



EL DORADO COUNTY RESOURCE CONSERVATION DISTRICT REFORESTATION SEEDLING DISTRIBUTION PROJECT PROJECT DESCRIPTION

BACKGROUND

Reforestation is the establishment of trees on sites that formerly supported them. Reforestation programs are a major part of forestry and conservation that yield better air and water quality, enhanced wildlife habitat, greater biodiversity and ecosystem sustainability, healthier forests, reduced soil erosion, and increased timber production. In California, it is a legal requirement that reforestation occurs after a timber harvest so that maximum sustained productivity (MSP) can be achieved. Although there is no legal requirement for reforestation after mortality due to natural causes, it is essential to both protect the site from degradation and restore forest-related functions,

There are many thousands of acres of former forest in California that have been deforested due to wildfire, insect attacks and disease. These include both public and private lands. In the Sierra Nevada, mixed conifer and pine forests are among the most productive timberlands in the Pacific Northwest, rivaled only by the redwood forests on the coast. The Natural Resources Conservation Service (NRCS) and California Department of Forestry and Fire Protection (CAL FIRE) administer cost share programs that provide partial funding to landowners undertaking reforestation. The funding provided by these programs is aimed at reducing the backlog of deforested private land.

Although funding is one of the main constraints on reforestation, another important constraint applicable to many private lands is the availability of suitable planting stock. CAL FIRE formerly operated nurseries that sold planting stock to private landowners. Those nurseries are no longer in operation. There are private nurseries that sell to private landowners but they may not have the capacity to meet the demand anticipated in the future in view of increased funding for reforestation.

The acknowledged need for additional seedling production capacity led to the conception of a process by which the El Dorado County Resource Conservation District (RCD) could facilitate the growing and distribution of seedlings to private landowners. In collaboration with its partner agencies, the RCD explored the possibility of contracting with the U.S. Forest Service Placerville Nursery to grow seedlings ordered through the RCD by landowners. The Placerville Nursery cannot sell seedlings directly to private landowners but it can sell to public agencies like the RCD. This document describes the process that resulted from that effort.

RESOURCE CONSERVATION DISTRICTS

The El Dorado County Resource Conservation District was formed by the voters within the District boundaries pursuant to the provisions of California Division 9 of the Public Resources Code. RCDs are grassroots government organizations that advise and assist individual landowners and public agencies in the planning and implementation of conservation practices for the protection, restoration, or development of land, water, and related natural resources. As a local government entity, an RCD can work with any local, state or federal agency through simple cooperative agreements. The RCD can often get conservation activities on the ground faster, cheaper and with greater local sensitivity than any other government entity.

El Dorado County Resource Conservation Districts' Mission Statement: *"to promote the responsible stewardship of natural resources"*.

In its resolution describing its "reforestation services policy" the RCD acknowledges the benefits of reforestation and the need for sources of quality seedlings. It then authorizes the creation of a seedling distribution program that reflects the following policies:

- The RCD will enter into an agreement with the U.S. Forest Service to produce seedlings at the Placerville Nursery.
- The RCD's program will not interfere with the activities of private nurseries producing planting stock for reforestation.
- Pricing for seedlings will be based on costs that are no less than the actual or estimated costs of producing seedlings as determined by the Placerville Nursery.
- All seedlings will be grown and distributed on a contract basis.

The RCD will solicit orders for seedlings through advertising and through working with its partner agencies. Orders will be placed using standardized order forms. These will be processed by the RCD to determine the requirements for numbers of seedlings by species and seed zone for each year.

The authorized uses for seedlings purchased through the RCD are:

- Planting or reforestation of public or private lands, emphasizing watershed land damaged by fire, flood, insects, disease, or other natural causes.
- Restoration of native trees from sites where they have been extirpated.
- Soil erosion control, watershed and riparian protection or restoration, or farm windbreaks.
- Commercial forestry and firewood production on private lands.
- Urban tree plantings demonstrating adaptability and suitability of trees for specific urban settings.
- Projects emphasizing carbon sequestration to offset climate change.
- Various State- funded projects

These uses are generally consistent with CAL FIRE policies applicable to its seed bank at L.A. Moran Reforestation Center and nurseries in general.

