



FORESTLAND STEWARDS

WORKING TOGETHER FOR HEALTHY FORESTS

WINTER 2001

California's Forest Legacy Program expands statewide

*Constance Best
The Pacific Forest Trust*

Private forests—about 15 million acres throughout the state—play a vital role in California's ecology and economy. They provide clean water, protect watersheds, reduce the buildup of greenhouse gases, and conserve fish and wildlife habitat.

Forests check urban sprawl and provide recreational opportunities. They also provide jobs for thousands of Californians, and the backbone of the state's timber industry.

But private forest lands in California are in jeopardy. Between 1992 and 1997, preliminary data from the USDA National Resource Inventory show that California lost its private forests at an average rate of 77,000 acres *per year*. Further, this trend is accelerating. California lost twice as much forest in the five years from 1992–1997 as it did in the previous decade.

California's Forest Legacy Program was created in 1995 under the auspices of the national Forest Legacy Program to help address these threats through a non-regulatory, incentive-based strate-

Forest Legacy provides an incentive to forest owners to protect the forest land base and resources, while ensuring the continuance of traditional uses and protection of landowners' property rights.

gy. A state/federal cooperative program, Forest Legacy protects forestlands threatened by development by funding the purchase of forest conservation easements. In 2000, California expanded the program's reach from the original six counties to virtually every county in the state with private forests, while the legislature passed the California Forest Legacy Program Act to authorize the program's full implementation by the California Department of Forestry and Fire Protection in partnership with the USDA Forest Service. Now forest owners across the state can take advantage of Forest Legacy if they so desire.

By providing funding for conservation easements, Forest Legacy provides an incentive to forest owners to protect the forest land base, as well as forest

resources such as fish and wildlife habitat and water quality so important to the people of California, while ensuring the continuance of traditional uses and protection of landowners' property rights. California's program can pay for the fair market value of the conservation easement, as well as some of costs associated with its creation, such as forest management plans, surveys, and project management.

Forest Legacy is a cost-effective program built on partnerships, providing three dollars of federal matching funds for every one dollar of state or private money. It is also a flexible program that can draw on the resources of federal, state, and local agencies, private nonprofit organizations, and private

(continued page 3)

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From the Director



Help California get through the energy crisis

California continues to experience electrical shortages and rolling blackouts throughout the State. These may affect us both on the job and at home. To reduce the risk of power outages, the most important thing we can do in the short term is reduce our demand for electricity and use energy more efficiently.

The Governor and California Legislature are working with utility companies, generators and consumer groups to fashion long-term solutions for reliable and affordable electricity. The State has already implemented a plan to reduce consumption by at least 8% across the board.

We have an important role to play right now—**FLEX OUR POWER TO CONSERVE!**

Below you will find simple things that we can do to help reduce energy consumption. Many of you have already taken some of these steps, but I encourage each of you to check again.

Feedback

Dear Sirs:

Reading your Summer 2000 newsletter, I was disappointed to read on page 6, Fire in California, "The last century has seen a deterioration in forest health. Fire suppression, forest practices, grazing, and weather have all contributed to this situation." As cattle grazers and timber owners, we feel your statement that grazing has contributed to the deterioration of forest health is in error. Grazing helps reduce fuel load by reducing brush preventing the spread of wildfires and we appreciate grazing as a fire management tool. Prescribed burning, properly done, reduces fuel load and grazing is a natural use for subsequent treatment.

Sincerely,
Mary L. Cook, Sonora

These are minimal efforts that we can all implement right now to reduce demand, cut energy costs, and serve as an example to others in our communities.

While at Home:

- ◆ Turn thermostats down to 68° or below. Reduce settings to 55° before going to sleep or when away for the day. (For each 1 degree, you'll save up to 5% on your heating costs.)
- ◆ Turn off non-essential lights and appliances.
- ◆ Avoid running large appliances such as washers, dryers, and electric ovens during peak demand hours from 5:00am to 9:00am and 4:00pm to 7:00pm
- ◆ Close shades and blinds at night to reduce the amount of heat lost through windows.
- ◆ Buy Energy Star appliances, products and lights.

While at Work:

- ◆ Turn thermostats down to 68° or below. Reduce settings to 55° at the end of the day. (For each 1 degree, you'll save up to 5% on your heating costs.)
- ◆ Turn off all unnecessary lights, especially in unused offices and conference rooms and turn down remaining lighting levels where possible.
- ◆ Set computers, monitors, printers, copiers and other business equipment to their energy saving feature, and turn them off at the end of the day.
- ◆ Minimize energy usage during peak demand hours from 5:00am to 9:00am and 4:00pm to 7:00pm
- ◆ Buy Energy Star appliances, products, and lights.

Tips for Your Kids:

- ◆ Choose an energy monitor for your classroom every week who will make sure that energy is being used properly.
- ◆ Start an "Energy Patrol" at school and at home. Check out the California

Energy Commission's website—www.energy.ca.gov/education for more ideas

- ◆ At home, hold a ribbon up to the edges of windows and doors. If it blows, you've found a leak. Tell your parents.
- ◆ When you leave the room, turn off the light.

I know you will all do your best to conserve energy, both at work and when at home. Working together we can get through this energy crises.

Thanks for your help,

Andrea E. Tuttle, Director

FORESTLAND STEWARD

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Forest Legacy (cont.)

landowners to conserve forest resources that would otherwise be lost.

