



FORESTLAND STEWARDS

Maps, photos, and data for all your needs

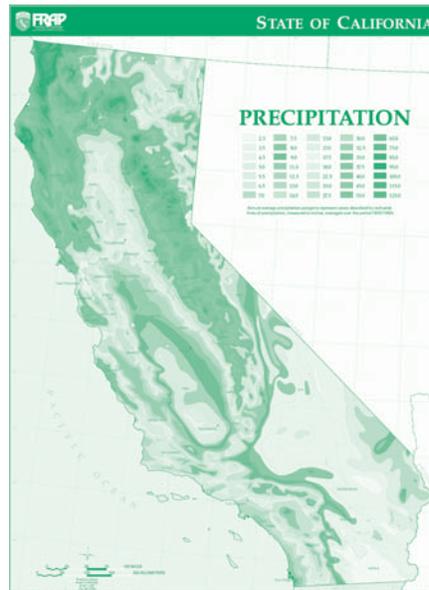
In order to accomplish your forestland objectives, it is helpful to have a few basic tools. One of the most basic, as well as important, are good maps.

There are many different kinds of maps, each with a different purpose and depicting a different set of information (or depicting the same information in a different manner). Maps are created at various scales that show more or less detail or features. It is necessary to choose the correct type of map with the correct scale for your purpose.

As a landowner, what information would be useful to you? You want to know where your property is, its boundaries and placement in a larger context—in the state, region, or watershed, for example. You probably want to know the elevation and topography of your land and surrounding areas. In addition, you may want information on structures, vegetation, soils, fire history, historical uses, weather data and much more. The possibilities are endless.

Traditional maps

Most people are familiar and comfortable with traditional paper maps such as road maps. We know how to read



Precipitation map created by FRAP.

them—the orientation, legend, and scale make sense. Some common maps you might want to include in your personal collection:

Geological survey maps. These show general geological and landmark features. You can find these maps from the US Geological Service (USGS).

Topographic maps. These maps show

the elevation of the land using contour lines on the map. Topographic maps show relief, slopes and drainage patterns of the land. The USGS has various scales of topographic maps—7.5 and 15 minute series.

Soils and vegetation maps can provide valuable information on erosion and stability, fire hazard and other data. Check with the Natural Resource Conservation Service (NRCS) to find out what maps are available.

Land use and ownership maps. Land use maps can identify what has been done to various areas such as mining, grazing, timber harvest, etc. These maps may be available from county agencies. The Bureau of Land Management or Forest Service may also be good places to look.

GIS

Over the last several years, advances in technology have opened up whole new areas in the world of mapping. One of the most significant is Geographic Information Systems, or GIS, technology.

GIS is a computerized system of
(continued on page 3)

Report

Forestland Incentives

What incentives can government offer to encourage private landowners to manage their forestlands for sustainable timber harvest while protecting watershed values over and above the minimums required by regulation?

That was the question put before a task force of about 60 landowners, foresters, environmentalists, and agency representatives that met in February and April of 2000. The task force, convened by the Resources Agency and California Department of Forestry and Fire Protection (CDF), was charged with reviewing the effectiveness of current financial and other incentives programs that encourage sustainable forestry and conservation by landowners. The issues and recommendations that came out of the two meetings are documented in a new report, "Forestland Incentives."

One of the challenges for the group was to define the goals and impediments to incentive programs. The task force agreed that the goal of incentive programs should be to achieve exemplary forest stewardship by:

- ◆ Maintaining and restoring the private forestland base
- ◆ Encouraging conservation of native biodiversity
- ◆ Maintaining the capacity of forestland to produce the full range of ecological and economic goods and services in the long-term
- ◆ Enhancing landowner profitability for doing the above.

Incentives should:

- ◆ Reward excellence in management above the requirements of law
- ◆ Reward management for values such as water, scenery, wildlife, etc. that do not have commercial markets
- ◆ Help create or augment markets

where they don't yet exist

- ◆ Provide rewards proportional to the public benefit achieved
- ◆ Be designed for pragmatic implementation

Four categories of incentives were reviewed: cost-share programs, certification, conservation easements, and tax incentives. The discussions resulted in a long list of recommendations which was distilled into a smaller list to be acted upon. The nine-points include:

- 1. Restore and expand the California Forest Improvement Program (CFIP).**
- 2. Increase funds for restoration activities to protect salmon and steelhead.**
- 3. Assist forest landowners, resource conservation districts, and community groups with watershed assessment and planning.**
- 4. Explore the role of certified forestry in regulation.**
- 5. Develop and implement a California Forest Legacy Program for conservation easements.**
- 6. Support amendments to the Federal Tax Code for critical forest stewardship activities.**
- 7. Increase state tax incentives for forestland stewardship.**
- 8. Encourage market-based approaches to carbon sequestration.**
- 9. Support University Cooperative Extension programs to assist forest landowners.**

For copies of the report or to share your thoughts about forestland incentives, contact Mark Hite, CDF, (916) 653-1604.

-L.L.



