



# FORESTLAND STEWARDS

WORKING TOGETHER FOR HEALTHY FORESTS

## Mechanical fuel reduction around the home: A demonstration

*Mike De Lasaux*

Logging around one's home is not a consideration for many who live in forested communities. Yet as more people leave the city and move to the forest in pursuit of a different lifestyle, tree harvesting and fuel reduction will need to become an accepted activity.

In forested communities throughout California, the damage from and concern about catastrophic wildfires has increased enormously. Fuel management that regularly reduces newly grown fuels, including brush and trees, is being increasingly recognized as an important protective action.

Community and homeowner education programs that focus on wildfire safety emphasize what can be done to protect lives, one's home, and property. Homes can be made fire resistant with proper design, appropriate building materials, special landscape considerations, and maintenance. But attention to little things, such as leaf and needle accumulations in the rain gutters or against wood siding, is critical to a home's resistance to fire. Once the home is fire resistant, then reduction of hazardous fuels to protect the property, aesthetics, habitat, and watershed functions becomes a priority.

In many forested communities, hazardous fuels have accumulated from fire suppression and timber harvests that may have occurred

several years or perhaps decades ago. After timber harvest, due to increased sunlight, hundreds or even thousands of seedlings established on each acre.

The result is an overly dense forest where fuel has accumulated and poses a significant hazard to the community. Once you recognize the need to reduce fuels around your home or over your entire property, what are your options?

Logging as most think of it is not something one would normally want around their home. However, there is specialized equipment that is well-suited to fuel reduction and the removal of small trees near your home. University of California Cooperative Extension Advisor Mike De Lasaux and Bruce Hartsough, a UC Davis professor of forest harvest systems, demonstrated an integrated skid-steer system with specialized attachments developed to harvest small trees on parcels ranging from 1 to 10 acres.

*(continued page 3)*



*ASV-4520 and Davco 705 brush cutter.*



*ASV-4520 and Davco QC 1200 14 tree cutter.*

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Forestland Steward is a joint project of the CA Dept of Forestry and Fire Protection, UC Cooperative Extension, and USDA Forest Service to provide information on the stewardship of private forestlands in California.

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# New funding to reduce fuels

The California Department of Forestry and Fire Protection (CDF) expects to have available \$39 million over 5 years to fund fuels reduction in 15 Sierra Nevada counties. The goal of the new program, known as the Proposition 40 Fuels Reduction Program, is to reduce wildland fuel loadings that pose a threat to watershed resources and water quality. It is funded by Proposition 40, the California Clean Water, Clean Air, Safe Neighborhood Parks, and Coastal Protection Act of 2002.

Nonfederal lands in the following counties are eligible for the Prop. 40 Reduction Program: Butte, Plumas, Sierra, Yuba, Nevada, Placer, El Dorado, Amador, Alpine, Calaveras, Tuolumne, Madera, Mariposa, Fresno, and Tulare.

CDF has developed maps for each county to identify high priority areas for fuels reduction projects to protect watersheds and water quality. If you are in one of the eligible counties, look at the maps at <http://frap.cdf.ca.gov/projects/prop40/maps.html> to see whether your property is at high or moderate risk for wildfire.

Projects outside of the priority areas will be considered for funding as long as the applicant can demonstrate the project's watershed and/or water quality protection values.

CDF is implementing the Prop. 40 Fuels Reduction Program through three existing CDF programs: Watershed and Fuels Community Assistance Grants (2005 application deadline is past), Vegetation Management Program (applications accepted anytime), and the California Forest Improvement Program (applications

accepted anytime). Go to the websites below for information on the application process and timelines, eligibility, and other program details.

The Vegetation Management Program (VMP) is a cost-share program that uses prescribed fire to address wildland fire fuel hazards. Private landowners enter into a contract with CDF to use prescribed fire to accomplish their fire protection and resource management goals. CDF assumes the liability for such burns. As part of the Prop. 40 Fuels Reduction Program, up to 90% of the project cost may be funded by CDF with the remainder paid by the landowner.

The California Forest Improvement Program (CFIP) is a cost-share program aimed at improving the economic value and environmental quality of forestlands. CFIP can help rebuild forest, wildlife, and watershed resources to meet future needs for a healthy environment and productive forests. Eligible forest landowners can be reimbursed up to 90% of their expenses for fuels reduction projects conducted under CFIP. For more information, visit the following websites:

- Prop. 40 Fuels Reduction Program, go to the CDF website, <http://frap.cdf.ca.gov/projects/prop40/>
- Vegetation Management Program. <http://frap.cdf.ca.gov/projects/prop40/vmp.html>
- California Forest Improvement Program. <http://frap.cdf.ca.gov/projects/prop40/cfip.html>

For help in developing or applying for a Prop. 40 fuels reduction project, contact the Program specialist at your local CDF Unit:

