



FORESTLAND STEWARDSHIP

WORKING TOGETHER FOR HEALTHY FORESTS

Stewardship courses a hit

Would you like to better understand your forest, develop goals for its protection and improvement, and produce a management plan to achieve those goals in an ecologically and economically sustainable manner?

Forest Stewardship courses and workshops are being offered in various parts of the state to help you define and implement your unique goals for your unique forest. These courses combine classroom time and field trips to give you a comprehensive framework that will help you make informed decisions about forest management. (Even the decision to do nothing to your forest is a management option with definite consequences and should be done with knowledge and forethought.)

A typical course includes background on forest ecology and history, the hows and whys of stewardship planning, using maps, tree growth and management, forest pests, economic considerations, wildlife, streams and watersheds, roads, regulation, cost-share and assistance, fire and risk management, and much more. Guest speakers bring added expertise to the class. In addition, the range of perspective and experience of class members provides a personal, real-world dimension to the course.

The Forest Stewardship courses are offered by UC Cooperative Extension. For more information on upcoming sessions, contact Sherry Cooper at 530-224-4902 or slcooper@nature.berkeley.edu.

"The course forced me to organize and prioritize what it is I would like to end up with. I have several projects in my plan that I have prioritized starting with road maintenance (those dreaded culverts)."



"I wish I had this knowledge 10 years ago."



"I thought I knew something about forest management; the class showed me I knew very little. It's worth coming to class just for the reference materials."



"The course exposed me to a wealth of information both written and verbal. The written material is going to be a useful resource with the development of my management plan. I'm not sure I can suggest any improvement..."

CDF & UC Cooperative Extension
Forest Stewardship Program
c/o P.O. Box 162644
Sacramento, CA 95816

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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.

California Forest Stewardship Program
P.O. Box 944246
Sacramento, CA 94244
(916) 653-8286
Fax (916) 653-8957
<http://ceres.ca.gov/foreststeward>

Editorial Committee
Jeff Calvert, CDF
Richard Harris, SAC
Heather Morrison, SAF
Gary Nakamura, UC

Editor
Laurie Litman, InfoWright



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This newsletter was produced under a grant from the USDA Forest Service.

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Seasonal Stewardship

That book may have to wait

The cold months—time to put up your feet and read a good book by the fire. Of course, there are some basic chores that need to be done first, like winterizing your roads. And this is also the best time to prune trees. Plan to plant seedlings while the weather is cool and the ground saturated. And in your free time you may want to take care of other important projects you've been putting off, like preparing your Forest Stewardship Plan.

Get your roads ready for winter.

Winterizing consists of maintenance and erosion control work needed to drain the road surface, ensure free flowing ditches and drains, and open culverts to their maximum capacity.

- Inspect all roads. A good time to do this is during the first rain. Bundle up in your raingear, take a shovel, and go to work. Clear out any debris upstream of culvert inlets and place it where it cannot get back into the watercourse. Remove sediment deposits that threaten to plug culverts. Straighten bent or damaged culvert ends. Outlets experiencing erosion can be armored or fitted with a downspout. Culverts with overflow problems may need to be larger and, if replaced, should be designed to carry anticipated high flows.
- Place waterbars on unsurfaced roads where winter use for management purposes is minimal. These high maintenance structures must be built and maintained properly.
- Look at the drainage of the whole road. Check culverts, waterbars, outsloping, and ditches for problems. Clean out debris and sediment from all trash barriers, culvert inlet basins, and pipe inlets. Clear ditches and trim heavy vegetation that may impede ditch flow. Excavate all



A single stick can cause a culvert to plug.

unstable fills and sidecast that could fail and be delivered to a watercourse.

- Seasonal roads should be gated and closed to non-essential traffic after they are winterized. For more information on how to winterize roads, see the *Handbook for Forest and Ranch Roads*, available at 707-468-9223.

Assess damage after storms. Walk your entire property and map the type and extent of damage after a storm. Identify high priority problems such as immediate safety hazards to people or structures; blocked or damaged ditches, culverts, and roads; damaged trees and limbs that may fall onto roads or power lines; trees blocking forest access roads.

Make preparations for planting. Planting time varies by location and conditions but conditions are usually optimum in late winter to early spring in the Sierra Nevada, Northern California, and Eastern side of the Coast Range, and when the snow is gone and chance of frost minimal at higher elevations. In warmer areas, planting can begin as early as late fall once rains have saturated the soil and can continue through late winter. You can order seedlings from the Magalia Reforestation Center; they begin shipping the first part of December. Call 530-872-6301 for information or check the CDF website "Hot Topics" section (www.fire.ca.gov). Your local CDF Forest Advisor can help with planting questions.

Pruning is best done during the dormant season, typically November through February. Be sure to prune correctly to minimize damage to the tree and hiding places for insects.