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Data (continued from page 1)

collecting and manipulating information so that various elements can be related to one another. For example, you might be interested in producing a map with topographical features, then add information on vegetation types, rainfall, and fire history. This map could then be analyzed to find out the relative fire danger of an area.

GIS maps require specialized software and data sets, or layers of information. The mapping possibilities are limited only by your imagination and the data sets available. Luckily, a number of government agencies have begun compiling information that is then made available to the public. FRAP, the Fire and Resource Assessment Program of the California Department of Forestry and Fire Protection, is an excellent source of information. Private companies will also provide data sets for a fee.

GIS software can be quite complex and involves a steep learning curve. For those interested in playing with the technology, there are free, more limited versions of the software available and websites that provide data sets. One of the most widely used is ArcExplorer, from ESRI.

Aerial Photos

Air photos show an area looking straight down from an aircraft. Orthophotoquads are black & white photo images prepared from air photos that have been adjusted to eliminate image distortions. Orthophotomaps are multicolor orthophotoquads.

Historical photo sequences can provide greater insight into the conditions of the land. These sequences can show changes from natural and human-caused disturbances, changes in land use, vegetation changes, and more.

County assessors, planners, and public works departments often have historical aerial and other photography



This aerial photograph clearly shows tree mortality. Photos can be an invaluable tool for forest management. Photo courtesy FRAP.

used for timber tax assessment or early land surveys. In addition, the US Forest Service and private timber companies also keep aerial records of their lands as do many public agencies.

Databases

If all this information seems a little daunting, hold on, we have yet another category: databases. Databases are collections of information, generally organized in ways that it can be sorted, manipulated, or otherwise analyzed. Some databases contain sensitive or restricted information and require a password for entry.

While some databases are static, that is, the information is just a plain list, most good databases are interactive. For example, the California Dept of Fish & Game has a database on California's plants and animals that allows the user to search for specific items of information. CERES, the California Environmental Resources Evaluation System, has a number of databases on watersheds, wetlands, and other topics of interest to landowners.

Access

So where do you find all this information? You can still find maps and photos by calling or visiting USGS, private companies, or other sources. But now, with computers and the internet, finding the information you need is easier and faster than ever before.

Those with computers have access to vast libraries and collections of maps and photos from the desktop. In addition, there is software available that allows you to manipulate the information and create your own customized maps or data sets. (Most of the software is

available only for PC platforms so those with Macintosh computers will have to use a PC emulation program like Virtual PC.)

But this information does not necessarily come easily. The down side is that you can expect it to take time and effort (and patience) to learn to understand and use some of the websites and software. Assistance may be available on the websites themselves or you can talk to your local UC Cooperative Extension or other technical experts who may be able to help.

In addition, those with slow modem connections may encounter problems with manipulating maps online and interminable download times for maps and photos because you're working with extremely large files. Computers with faster internet connections may be available for public use at schools, colleges and libraries.

But while it may take some effort to become familiar with these new tools, the potential rewards in terms of valuable information are well worth the trouble.

See page 4 for a list of the websites mentioned in this article plus other sources of maps, photos, and data.



Data Sources

There is a huge amount of information available, much of it free, but check with the vendor for any costs. Here are a few of the major agencies, companies, and sites with maps, photos, and/or other data that might be of interest to forest landowners. In your computer explorations you will find many more. Some of these sites require a bit of work to become familiar with the software.

Earth Science Information Center (ESIC)

U.S. Geological Survey (USGS)
345 Middlefield Road
Menlo Park, CA 94025
(415) 329-4309
<http://ask.usgs.gov/>
Aerial and satellite photographs
<http://nsdi.usgs.gov/products/aerial.html>
National High Altitude Photography and National Aerial Photography Program
<http://edcwww.cr.usgs.gov/glis/hyperl/guide/napp>
National Gap Analysis Program
<http://www.gap.uidaho.edu/>

Fire and Resource Assessment Program (FRAP)

Information Center
<http://frap.cdf.ca.gov/infocenter.html>

Department of Fish & Game

Wildlife & Habitat Data Analysis Branch
<http://www.dfg.ca.gov/whdab/>
California's Plants & Animals
<http://www.dfg.ca.gov/hcpbl/species/species.shtml>

Natural Resource Conservation Service (NRCS)

Photography Library
<http://www.nhq.nrcs.usda.gov/PROGRAMS/cpgrphcs.htm>
Aerial Photography Field Office
PO Box 30010
Salt Lake City, UT 84130
(801) 975-3503
Current and historical aerial photography; information on in-progress and planned aerial photo missions.
Maps, facts & figures index
<http://www.nhq.nrcs.usda.gov/land/index/intro.html>
GIS
<http://www.nhq.nrcs.usda.gov/land/tools/>

California Spacial Information Library

<http://www.gis.ca.gov/>

California Environmental Resources Evaluation System (CERES)

Environmental Information by Geographic Area
http://ceres.ca.gov/geo_arealindex.html
Watershed Information Technical Service (WITS)
<http://ceres.ca.gov/watershed/index.html>