Relationship to U.S. Forest Service Placerville Nursery

The U.S. Forest Service Placerville Nursery has been producing seedlings for plantings on National Forest and other public lands since 1958. Under the terms of its operation, it cannot directly sell seedlings to private landowners. As a public agency, the RCD can act as an intermediary between private landowners and the nursery to facilitate seedling distribution. The RCD entered into a “Sales Agreement” with the Placerville Nursery in July 2014. Under the terms of the agreement, the Placerville Nursery will provide tree seedlings to the RCD to be used for “establishing forests, woodlots, windbreaks and wildlife areas throughout the state of California”. Seedlings will be grown from native or approved seed sources including the CAL FIRE seed bank, Placerville Nursery seed bank or other verified suppliers. All seedlings will be produced in accordance with U.S. Forest Service grading standards. Those standards are:

- Conifer nursery stock will be dormant at the time of lifting and grading
- Stock will have viable well-formed terminal buds
- Stock will be free of insects and disease damage
- Stock will have a well-formed fibrous root system.

For all conifers, minimum top height is four inches, minimum caliper is three millimeters, minimum container fill is 75 percent and minimum root length is six inches for bare root seedlings.

The Placerville Nursery rigorously applies quality control and assurance procedures to ensure that grading standards are met. Other operations such as storage, packing and preparation for shipping are also subject to performance standards and monitored for effective implementation. The Nursery's standards for seedling production and delivery are recognized as the best in the state.

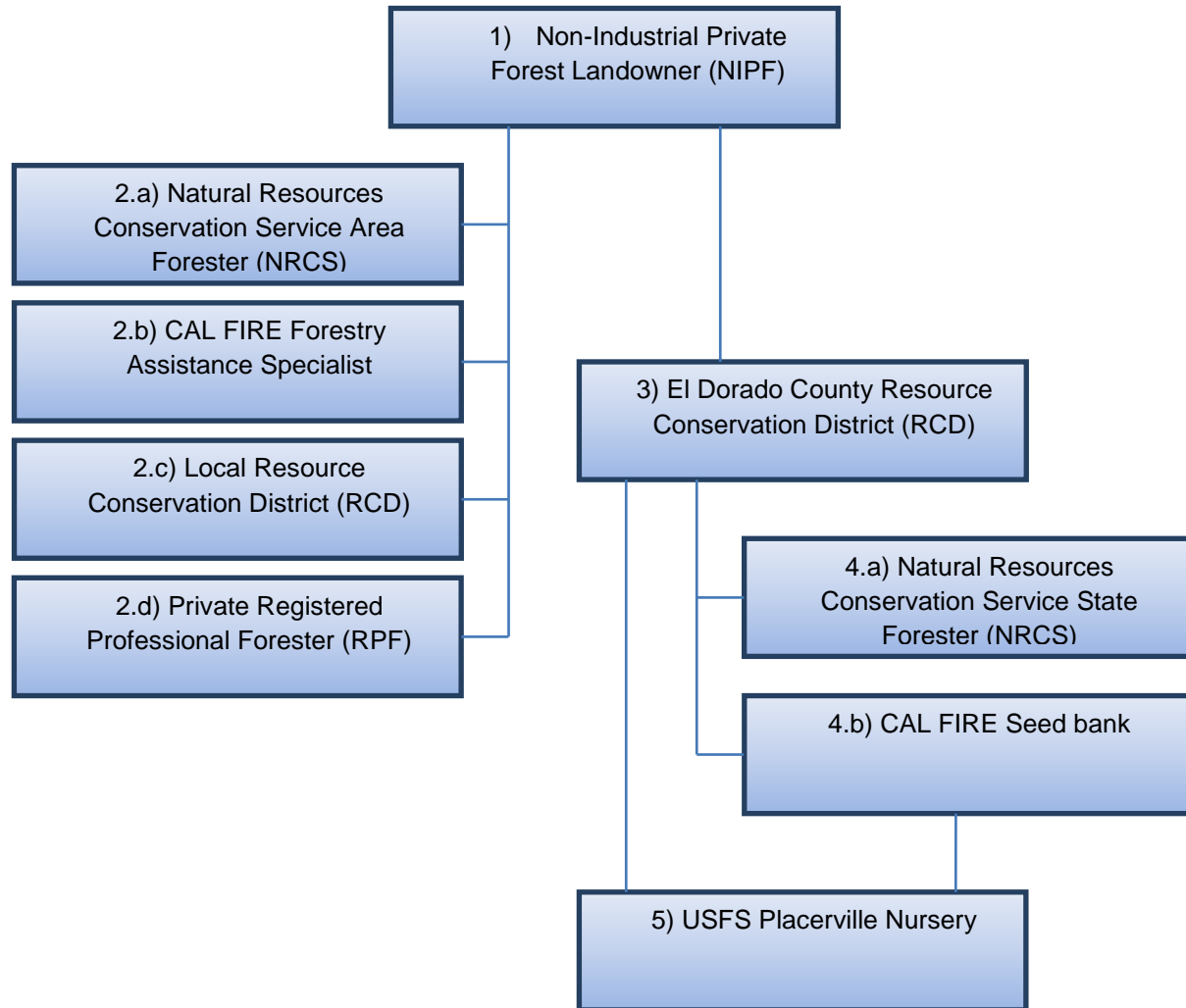
The RCD will aggregate orders and forward requests for seedlings to the Placerville Nursery by October 15 of each year for sugar pine and December 15 of each year for all other species. The RCD will confirm or check or certify the quality of seedlings prior to leaving the nursery and annually review established grading standards. The RCD will inform clients when seedlings are ready for either pick up at the Nursery or delivery. Partial payment for seedlings is due upon ordering (40 percent deposit with balance due at time of shipment or pick up at the Placerville Nursery).