Why bother with a stewardship plan? As we discuss on page 6, your stewardship plan is a personal management plan that can guide you in achieving your goals. It can help you define what you want, and spell out the steps needed to get there. It is a timeline for management activities. It is also a blueprint you can use to discuss your plans with others—family members and professionals. And a stewardship plan can be a practical management document that will come in handy when you want to apply for cost-share monies and loans.

For more details on all of these topics, see our website at <http://ceres.ca.gov/foreststeward>.

A Landowner's Perspective

by Doug and Betty Carlson, Redding, CA

The following discussion reflects the views and plans of the owners from the start of their first project in 1985 through the end of the next 10-year planning period in 2015.

The original concept in 1985 was to convert 960 acres of brush land, scattered oak and timber to a high quality wildlife habitat area with larger timber stands interspersed. The first five years of experiment and improvement encouraged us to reverse priorities, placing timber stand improvement at the forefront, and wildlife habitat as a second priority. There were many reasons for this change, foremost among them was the fact that wildlife habitat work did little to improve timber, but timber stand improvement did much to improve wildlife habitat areas. This reversal of priorities was very successful and more practical to accomplish under the conditions of our area. The timber stand has increased from the original 2000 trees to the present 130-150 thousand conifers, while the deer population averages about double the original number. (Timber and deer numbers are used here as a baseline for other species.)

Future Planning 2005–2015

Strategies for the next 10-year period call for continued herbicide brush control measures as necessary in all conifer plantation areas. Also, manual removal of oaks that are over-topping conifers while leaving most large oaks provides the best species mix for a healthy forest.

- Gradual thinning and limb removal from conifers will promote better growth rates and reduce fire hazard.
- Downhill burning on calm, cool winter days will push back brush margins. Fire safety will increase as time goes on, making increased use of fire a major tool in the future.
- Over time gradual replacement or addition of conifer seedlings in plantation openings will bring each timber area to its full potential.
- Gradual improvements of impoundments and watersheds will provide more sediment control, improve stream quality for fish and wildlife and provide more nesting opportunity for a duck population that is increasing. A small resident stream trout population has appeared where they had not been seen before as the result of escapement from a

small pond.

Over the last 20 years, the owners have observed a steady improvement in all areas of timber and wildlife habitat. Very little of these considerable advances would have been possible without the State CFIP Program. Over many years, regular improvements occurred because of CFIP cost share financing and the help of State foresters Larry Blackman, Dave Soho, and Adam Wyman. The steady hand and professional help of Steve du Chesne, R.P.F., has guided us through 15 years, two management plans, several project plans, and a Timber Harvest Plan.

The State CFIP Program serves as a financial lifeline to the small landowner and provides a critical element to forest improvement where otherwise it would not occur. Words cannot adequately express our appreciation for this service, and I am confident many others feel the same way. Thanks many, many times over, State CFIP Program!

Harsh Land Management—Tips

In 20 years of site work and experience on harsh, lowland forest, I have learned a lot about how to proceed when little information was available. Few people attempt to convert rank brush land to mixed forest at 1000–3000 feet elevation, on harsh south slopes and at temperatures exceeding 105° in summer—and for good reason, it's tough! Tough, but not impossible, as we have succeeded. A few tips might be in order here to make life easier for the next stubborn landowner.

Wildlife Habitat Improvement—Simple But Effective

Brush crush small areas up to 5 acres using a D4 or D5 Cat in a mosaic pattern and then leave 10 acres natural as cover. Repeat as often as you want over thousands of acres. Pull brush away from save trees and scatter it, don't pile it. Downhill burn in the winter on calm days; don't worry about a real clean burn, the animals don't care! Keep your fire fairly cool so you don't damage your leave trees. Repeat the treatment in the same areas every five years. Leave your natural cover areas alone. Do not convert over 40% of any area. This simple treatment will do wonders for all wildlife. Don't get carried away!

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A few tips to make life easier for the next stubborn landowner.

This letter shares the trial-and-error forest management efforts of one family over 20 years. The recommendations expressed here are those of the authors and not necessarily endorsed by all forest managers. Check with professionals in your area for advice on your unique situation and needs.

This article kicks off a four-part series on forest management that will start in the Winter 2006 issue. In that series we will address many of the topics covered in the Forest Stewardship workshops and courses (see page 1). In addition, we will be updating our website to make these topics easier to access. Stay tuned.



Conifer and Oak Forest Management

First, consider saving as many oaks of each type as you can, but pay attention to spacing, 20-30 feet between the best trees. Closely spaced trees will not produce acorns regardless of age. You need large, strong, older trees (75 years and up) to produce mast crops that are critical for many wildlife species. You can intersperse a few conifers in primarily oak areas for variety and timber.