CDF Unit	Prop. 40 Counties Administered	CDF Contact	Phone #	E-Mail
Butte	Butte and Plumas	Mike Santuccio	(530) 538-7111	mike.santuccio@fire.ca.gov
Nevada-Yuba-Placer	Nevada, Yuba, Sierra and Placer	Kevin Whitlock	(530) 265-2661	kevin.whitlock@fire.ca.gov
Amador-El Dorado	El Dorado, Amador, and Alpine	Patrick McDaniel	(530) 919-4528 or (530) 647-5288	patrick.mcdaniel@fire.ca.gov
Tahoe Basin	Portions of El Dorado and Alpine Counties located within the Tahoe Basin	Mary Huggins	(530) 919-4506 or (530) 544-5843	mary.huggins@fire.ca.gov
Tuolumne- Calaveras	Tuolumne and Calaveras	Alan Peters	(209) 754-2709	alan.peters@fire.ca.gov
Madera-Mariposa-Merced	Madera and Mariposa	Herb Bunt	(209) 966-3622	herb.bunt@fire.ca.gov
Fresno-Kings	Fresno	Scott Bullock	(559) 243-4126	scott.bullock@fire.ca.gov
Tulare	Tulare	David Shy	(559) 732-5954	david.shy@fire.ca.gov

## Mechanical demonstration

(continued from page 1)

They took the demonstration a step further by also using a portable sawmill to make lumber from the small trees.

The demonstration was conducted on 11 privately owned parcels in five northern California counties. A total of 29 acres were thinned using a small skid steer with tree harvesting attachments. Small logs between 5 and 10 inches were milled with a small log mill.

At the time of the demonstration, there were no known operators using equipment such as this in California and very few in the west. Mark Smith of Woodland Harvest and Landscape from Portland, Oregon did the fuel reduction work. Mark used an ASV4520 rubber-tracked skid-steer that can alternatively carry a feller-buncher hotsaw for tree felling, a tree processor to limb and cut the felled trees to a desired length, a brush cutting head for mastication, or a log-grapple to transport logs and trees. All of the equipment can be transported on a trailer pulled by a heavy pick-up truck, which makes for fast, economical movement between project sites.

The small-log milling was performed by the Watershed Center, located in Hayfork in Trinity County. The Watershed Center owns an Economizer Small-Log Mill that is portable and capable of milling small logs up to 12 inches diameter on the large end. At one of the nine locations the trees, including the limbs and needles, were chipped. Most of the chips were hauled to an electrical cogeneration plant while some were left on site for landscaping purposes.

On each of the demonstration parcels the brush and trees less than 6 inches at 4.5 feet from the ground were masticated. Following mastication, trees marked for removal that were from 6 inches to 10 inches were cut with the tree cutter. Once the trees were cut, the processor



ASV-4520 and Davco TP1000 12.

was put on the skid-steer and the trees delimbed and cut into logs 8, 10, or 12 feet long. The logs were then moved to the milling area using the Implemax grapples.

Time and motion studies were conducted at each demonstration site to quantify productivity during all phases of the fuel reduction operation. A total of 329 hours of work were monitored over a course of nearly two months. The 11 demonstration parcels provided considerable diversity in terms of forest type, forest density, forest composition, topography, and parcel size.

The demonstration sites were all in conifer forests. On average, the fuel reduction treatment required 11 hours to treat an acre with all four phases of the thinning operation. Treatment cost was estimated to be \$943 per acre where the trees were bucked to length and milled for lumber. When trees were chipped without bucking the cost was \$343 per acre with only about 5 hours required to treat an acre.

The small, lightweight equipment caused virtually no soil disturbance even though the project was conducted in very wet conditions during the spring of 2003 when it rained or snowed 27 out of 52 days.

Landowners who participated in the project were very pleased with the equipment. They felt it was the appropriate equipment for the job. The most common remark following the treatment was, "I can now walk in my forest again."

To learn more about this project, or to see videos and photographs, go to <http://www.ucee.uccdavis.edu/fuelreduction> or call Mike De Lasaux at (530) 283-6125; email [mjdelasaux@ucdavis.edu](mailto:mjdelasaux@ucdavis.edu).

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*UC Cooperative Extension demonstrated an integrated skid-steer system with specialized attachments developed to harvest small trees on parcels ranging from 1 to 10 acres.*

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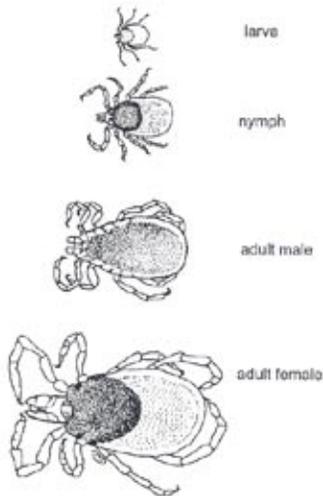
ASV-4520 and ImpleMax 4836 L log.



## Species Spotlight

# The story of ticks and Lyme disease

Ticks are one of the more unpleasant realities of enjoying the outdoors. Besides being generally creepy, ticks can cause a painful allergic reaction or infection from their bite. They also carry a number of diseases including ehrlichiosis, Rocky Mountain spotted fever, babesiosis, Colorado tick fever, tularemia, and relapsing fever. The most common disease transmitted by ticks in California is Lyme disease, named after Old Lyme, Connecticut, where it was first identified in the 1970s.



### Western black-legged tick

Of the 48 species of ticks in California, the western black-legged tick is the one that transmits Lyme disease to humans. It is most common in coastal areas and along the western slope of the Sierra Nevada.