US Forest Service

Data and information systems, maps, and software
<http://www.fs.fed.us/links/products.shtml>
Historical photo collection
<http://www.nalusda.gov/speccoll/collect/forest.html>

Calif Dept of Conservation Division of Mines and Geology

Information Office
801 K Street, MS 12-30
Sacramento, Ca 95814
(916) 445-18325
http://www.conservation.ca.gov/dmg/pubs/pub_list/offices.htm

Information Center for the Environment (ICE)

<http://ice.ucdavis.edu/>
ICEMAPS—a mapping service
<http://icemaps.des.ucdavis.edu/icemaps2/ICEMapInIt.html>

US Census Bureau—TIGER

<http://www.census.gov/geol/www/tiger/index.html>

Many colleges and universities also maintain large current and historical map and photography collections. Here are a few; check with the local college in your area:

UC Berkeley

Earth Sciences and Map Library
<http://library.berkeley.edu/EART/>

University of Oregon

Map and Aerial Photography Collection
<http://libweb.uoregon.edu/map/>

A number of private companies provide mapping software and customized maps. Find others at the ESIC site or through search engines.

ESRI—GIS mapping and software

<http://www.esri.com/>
ArcData Online: ESRI's Internet Mapping and Data Site
<http://www.esri.com/data/online/index.html>
ArcExplorer—free GIS data viewer
<http://www.esri.com/software/arcexplorer/index.html>

WAC Corporation

1-800-845-8088
<http://www.waccorp.com/califcoun.shtml>
Provides yearly aerial coverage of California. Send them a quad sheet with your property on it and they will send you the most recent aerial photographs.

Topozone—a service that allows subscribers to create and download customized maps

<http://www.topozone.com/>

Terraserver.com

<http://www.terraserver.com/>

MapCruzin.com

<http://www.mapcruzin.com/>

GIS Data for Northern California

<http://www.pacificsites.com/~cbrooks/gis1.shtml>



Restoration

Bioengineering to control stream bank erosion

Stream bank erosion is a natural process that can be beneficial to fish since bank failures can deliver needed boulders, gravel, and large woody debris into streams. However, human disturbance can cause erosion that exceeds natural levels, destroying fish habitat and compromising the quality of riparian zones.

Each site is unique and must be evaluated individually. If it is determined that erosion is a problem, it may be appropriate to take some action. Traditionally, this has involved the placement of structures like rip-rap, gabions, or sheet piles, techniques that may be expensive or unsightly.

Bioengineering is another approach, utilizing live plants alone or in combination with dead or inorganic materials to produce living, functioning systems that not only prevent erosion but can also control sediment and provide habitat. Bioengineering is creative and multi-disciplinary, requiring knowledge of engineering, botany, hydrology, soil science, construction and more. It is a rapidly growing field, subject to innovations and changing design specifications.

Advantages and Limitations

Bioengineering solutions can be adopted in many soil stabilization and erosion control situations.

Advantages include:

- ◆ low cost and lower long-term maintenance costs than traditional methods
- ◆ low maintenance of live plants after they are established
- ◆ environmental benefits of wildlife habitat, water quality improvement and aesthetics
- ◆ improved strength over time as root systems develop and increase structural stability
- ◆ compatibility with environmentally

sensitive sites or sites with limited access.

Limitations include:

- ◆ the installation season is often limited to plant dormant seasons, when site access may be limited
- ◆ the availability of locally adapted plants may be limited
- ◆ labor needs are intensive; skilled, experienced labor may not be available
- ◆ training may be required for installers not familiar with bioengineering principles and designs
- ◆ traditional practices are often more widely accepted by society and contractors.

Vegetation Types

Selection, procurement and installation of the proper plant material is essential for a successful design. In the case of streambank protection, both herbaceous and woody plants are needed. Herbaceous plants that can grow with their roots underwater are needed at and near the water's edge. This root growth adds considerable strength to the soil. Woody plants should be used

on the upper slope and upland areas where their roots can grow in soil above the water table.

Proper plant selection is important; appropriate species are usually those found growing nearby. Cuttings can be taken from plants such as willow, cottonwood, thimbleberry, coyote bush, or other species that can root from cuttings. Container grown or bareroot stock such as alder, tan oak, Ceanothus, Douglas-fir, redwood and grand fir is also good. Correct placement and proper planting techniques are critical (*see video, page 10*).

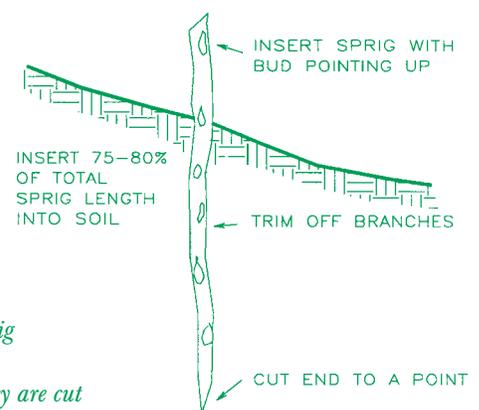
Protect Plantings

Protect live plantings from animals and humans. Signs may keep people away, but fencing may be needed if animals are a problem. Also, protection from flooding or excess water flowing across the planting is important to establish all bioengineering plantings. Be sure surface drainage and water flow is directed away from the new plantings or protected slope.