Specifically, the conservation goals of California's Forest Legacy Program are:

- ◆ To prevent future conversions of forestland and forest resources.
- ◆ To protect wildlife habitat, rare plants, and biodiversity.
- ◆ To maintain habitat connectivity and related values needed to ensure the viability of wildlife populations across landscapes and regions.
- ◆ To protect riparian habitats, oak woodlands, ecological old growth forests, and other key forest types and seral stages which are poorly represented across landscapes and regions, and which play a key role in supporting biodiversity.
- ◆ To protect water quality, fisheries, and water supplies.
- ◆ To maintain and restore natural ecosystem functions.

These goals were established through an extensive public process in 1995, and were confirmed by the legislature last year.

Conservation easements under Forest Legacy

Conservation easements are permanent deed restrictions that a landowner voluntarily establishes, that limit land uses for conservation purposes such as those listed above. Such easements are well established in California law (Section 815 of the California Civil Code) and have been in use across the U.S. for 60 years.

Land under a conservation easement stays in private ownership and productive use. Public access is not a requirement, although it can be granted as part of a regional trail system for instance. Rights not restricted by the landowner are retained. While its terms are binding on future owners, the easement does not restrict the resale or

transfer of the property. In essence, the conservation easement expresses a landowner's right *not* to develop a property. By stripping off speculative development rights from forestland—and by guiding land use and forest management to protect sensitive resources—the easement reflects a landowner's long-term vision of stewardship.

The landowner conveys the conservation easement to a selected government agency or nonprofit land trust that holds the restricted rights "in trust" and is empowered by the landowner to ensure the easement terms are adhered to through time. The landowner retains all management rights and responsibilities—the government agency or land trust, as grantee of the easement, have none. There is no third party involvement in monitoring or enforcing the easement.

If federal funds are used for the acquisition cost of the easement, the federal program requires that a federal, state, or local government agency act as grantee. If the easement is charitably gifted and federal funds are only used for associated costs, or if state funds are used for the easement purchase, then a nonprofit conservation organization can hold the easement.

How landowners can participate in the program

Landowners are eligible to participate in Forest Legacy on a strictly voluntary basis if they own forestland in one of the 34 counties designated "Forest Legacy Areas;" if protection of their forestland helps meet the program's conservation goals; if their forestland is threatened by potential conversion; and if traditional uses, whether for forestry or habitat, will be continued. Each property enrolled in Forest Legacy is required to have a stewardship plan or similar multi-resource forest management plan, such

Negotiable items for conservation easements

Note that the following are rights that can be given up or retained, depending on how the conservation easement is written up. The easement must meet state and federal forest practice regulations and, in addition, each land trust has its own criteria for acceptance.

Some of the common rights that are addressed in a conservation easement include:

- ◆ Development/subdivision rights. This is the most common restriction, the goal being to maintain the property under one ownership with fewer buildings and roads, thus decreasing biological fragmentation and erosion.
- ◆ Surface and subsurface mining
- ◆ Water rights
- ◆ Commercial recreation
- ◆ Hunting rights
- ◆ Road building
- ◆ Watershed protections
- ◆ Various management activities. Restrictions are specific to each landowner's objectives and property characteristics
- ◆ Timber harvest/timber rights to be retained

as an NTMP (the costs of which can be covered by program funds).

Landowners nominate their properties to CDF, and proposed projects are reviewed regularly by the department, in consultation with the state Forest Stewardship Coordinating Committee and the U.S. Forest Service. Even with increasing state and federal funding for the program, the selection process will be a competitive one both statewide and nationally. Projects that include funding from a variety of sources, including landowner contributions, and

(continued page 8)



Out on a Limb

Why the big deal about forests next to streams?

Richard R. Harris
Extension Forestry Specialist

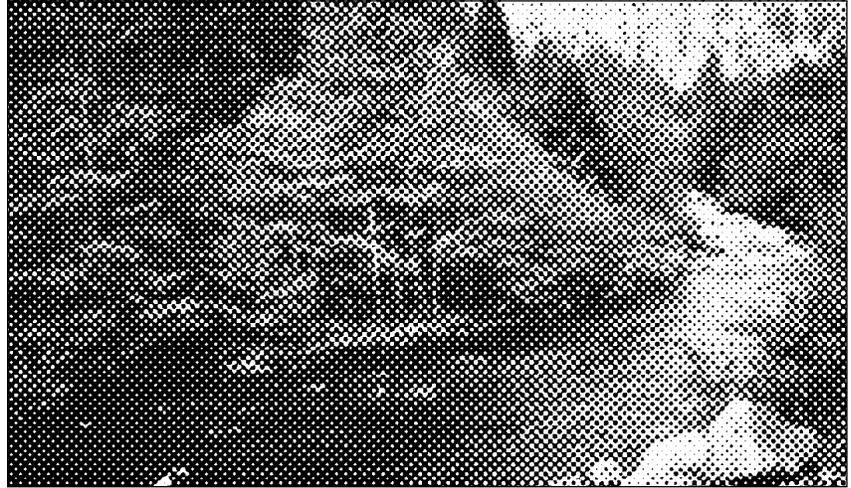
Forests next to streams are extremely important and deserve special attention in stewardship planning.

Much of the current concern about the management of streamside forests stems from recent listings of anadromous fish, such as salmon and steelhead, under the Endangered Species Act. As we shall see, however, it is not just fish that are affected by streamside practices.

Size is important

There are many types of streamside forests. How much a streamside forest differs from the nearby upland forest depends largely on the size and location of the stream. This relationship between stream size and the associated forest are extremely important ecologically and have implications for management.