In Areas Primarily Devoted To Timber

- Do not try to convert extra tough sites; too much time and money will be diverted away from your good sites. The two most important ingredients for a practical site are soil depth and the amount of rainfall. Thirty inches of annual rainfall and a minimum of three feet of soil/subsoil are needed even on harsh, marginal land. After initial survival, your goal is to produce a tree that has a minimum annual height growth of one foot per year within three years.
- Site Prep—The most common mistake for the landowner is to try to save too many marginal oaks in a timber growing site. Retain only the best 6-10 oak trees per acre if you want a conifer forest. A mixed oak and conifer forest is different—oak will remain dominant with conifers present at 25–100 trees per acre maximum. Learn the difference.
- Plant newly prepped sites within the first year of prep work with seedlings from your own area seed stock, if possible. Collecting cones/seed from our best trees and having a tree nursery grow our seedlings has resulted in healthy trees that are genetically adapted to our area. Ponderosa pine loves full sun; fir or cedar should only be tried under partial oak shade.
- Plant in December, January or February, if possible. March is very late and seedling survival becomes dependent on spring rains. This is very important on low elevation harsh sites.

Planting Method On Harsh Sites

- Use an auger, not a hoedad. Auger holes 4-6" wide, 24" deep in wet soils on 10' spacing. Auger bits should have the upper half of the blade removed to leave dirt in hole. Mix 1/2 to 1 teaspoonful of osmocote slow-release 10-10-10 fertilizer in bottom of hole with auger. Plant tree in top half, place one fertilizer

teabag 1" deep in top of hole. This method will allow maximum penetration of taproot in the first year giving better survival initially, and better growth rates in the first three years.

- Use rigid tree protection tubes. Deer and rabbits will destroy all of your investment if you don't. Remove protection after two years; the trees will do better without it.
- If you intend to plant an area with established grass, spray an area about 4 feet square on 10' grid, place a wire flag in the middle to mark auger placement. Common scalping methods are largely ineffective, more expensive, and much harder to do. Usually grass can out compete the young tree for water, causing death or very slow growth for the first five years.
- On a few extra harsh areas, you can mulch heavily with pads of rice straw for an extra degree of protection. Do not use oat or wheat straws, they will introduce yellow star thistle where you don't have it!
- Tree survival is often a matter of only a few degrees of extra protection. If the tree survives the first two years, it will probably live a hundred years. Do a complete professional herbicide spray/release job in the third or fourth year after planting to eliminate competition. Repeat in the seventh or eighth year. Do not avoid this, it is a must do project.

Fire, The Ultimate Long Range Management Tool

Controlled fire can be the best tool in forest management if properly used and understood. However, fire can do enormous damage very fast when used incorrectly.

- After site prep and oak thinning, burn downhill and on cool, windless winter days. Do not attempt to burn in or around young conifers (under 15 feet or less); they can't take the heat and you will destroy years of restoration work in minutes. After your conifers have grown 15 feet or more you can downhill burn every 3-5 years to maintain a clean forest. Be very cautious with young trees for the first ten years; patience pays off big!
- The proper use of fire will push back brush margins, eliminate new brush seedlings and remove dry fuel accumulations, reducing future wildfire hazards, all in one move. Convert from chemical sprays when you can; hopefully, around 10–15 years into your

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Leave your natural cover areas alone. Do not convert over 40% of any area. This simple treatment will do wonders for all wildlife. Don't get carried away!

Cost share assistance programs

CFIP (California Forest Improvement Program) involves the improvement of all forest resources, including fish and wildlife habitat, soil, and water quality. It provides technical assistance to forest landowners, forest operators, wood processors, and public agencies. Cost share assistance is provided to forest landowners who own less than 5000 acres of timberland for management planning, site preparation, trees and planting, timber stand improvement, fish and wildlife habitat improvement, and land conservation practices. www.fire.ca.gov/php/rsrc-mgt_forestryassistance_cfp.php

EQIP (Environmental Quality Incentives Program)

promotes agricultural production and environmental quality as compatible national goals. EQIP offers financial and technical help to assist eligible participants install or implement structural and management practices on eligible land. EQIP offers contracts to a maximum term of 10 years that may cost-share up to 75 percent of the costs of certain conservation practices. These contracts provide incentive payments and cost-share for persons engaged in livestock or agricultural (including forestry) production on eligible land. The local conservation district approves the plan. www.nrcs.usda.gov/programs/eqip/

WHIP (Wildlife Habitat Incentives Program)

is a voluntary program for people who want to develop and improve wildlife habitat primarily on private land. WHIP provides both technical assistance and up to 75 percent cost-share assistance to establish and improve fish and wildlife habitat. WHIP

agreements between NRCS (USDA Natural Resource Conservation District) and the participant generally last from 5 to 10 years from the date the agreement is signed.

www.nrcs.usda.gov/programs/whip/



FSP (Forest Stewardship Program) seeks to encourage the long-term stewardship of nonindustrial private forest lands by assisting owners to more actively manage their forest and related resources. FSP provides assistance to owners of forest land and other lands where good stewardship, including agroforestry applications, will enhance and sustain the long term productivity of multiple forest resources. Special attention is given to

landowners in important forest resource areas and those new to, or in the early stages of, managing their land in a way that embodies multi-resource stewardship principles. The program provides professional planning and technical assistance needed to keep their land in a productive and healthy condition. www.fs.fed.us/spf/coop/programs/loa/fsp.shtml

The Private Stewardship Grants Program

provides grants and other assistance on a competitive basis to individuals and groups engaged in local, private, and voluntary conservation efforts that benefit federally listed, proposed, or candidate species, or other at-risk species. This program is administered by the US Fish & Wildlife Service. Proposals for 2006 grants will probably be accepted early in the year. Get the latest information and the RFP at www.fws.gov/angered/grants/private%5Fstewardship/.

project.