(continued next page)

Willow sprigs can be an effective and inexpensive way to armor headcuts and eroding gully banks and to stabilize streambanks. Willows must be planted in sunny areas where the soil stays moist throughout the dry season. They respond well to heavy pruning so can be collected heavily from a grove. Sprigs should be collected and planted when the willows are dormant. Sharpen the bottom end of the sprig with an axe or pruners right after it is cut. Cuttings should be planted the same day they are cut or, if that is not possible, the entire cutting should be placed in cold water.

Plant willows with the buds up. Sprigs should be driven into the soil 75 to 80 percent of their total length, at a slight angle downstream. After placing the cutting in the hole, tamp firmly around to remove air pockets in the soil. The revegetated areas may need protection from cattle and deer which like to feed on willow.



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Bioengineering Techniques

The following are some of the most common bioengineering practices, used alone or in combinations. Be aware that new methods and materials are constantly being developed.

◆ **Contour Wattling.** This method is used to control surface erosion by breaking long slopes into shorter ones. Bundles of branches, called wattles or fascines, are placed in shallow trenches along the slope or streambank contour.

◆ **Brush Layering.** This is used to restore slopes by constructing a fill-slope consisting of alternating layers of live branches and soil, creating a series of reinforced benches. Large quantities of dormant willow branches often used.

◆ **Brush Mattress.** A mattress-like layer of branches is placed over the streambank to protect soil and slow water velocity. The mat is composed of interwoven, usually dead, branches secured to the soil by live stakes, wire, twine or live branches. Live stakes are often cut from dormant willow. Brush matting helps collect sediment and enables establishment of vegetation.

◆ **Coir Fascines.** Coir fascines are wattles made from the fibrous outer husk of coconuts. Coir is denser than water so it won't float and is very slow to decay. Coir fascines are readily available and are popular for streambank and wetland restoration. Live plants can be placed into coir fascines to create a natural look.

◆ **Prevegetated Mats.** Prevegetated mats are live plants grown on a movable mat of organic material. They come in many sizes and materials and are moved and installed in one piece.

◆ **Willow Siltation Baffles.** These are inexpensive structures that can be used for bank protection and energy dissipation. Flow passes through the structure, where bedload is sorted, energy dissipated, and fines trapped.

◆ **Interplanting Rip Rap.** Rip rap is composed of various size large stones

Improving bioengineering success

Bioengineering can be effective in many streambank and hillslope erosion situations, but it will not solve all soil erosion or slope failure problems. The success of a project hinges on many factors including proper design, plant selection, proper installation, weather conditions, and outside factors like animal damage. Site evaluation is important to determine whether there is adequate sunlight, soil type, and water quality to support plant growth. Do not expect bioengineering solutions to stop slope failure caused by high water tables or landslides. Nor are they ideal for high stress areas with severe wave action, rapid or long-term water level fluctuations or fast water flows.

The following list includes tips that may help ensure a successful bioengineering project.

1. Do not attempt bioengineering solutions in situations where:
 - a) there is severe soil or water contamination;
 - b) the stream bottom is degrading;
 - c) you can not control human or animal traffic at the site; or
 - d) there is too much shade for selected plant species to thrive.
2. Check with your local Natural Resource Conservation Service (NRCS) office for help. Some have staff that can provide technical assistance.
3. Check with local, state and federal regulatory agencies before beginning the project. Get any necessary permits.
4. Water elevation is the most critical element in a successful installation. Be sure you know the normal, high and low water elevations for the site. Know the seasonal changes in water elevation and how rapidly these occur.
5. Be sure to fence out animals and people, if needed. If damage occurs, supplemental planting may be necessary.
6. Be aware of flood or drought conditions that could impact your installation. Severe weather will reduce seedling survival. Supplemental planting may be needed.
7. Provide regular monitoring and maintenance, especially in the first year, to assure adequate plant survival.
8. Plan ahead. Involve the proper design professionals and experts to provide information on hydrology, plantings and structural design. A multi-disciplinary approach will assure success.

placed on the soil surface where the water contacts the soil. Live cuttings can be interplanted in rip rap to provide additional slope stability. Root growth below the rip rap will improve soil strength and live vegetation will hide the rocks, presenting a more natural look.

◆ **Staking.** Stakes can be live or dead. Live staking is often done with willows

to stabilize soil or to stake other materials in place. Manufactured timber stakes, 2 to 3 feet long, are used to secure wattles and coir fascines.