Smaller streams (say, less than 10 feet wide) in steep forested terrain often have steep rocky channels with no adjacent flat floodplains and seasonal streamflow. The width of the stream channel is small in relation to the height of trees in the surrounding forest. In such cases the streamside forest may be similar in



Stream size determines many of the characteristics of the streamside forest.

species composition or size to the forest away from the stream; it is simply the trees closest to the stream.

As streams get larger, their potential for supporting a distinctive streamside forest increases. A larger stream (say, 20 or more feet wide) may have a gentler slope, year-round flow, and a narrow floodplain.

The floodplain is important. It provides a new type of environment, an area subjected to flooding, sedimentation and erosion, and possibly a high water table. These environmental conditions are

conducive to the establishment and growth of *obligate riparian* or *wetland* plants.

Obligate means dependent on the stream; these plants could not live there if the stream or some other source of water were not available. Some examples of obligate riparian plants include sedges, Indian rhubarb, many ferns, mosses, and horsetail. One of the most common obligate riparian shrubs is willow. Trees include alders, cottonwood, mountain ash, and sycamore.

Whether or not these plants occur along a given stream depends on the availability of light as well as habitat. Since many of the obligate riparian or wetland plants require plenty of sunlight, they may be present only if the stream's size is adequate to create a sufficiently large gap in the surrounding forest.

On larger streams (e.g., 60 or more feet wide), slope is gentle, the stream has a meandering or wandering channel, and there is a relatively broad floodplain which is only inundated at high flows. Consequently, these floodplains create fairly large openings in forests and the associated streamside forest can become much more complex, with different



Ferns grow along the banks of this smaller stream.



zones of vegetation as you move away from the channel. Next to the channel itself there may be willows or other plants that are well adapted to frequent flooding. As you move away from the stream, there tends to be a greater variety of trees and shrubs.

The role of the streamside forest in shaping the stream environment and aquatic habitats also varies in relation to stream size.

What are the general functions of streamside forests?

The functions of a streamside forest ecosystem vary according to species composition and the physical arrangement of the vegetation (structural complexity). There are three general kinds of functions performed by streamside forests: 1) they create and/or change aquatic habitat; 2) provide wildlife habitat on the land; and 3) modify erosion and sedimentation.

Streamside forests influence food, shelter, light, and water temperature in aquatic habitats. They provide food in the form of leaf litter, insects, and an occasional squirrel for aquatic insects, fish, and amphibians. Roots, stems, and overhead cover provide shelter to these same animals. Many aquatic insects spend at least some part of their life cycle in the streamside forest. The effects of streamside canopy on light and water temperature largely control photosynthesis by aquatic plants and algae (instream primary production). Water temperature is also critical to aquatic insects, fish and amphibians.

Many terrestrial animals depend at least in part on streamside forests for their habitat requirements. Some, like amphibians and reptiles, may live their entire lives in or near the streamside forest. Others (e.g. birds of prey) use the streamside forest to hunt, rest, or nest. Streamside forests provide travel corridors for large secretive animals like bear, cougar, and deer. Generally, the value of forest as a wildlife habitat increases with its width, degree of continuity along and

(continued next page)

Management implications

Timber harvesting in streamside forests can reduce the amount of large woody debris (LWD) entering a stream. This effect is probably most important on smaller streams which do not receive inputs of LWD from upstream transport.

In this era of buffer strips along most streams, timber harvest impacts are not as severe as they once were. However, many streamside forests lack conifers and are dominated by smaller hardwood species. Even if conifers are present, today's streamside forest may be deficient in large trees. In second or third growth streamside forests the average diameter of trees that can provide LWD (source trees) is smaller than in old growth forests.

◆ **Clearing streams of large woody debris, for whatever reason, can have dramatic physical and ecological effects.** This was practiced in the past because the debris was thought to impair fish migration. It is still practiced to prevent damage to roads and stream crossings.

◆ **Leaving too much wood in a stream after logging can also create problems.** This tends to occur with fine, rather than coarse, debris. An overabundance of fine debris can create chemical conditions in water (lowered oxygen levels, elevated tannic acids) that adversely affect instream species.

◆ **Landowners should work to restore and maintain the functions of large woody debris in their streams.** Management decisions can be guided by the knowledge that LWD performs differently in different streams. On small, steep streams, single pieces of wood spanning the channel act as major controls on channel form and ecology. On larger streams, LWD accumulations or jams are the rule. Single pieces are generally unsta-

ble. For the largest streams, LWD plays a limited role in the channel except when extremely large jams are present. LWD on floodplains and gravel bars on the largest streams provides escape habitat for fish at high flows and promotes streamside forest development.

◆ **Managing the streamside forest to promote recruitment of LWD is a long-term project.** Just prescribing buffer strips alone may not be adequate. Most LWD derived from streamside forests comes from within 100–200 feet of the stream. Growing large trees as potential sources of LWD in that zone may require active management, such as planting conifers, controlling competition and thinning, activities that are rarely done at the present time.

◆ **Avoid indiscriminate removal of LWD from streams or floodplains.** Few people agree on how much LWD is enough but nearly all agree that most streams need more. On some streams, reintroduction or placement of logs in the channel may provide a short-term solution to maintain wood-created habitats until natural recruitment processes recover. This should not be done by the novice, however, since added logs should be structured to mimic effects of natural obstructions in streams.

In the long term, creative management of streamside forests offers the most promise for improving conditions.



Many terrestrial animals depend on streamside forests.