Try these less known and used methods on your harsh ground sites. We think you will have higher survival rates and better growth rates, as well as less costs!

Observation, much patience, and stubbornness are the best personal qualities to produce a forest where none now stands. Good luck and success go with those who try!

For more information on cost-share opportunities, see the booklet "Cost Share and Assistance Programs for Individual California Landowners and Indian Tribes" compiled by UC Cooperative Extension at <http://ucce.ucdavis.edu/files/filelibrary/5098/7496>.

Seasonal Stewardship

Create your stewardship plan

Goals and objectives

The first step in managing your forest effectively is to define your goals, that is, your vision for your property. These goals are entirely personal—only you can decide what they are. Of course if others are involved in your land decisions like your family or other partners, you should involve them in this planning process.

Goals are general statements. For example, one of your goals may be to reduce the fire hazard of your property, another might be to increase species diversity, and a third might be to generate income by enhancing the recreational values of your land. Whatever the goals, they are based on your personal values and needs. (Of course, they should also be realistic and within the potential of your property. For example, if your property is in southern California, it would be unrealistic to set a goal of growing a redwood forest.)

Start with identifying your goals. Write them down, if only to help you remember them.

Next, you will want to prioritize the goals. This will help you figure out where to start and where to put your money and effort. If you find that some goals conflict with others, you will need to come up with creative solutions or compromises to reconcile them.

While goals are the general vision, objectives are the concrete steps you take to reach your goals. For example, if your goal is to increase habitat for deer, an objective may be to thin or burn some areas of your land to promote brushy vegetation. Be specific and include costs and a timeline. Objectives statements should identify specific quantities and times such as “restore 12 acres of riparian vegetation by fall of 2005” which helps you track your progress.

While the vision for your property is entirely up to you, advice from experts can help you decide how to best achieve that vision. You may want to consult with a forester, wildlife biologist, or other professionals to discuss your goals, regulations, and alternatives for achieving those goals. Professionals can also give you an idea of costs for various activities and may be able to help you find cost-share funding to accomplish them. Be sure to choose professionals who will listen well and address your specific goals.

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The big picture—landscape-level planning

After you have defined your goals and objectives, take a step back to consider the bigger picture. How do your goals fit together at the landscape level? For example, if you plan to thin the forest for fire safety, how does that affect your goal to provide vegetative corridors for wildlife? Landscape-level planning looks at the entire property and takes into account all your various goals and objectives.

Taking that concept a step further, now look at how your landscape planning fits in with the rest of the watershed and region. What are the important issues and priorities in your area? How do your goals fit in with those?

Types of Management Plans

There are various kinds of plans to help guide your land management decisions. Simple plans you can prepare yourself. For complex plans you will need to rely heavily on a Registered Professional Forester (RPF). Most cost share programs require a management plan be prepared and certified by an RPF, e.g. CFIP or EQIP Management Plan.

Stewardship or Management Plan. The purpose of this type of plan is to put down on paper the most important aspects of your property’s physical features as well as your management philosophy, objectives, and future plans. The plan might be only a few pages of text and maps but can provide important guidance and continuity in the management of your property.

Timber Harvesting Plan (THP) or Non-industrial Timber Management Plan (NTMP). A THP or NTMP is required when a landowner engages in commercial timber harvesting. THPs and NTMPs are legal environmental review documents that must be prepared by a Registered Professional Forester.

Stewardship Plan

Stewardship planning is an approach that takes into account your personal goals for your property, the various resource values there including timber, fisheries, wildlife, botanical resources, watershed values, etc., and the needs of present and future generations. A commitment to good stewardship is a

commitment to manage the forest thoughtfully.

Why create a stewardship plan?

Your stewardship plan is the blueprint that guides the management of your property. Basically a business plan for your forest, it helps define where you are, where you want to go, and how best to get there. It is a creative document—a chance to combine your dreams with the practical framework needed to achieve them. The stewardship plan can guide your decisions and actions to meet your goals.

As with a business plan, your stewardship plan can also be modified for other uses, e.g. cost-share funding, bank loans, and timber harvest plans. Although each of these applications requires its own specific set of information presented in a particular way, much of the information will be available at your fingertips from your stewardship plan. It can also be of assistance to any professionals you consult to help you with bank loans, timber management planning, etc.

A stewardship plan can be as simple or as complex as you wish to make it; it depends on how you expect to use it and how much detail you feel is necessary. Larger, more complex forests may require more work.