Ticks go through three life stages: larva, nymph, and adult. In order to go to the next stage, a tick must partake of a blood meal. The female adult must also feed to produce eggs; adult males rarely eat.

Ticks live in leaf litter throughout their lives. They do not jump or fly. Adults crawl out on to the tip of a blade of grass or branch to catch a passing host while nymphs mostly remain on the ground. People usually encounter ticks while gardening, picnicking, resting, and hiking in shady moist wooded areas carpeted with dead leaves and organic matter.

Western black-legged ticks are very, very tiny. A typical nymph is the size of a poppy seed. Even the fully grown adults are only about the size of a sesame seed. Because they are so small, it is easy to overlook and carry them until they finish feeding several days later.

The nymph stage is the most dangerous for Lyme disease, partly because the ticks are so small they can be easily overlooked even when you're being vigilant. Nymphs are most active in the spring and early summer when people are most likely to be out of doors; adults are most active from fall through early spring.



Photo © 2004 Roger Hall

### Ticks and Lyme disease

The complex life history of the tick is important for understanding Lyme disease.

Ticks feed three times in their lives, once for each stage. Larvae and nymphs feed on small rodents, lizards, or birds; adults prefer larger animals such as deer.

Ticks are born disease-free. When a larva or nymph feeds on a rodent, often a woodrat, carrying the Lyme disease bacteria, the bacteria passes from the host to the tick where it lives in its gut. The next tick stage hatches with the disease and can pass it on to the next host.

Lyme disease bacteria reside deep in the tick's midgut so it takes an extended length of time—generally 36 to 48 hours—to pass the bacteria on to a host. Fortunately, that means that if you remove a tick in less than 24 hours, the chances of developing Lyme disease are low.

### Lizards to the rescue

Perhaps the most intriguing aspect of the tick story is the role western fence lizards play in the disease. These common reptiles, also called blue-bellies, are a favorite tick host.

But lizard blood contains a compound that kills the bacteria that cause Lyme disease. Better still, when a tick feeds on a lizard, some of the lizard blood leaches into the midgut where it cleanses the tick of the disease. Therefore, if a nymph chooses a lizard for its blood meal, the adult will be disease-free and will not pass the disease on to its next victim. This is thought to be the reason that the incidence of Lyme disease is so much lower in the western US than in the east where there are no western fence lizards.

### Remove ticks correctly

Remove ticks carefully with fine-tipped tweezers. Grab the tick as close to the skin as possible and pull straight out with a firm, steady motion—don't jerk. Do not squish the tick.

Do not twist, smother, or burn an attached tick as these methods don't work.

Wipe the bite site with antiseptic and wash hands and tweezers. Mark the spot with permanent ink and check for rash or inflammation every few days. See a doctor if symptoms occur.

### Symptoms of the disease

Lyme disease is tricky to diagnose because the symptoms vary from person to person and

they come and go. Some other diseases have similar symptoms.

Often, the first sign is a ring-like red rash or spot near the tick bite that grows for several days to a few weeks. This rash is generally painless and goes away by itself. On darker-skinned people, the rash may appear more as a bruise which can be hard to see.

Painful redness that occurs less than 24 hours after a bite and does not expand is more likely to be a local allergic reaction to the tick's saliva.

Symptoms are classified as early or late. Besides the rash, the early signs of infection are flu-like symptoms: chills, fever, joint pain, fatigue, and swollen lymph nodes near the bite. In addition, there can be paralyzed muscles of the face and palpitations of the heart. While these may go away by themselves, the bacteria will move into other parts of the body including muscles, nerves, joints, and brain if not treated.

Late stages of the disease can be debilitating and even fatal. Late symptoms occur weeks, months, or even years after infection. In some people late symptoms may be the first sign of the disease. Symptoms include numbness, tingling, or burning in arms and legs; muscles of the face, arms, or legs may twitch or become weak or paralyzed; sharp pains in the arms, legs, neck, and back; sensitivity to light. In addition, there can be swelling in the joints, especially the knees; difficulties with memory, concentration, learning, or speech; mood swings, depression, or abnormal thought processes.

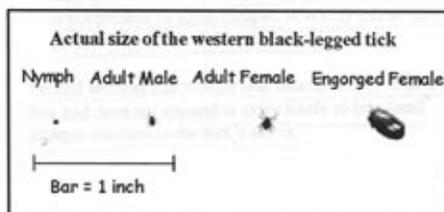
## Diagnosis and Treatment

Diagnosis is generally based on symptoms and the knowledge that the patient was in an area where ticks occur. Blood tests can give false positives and need to be interpreted carefully.

When Lyme disease is caught early it is easily treated with antibiotics. Later stages are harder to treat and can be debilitating.

## Protect yourself

What can you do to minimize the dangers of Lyme disease?