Streamside Forests (cont.)

across the stream, plant species diversity, and structural complexity.

Plants rooted next to streams or on floodplains screen sediment out of passing water, slow flood velocities, and influence erosion. All of these actions impact disturbance in the streamside zone. For example, when plants screen sediment out of the water, it causes floodplain deposition and building. Tree roots can also deflect water, leading to erosion and undercut banks.

The importance and magnitude of these general functions also vary depending on the size and complexity of the

streamside forest. In medium-sized streams where the streamflow is year-round, the streamside forest can have a dominant influence and is very important in shaping aquatic habitat. Terrestrial wildlife functions tend to be more important on larger streams with larger floodplains and extensive streamside communities. The effects of the streamside forest on erosion and sedimentation are important on any size stream, although the absolute magnitude of impact by the forest may be greatest on small- to medium-sized streams.



The streamside forest contributes large woody debris, a vital component of healthy streams.

Some functions of large woody debris

Large woody debris (LWD) is more important than one might think:

- ◆ LWD creates obstructions that encourage sediment deposition, especially in small- to medium-sized streams. The sediment stored behind individual log “steps” or jams can be quite substantial; removing it can dramatically increase downstream sediment loads.
- ◆ Log steps create abrupt changes in channel slope (i.e., waterfalls) that cause scour pools. These pools are an important habitat element for aquatic insects and fish. On many smaller streams, virtually all the pool habitat may be associated with LWD. In the absence of LWD the stream becomes all riffle, offering little habitat value.
- ◆ The presence of LWD can either enhance or reduce channel stability by deflecting or directing flow to or from erodible banks.
- ◆ LWD traps organic material traveling downstream, making it available to instream organisms. In anadromous fish streams, this includes trapping salmon carcasses that are an important source of nutrients.
- ◆ Many aquatic insects attach themselves to LWD either permanently or temporarily while they reproduce. The succession of colonizers on LWD depends on its age and state of decay.
- ◆ Wood is crucial in creating and maintaining the complexity of habitat for anadromous salmonids. LWD-created pools provide fish with a quiet environment to rest, feed and avoid predators. Gravel bars created by LWD are used by salmonids as spawning habitat. Juvenile salmonids are particularly dependent on LWD for escape cover and refuge during high wintertime flows. Studies have shown fewer salmonids in streams where LWD is either naturally limited or has been reduced.
- ◆ LWD affects the streamside forest that is its source. LWD creates low velocity areas where sediment and organic material deposit, speeding soil development and providing nutrients for streamside forest development. Downed logs trap sediment and provide areas for seedlings to establish. Woody debris shields seedlings from scouring during high flows. Established streamside forests eventually contribute LWD back to the stream during disturbance events.

Streamside forests and large woody debris

One very important function of a streamside forest is that it provides logs, stumps, and branches that enter the stream as large woody debris (LWD). The actual size of functional large wood should be defined operationally, in relation to the size of the stream.

Large woody debris affects streams in a number of ways. It directs streamflow, stores and distributes sediment, and creates pools, riffles, and waterfalls. Aquatic insects and fish occupy and use the pools and riffles as habitat. LWD intercepts organic matter traveling downstream, allowing it to be used as food by aquatic insects. Gravel bars created from sediment trapped by LWD become sites for streamside forest regeneration.

The abundance and distribution of large woody debris in a stream is strongly influenced by the size of the stream, character of the streamside forest, and the manner in which wood gets into the stream. Under natural conditions LWD loading (amount per unit area of stream water surface) is greatest in small streams in coniferous forests. The highest loadings have been recorded for small streams in the redwood region. This is because small streams lack the streamflow necessary to move logs that fall into them. The major mechanisms by which LWD enters these streams are wind-throw, bank erosion, and landslides.

(continued next page)



Species Spotlight

Red alder: part of the streamside forest

Red Alder (*Alnus rubra*) is a common hardwood species that can be found growing along the west coast from Southern California to Northeast Alaska.

It does well in wet areas—it can even tolerate some flooding—and most commonly grows along the borders of streams or lakes. While this species can be found in pure stands, especially after a disturbance, it is more often a component of mixed forests, associated with trees such as Douglas-fir, black cottonwood, willow, Pacific dogwood, and redwood.

Red alder is a pioneer species, some might call it a weed, growing rapidly in disturbed areas such as clearcuts, burns, or along road cuts—anywhere with full sunlight and exposed soil.

After a disturbance, red alder quickly colonizes a site through its many wind-dispersed seeds. The trees are extremely intolerant of shade so only those that can stay above the canopy and retain access to sunlight survive. This prevents young-

er alder seedlings from becoming established, resulting in even-aged stands. In about 25 years, however, slower-growing conifers such as Douglas-fir begin to overtop the alders until few remain after 60 years.

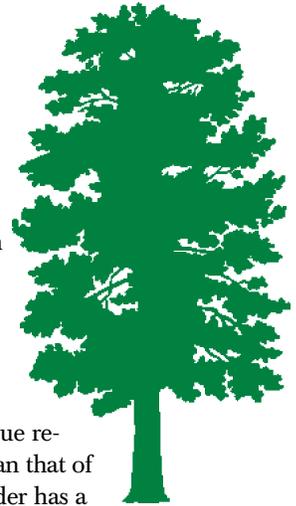
One of the more intriguing attributes of red alder is its ability to fix atmospheric nitrogen through root nodules that contain a symbiotic nitrogen-fixing bacteria. This trait helps the tree grow in disturbed areas where it puts nitrogen back in the soil. A relatively short-lived tree, red alder prepares the soil for the next seral stage. In fact, it has been suggested that alder be planted as a rotation crop before growing conifers since conifers that come in under a red alder canopy show an increased growth rate. Douglas-fir grown with red alder also exhibits greater heights and diameters than those grown without.