Relationship to CAL FIRE Seed Bank

Upon receiving orders from landowners the RCD will determine if seed of the required species from the proper seed zone is available at the CAL FIRE Seed Bank or the Placerville Nursery. If the required seed is not available, the RCD will advise the landowner and propose solutions such as substitution of other species adapted to the site. If the seed is available from the CAL FIRE Seed Bank the RCD will purchase it and deliver it to the Placerville Nursery for planting. If the seed is available from the Placerville Nursery there will be no charge to the RCD.

THE REFORESTATION PROCESS

The diagram below depicts the process by which seedlings will be produced for private landowners. The sequential steps in reforestation are described below the diagram.



The first step is for you to contact the RCD to indicate that you are considering a planting project. The RCD can advise you on the choice of species and planting stock, the potential need for assistance from a professional forester, costs and timing. RCD contacts are listed at the end of this document. If you are working with a professional forester, they should make this contact for you.

The second step is for you to identify the area to be planted. This may be an area that was formerly forested, an area currently occupied by vegetation such as brush species or a partially forested area where increased stocking is desirable. In selecting the area to plant there are important considerations and questions to ask:

- Is the area a suitable site for planting? This is indicated by the site productivity. Generally, timberland is defined in terms of four site classes. If your land is zoned Timber Production Zone it is in one or more of those site classes. Planting unproductive sites can lead to disappointing results.
- Are there specific conditions on the site that will make planting difficult? For example, is there a need to clear existing vegetation? Is the site steep and/or rocky? What elevation and aspect is the site? Is the site easily accessible? These conditions will affect the choice of species and planting stock. California is divided into seed zones that define suitability for different species. Seed stored at the CAL FIRE seed bank is categorized by species and seed zone. Any seedlings provided by the RCD will be specifically adapted to the seed zone that your site is located in.