Information for this article came from the California Salmonid Stream Habitat Restoration Manual (see page 10) and from a NebGuide: Bioengineering for Hillslope, Streambank, and Lakeshore Erosion Control, <http://www.iann.unl.edu/pubs/Soil/g1307.htm>



Seasonal Stewardship

Prune trees for better health and higher value

Pruning removes lower branches from a tree. It is an important forestry technique that provides a number of benefits including:

- ◆ Prevents knots in timber, producing higher quality wood.
- ◆ Helps decrease fire danger by eliminating fuel ladders
- ◆ Improves disease control by eliminating diseased or insect infested branches
- ◆ Eliminates hazardous branches
- ◆ Provides easier access within the forest
- ◆ Allows more light to reach the forest floor, encouraging pasture growth

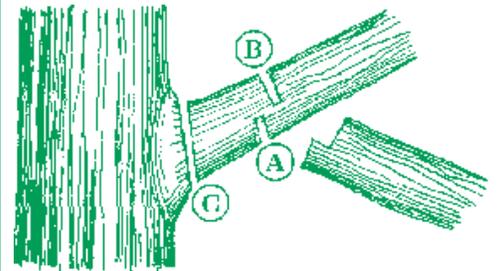
Winter, the dormant season, is a good time to prune. This will minimize sap and resin flow in conifers, which reduces the potential for bark beetle attack.

Prune correctly (*see illustrations*). The object of the operation is to remove the branches as close to the tree stem as possible without leaving any stubs.

Various tools are used for pruning. The correct tool depends on the size of

the branch to be pruned. Hand pruners can be used for very small branches. Small pruning saws or lopping shears are used for larger branches. Larger branches require a pruning saw. Pole pruners can be attached to extension poles to reach branches beyond reach. Chain saws for the largest branches should be used only by qualified persons. Safety should always be a prime consideration. Keep all tools clean and sanitized to prevent the spread of disease from infected to healthy trees.

If you are interested in pruning for clearwood, talk to a forester for information on market opportunities and pruning strategy. Prune only species with a market for clearwood lumber. Decide the length of clear logs you want to produce. Prune only potential crop trees. Begin pruning when your trees are small. It is necessary to balance pruning with growth. Try to maintain about 50 percent of the total tree height in live crown. Pruning is done in a series of successive "lifts," usually three to five lifts over the life of the tree.

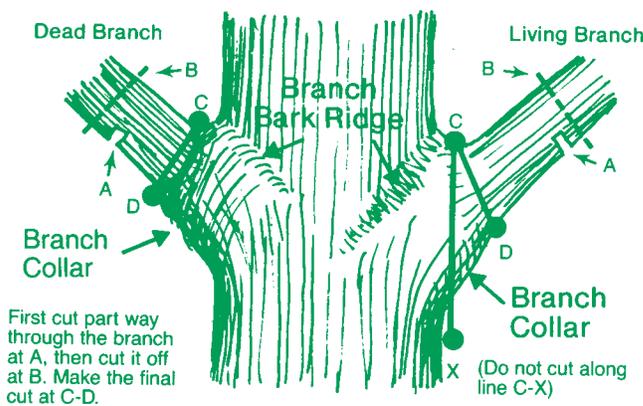


A Cut part way through the branch from beneath at a point one or two feet from the trunk.

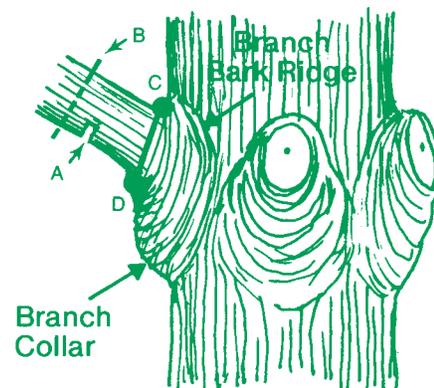
B Make a second cut on the top of the branch, at a distance of 1/3 to 1/2 the diameter of the limb from the first cut. This should allow the length of the limb to fall from its own weight and be safely removed.

C Complete the job by making a final cut next to the trunk, just outside the branch collar; with the lower edge farther away from the trunk than at the top.

Hardwoods



Conifers



Using these illustrations, final cuts should be made from points C to D. Do not cut along C-X, which is an imaginary vertical line to help you locate C-D. First cut part-way through the branch at A, then cut it off at B. Make the final cut at C-D.



Species Spotlight

Willow family has many uses

Willows, in the genus *Salix*, are common plants, generally found in riparian, or wet, environments. There are about 170 species worldwide, with about 100 native to North America. Most are shrubs although several reach tree size, often with multiple trunks.

Willows are easily recognized by their leaf shape and flowers that grow in catkins, but it's not as easy to tell individual species apart. Plants are dioecious, with male and female flowers on different plants. It can reproduce both by seeds and vegetatively, by the sprouting of stem pieces.

Willows provide food and cover for many wildlife species including shade for fish, habitat for birds, and browse for domestic and other animals including deer. They are a preferred

food of beaver and often used as building material for beaver dens. Plants are also used for screening, windbreaks, and landscaping.

Native Americans used preparations from willows to treat toothache, stomach ache, diarrhea, dysentery, and dandruff. The medicinal properties come from the compound salicin found in willows. Salicin is closely related chemically to acetylsalicylic acid, commonly known as aspirin. Native Americans also used the stems for basketry and bow making and the bark for tea and fabric making.