Red alder is used for erosion control because of its ability to grow quickly and stabilize the soil on exposed sites while

rehabilitating the soil through its dense litter layer and nitrogen fixation.

While its commercial value remains lower than that of conifers, red alder has a lot to recommend it. Wood from the tree is fine-grained, moderately dense, and uniform in color. It is valued in the production of furniture, cabinets, veneer and used in other wood products such as pallets, plywood, and paper. It is also an important firewood species.

Native Americans used the inner bark of red alder to produce a red dye used to dye fish nets, making them invisible to fish. The tree also contains medicinal properties including salicin, a chemical closely related to the active ingredient in aspirin. And, it is considered the best wood for smoking salmon.



Streamside Forests (continued)

Logs in small streams may remain in place for hundreds of years.

Intermediate-sized streams are wide and deep enough to move and redistribute LWD. Wood may find its way to a given place on an intermediate-sized stream by floating down from upstream where it accumulates in irregularly spaced but distinct clumps at constrictions in the channel or on meander bends. The number of clumps, or jams as they are called, decreases with the size of the stream while the size of individual clumps increases with stream size.

On larger forest streams, most LWD enters through bank undercutting and tends to wind up on gravel bars or on terraces along the stream margin. This wood is frequently out of contact with

the low flow channel and may have a limited effect on channel shape. On larger streams, stream width and degree of sinuosity (winding) are the main factors controlling abundance and distribution of LWD accumulations.

The manner in which wood is transported also varies with stream size. On smaller channels, wood often moves in “debris flows” during extreme runoffs. On larger streams, wood is floated downstream as individual pieces at high flows until it reaches an existing jam or constriction. Transport of wood from one part of the watershed to another is a major means of increasing LWD loading; it may be more important than the streamside forest as a source of LWD on medium-sized and larger streams.

As you would expect, the size of the stream discharge determines how big the

wood has to be in order to remain in place; the larger the stream, the larger the average size of stable LWD. Logs with rootwads attached are more stable because of the increased potential for snagging. Stability is also increased if one or both ends are buried in the bank or resting above the channel.

When larger streams are constrained by bedrock, higher terraces, or other natural or manmade features (e.g., levees), there are less extensive floodplains, fewer opportunities for contributing and storing LWD, and more capacity to move LWD downstream during high flows. Wide, unconstrained streams bordered by floodplains and terraces possess abundant sites for storing logs. These areas often develop streamside forests that in turn become sources of LWD.



Conservation Easements

Forest Legacy (continued from page 3)

that provide the greatest protection to the most threatened resources are likely to be more highly ranked than others.

The California Forest Legacy Program is managed by Jeff Calvert, Forest Stewardship Program Manager, for the California Dept. of Forestry & Fire Protection. Details of California's Forest Legacy Program can be found in the program's Assessment of Need (as amended), available from Jeff. He can be reached at CDF, PO Box 944246, Sacramento, CA 94244-2460; 916-653-8286; or by email at jeffrey_calvert@fire.ca.gov.

Other resources:

For information on land trusts and conservation easements:

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One landowner's experience with a conservation easement

Chris Hayes has nothing but positive things to say about conservation easements. It worked for him.

Hayes owns 952 acres of mixed range and forestland that spans the Sonoma/Mendocino county border. He bought the property 12 years ago to use for hunting. It had been logged in the past but his interest was in stewardship activities including a Non-industrial Timber Management Plan (NTMP) to do forest thinning.

In 1997, Hayes was looking for a tax break and decided to investigate conservation easements. He did a lot of homework, got good professional help, and was able to accomplish his objectives. He feels that everyone benefitted from the transaction. "It's one of those situations where it's beneficial to the landowner and the land both."

This was a learning experience that took a bit of effort. First, Hayes had to find a land trust to take his easement. He also hired an attorney who was knowledgeable about conservation easements to go over the agreement. Since timber was a great deal of the value of the property, he worked with a forester to evaluate the forest resources and give advice on long-term management. And an independent appraiser was needed to calculate the property's total worth.

The costs of securing the conservation easement included payments to all the professionals plus a gift to the land trust for management purposes—a charitable donation. But all those costs are tax deductible and Hayes feels he got a "good deal."

"It's time consuming. You have to go through a few steps," Hayes acknowledges. It depends on how big the property is and how complicated the easement. He was under a time constraint because he wanted the tax

break at the end of the year. His easement took six months to complete.

What a conservation easement actually does is devalue the property by restricting certain rights. In this case, the development rights that were given away were rights Hayes had no intention of using anyway. Twenty acres by the house were excluded from the conservation easement in case he wants to "do things" to that area in the future.

"The conservation easement is pretty specific. The land trust maps the whole property and then goes over it on the ground. They have the right to come by to check that the agreement is being followed but usually they will notify and let us know they are coming by to check. It hasn't been invasive at all. They've only been up there once in three years. It all depends on the land trust, the nature of the easement, and how easy it is to come by."

Forest management plans are built in to a conservation easement. Each one is different depending on the needs and objectives of the landowner, the land trust, and the property characteristics. Hayes retained the right to log within the NTMP.

"You can give away as much or as little as you want," he notes. "It all depends on how you write up the easement. Basically it's a negotiation—as long as you have something the land trust values you have leverage."