It is helpful to delineate the area to be planted on a topographic map and provide that map with your order form. An RCD staff person or a professional forester can help you with preparing a map. If you plan on applying to cost share programs to fund your project, a map will be required. Depending on the program, the services of a professional forester may also be required.

The third step is for you or your forester to quantify the number and types of seedlings needed. This will depend on the number of acres to be planted and the spacing that seedlings will be planted at. Common planting densities range from 100 to 300 trees/acre depending on site productivity and presence of existing trees. You should consult with the RCD or a professional forester to determine the count for your specific site.

The choice of stock type depends on the planting site conditions. Higher levels of survival may be achieved with plugs (container stock) than with bare root stock. Two-year old bare root stock will tend to survive better than one-year old bare root stock.

The fourth step is for you to complete the order form and submit it to the RCD. Staff will review your order and contact you if we have any questions. Order forms that include sugar pine must be submitted by October 1 for planting in the spring two years hence. Orders for other species must be submitted by December 1.

The fifth step is for the RCD to check the availability of seed from suitable seed zone(s). Staff will contact the CAL FIRE seed bank and the Placerville Nursery to determine if the quantity of seed required is currently in storage and available. If that is the case, then the process moves on. If not, the RCD may contact you to discuss potential options such as choosing a different species.

The sixth step is for the RCD to obtain seed and arrange for it to be delivered and sown at the Placerville Nursery.

The seventh step is for the RCD to inform you when your seedlings are available. If you plan on picking them up at the Nursery, a mutually convenient time for the RCD and you will be arranged. If instead you will have the seedlings delivered, the RCD will arrange delivery at additional cost.

The eighth step is for you to either arrange for the planting or do the planting yourself. There are numerous things that affect the success of a planting project. The RCD or a professional forester can advise you on the planting process. The most important thing is to ensure that the seedlings are

kept in the condition in which they departed the Nursery. Allowing seedlings to sit too long, dry out or be exposed to harsh conditions can jeopardize the success of the project. Depending on humidity, the root systems of individual seedlings can be compromised within minutes of being removed from the planting bags. It is imperative that seedlings be planted promptly to ensure survival.

The final step is for you to stand back and look at your work. This includes monitoring your plantation over time and taking actions to increase chances of survival if needed. Through monitoring you can observe if you are experiencing insect or disease problems or unacceptable mortality. Survival depends on post-planting environmental stresses such as drought, animal depredation and competition from grasses or shrubs. With proper site preparation, the best available planting stock, and good planting practices you maximize the chances that you will get good survival. Depending on the availability of staff, the RCD can assist you with planning and implementing plantation monitoring.

QUESTIONS?

If you have any questions regarding this project description or the process described in it please contact the RCD:

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OTHER RESOURCES

Numerous resources are available to help you plan and implement your project. Contact the RCD if you want a list of Registered Professional Foresters, UC Cooperative Extension Forestry Advisors, NRCS foresters or CAL FIRE Forestry Assistance Specialists serving your area.

The University of California Cooperative Extension has published a series of leaflets on forest stewardship including ones on forest ecology and planting. Go to <http://anrcatalog.ucdavis.edu/Forestry/8323.aspx> to review what is available. The publications can be downloaded free.

In 2014, the Society of American Foresters in collaboration with the University of California Cooperative Extension and other parties held a series of webinars on reforestation. The recordings from these webinars can be viewed at <http://ucanr.edu/sites/forestry/Webinars/Reforestation/>.

Technical support is also available on the CAL FIRE website under http://www.fire.ca.gov/resource_mgt/resource_mt_statenurseries.php or by calling the Stewardship Helpline at (800) 738-TREE.

The magazine Forestland Steward is an excellent source of information that can help landowners become better stewards of their forestland. Past issues can be accessed at <http://ceres.ca.gov/foreststeward/newsletter.html>.