such as towels away from wall and floor heaters

6 Garage

- Mount a working fire extinguisher in the garage
- Have tools such as a shovel, hoe, rake and bucket available for use in a wild fire emergency
- Install a solid door with self-closing hinges between living areas and the garage
- Dispose of oily rags in (Underwriters Laboratories) approved metal containers
- Store all combustibles away from ignition sources such as water heaters
- Disconnect electrical tools and appliances when not in use
- Allow hot tools such as glue guns and soldering irons to cool before storing
- Properly store flammable liquids in approved containers and away from ignition sources such as pilot lights

- Maintain at least a three-day supply of drinking water, and food that does not require refrigeration and generally does not need cooking
- Maintain a portable radio, flashlight, emergency cooking equipment, portable lanterns and batteries
- Maintain first aid supplies to treat the injured until help arrives
- Keep a list of valuables to take with you in an emergency; if possible, store these valuables together
- Make sure that all family members are ready to protect themselves with STOP, DROP AND ROLL
- For safety, securely attach all water heaters and furniture such as cabinets and bookshelves to walls
- Have a contingency plan to enable family members to contact each other. Establish a family/friend phone tree
- Designate an emergency meeting place outside your home
- Practice emergency exit drills in the house regularly
- Outdoor cooking appliances such as barbecues should never be taken indoors for use as heaters

Source: "Homeowner's Checklist", produced by the California Department of Forestry & Fire Protection, in cooperation with the California Fire Safe Council.

FireSafe Recreation

- Make sure it's legal to have a campfire before you make one.
- Use established fire rings. Keep burning material inside the fire ring and all other flammable materials at least 30 feet away.
- Have water and a shovel on hand to extinguish a fire.
- NEVER throw cigarettes out of a vehicle.
- NEVER leave a campfire, barbeque or portable stove unattended.
- Use caution when operating all portable cooking devices.
- NEVER cover coals with sand after making a beach fire. It will insulate the heat and create an unseen danger for humans and wildlife.
- Teach children not to play with matches or lighters and other rules of fire safety.
- NEVER use fireworks in wildlands. It is probably illegal and it is never a good idea in remote areas.
- Maintain your vehicle to prevent loose wires from igniting roadside fires.
- Make sure all off road vehicles have spark arresters.
- Thoroughly extinguish all smoking and campfire materials before leaving.

Campfire Safety Reminder
"Drown, Stir, and Feel"
to fully extinguish all campfires.



Our Firefighting Community

Firefighting Agencies

LOCAL

Bolinas Fire Protection District.....	(415) 868-1566
Corte Madera Fire Department.....	(415) 927-5077
Inverness Public Utility District.....	(415) 669-7151
Kentfield Fire Protection District.....	(415) 453-7464
Larkspur Fire Department.....	(415) 927-5131
Marin County Fire Department	
* Hicks Valley Station.....	(415) 662-2503
* Marin City.....	(415) 446-4463
* Point Reyes Station.....	(415) 663-1018
* Throckmorton Station.....	(415) 388-5414
* Tomales Station.....	(707) 878-2464
* Woodacre Station (Headquarters).....	(415) 499-6717
Marinwood Fire Department.....	(415) 479-0122
Mill Valley Fire Department.....	(415) 389-4186
Muir Beach Volunteer Fire Department.....	(415) 380-9627
Nicasio Volunteer Fire Department.....	(415) 662-2201
Novato Fire Protection District.....	(415) 892-1513
Ross Valley Fire Department.....	(415) 453-7434
San Quentin State Prison Fire Department.....	(415) 454-1460 x5945

San Rafael Fire Department.....	(415) 485-3304
Sausalito Fire Department.....	(415) 289-4165
Skywalker Ranch FB.....	(415) 662-1672
Southern Marin Fire Protection District.....	(415) 388-8182
Stinson Beach Fire Protection District.....	(415) 868-0622
Tiburon Fire Protection District.....	(415) 435-7200

STATE

California Department of Forestry & Fire Protection
P.O. Box 944246, Sacramento, California 94244-2460
<http://www.fire.ca.gov>

FEDERAL

National Park Service Fire Management	
* Golden Gate National Recreation Area Fire Management Office.....	(415) 331-6374
* Point Reyes National Seashore Fire Management Office.....	(415) 464-5240

EMERGENCY DIAL 911

Websites

FIRESafe MARIN	www.firesafemarin.org
California Fire Safe Council	www.firesafecouncil.org
California Fire Alliance	www.cafirealliance.org
FireWise Communities	www.firewise.org
National Interagency Fire Center	www.nifc.gov

National Fire Plan	www.fireplan.gov
California Oak Mortality Task Force	www.suddenoakdeath.org
California Association for Fire Ecology	www.ice.ucdavis.edu/cafe
National Wildfire Coordinating Group	
Wildland Fire Education	www.nwcg.gov/team/wfewt/NWCGBib/index.html

Sponsors

North Marin Water District

Ghilotti Construction Co.

Bolinas Fire Protection District

Marin Conservation Corps.

Inverness Volunteer Fire Department



Fire Prevention Officers of Marin County

Marin County Sheriff's Department



Marin's wildlands include Point Reyes National Seashore, Muir Woods National Monument, and parts of Golden Gate National Recreation Area.

The National Park Service Fire Management Program emphasizes interagency cooperation, community partnerships, and ecosystem management. Visit us at www.nps.gov/fire

The National Park Service cares for special places saved by the American people so that all may experience our heritage

EXPERIENCE YOUR AMERICA



The California Department of Forestry and Fire Protection (CDF) has a long history of providing fire prevention and fire safety information to the citizens of the state. By working with local governments, community groups, Fire Safe Councils, and one-on-one with homeowners, CDF places an emphasis on the steps that can be taken long before a fire starts to reduce property losses, reduce the costs associated with fighting fires, and to increase firefighter safety. This team effort is key in California's fire prone environment. For more information about the California Department of Forestry and Fire Protection, and how you can be Fire Safe, visit the CDF website at www.fire.ca.gov



**MARIN MUNICIPAL
WATER DISTRICT**

The Marin Municipal Water District provides water to 185,000 people in a 147-square-mile area in central and southern Marin. MMWD is the steward of 21,500 acres of public watershed lands on Mt. Tamalpais and in west Marin and implements a Vegetation Management Plan to reduce the risk of fire along the urban-wildland interface between district lands and private property. The district also is the primary public agency in charge of the Fire Flow Master Plan, which is improving the water distribution system's ability to fight fires and withstand earthquakes.

Visit us at www.marinwater.org