His experience has inspired others. Since Hayes got his conservation easement, his neighbors are following suit.

His advice for others? The most important thing is to make sure you know what you're willing to give up. Get an attorney to look out for your interests.

"For me it was a perfect match. I don't have designs to change the property any more than it's been changed. It hasn't really changed my life or how I use my property."



Seasonal Stewardship

Thinning for increased forest health and profit

Thinning a forest stand can provide many benefits, but only if you know what you're doing and why, and if you do it correctly.

Trees are removed from an immature stand for a number of reasons: to promote growth in the remaining trees; to enhance nontimber use of the forest like grazing, wildlife, and recreation; and for reasons of forest health. Thinning can be done for a profit (commercial thinning) or not (pre-commercial).

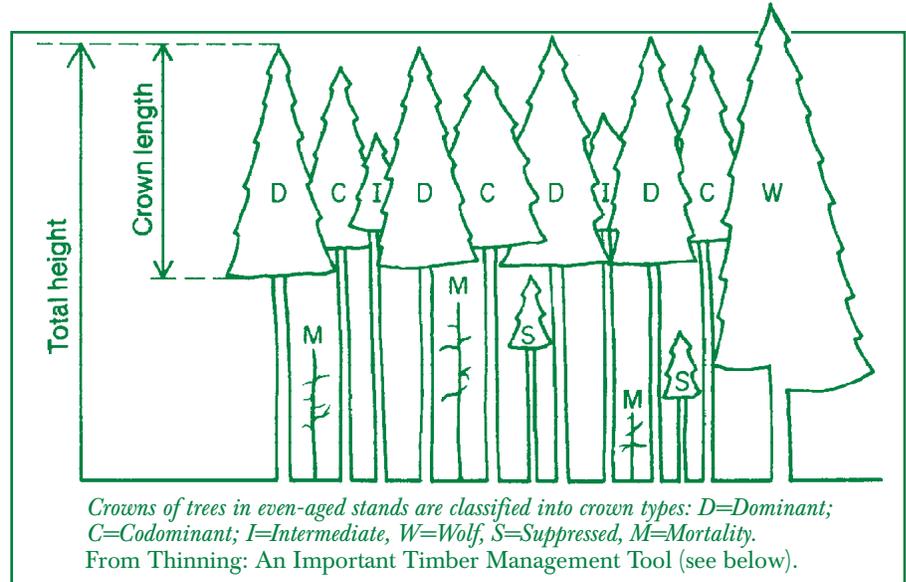
The rationale for thinning is based on how trees grow. Trees make energy for growth through photosynthesis, a process that uses sunlight, water, and nutrients to produce energy that is stored as carbohydrates (tree food). Other life processes of the tree—respiration, food transport, and metabolism—use up energy. The amount a tree can grow is dependant on how much energy is left over after its basic needs are met.

When trees grow closely together in a stand, they compete for a finite amount of sunlight, water, and soil nutrients. Crowded conditions mean that taller trees have more access to sunlight and can shade smaller ones, blocking out that vital sunlight. By thinning the stand, more water, nutrients, and light become available to the remaining trees. The resulting increase in growth is primarily exhibited in diameter gain which is a benefit to timber producers.

Of course not all trees react to thinning in the same way—the amount of growth varies by species, age of tree, and condition. As a rule, young trees respond to thinning more than older trees; those that are intolerant of shade will also respond more readily.

The effects of thinning on a stand can be described with the six crown classes (see diagram above):

1. Dominant—these trees extend above the crown canopy and receive full sunlight from above.



2. Codominant—trees at the general level of the crown canopy; more crowded on the sides than the dominants.
3. Intermediate—shorter trees, with small, crowded sides.
4. Suppressed—overtopped by other trees; they receive no direct sunlight.
5. Wolf—trees that develop in the open and have full crowns on all sides.
6. Mortality—dead trees in the stand.

At first, all trees in an even-aged stand are dominant. But as they grow, some trees grow taller and begin to shade others. Those in the shade are less able to photosynthesize and their growth is decreased. As this process continues, the various crown classes develop.

Thinning can alter this dynamic. High thinning (thinning from above) removes some of the dominant and codominant trees to release a large number of the remaining trees. Low thinnings (thinning from below) removes suppressed and intermediate trees as well as some codominants and dominants, leaving uniformly-spaced dominant and codominant trees.

Thinning can also change the species composition of a stand depending on

which species are selected for removal.

A thinning prescription for any stand must be site-specific. The approach to thinning an even-aged stand, as presented in this article, would not necessarily apply to an uneven-aged stand. Decisions about when and how to thin depend on site conditions, species, and, of course, landowner objectives. One rule of thumb is to consider thinning when the crowns begin to touch. It is best to avoid cutting trees during the spring and early summer when they are growing. Also, trees cut during this time may attract insects such as bark beetles. Fall and winter are the best times to thin, but remember that wet soils are prone to compaction and erosion so take precautions.

For advice on thinning, talk to your local CDF Forestry Assistance Specialist or call the California Forest Stewardship Helpline at 1-800-738-TREE.

—much of this information comes from "Thinning: An Important Timber Management Tool" by William H. Emmingham and Norman E. Elwood, PNW 184, (A Pacific Northwest Extension Publication published by Oregon State University, Corvallis, August 1983, reprinted February 1993), 50¢



Resources

Get ready—it's that time of year again

The following good advice is from the USDA Forest Service Southern Region:

Taxes are a major cost of doing business. Proper tax planning is just as important as the silvicultural techniques used to grow a profitable timber crop. Hence, to increase your revenues, you should be aware of the special income tax provisions that are available so that you can earn optimum income from your forestlands. Congress provides these favorable advantages and elections to stimulate increased

productivity from the nation's privately owned forestlands.