*Western fence lizards appear to be responsible for the lower incidence of Lyme disease in the western US.*

*Photo © 2004 Pierre Fidenci*

- The first line of defense is to check yourself regularly for ticks. Remember, it takes over 24 hours of feeding to transmit the disease.
- Check for tiny dark spots. Give special attention to body creases and moist areas like armpits, behind the earlobe, groin, hairline, scalp, under arms and breasts, at the beltline, and the backs of knees. Let someone else check you when possible (it's hard to see your scalp and other prime tick sites). Check again before bed and for a few days after being in tick country.
- Parents should carefully examine their children. Although Lyme disease can strike anyone, children under 15 and adults 45–59 are at greatest risk of infection.
- Dress defensively (“dress like a geek”)—tuck your shirt into your pants and your pant cuffs into your socks or boots. Wear light colored clothing which shows up the dark-colored ticks more easily. A lint roller can be effective in picking up ticks from clothing.
- Stay on trails; avoid contact with bushes or grasses alongside trails.
- Take a hot soapy bath and give your clothes a hot 10 minute spin in the dryer.
- Repellents can help but aren't 100% effective. Ticks won't feed on skin sprayed with DEET but will look for another spot.
- Control ticks on pets. Discuss this with your veterinarian.
- Avoid areas where ticks are known to occur. Check with your local health department or vector control agency to find out where ticks are in your county.

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*Western fence lizard blood contains a compound that kills the bacteria that cause Lyme disease. Better still, when a tick feeds on a lizard, some of the lizard blood leaches into the midgut where it cleanses the tick of the disease.*

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*Information and illustrations came from several sources including “Lyme Disease in California” by the CA Department of Health Services <http://www.dhs.ca.gov/ps/dcdc/disb/disbindex.htm> and Pest Notes <http://www.ipm.ucdavis.edu>.*

## Assessment

# First step: Assess your forest stands

No matter what your personal goals for your forestland, you need to assess its current state to determine what you need to do to meet your objectives. UC Cooperative Extension has made this somewhat overwhelming task easier by developing checklists that cover a number of important areas including roads, streams, forest stands, and fire and fuels. These checklists are often presented in workshops designed to help you develop a Forest Stewardship Plan for your land. Contact your local UC Cooperative Extension office to learn more about the assessments and upcoming workshops. The Forest Stand Assessment on page 7 is an example for your use.

The simple checklist on page 7 was developed by UC Cooperative Extension to help you evaluate the condition of your forest stand(s). Use the worksheet as a guide to the future condition you desire for your stands. Fill in the boxes as well as you can. Skip any sections that don't apply. For more information or to request a class on this topic, contact your local UC Cooperative Extension office or an Extension Forester.

## Directions for the Forest Stand Assessment Checklist (abridged)

**Stand ID:** A stand is a small section of forest managed as a single unit. This may be determined by species and age, or can be an area managed in a similar way due to location.

**Date:** Date sheets so they can be used in the future to see if you are reaching your goals.

**Management Focus:** A summary of what you would like to accomplish with this stand.

**Goals:** Your vision for the forest stand.

**Objectives:** Measurable steps needed to achieve your goals along with a date due.

**Site Class:** This is the potential of the site to grow trees. I is the highest and V the lowest.

### VEGETATION

**Composition:** Which species are present and their relative position. For each species and position, either note its presence or estimate its percentage. Envision how you would like the stand to look and what needs treatment.

**Structure:** *One-storied* stands have a single crown canopy layer. *Two-storied* stands have two distinct canopy layers, usually an overstory and an understory. *Multi-storied* stands have three or more distinct canopy layers. This implies an uneven-aged stand.

**Arrangement:** Are the trees *dense* and close together or *sparse* so the crowns do not touch? Are they evenly spaced? Is the horizontal spacing *clumpy* with groups of trees densely packed and open space between?

### FIRE FUELS

**Size:** Size of dead and down material. *Fine:* 0–1" in diameter; *medium:* 1–3"; or larger.

**Amount:** How much fuel is present? *Low:* little to no treatment necessary to make the

stand fire safe. *Moderate:* perhaps a few days work needed. *High:* significant effort.

**Vertical:** Are fuels *low* to the ground, stems *stacked*, or are they in *ladders* that allow fire to travel from the ground to the crowns?

**Horizontal:** Is the distribution of fuels clumpy or uniform?

### OTHER

**Slope:** The change in elevation divided by the distance expressed as a percentage.

**Aspect:** The compass direction the slope faces. Southern/western aspects tend to be hotter and drier than northern/eastern aspects.

**Streams:** Permanent year round *perennial* stream, *intermittent* streams that flow only part of most years, and *ephemeral* streams that only carry water during major storm events.

**Pests:** Any insect, disease, or weed concerns.

**Wildlife:** Note the presence and abundance of *food* (seeds, grasses, shrubs, or other wildlife). *Cover* is hiding places, shade, and protection. Is *water* available in the stand? *Snags* are standing dead trees used by many species.

**Cultural/Historical:** Features that indicate past human use including mortars, house sites, middens, rock art, and rock chips. Structures older than 50 years are considered historical, e.g. cellar holes, cabins, and disturbed ground.

**History:** Historical management practices and their approximate dates.

**Roads:** Note the surface. Also note if the road is *insloped* or *outsloped*. Is the road *entrenched*, below ground level on both sides? Are there *ditches* that may need treatment or *culverts* needing maintenance. Is the road *eroding*?