No matter what level of detail you choose to include, none of your effort will be wasted. The knowledge you gain about your property will help in your day-to-day decision-making. Articulating your goals will help guide your short-term activities in order to most efficiently and cost effectively achieve your long-term goals. It is also a wonderful way to communicate your vision to the next generation of managers of your property.

Nothing in a stewardship plan is set in stone; this is simply your own personal guide to your goals. As conditions change—in your life, on your property, in the economy, in your goals—you will want to adjust the plan accordingly. It is a good idea to revisit your plan on a regular basis, perhaps once a year, to keep it current and your management activities on track.

How to organize your plan

Not everyone likes to write. We encourage you to write down your stewardship plan because the process of putting information on paper can help you clarify your thoughts. In addition, a written plan is the best way to share your ideas—with your family, forester, banker, or others. Remember, however, that you are

developing this plan for your own needs so write only what you feel is necessary.

Since forest stewardship plans are developed for a variety of reasons, there are any number of ways to write them. The outline below contains a great number of sections and topics. You may choose to include all or only those parts that address your personal goals and objectives.

General outline of topics

- **Cover page**—the basic information: date, name, address, phone, email, tract name or number, total acreage, total forested acreage, legal description, latitude and longitude, land use classification, watershed, fire protection district, property tax classification, seed zone
- **Introduction**—the plan’s purpose and how it relates to landowner values, describe property and give a brief history of the land.
- **Description**—landowner information, legal description, tax lot, boundary map, assessor’s plot, property corners, adjacent property owners, tax status, map of a scale appropriate for the property, vegetation cover types, soil types, topography, access with roads and culverts, water features, and other resource sites. Aerial photos.
- **Goals and objectives**—describe what you want to achieve on the property. Include both goals, which are broad statements, and objectives, which are specific and measurable.
- **Plus:**
 - Vegetation
 - Wildlife Habitat
 - Soils
 - Roads
 - Water Resources
 - Forest Health
 - Timber Harvest
 - Agro-forestry & Range
 - Special Forest Products
 - Archaeological and Cultural Resources
 - Recreation
 - Aesthetic/Scenic
 - Forest Practice Rules
 - Assistance
 - Tax and Business Management
 - Summary of Resource Situation
 - Measuring success
 - Appendices—maps, lists, etc.

*Find a detailed outline for writing a Stewardship Plan at our website <http://ceres.ca.gov/foreststeward/stewardplan.html>. See also: *A Stewardship Handbook for Family Forest Ownerships* on page 10.*

Nothing in a stewardship plan is set in stone; this is simply your own personal guide to your goals. As conditions change—in your life, in your goals, on your property, in the economy—you will want to adjust the plan accordingly. It is a good idea to revisit your stewardship plan on a regular basis, perhaps once a year, to keep the plan current and your management activities on track.

Nontimber Forest Products

Aromatics
Art Supplies
Bark
Berries
Charcoal
Chips
Cones
Cooking Wood
Craft Materials
Decoratives
Dyes
Fibers
Flavorings
Floral Products
Greenery
Honey
Medicinals
Moss
Mushrooms
Nuts
Pharmaceuticals
Pine Straw
Resins & Saps
Sawdust,
Seeds
Shavings and
Excelsior
Smoke Wood
Specialty Wood
Products
Syrup
Transplants
Weaving
Materials
Wild Fruits

Entrepreneurs in the forest

Traditionally, forests have been valued primarily for their timber production. However, there are thousands of species in the forest, many of which have been used for centuries for medicine, food, shelter, basketry, art, and other purposes. Many of these species may have commercial value that can provide supplemental and alternative income opportunities for forest landowners.

Nontimber forest products

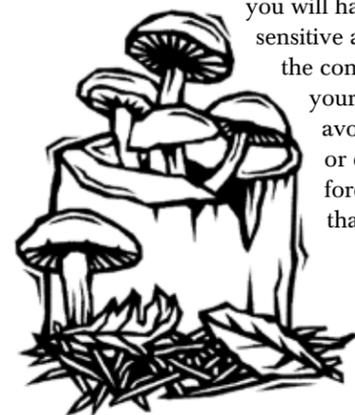
The nontimber forest products (NTFP) industry has been growing rapidly and now contributes billions of dollars to the US economy each year.

The definition of nontimber forest products generally includes all vegetation in the forest (except timber) with a potential commercial value. Other terms for nontimber forest products include special forest products, non-wood forest products, minor forest products, alternative forest products, and secondary forest products. Harvesting is also known as wildcrafting, gathering, collecting, and foraging.

Looking for a product

What can you market? This is where your inner entrepreneurial self comes in. Take a walk in your woods and make an inventory of everything you see—berries, moss, nuts, plants, mushrooms, etc. You may need to do some research to identify all of the plants and learn more about their uses.

When you decide on a product, it is important that you have an understanding about the role it plays in the forest ecosystem, its habitat requirements, sensitivity to harvest, and how to enhance its growth within the forest. Much of this information is not available so



you will have to be sensitive and aware of the consequences of your harvesting to avoid overharvest or damage to the forest or wildlife that live there.