You should have a general knowledge of these provisions whether you prepare your taxes yourself or have someone else prepare your return for you.

Most tax accountants are not familiar with all of the special provisions available for private forest landowners. The tax code is very complex and these special provisions are quite obscure. Hence, you need to be aware of them so that you can inform your tax accountant.

Here are a few special provisions you should know in order to avoid paying unnecessary income taxes:

1. Landowners can claim a 10% reforestation tax credit and 7-year amortization for qualified reforestation expenses on the first \$10,000 invested in reforestation each year. This special advantage is available only to timber growers—with only a few specified exceptions.
2. You must have a profit motive to claim business or investment expenses, but you do not have to have a profit three out of five consecutive years. An expanded definition for "profit" is particularly relevant to timber. "Profit" also includes appreciation in value of assets. Hence, timber growing meets the profit definition since it appreciates in value through physical growth and enhanced quality over time—even though it may not be harvested for a period of many years.
3. Generally, you get the best tax treatment if you are "an active participant in the trade or business." The passive rules apply, but it is not difficult for you to meet these requirements if you so choose. However, you must report your business expenses in a consistent manner and dispose of your timber under the provisions of Section 631, i.e., you should not sell your timber "lump sum" (see website below).
4. You should maintain, and keep current, in your tax records IRS Form T (Timber) Forest Activities Schedules. You should also attach Form T schedules to your tax return when specified by the instructions included on this form.

—from the USDA Forest Service Southern Region website at <http://12.4.79.42/spf/coop/taxation/default.htm>. Go there for links to other valuable tax sites, including the National Timber Tax Website at <http://www.fnr.purdue.edu/ttax/>

Technical Assistance Resources

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

California Stewardship Helpline 1-800-738-TREE

California Department of Forestry & Fire Protection

Forest Landowner Assistance Programs
Jeffrey Calvert
(916) 653-8286
jeffrey_calvert@fire.ca.gov

Forestry Assistance Specialists
Jill Butler (Santa Rosa)
(707) 576-2935

Rich Eliot (Fortuna)
(707) 946-1960

Tess Albin-Smith (Fort Bragg)
(707) 961-1531

Adam Wyman (Red Bluff)
(530) 529-8548

Chris Waters (Camino)
(530) 644-2345 x292

Tom Sandelin (Fresno)
(559) 243-4108

Glenn Barley (Riverside)
(909) 320-6120

California Resources Agency:

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

California Association of RCDs

Thomas Wehri
(916) 447-7237
carcd@ns.net

Natural Resources Conservation Service

Jerry Reioux
(530) 792-5655
jerry.reioux@ca.usda.gov

Farm Service Agency

Larry Plumb
(530) 792-5520

California Dept of Fish & Game

Marty Berbach
(916) 327-8839
mberbach@dfg.ca.gov

U.C. Cooperative Extension Forestry

Richard Harris
(510) 642-2360
rrharris@nature.berkeley.edu

Gary Nakamura
(530) 224-4902
gmnakamura@ucdavis.edu

USDA Forest Service

Sandra Stone
(707) 562-8918
ssstone/r5@fs.fed.us



Calendar

March 1, 2001

CLFA Spring Workshop: Plants—Their Status & Protection

Sacramento, CA
California Licensed Foresters Assn.
Hazel Jackson 209-293-7323, fax 209-293-7544 clfa@volcano.net
<http://www.clfa.org/>

March 1-4, 2001

Salmonid Restoration Federation Conference

Chico, CA
Salmonid Restoration Federation
707-268-8182 srf@northcoast.com
Conference: \$55-\$80; Field tours: Thurs. & Fri. \$45 each
<http://www.northcoastweb.com/srf/>

March 2-3, 2001

CLFA Annual Conference: The Contemporary Forestry Ethic

Sacramento, CA
California Licensed Foresters Assn.
Hazel Jackson 209-293-7323, fax 209-293-7544 clfa@volcano.net
<http://www.clfa.org/>

March 5-6, 2001 9 a.m.

Board of Forestry meeting

Sacramento, CA
California Dept. of Forestry
916-653-8007; fax 916-653-0989

March 9, 2001 8 a.m.-3:30 p.m.

Combating the Sudden Oak Death: Phyophthora—A New Disease

San Rafael, CA
UC Coop Extension, San Rafael Parks Maintenance Division, & Marin County Stormwater Pollution Prevention Prog
Pavel Svihra 415-499-4204
psvihra@ucdavis.edu; \$55
<http://danr.ucop.edu/ihrmp/sodwkshp.html>

March 12-15, 2001

Call for papers, posters: Riparian Habitat & Floodplains Management Conference

Sacramento, CA
The Wildlife Society
Diana Craig 707-562-8930
dcraig01@fs.fed.us or Lyann Comrack 858-467-4208 lcomrack@dfg.ca.gov
\$150-\$275. Register by 2/9/01 to avoid late fee; <http://www.tws-west.org/riparian>

March 19-30, 2001

Forest Conservation Days

Saratoga, CA
NorCal SAF and others
Volunteer Coord: Keith Guenther 925-689-2431 Wildland@jps.net; forms: Sherry Cooper 530-224-4902; shcooper@ucdavis.edu
Volunteers needed to assist with tours through Sanborn Park for 5th graders

March 22-23, 2001

TMDL: The Total Maximum Daily Load Program in California Rivers

San Francisco, CA
UC Berkeley Extension
510-642-4111, fax 510-642-0374
www.unex.berkeley.edu/enroll; \$395
Course code EDP 256883

March 27-28, 2001

Partnerships for Sustaining California Agriculture: Profit, Environment and Community

Woodland, CA
UC Sustainable Ag Research & Education Program, US EPA Region 9, Cal. Dept. of Pesticide Regulation, USDA Western Region SARE
800-752-0881
www.universityextension.ucdavis.edu; \$125
Course code 003AGR104

April 3-5, 2001 9 a.m.