Willow is a pioneer species, able to establish in disturbed soils. It is shade intolerant but able to survive flooding. These characteristics make willow a good choice for streambank stabilization projects. Willows can be heavily



pruned and cuttings planted on open sites. Cuttings will root along the entire length of the stem. The fast-spreading root systems are effective in erosion control.

Willow is also being explored as a renewable energy resource to combat global warming. Willow biomass plantations have been established in New York and Europe for its potential as a fuel for electricity generation. These experimental farms are working to optimize production and utilization.

Use Your Appliances Wisely

- ✓ Turn off appliances, lights and equipment when not in use.
- ✓ To help prevent electricity outages, **do not run large appliances** between 5 a.m.–9 a.m. and 4 p.m.–7 p.m.
- ✓ Do your laundry efficiently by using the warm or cold water setting for washing; always use cold water to rinse.
- ✓ Conserve energy by running your dishwasher only when it is fully loaded, and turn off the dry cycle to allow dishes to air dry instead.

Inexpensive Energy Solutions

- ✓ Choose **Energy Star**® products. Purchase compact fluorescent light bulbs. They use a quarter of the energy and last five to ten times longer than conventional light bulbs.
- ✓ Reduce your hot water temperature. Set your water heater to the “normal” setting or 120 degrees unless the owner’s manual for your dishwasher requires a higher setting.
- ✓ Replace furnace filters once a month. Dirty filters restrict airflow and increase energy use. Keep your furnace clean, lubricated and properly adjusted.
- ✓ Install low-flow showerheads. You’ll be surprised how much this simple device can cut your hot water costs.
- ✓ Wrap your hot water tank with jacket insulation. If your water heater is gas, be sure to leave the air intake vent uncovered.

Eliminate Wasted Energy

- ✓ Turn off lights in unoccupied rooms.
- ✓ Unplug electronic devices and chargers when they’re not in use.
- ✓ Close the damper on your fireplace when you’re not using it.
- ✓ Unplug that spare refrigerator in the garage if you don’t really need it.

Check out www.flexyourpower.ca.gov for more information and ways to save money!



Taxes

National Timber Tax website has it all

Each year we try to provide some information on taxes for forest landowners but we can't give any better advice than to urge you to visit the National Timber Tax Website at <http://www.timbertax.org>. And if you don't have a computer yet, this site alone just might be worth the cost.

This website contains just about anything a landowner needs to help understand taxes as they relate to forestland.

The introduction states, "Very few sections of the Internal Revenue Code are written specifically for timber. This means there is a lot of interpretation involved which can be time consuming and complicated. We have done the interpretation for you and present the material in a way that is easy to follow, easy to understand, and easily applied to your specific situation."

The information is presented at a variety of levels—easy to understand explanations and discussions for those unfamiliar with tax laws as well as more detailed information for accountants, attorneys, foresters and other professionals. Topics include:

Timber Transactions. This section allows you to research timber tax questions in two ways. 1) Specific Transactions—All information is targeted at the ownership classification you choose. Included is a series of questions to help you determine the appropriate classification based on your past, current and future management practices. 2) General Transactions—A brief introduction to the most common timber tax questions (basis, casualty losses, capital gains, carrying charges, Christmas trees, conservation easements, cost-share payments, depreciation, like-kind exchanges, management and operating expenses, form T,

recordkeeping, reforestation, passive activities, timber income, and timber sales). There are also several on-line forms throughout both these sections that can be used to calculate your basis, reforestation amortization schedule, excludable portion of cost-share payments, and much more.

Tax Strategies. This section includes information on structuring your timber activities for tax purposes, including evaluations of the different ownership classifications and business entities, their structural requirements, and important considerations when choosing among them. Steps you should consider after acquiring timberland, information on spreading timber income, qualifying for capital gains treatment and timberland appraisal and valuation are discussed.

Financial and Estate Planning. This section includes information on methods to reduce your death taxes and incorporate timberland into your estate and financial plans. The federal taxation of estates and the role of conservation easements in estate planning is addressed.

State Tax Laws. Includes a summary of each state, classifying timber as real or personal property; an introduction to the property tax laws of each state; tax treatment of income and expenses under state income tax laws; how those laws interact with federal laws; links to all state tax forms.

Tax Research. In depth explanation of researching tax question include

- ◆ Timber Tax Research—four step process
- ◆ Case Law—full text of court cases dealing with timber issues
- ◆ Findings List—alphabetical list of court cases used to determine

You need this book!

The new Forest Landowner's Guide to the Federal Income Tax, Ag Handbook #718, March 2001, is available online at the National Timber Tax website, <http://www.timbertax.org/>. There you can download the handbook by section or purchase a hard copy from the US government bookstore.

precedent

- ◆ Revenue and Letter rulings—full text of relevant tax code sections and regulations
- ◆ Tax Treatment of Timber—primary source of timber tax information for tax professionals
- ◆ ISP/MSP—official IRS papers used by examiners when working on timber issues
- ◆ Auditor's Manual—IRS manual used by examiners when working on timber issues.

MyNTTW. A secure section of the website where you can set up and maintain your own timber records.