Find your market

As a small business, you have the advantage of flexibility. You can work directly with local markets and supply what they need. Or you can look at what you have available and try to find a market for it. The tricky part when you find your market is to come up with the quantities needed at the time they are needed.

In some cases, marketing cooperatives have been successful by working together and pooling resources.

One way to try to find a market for your product(s) is to look in the yellow pages of the phone book and make a list of any possible buyer for anything growing on your forestland. Think big and creatively. For example, look under physicians, massage therapists, florists, art stores, bakeries, homeopaths, aromatherapy, candlemakers, local markets, festivals, etc. Talk to friends and relatives for more ideas.

Then go visit these places and talk to the owner or salespeople about their needs. Be professional and confident—you're a businessperson doing a market analysis and you have something to offer them.

Avoid pitfalls

Markets change, prices fluctuate, and nature can be untrustworthy. In other words, there are risks in any NTFP business. You need to be aware of these risks and willing to take them.

In order to avoid some of the pitfalls inherent in your business, you should have a clear understanding of your product, when to harvest it, and who is going to do the harvesting. It is essential to identify where and to whom the product will be sold and to understand current and projected demand for the product.

When you find a buyer, make sure you have a contract that spells out quantity needed, quality, delivery date, etc. That will help prevent misunderstandings and problems down the road.

It's a business; make a plan

To minimize surprises, it is imperative that you develop a business plan. The simple exercise of writing a business plan can point out any weaknesses in your enterprise. Your plan will include a complete analysis of the supply and demand for the product, with all costs as

well as profits anticipated. This will give you a more accurate idea of the feasibility of your plan. For example, if the cost of transporting your product to market outweighs the profit, then your idea is not feasible.

A business plan will also be necessary if you decide to go to a bank for financing. It will show that your enterprise is well thought through and has the potential for making a profit.

There are many places to get help in researching and writing a business plan. Local economic development agencies, small business development centers, UC Cooperative Extension, and others have expertise that will help you explore your business idea.

One example: pine straw

Pine straw (pine needles) is a common and relatively well-studied nontimber forest product in the southeast and eastern US. Gardeners and landscapers use pine straw as a mulch. Contractors have found that it helps protect the soil around a building site from compaction by heavy equipment. It is even used as an ingredient in livestock feed.

Pine straw is baled with a hay baler, which makes it easy, however it must first be hand raked into piles and cleaned of twigs and debris, which is very labor intensive.

Environmental considerations are important in the harvest of pine straw. Removing the needles from the forest floor reduces fire hazard, but loss of pine needles also has an impact on the forest. Needles play a critical role—they protect the root system of trees from freezing in the winter and hold moisture in the soil in summer. They also suppress the growth of underbrush which would otherwise compete with trees for water and nutrients.

In addition, pine needles are a reservoir of nutrients that is released as the needles decompose. Studies have shown that 40 pounds of nitrogen is lost for every 100 bales harvested. It takes 238 pounds of fertilizer to replace this loss, which is another cost to pine straw harvesters.

Research is ongoing to identify ways to minimize the impact of pine straw harvest while allowing a profit to be made. Some suggestions include waiting until February to harvest (pine straw is harvested between August and February), harvesting at three separate intervals, taking only the top layer of needles, or leaving

some needles around the base of each tree.

The complexity of even a simple product like pine straw illustrates the need for research and careful analysis before embarking on your commercial NTFP venture.

Taking pine straw a step further, in true entrepreneurial spirit the USDA Agricultural Research Service has developed designer pine straw mulches in blue, red, brown, gold, black, and green. The mulch works like natural pine straw in conserving soil moisture, moderating soil temperature, and helping stifle weeds, while the environmentally safe dyes slow down the straw's decomposition.

Sustainability concerns

Little is known about the short- or long-term effects of harvesting many of the species in the forest. There has been little or no research to determine how much of a species can be harvested, when it should be harvested, and how to mitigate any damage to the forest ecosystem. Those who are involved in the NTFP industry are in the forefront of this research and need to be involved in documenting this information.

Be aware of the role your products play in the forest ecosystem. The goal is to harvest sustainably, so that the forest remains healthy and the species thrive for future generations.

Stewardship considerations

Active management for NTFPs has the potential to enhance ecosystem complexity and play an important role in restoring biodiversity and balance to damaged forests. In addition, NTFPs add economic diversity and stability for rural forest communities by diversifying the products that are harvested from the forest.