# Forest Stand Assessment Worksheet

Property: \_\_\_\_\_ Stand ID: \_\_\_\_\_ Evaluator: \_\_\_\_\_ Date: \_\_\_\_\_

## Management Focus

	High	Med.	Low
Timber			
Wildlife			
Range			
Fuels			
Scenic			

## Site Class

I	
II	
III	
IV	
V	

**Goals:**

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**Objectives**

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**Notes**

## Vegetation

### Composition

Species	Overstory	Understory	Ground
Ponderosa Pine			
Sugar pine			
Douglas fir			
Incense Cedar			
White Fir			
Black oak			

### Structure

Vertical	
1 Storied	
2 Storied	
Multi-storied	
Plantation	

### Arrangement

Horizontal	
Dense	
Sparse	
Even	
Clumpy	

### Fire / Fuels

Size	Fine	Medium	Large
Amount	Low	Moderate	High
Vertical	Low	Stacked	Ladder
Horizontal	Clumpy	Sparse	Dense

### Slope / Aspect

Slope		%
Aspect		

### Pests

Insects	
Disease	
Weeds	

### Streams

Perennial	
Intermittent	
Ephemeral	

### Wildlife

	Low	Mod	High
Food			
Cover			
Water			
Snags			

### Cultural / Historical

Mortars	
House Sites	
Middens	
Rock Art	
Rock Chips	
Structures	
Dumps	

### History

Event	Date
	/ /
	/ /
	/ /
	/ /
	/ /
	/ /
	/ /
	/ /

## Roads

	Insloped	Outsloped	Entrenched	Ditches	Culverts	Eroding
Paved						
Surfaced						
Unsurfaced						
Temp.						

## Seasonal Stewardship

# How to fell trees safely

*More people are killed while felling trees than during any other logging activity.*

—OSHA website

If you live in a forested area, chances are that you occasionally have to cut down trees. Felling trees is dangerous business—safety must always come first.

This article provides information on how to fell trees safely, however, an article just provides background; it cannot substitute for training. Before you do this yourself, work with a professional to learn how to do it right.

Always start with the right equipment. When using a chainsaw, you need to wear protective clothing, glasses, and ear plugs. Steel-capped boots and non-slip gloves are also recommended.

Practice with your chainsaw, preferably with an experienced person, until you can use it easily. A chainsaw safety course can be extremely valuable.

## STEPS TO FELLING A TREE

### What direction to fell?

Always try for a clear landing. Avoid felling a tree onto stumps, large rocks or uneven ground.

To determine the appropriate felling direction, consider the following factors:

#### Clear Fall Path

Along with a clear landing, this is the most important factor in deciding what direction to fell a tree. Visualize the fall path in all directions and identify those directions that are free of other trees. Finding a clear path will

eliminate lodged trees, throwback, and damage to the tree being felled as well as the other trees.

#### Clear Landing

Avoid felling a tree onto stumps, large rocks,

or uneven ground. This will prevent cracking and other damage to the tree.

#### Lean of Tree

It is generally easier and safer to fell a tree in the direction that it is already leaning. This makes for a cleaner fall and eliminates the need to use wedges, allowing gravity to do the work.

#### Ease of Removal

When possible, fell the tree so the butt faces the skid road. Also, fell the tree consistent with the felling pattern of other trees. This also makes for efficient limbing and removal.

#### Slope of Ground

Fell in a direction that will minimize the chance that the tree will roll or slide.

### Plan your escape route before you start cutting

#### Direction of Safe Retreat

- 45 degrees from the sides and back on either side.
- NEVER move away directly behind the tree—you can be seriously hurt if the tree butt kicks back during the fall.

#### How to Retreat

- Don't turn your back on the falling tree.
- Walk quickly away to a distance of 20 feet from the falling tree.
- Position yourself behind a standing tree if possible.

### Making the cut

Cutting the tree generally involves three cuts: a top cut, a bottom cut, and a back cut. The top and bottom cuts make a notch. There are three major types of notches: the open-faced, the conventional, and the Humboldt. There are also special techniques that can be used for difficult trees.

The top cut is the first of two cuts that result in a V-shaped notch. The notch is made on the side of the tree that faces the direction you want it to fall. To make a top cut:

*Starting Point*—Begin at any height as long as you allow enough room for the undercut.

*Angle of Attack*—Cut downward at an angle consistent with the type of notch you are making. For example, the Humboldt notch uses a horizontal cut that allows for using the saw's sight.

*Ending Point*—Stop when the cut reaches 1/4 to



*The back cut is the final cut, made on the opposite side of the notch.*

Photos by Steve Jolley



*Plan your escape route before you start cutting.*

1/3 of the trunk's diameter or 80% of the tree's diameter at chest level.

The bottom, or undercut, is the second cut. The notch is made on the side of the tree facing the direction that you want it to fall. To make the bottom cut:

*Starting Point*—Begin at the level that will create at least a 70 degree notch opening.

*Angle of Attack*—Cut upward at an appropriate angle—20 degrees for an open-face notch.

*Ending Point*—Stop when the cut reaches the end point of the face cut. Ideally, you have created a 90 degree notch opening. Try to get the face out in one cut.

The back cut is the final cut, made on the opposite side of the notch. The back cut disconnects almost all of the tree from the stump, leaving a hinge that helps to control the tree's fall. To make a simple back cut:

*Starting Point*—begin on opposite side of the notch at the same level as the notched corner

*Angle of Attack*—cut flat along a horizontal plane

*Ending Point*—stop at the point that will leave a hinge width that is 1/10 the tree's diameter.