Extras. This section includes federal tax forms and publications; new developments; a new listing of timber tax workshops in your state; and links to other tax sites, federal and state agencies, university extension site and more...

The National Timber Tax Website is sponsored by a diverse group of organizations including Purdue University, USDA Forest Service, Indiana Dept. of Natural Resources, American Tree Farm system, National Woodland Owners Association, and Washington State University.



Resources

Salmonid Stream Habitat Restoration Manual

If you want to get into the basic how-to's and why's of salmonid stream restoration, look at the "California Salmonid Stream Habitat Restoration Manual" produced by the California Department of Fish & Game. While written primarily for agency personnel, there is a host of useful information for any landowner interested in enhancing, restoring, or protecting stream habitat.

This massive 495-page manual

provides the technical expertise needed for all aspects of stream restoration work: assessment, inventory, fish sampling, working with data, project planning and organization, project implementation, and evaluation and monitoring. In addition, there are 18 appendices that offer more specialized information including policy and regulations, list of fish species, computer programs, tools and specialty instruments.

Since each species of salmonid has its own unique life cycle and habitat requirements, it is necessary to understand critical habitat needs in order to design effective projects. A section on the various species—steelhead, coho salmon, chinook salmon, coast cutthroat trout, and resident trout—provides that background along with suggestions for instream structures to enhance critical habitat.

You will find this manual in its entirety on the internet at <http://www.dfg.ca.gov/fishing/manual3.pdf> or contact Fishing Publications, Department of Fish & Game, 1416 9th Street, Sacramento, Ca 95814, (916) 653-6194.

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; ncsaf@mcn.org

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 Anthony (Camino)
(530) 644-2345 x292

vacant (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
sstone01@fs.fed.us

Plant It Right

For those interested in restoring streamside vegetation, an excellent video called "Plant It Right: Restoring Our Streams" is available from Washington State University Cooperative Extension.

The 17-minute online video can be found at <http://wawater.wsu.edu/>. There, a friendly restoration ecologist leads the viewer through planting techniques for bareroot and containerized plants, and livestock cuttings. She demonstrates each of the steps involved (making restoration planting look very easy), shows the tools required, and discusses other considerations for each type of planting. There is even a discussion of safety concerns. The video uses diagrams and other professional touches to illustrate the important points. This is a very well-done video and highly recommended.

An accompanying fact sheet, "Plant It Right: Restoration Planting Techniques" is also available at the same site.



Calendar

February 5–7, 2002

Board of Forestry
Sacramento, CA
Board of Forestry
Donna Stadler 916-653-8007, fax 916-653-0989
www.fire.ca.gov; Office Building 8

February 6, 2002

Hyperspectral Remote Sensing for Vegetation Management
Davis, CA
UC Davis Extension
800-752-0881
www.universityextension.ucdavis.edu
\$240; Section 013GOS302

February 6–8, 2002

Ecology and Management of Rare Plants in Northwestern California
Arcata, CA
North Coast Chapter of the California Native Plant Society (CNPS)
Clare Golec 707-822-6001
cgolec@humboldt1.com or Leonel Arguello leonel_arguello@nps.gov
\$200-\$275
<http://www.northcoast.com/~cnps>

February 13–19, 2002

2002 Society for Range Management Annual Meeting: Where the Rivers Meet the Plains
Kansas City, MO
SRM 445 Union Blvd., Ste. 230,
Lakewood, CO, 80228-1259; fax 303-986-3892
\$50-\$250 (\$40 late fee after 1/16/02)
www.oznet.ksu.edu/srm2002

February 25–27, 2002

Small Diameter Timber: Resource Management, Manufacturing and Markets
Spokane, WA
Washington State University Cooperative Extension & others
509-335-2963, fax 509-335-2878
\$60-\$110, \$135 after 2/1/02
<http://ext.nrs.wsu.edu/small-diameter>

February 28–March 3, 2002

20th Annual Salmonid Restoration Conference
Ukiah, CA
CAL Trout, Americorps Watershed

Stewards Project, Trout Unlimited, CDF&G SB271 Fund, Mendocino Redwood Co., and others
SRF Conference, 805-473-8221, fax 805-473-8167, srf@northcoast.com
2/28–3/1 workshops \$45-\$55 each; 3/2–3/3 \$55–100
www.northcoastweb.com/srf

March 5–7, 2002

Board of Forestry
Sacramento, CA
Board of Forestry
Donna Stadler 916-653-8007, fax 916-653-0989
www.fire.ca.gov

March 5–6, 2002

Silvicultural Options for Sustainable Management of Pacific NW Forests: Integrating Research Results into Mgmt. Practice
Corvallis, OR
Oregon State University, Cooperative Forest Ecosystem Research, Cascade Ctr. for Ecosystem Studies, Sustainable Forest Partnership
Conference Assistant 541-737-2329
outreach@for.orst.edu

March 7, 2002

CLFA Spring Workshop: Advancements in Silviculture
Sacramento, CA
California Licensed Foresters Assn.
Hazel Jackson 209-293-7323, fax 209-293-7544 clfa@volcano.net; \$150-\$175
<http://www.clfa.org/> Hilton Hotel