Resources

Thomas, M.G. and D.R. Schumann. 1993. Income opportunities in special forest products. USDA Forest Service Ag Information Bulletin 666. 206 pp. <http://www.fpl.fs.fed.us/documnts/usda/agib666/agib666.htm>

Everett, Y. Building capacity for a sustainable non-timber forest products industry in the Trinity Bioregion. <http://www.odifpeg.org.uk/publications/rdfn/20/rdfn-20a-ii.pdf>

Institute for Culture and Ecology has three databases: a product database to help identify regional NTFPs, a bibliographic database with references, and a links database with links to resources. <http://www.ifcae.org/projects/ntfpwebsite1/> More info on NTFPs at <http://www.ifcae.org/ntfp/>

Non-Timber Forest Products Website (western states section under construction) <http://www.ifcae.org/ntfp/>

Resources

Thoughtful principles can help frame your Stewardship Plan

The Principles of a Well-Managed Forest are based on the premise that "forests are recognized as a community of interacting plants, animals, soil, water, air, and people within a major landscape—no longer just a concentration of trees."

A Stewardship Handbook for Family Forest Ownerships is another tool to help you in developing your Stewardship Plan. Developed by the National Association of State Foresters, it provides a template to help organize and implement your objectives within the context of good forest stewardship.

Recognizing that the desire of most small forestland owners to "do the right thing" can often be a confusing goal, this handbook attempts to simplify the discussion by using a set of stewardship principles to help you prioritize and plan your goals.

The Principles of a Well-Managed Forest are based on the premise that "forests are recognized as a community of interacting plants, animals, soil, water, air, and people within a major landscape—no longer just a concentration of trees."

- Principle 1 Contribute to the Conservation and Biological Diversity of the Forest and the Landscape in Which it Resides
- Principle 2 Maintain and Improve Productive Capacity

- Principle 3 Maintain the Health and Vigor of the Forest and its Landscape/Watershed
- Principle 4 Protect Soil and Water Resources
- Principle 5 Consider Carbon Cycles
- Principle 6 Consider Socio-Economic Benefits
- Principle 7 Comply with Laws and Rules...

After introducing the seven principles, the booklet notes some points to consider that can help you spell out your own goals (with a space to note your personal goals). It then goes on to give an example of "indicators" of good forest stewardship within the framework of the seven principles. These indicators are the "efforts, events, milestones, or accomplishments you might use to track your plan's success."

There is an amazing amount of information and food for thought in this short booklet—you will find it invaluable as you work on your own Stewardship Plan (see page 6).

Thanks to the magic of the internet, you can get your own copy of *A Stewardship Handbook for Family Forest Ownerships* at <http://www.stateforesters.org/pubs/p&ghandbook.pdf>.

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

California Dept of Forestry & Fire Protection
Forest Landowner Assistance Programs
Jeffrey Calvert
916-653-8286; jeff.calvert@fire.ca.gov

Forestry Assistance Specialists
Jill Butler (Santa Rosa) 707-576-2935
Gary Whitson (Fresno-King) 485-7500 x107
Ed Cranz (Placer) 530-889-0111 x128
Mary Huggins (S. Lake Tahoe) 530-541-1989
Patrick McDaniel (Ama/El Dorad) 530-647-5288
Dale Meese (Butte) 530-283-1792
Alan Peters (Calav/Tuol) 209-754-2709
Kevin Whitlock (Yuba/Nevada) 530-265-2661
Jim Robbins (Fortuna) 707-726-1258
Adam Wyman (Red Bluff) 530-528-5116

California Association of RCDs
916-447-7237
staff@carcd.org

California Dept of Fish & Game
Marty Berbach
916-327-8839; mberbach@dfg.ca.gov

California Resources Agency
California Environmental Resources Evaluation System (CERES)
Deanne DiPietro
916-653-8614; 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

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; ssstone01@fs.fed.us

Calendar

January 17–19, 2006

FVMC—Growing the Future

Location: Redding, CA
Sponsor: Forest Vegetation Management Conf.
Contact: Sherry Cooper 530-224-4902, slcooper@nature.berkeley.edu; \$105
<http://groups.ucanr.org/forest/>

January 28, 2006

NorCal SAF's Annual Winter Meeting—Joint Meeting with the Intermountain SAF

Location: Reno, NV
Sponsors: NorCal and Intermountain Society of American Foresters
Contact: Jim Ostrowski 530-842-2310 jimo@sor.timberproducts.com
Cost: TBA
<http://norcalsaf.org/> or <http://www.usu.edu/saf/>

February 1–3, 2006

Calif. Forestry Association's Annual Meeting

Location: Napa, CA
Sponsor: California Forestry Association
Contact: Eleanor Anderson 916-444-6592
eleanora@cwo.com
Cost: TBA
Notes: <http://www.foresthealth.org/>

February 3, 2006

Structure and Fire Workshop

Location: Diamond Springs (near Placerville)
Sponsor: UC Cooperative Extension
Contact: Nancy Starr 530-621-5552; Nancy.Starr@co.el-dorado.ca.us
Audience: Landowners, general interest
Cost: TBA

February 8–10, 2006

Annual Conference of the Western Section of the Wildlife Society: Celebrating 50 Years

Location: Sacramento, CA
Sponsor: Western Section of the Wildlife Society
Contact: Kevin Hunting; khunting@dfg.ca.gov
Cost: \$100-\$195, late fees after 12/23/05
<http://www.tws-west.org/>