## Bucking and Limbing

Limbing is cutting branches off of felled or standing trees. Bucking is sawing felled trees into sections called logs. The length of the logs depends on the tree species and final product.

As a tree falls it will often brush other trees and leave broken limbs hanging in surrounding trees. Sometimes falling trees will shoot off the stump and roll sideways or ahead creating pressures on tree limbs. Never limb a tree immediately after felling. Provide time for overhead hazards to come down.

Prior to limbing, evaluate potential hazards:

- Overhead hazards.
- Spring poles.
- Butt movement forward (creates back pressure on limbs).
- Butt twist (creates sideways pressure on limbs).
- Butt off the ground (creates tension and compression on the tree stem).

### Important:

- Limbing and bucking must be done on the uphill side of each tree or log, where rolling or sliding of logs may be expected.
- Precautions, such as moving to a stable position, must be taken to prevent the logs or the butt from striking employees while limbing and bucking trees.

## Results of incorrect felling

### Barber Chair

The butt of the log splits during the latter part of the fall. The tree often remains attached to the stump, thus creating a danger zone and ruining much of the log.

*\* Caused by a Dutchman notch.*

### Throwback

Limbs or other material is thrown back toward the logger when the falling tree contacts standing trees or fallen trees.

*\* Caused by not felling the tree in a clear path or onto a clear landing.*

### Lodged Tree (also called A Hung Tree)

A cut tree that has not fallen completely to the ground, but is lodged or leaning against another tree. This is extremely dangerous. Do NOT work in the presence of hung trees. Have these death-traps pushed or pulled down by a machine.

*\* Caused by poor judgment of felling path or inaccurate cutting.*

### Dutchman

The seat that interferes with the smooth closing of the notch

*\* Caused when one of the notch cuts is made too deep and extends beyond the endpoint of the other notch cut, known as "Bypass"*

### Kickback

When a falling tree hits the ground or other object it can bounce back causing the log to move back over the stump with great force. This is the main reason you should never stand or retreat directly behind the tree.

*\* Increased chance of kickback by not making the back cut above the notch on a conventional or Humboldt notch.*

### Stalled Tree

A tree that has just begun to fall but is stopped by its own stump. This is almost as dangerous as a lodged tree and requires a machine to push it over.

*\* Caused by a Dutchman notch.*

—US Department of Labor OSHA site  
[www.osha.gov/SLTC/etools/logging/mainpage.html](http://www.osha.gov/SLTC/etools/logging/mainpage.html)



*Limbs are removed on three sides of the tree, flush with the bole.*

*Photo by Peter Matzka*

The US Department of Labor has an interactive website, the Logging eTool, that goes into more detail on how to fell a tree with illustrations of all the cuts. Go to <http://www.osha.gov/SLTC/etools/logging/mainpage.html>. In addition, there is an article on How to Fell a Tree Using a Chainsaw with excellent pictures of the process at [http://forestry.about.com/od/chainsaws/ss/fell\\_tree\\_p.htm](http://forestry.about.com/od/chainsaws/ss/fell_tree_p.htm).

## Resources

*This short but comprehensive workshop will cover a wide range of topics along with numerous displays and thrilling demonstrations.*



*Credit for the photo on the front page of the*

*Winter 2005 issue was inadvertently omitted. The photo was taken by Claralynn Nunamaker.*

# Fire safe homes and defensible space: the workshop

What can you do to make your home safer from wildfire? A highly informative workshop presented by UC Cooperative Extension may answer many of your questions and leave you much wiser on the ways of wildfire and how you can best protect your home.

This short but comprehensive half-day workshop will cover a wide range of topics along with numerous displays and thrilling demonstrations by Steve Quarles, UC Extension Wood Durability Advisor.

There will be general background on how wildfire behaves under various conditions, and how this relates to your specific home location.

Learn about local issues and hazard assessment, the State Fire Plan, and building standards and local codes pertaining to construction.

There will be discussion of the most vulnerable features of your home including roofs, eaves, vents, windows, decks, and other structural components, and how wildfire elements can “take advantage” of these features. A variety of building materials will be displayed.

Learn also about maintenance you can do to



help protect your home along with options such as shutters, underdeck protection, and foams and sprays.

Different plants are more or less fire resistant. A discussion of desirable (and undesirable) plant characteristics, their placement and maintenance can help you with important landscaping decisions around your home and property.

There are currently three free workshops scheduled in May:

May 7 (9:30–2:30), Fortuna, (707) 445-7351

May 13 (5–9 pm), Oroville, (530) 822-7515

May 14, Quincy, (530) 283-6125

For more information or to register, contact your local UC Extension advisor.