Board of Forestry meeting

Sacramento, CA
California Dept. of Forestry
916-653-8007; fax 916-653-0989

April 5, 2001

Forest Certification and Sustainability

Corvallis, OR
Oregon State University
Conference Assistant 541-737-2329
outreach@for.orst.edu; \$15
<http://www.cof.orst.edu/cof/extended/conferen/>

April 5, 2001

Funding Sources for Environmental Restoration

Berkeley, CA
UC Berkeley Extension
510-642-4111, fax 510-642-0374
www.unex.berkeley.edu/enroll
\$259
Course code EDP 256156

May 7-9, 2001 9 a.m.

Board of Forestry meeting

Aptos, CA

California Dept. of Forestry
916-653-8007; fax 916-653-0989
Soquel DSF and Fish & Game Comm.

May 17-19, 2001

Annual Forest Landowners of California Meeting

Quincy, CA
Forest Landowners of California
Dan Weldon 916-972-0273
dvweldon@forestlandowners.org
To be held at the Plumas/Sierra County Fairgrounds www.forestlandowners.org

July 15-21, 2001

Forestry Institute for Teachers

Humboldt County, CA
N. California Society of American Foresters, UC Coop. Ext., Shasta Co. Office of Educ., CDF Proj. Learning Tree & others
Heather Schur 1-800-738-8733
info@forestryinstitute.org
For teachers only
<http://www.forestryinstitute.org>
One-week workshop; \$200 stipend paid upon completion of a curriculum unit

July 24-25, 2001

Forestry Institute for Teachers

Plumas County, CA
N. California Society of American Foresters, UC Coop. Ext., Shasta Co. Office of Educ., CDF Proj. Learning Tree & others
Heather Schur 1-800-738-8733
info@forestryinstitute.org
For teachers only
No charge. Applications postmarked by March 15 receive priority
<http://www.forestryinstitute.org>

For more information on these calendar items, call the number given or the Forest Stewardship Helpline, 1-800-738-TREE. To submit an event or to receive this calendar by email, contact Sherry Cooper, 530-224-4902; shcooper@ucdavis.edu.

ONLINE CALENDAR!
Find a more comprehensive calendar, updated monthly, at the California Forest Stewardship website:
<http://ceres.ca.gov/foreststeward>



Moving on

Farewell from Claralynn

Claralynn Nunamaker

A new voice will answer when you next call the Helpline—after two and a half years, it is time for a changing of the guard. Like the forests we manage, we as individuals are dynamic, growing and changing over time. This last year has brought two significant changes that led to the decision to move on in both professional and personal life and to transplant myself from California to Colorado.

The first is the strong resurgence of a life-long interest—music. For nearly 20 years I have played and composed guitar and piano music. A year ago I had the great good fortune to meet and become good friends with world-class guitarist John Renbourn (you may remember John's old group, Pentangle) as well as Alex de Grassi. Over the course of the last year, each has provided a great deal of encouragement and support in the development of my first CD of original guitar music. John suggested the title, *The Redwood Sidthe*, as the pieces were written in or inspired by the redwoods. "Sidthe",

the Gaelic word for the fairy folk who have power over Music and Nature, captures well the spirit of the album. (It is available for \$16 at www.clarelynnrose.com, or from Heartwood Music, P.O. Box 12314, Aspen, CO81612.)

For the immediate future, I will be performing and promoting the CD, as well as finishing the new compositions that will be on a second album, to be released by year's end. At the same time, I will continue to do forestry work on a contract basis and have already begun taking the occasional job with SmartWood, a certifier of logs and lumber from ecologically well-managed forests. They are doing work in China, so the rather exciting possibility exists of using my Chinese language skills to do forestry work overseas.

The second impetus for this uprooting is that a wonderful man recently proposed marriage to me. In



The cover of her first CD: Claralynn at the base of a redwood tree.

good form, he waited until we were in an old-growth redwood grove to officially pop the question. He is a Swedish man who lives near Aspen and makes his living as a woodworker, a craftsman of custom pieces. We are excited about building a life together and, after a few years, starting a family.

My time with the Forest Stewardship program has been most rewarding. May you as stewards of our state's wonderful forests continue to find creative solutions to the complexities that you face, to practice excellent management and to call the Helpline with your questions. Skål!

How can the *Forestland Steward* newsletter help you?

I'd like to see more information on _____

My suggestion is _____

Add me to the mailing list / Change my address:

Name _____

Address _____

City, Zip _____ Phone _____

e-mail _____

Forestland Steward is also available on the internet. Would you like to receive an email alert of each new 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; e-mail: jeffrey_calvert@fire.ca.gov

**Call the
California Forest
Stewardship
Helpline with any
forestry-related
question
1-800-738-
TREE**