February 9–11, 2006

Sierra-Cascade Logging Conference: "Growing Opportunities"

Location: Anderson, CA
Sponsor: Sierra Cascade Logging Conference
Contact: Bill Dennison 530-258-2058 or Jed Gibson 530-243-5410; Cost varies
<http://www.sierracascade.org/>

February 22–25

Salmonid Restoration Conference

Location: Santa Barbara
Contact: Dana Stolzman 707-923-7501 srf@

calsalmon.org
Cost: TBD
Notes: <http://www.calsalmon.org/conference/2006/index.htm>

February 26–March 1, 2006
Forestry Products Management Development

Location: Corvallis, OR
Sponsor: Oregon State University
Contact: 541-737-2329
forestry.outreach.education@oregonstate.edu
Cost: TBA
Notes: <http://outreach.cof.orst.edu/fpmgt/pn.php>

March 2–4, 2006

CLFA Spring Workshop & Annual Conference

Location: Hilton Hotel, Sacramento
Sponsor: California Licensed Foresters Assn.
Contact: Hazel Jackson 209-293-7323
clfa@volcano.net
Notes: <http://www.clfa.org/>

March 6–9, 2006

Vertebrate Pest Conference

Location: Berkeley, CA
Sponsor: The Vertebrate Pest Council
Contact: Terry Salmon 858-694-2846; tpsalmon@ucdavis.edu
Cost: \$240, late fee after 2/6
Notes: www.vpconference.org

March 16–18, 2006

Redwood Region Logging Conference: Building Proud Communities From Sustainable Forests

Location: Eureka, CA
Contact: 707-443-4091
Cost: TBA
Notes: <http://www.rrlc.net/>

March 20–26, 2006

Forest Conservation Days

Location: Saratoga, CA
Sponsors: NorCal SAF and others
Contact: David Ganz d ganz@tssconsultants.com; Sherry Cooper 530-224-4902 slcooper@nature.berkeley.edu
Cost: No Charge
Notes: Forms will be posted at www.norcalsaf.org; VOLUNTEERS NEEDED to assist with tours through Sanborn Park for 5th-grade students



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. Find a more comprehensive calendar at the Forest Stewardship website <http://ceres.ca.gov/foreststeward>.

**Species
Spotlight**

The magnificent red fir

Red fir is the largest fir in the world, hence its name, *Abies magnifica*. It is the dominant conifer in the higher elevations of California, where it can be found at elevations of about 6,000–8,000

feet (higher in the south, lower in the north). North of Mount Lassen, a different variety is known as Shasta red fir.

In most of its range red fir is the climax species, which means that, over time and in the absence of disturbance, red fir will dominate the forest, replacing itself thanks to its shade tolerance and ability to grow in the understory of other trees. In dense stands

of red fir on good growing sites there is virtually no understory vegetation. At the

upper limit of the white fir zone, red fir shares its climax status with white fir, another shade tolerant species.

The climate for the red fir zone is generally cool to cold and moist. Red fir grows in places with some of the heaviest snowfall in the state. The best growth occurs in areas with 30–49 inches of precipitation, most of which falls as snow.

As evergreens, red fir needles last 7 to 10 years, providing a reservoir of nutrients that allows the tree to begin producing food immediately when conditions are favorable.

The large cones (largest of all fir cones) stand upright on the upper branches where they disintegrate and drop seeds each autumn. The red fir can begin producing seeds at 35 to 40 years of age. Trees can live 500 years.

Because cones are found almost exclusively in the upper crown of the tree, any top damage by insects, disease, or wind/snow reduces cone production.

A whole suite of damaging agents—pathogens, insects, animals, and abiotic agents (such as frost and drought)—can affect red fir. Red fir dwarf mistletoe infects 40 percent of the stands in California. Heavily infected trees are weakened and subject to attack by fungus, bark beetles, and other diseases. Heart rots enter through mistletoe stem cankers and increase mortality through stem breakage. Silvicultural practices can significantly reduce the impact of dwarf mistletoe in young managed stands. Other diseases, such as fir broom rust, annosus root rot, and yellow cap fungus, can also cause problems.

Various insects attack red fir. The most damaging is the fir engraver bark beetle. Anything that reduces tree vigor will increase susceptibility to fir engraver attack. Rodents and deer can also cause loss of seed and retard height growth.

Red fir is used as a general, all-purpose construction-grade wood. Young red fir, known as “silvertips” because of their whitish gray new growth, are the Cadillacs of Christmas trees. These are slower growing than most species used as Christmas trees and can be cultured for as long as 11 years before harvesting.

About 111 species of birds are found in red fir forests in California, 55 of which are associated with mature forests. About 52 species of mammals are found, only 6 of which are associated with mature forests, probably because red fir forests are so dense.



Red fir trees and cone.

Cone photo: Charles Webber © Cal. Acad. of Sciences

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Phone: (916) 653-8286; Fax: (916) 653-8957; email: jeff.calvert@fire.ca.gov