## Technical Assistance

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

**California Stewardship Helpline**  
1-800-738-TREE; [ncsaf@mcn.org](mailto:ncsaf@mcn.org)

**California Department of Forestry & Fire Protection**

Forest Landowner Assistance Programs  
Jeffrey Calvert  
(916) 653-8286; [jeff.calvert@fire.ca.gov](mailto:jeff.calvert@fire.ca.gov)

**Forestry Assistance Specialists**

Jill Butler (Santa Rosa)  
(707) 576-2935; [jill.butler@fire.ca.gov](mailto:jill.butler@fire.ca.gov)

Jim Robbins (Fortuna)  
(707) 726-1258; [james.robbs@fire.ca.gov](mailto:james.robbs@fire.ca.gov)

Adam Wyman (Red Bluff)  
(530) 528-5116; [adam.wyman@fire.ca.gov](mailto:adam.wyman@fire.ca.gov)

**California Association of RCDs**

(916) 447-7237  
[staff@carcd.org](mailto:staff@carcd.org)

**California Dept of Fish & Game**

Marty Berbach  
(916) 327-8839; [mberbach@dfg.ca.gov](mailto:mberbach@dfg.ca.gov)

**California Resources Agency:**

California Environmental Resources Evaluation System (CERES)  
Deanne DiPietro  
(916) 653-8614; [deanne@ceres.ca.gov](mailto:deanne@ceres.ca.gov)

**Farm Service Agency**

Larry Plumb  
(530) 792-5520

**Natural Resources Conservation Service**

Jerry Reioux  
(530) 792-5655; [jerry.reioux@ca.usda.gov](mailto:jerry.reioux@ca.usda.gov)

**U.C. Cooperative Extension Forestry**

Richard Harris  
(510) 642-2360; [rrharris@nature.berkeley.edu](mailto:rrharris@nature.berkeley.edu)

Gary Nakamura

(530) 224-4902; [gmnakamura@ucdavis.edu](mailto:gmnakamura@ucdavis.edu)

**USDA Forest Service**

Sandra Stone  
(707) 562-8918; [sstone01@fs.fed.us](mailto:sstone01@fs.fed.us)

## Calendar

### May 7, 13, 14, 2005

**Fire Safe Homes Workshops** (see page 10)  
Locations: Fortuna, Oroville, and Quincy  
Sponsor: UC Cooperative Extension  
Contact your local UC Extension advisor

### May 11–13, 2005

**California Plant and Soil Conference**  
Location: Troutdale, OR  
Sponsor: USDA FS  
541-737-2329, forestry.outreach.education@oregonstate.edu  
\$150-\$210  
<http://www.fs.fed.us/pnw/calendar/tech-transfer/index.shtml>

### May 23–24, 2005

**New Visions for the Future of California Forests: Strategies to end forest loss**  
Location: Sacramento, CA  
Sponsors: The Pacific Forest Trust & UC, Berkeley  
Sherry Cooper 530-224-4902,  
slcooper@nature.berkeley.edu; \$350 after 5/2  
<http://nature.berkeley.edu/forestry/forestfuture/>

### May 24, 2005

**Management Update for *Phytophthora ramorum*/Sudden Oak Death: Symptoms, regulations, treatment, and BMPs**  
Location: near Felton, CA  
Sponsors: California Oak Mortality Task Force, USDA-FS, CDFA, CDF and UC Coop Extension  
Katie Palmieri 510-847-5482,  
palmieri@nature.berkeley.edu  
No charge  
<http://www.suddenoakdeath.org/>

### May 31–June 3, 2005

**Integrated Management of Forest Landscapes for Ecological and Social Values: Using ecological forestry for forestland management**  
Location: Blue River, OR  
Sponsors: The Conservation Forestry Network & Western Forestry and Conservation  
Amy 212-629-3981, aoffen@osiny.org  
\$875 includes lodging  
<http://www.westernforestry.org/intmgmtforland/course.htm>

### June 1, 2005

**Guidelines for Managing California's Hardwood Rangelands: for owners/managers**  
Location: San Luis Obispo area  
Sponsors: UC Integrated Hardwood Range Mgmt. Program & UC Berkeley Center for Forestry  
Sherry Cooper 530-224-4902,  
slcooper@nature.berkeley.edu  
\$45, \$55 if received after May 20th  
<http://danr.ucop.edu/ihrmp/>

### June 2, 2005

**Guidelines for Managing California's Hardwood Rangelands**  
Location: Livermore, CA area  
(see June 1)

### June 6, 2005 to June 10, 2005

**National Silviculture Workshop: Restoring Fire Adapted Forested Ecosystems**  
Location: Tahoe City, CA  
Sponsor: USDA FS  
Monty Maldonado 202-205-5683,  
mmaldonado@fs.fed.us  
\$141.60 w/o lodging; \$588.80 w/lodging

### June 6, 2005

**Guidelines for Managing California's Hardwood Rangelands**  
Location: Placerville area  
(see June 1)

### June 7–9, 2005

**Board of Forestry**  
Location: San Bernardino, CA  
Sponsor: Board of Forestry  
Donna Stadler 916-653-8007  
Notes:  
[www.fire.ca.gov](http://www.fire.ca.gov)

### June 17–18, 2005

**Forest Stewardship Workshop for Family Forest Landowners**  
Location: Pollock Pines, near Placerville, CA  
Sponsors: El Dorado Co. UCCE, El Dorado & Georgetown RCDs, FSP, UCCE Forestry  
Nancy Starr 530-621-5552  
Cost: TBA  
<http://ceeldorado.ucdavis.edu>