March 8–9, 2002

Habitat Enhancement and Management for Waterfowl Areas
Davis, CA
UC Davis Extension
800-752-0881
www.universityextension.ucdavis.edu
\$350; Section 013NTR203

March 8–9, 2002

CLFA Annual Conference: It's a Small World
Sacramento, CA
California Licensed Foresters Assn.
Hazel Jackson 209-293-7323, fax 209-293-7544 clfa@volcano.net; \$150-\$175
<http://www.clfa.org/> Hilton Hotel

March 8, 2002

Water Resources Planning and Urban Growth
Sacramento, CA

UC Davis Extension
800-752-0881
www.universityextension.ucdavis.edu
\$250; Section 013NAT222

March 18–28, 2002

VOLUNTEERS NEEDED: Forest Conservation Days
Saratoga, CA
NorCal SAF and others
Volunteer Coord.: Maria Morales 510-486-1056 safe_solutions@yahoo.com; forms: Sherry Cooper 530-224-4902 shcooper@ucdavis.edu
Notes: Volunteers needed to assist with tours through Sanborn Park for 5th-grade students <http://www.humboldt.edu/~norcal/index.shtml>

March 19, 2002

ArcView in Forestry
Beaverton, OR
Atterbury Consultants
503-646-5393, 503-644-1683
jaschenbach@atterbury.com; \$175
<http://www.atterbury.com>

April 1–4, 2002

Natural Resources Coordinating Conference
Sacramento, CA
University of California
Joni Rippee 510-642-0095
rippee@nature.berkeley.edu
Cost: TBA

April 2–4, 2002

Board of Forestry
Sacramento, CA
Board of Forestry
Donna Stadler 916-653-8007, fax 916-653-0989
Notes: www.fire.ca.gov
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>



Restoration

Aquatic Restoration Guiding Principles

Restoration can be defined as the return of a degraded ecosystem to a close approximation of its remaining natural potential. The following is a list of principles critical to the success of aquatic restoration projects.

Preserve and protect aquatic resources. Existing, relatively intact ecosystems are vital for conserving biodiversity and provide the materials for recovery of impaired systems. Thus, restoration does not replace the need to protect resources in the first place.

Restore ecological integrity. An ecosystem with integrity is resilient, self-sustaining, and able to accommodate stress and change. Its key processes—nutrient cycles, succession, water levels and flow patterns, etc.—are functioning properly; plant and animal communities are good examples of native diversity; structural features are dynamically stable.

Restore natural structure. Many aquatic resources in need of restoration have problems that originated with harmful alteration of channel form or other physical characteristics.

Restore natural function. Reestablishing the appropriate natural structure can

bring back beneficial functions. Identify what functions should be present. Make missing or impaired functions priorities.

Work within the watershed and broader landscape context. A localized restoration project may not be able to change what goes on in the watershed, but it can be designed to better accommodate larger watershed effects.

Understand the natural potential of the watershed. A watershed can only become what its climate, geology, hydrology, and biological characteristics will support. Restoration goals require knowledge of the range of conditions that existed prior to degradation and what future conditions might be.

Address ongoing causes of degradation. It is essential to identify the causes of degradation and eliminate or remediate ongoing stresses wherever possible.

Develop clear, achievable, and measurable goals. Goals direct implementation and provide the standards for measuring success. Chosen goals should be achievable ecologically, given the area's natural potential, and socioeconomically, given the available resources.

Focus on feasibility. Particularly in the planning stage, take into account financial, social, ecological, and other feasibility considerations.

Use a reference site. Reference sites are areas that are comparable in structure and function to the proposed restoration site before it was degraded.

Anticipate future changes. Although it is impossible to plan for the future precisely, many foreseeable ecological and societal changes can and should be factored into restoration design.

Involve the skills and insights of a multi-disciplinary team. Restoration can be a complex undertaking that integrates a wide range of disciplines.

Design for self-sustainability. Minimize the need for continuous maintenance of the site. Designing for self-sustainability involves favoring ecological integrity, as an ecosystem in good condition is more likely to adapt to changes.

Use passive restoration, when appropriate. "Time heals all wounds." Determine whether simply reducing or eliminating the sources of degradation and allowing recovery time will allow the site to naturally regenerate.

Restore native species and avoid non-native species. Natural areas are experiencing significant problems with invasive, non-native species, to the great detriment of native ecosystems and the benefits we've long enjoyed from them.

Use natural fixes and bioengineering techniques where possible. Bioengineering is a method of using live plants to produce living systems to prevent erosion, control sediment and other pollutants, and provide habitat.

Monitor and adapt where changes are necessary. Restoration efforts may not proceed exactly as planned. Monitoring and adjusting a project to new information should be considered normal. This is known as adaptive management.

—abridged from USEPA, 2000. Principles for the Ecological Restoration of Aquatic Resources. EPA841-F-00-003. Office of Water (4501F), US EPA, Washington, DC. <http://www.epa.gov/owow/restore/>

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