### July 11–14, 2005

**Soil, Water and Timber Management: Forest engineering solutions in response to forest regulation**  
Location: Fortuna, CA  
Sponsors: Council of Forest Eng., Dept. of Forestry & Watershed Mgmt., HSU; Dept. of Forest Engineering, OSU, & IUFRO 3.10  
Peter Matzka 707-826-3725, peter.matzka@humboIdt.edu; Loren Kellogg 541-737-2836, loren.kellogg@oregonstate.edu  
\$275 members; \$285 non-members after 7/1/05 add \$50  
<http://cofe.org>

### July 12–14, 2005

**Board of Forestry**  
Location: Chester/Quincy, CA  
Sponsor: Board of Forestry  
Donna Stadler 916-653-8007  
[www.fire.ca.gov](http://www.fire.ca.gov)

## California Forest Futures 2005

A two day conference to examine the forces dramatically reshaping our forest landscapes and explore strategies and actions necessary to secure an economic and ecologically rewarding future. Sacramento Convention Center May 23 & 24. \$350. Call (530) 224-4902 or go to <http://nature.berkeley.edu/forestfutures/>

For more information on these events call the number provided or the Forest Stewardship Helpline, 1-800-738-TREE. To submit an event, contact Sherry Cooper, 530-224-4902; [slcooper@nature.berkeley.edu](mailto:slcooper@nature.berkeley.edu). Find a more comprehensive calendar at the Forest Stewardship website <http://ceres.ca.gov/foreststeward>

## Who Are We?

*The California Forest Stewardship Program is a collaboration of the California Department of Forestry and Fire Protection (CDF), University of California Cooperative Extension, USDA-Natural Resources Conservation Service and USDA-Forest Service, State and Private Forestry.*

# The Forest Stewardship Program

*Heather Morrison*

The purpose of the California Forest Stewardship Program is to encourage good stewardship of private forestland by providing technical assistance and advice to landowners, land managers, and consultants. In addition, the program funds general operating expenses such as communications, training, facilities operations, and more. The program is mandated and funded by the Federal Farm Bill.

Two of the many facets of this program are to encourage development of Forest Stewardship plans and fuels reduction demonstration projects. Forest Stewardship plans help landowners focus on their personal land objectives including fuels reduction, reforestation, rehabilitation, and wildlife habitat and road improvement projects. The California Forest Improvement Program (CFIP), in conjunction with the Forest Stewardship Program, supports the development of Forest Stewardship plans, resulting in improved forest practices. Landowners with approved Forest Stewardship plans are able to utilize state-funded implementation programs when funds become available.

The program has other key components:

1. The Forest Stewardship Helpline
2. Forestland Steward Newsletter and Website
3. Landowner educational events and materials

4. On-Line Natural Resource Calendar
5. California Forest Stewardship Coordinating Committee

**The Forest Stewardship Helpline** (800-738-TREE) provides information on general forestry, financial assistance programs, and forestry and woodland education. It is the portal to an extensive network of information and professionals. The goal of the Helpline is to provide timely, up-to-date information and referrals specific to individual situations. The Helpline is free and is staffed or monitored Monday through Friday, 9 a.m. to 5 p.m. A Registered Professional Forester (RPF) responds to calls.

**Forestland Steward Newsletter and Website**—This quarterly publication provides current information on forestry, forest practices, and cost share programs. It is available both on-line and in hard copy. The Forest Steward Website includes an archive of all newsletters plus other information and links for forest landowners.

**Landowner Educational Events and Materials**—UC Cooperative Extension sponsors workshops and publications specifically for non-industrial private forestland owners. Topics include forest biology, forest disease and insects, fire ecology, forest practice regulations, wildlife biology, cost share programs, and more. A comprehensive encyclopedia of forestry information will soon be available. All workshops are announced through Forestland Steward newsletter and the Natural Resource Calendar. Landowners may request workshops in their area through their local county Cooperative Extension office or Extension foresters.

**Natural Resource Calendar**—<http://ceres.ca.gov/foreststeward>. This calendar provides a list of events of interest to landowners, professionals, and the general public.

The **California Forest Stewardship Coordinating Committee** meets quarterly to discuss state forestry issues and make recommendations about the needs of private landowners. Chartered under US Code Title 16, Section 2113, the Committee is comprised of representatives from state and federal forestry, conservation and environmental groups, forest landowners, consulting foresters, and cooperative extension. The Committee consults with other committees that address State and private forestry issues and makes recommendations to the Secretary of Agriculture on the Forest Legacy Program.

### How can the *Forestland Steward* newsletter serve you?

I'd like to see more information on \_\_\_\_\_

My suggestion is \_\_\_\_\_

Add me to the mailing list /  Change my address:

Name \_\_\_\_\_

Organization \_\_\_\_\_

Address \_\_\_\_\_

City, Zip \_\_\_\_\_ Phone \_\_\_\_\_

e-mail \_\_\_\_\_

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

Send to CDF, Forestry Assistance, P.O. Box 944246, Sacramento, CA 94244-2460.  
Phone: (916) 653-8286; Fax: (916) 653-8957; email: [jeff.calvert@fire.ca.gov](mailto:jeff.calvert@fire.ca.gov)