

## Reforestation Basics

- How to Order Seedlings
  - Planting Techniques

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Reforestation treatment needs have historically been closely associated with regeneration activities.

- Utilize funds collected from timber sales
- Reforestation could be planned and coordinated with:

harvest activities

site preparation

seed acquisition

sowing and growing to specification

planting at the appropriate time

Much of this predictability is lost when the principal causal agent creating reforestation needs is a natural disturbance event, particularly those on a catastrophic scale.

Since the location and magnitude of these events cannot be predicted from one year to the next, this dynamic makes the job of planning orderly programs of work to complete reforestation treatments more difficult.

Reforestation work is time-sensitive.

Without timely reforestation efforts, undesirable species can dominate, making establishment of desired tree species difficult.

Once undesirable species become established, decades may pass before sufficient numbers of appropriate tree seedlings occupy the site.

Reforestation work is time-sensitive.

Delays also increase the cost of reforestation work by necessitating expensive site preparation and may adversely affect meeting other resource objectives.

## Sequence of Events

- Estimate Seedling Needs and Place Order
- Salvage Logging
- Site Preparation
- Planting
- Post-Planting Competition Control



# Ordering Seedlings

[www.eldoradocountyrcd.org](http://www.eldoradocountyrcd.org)

530-295-5630



## TO PLACE AN ORDER

- Orders are accepted no later than October 1<sup>st</sup> of each year for Sugar pine, and no later than December 1<sup>st</sup> for all other species.
- Order by mail using the enclosed Order Form, Fax at 530-295-5635 or by phone at (530) 295-5630.
- 40% deposit required at time of order.
- Cancellations will be accepted up to January 1<sup>st</sup> of each year.
- Minimum order is 200 trees/ species.

## SHIPPING AND HANDLING

- Seedlings are available for pick-up or delivery Prior to May 15<sup>th</sup> depending on weather conditions.
- Pick-up is available at the USDA Nursery in Placerville, CA. free-of-charge.
- Shipping charge is \$50.00/box and \$125/bag.
- All UPS/ FedEx orders are shipped from the USDA Nursery on Mondays and Tuesdays.

## TERMS AND CONDITIONS

- A \$20 service charge will be applied to all refunds except those caused by the nurseries' inability to deliver ordered seedlings.
- Full refund will be made, without penalty, in the event the RCD is unable to make delivery for any reason. No refunds after May 1<sup>st</sup>.
- It is agreed between the purchaser and the RCD that our liability will not exceed the original purchase price of the product excluding shipping costs.
- The RCD assumes no responsibility or liability for the planting of any tree seedlings and in the sale thereof, makes no warranties, expressed or implied, of merchantability or fitness for a particular purpose and makes no warranties regarding the survival or rate of growth of any seedlings.

## Enabling Legislation

Division 9 of the PRC§9409 allows for the District to make improvements or conduct operations on public lands, with the cooperation of the agency administering and having jurisdiction thereof, and on private lands, with the consent of the owners thereof, in furtherance of the prevention or control of soil erosion, water conservation and distribution, agricultural enhancement, and erosion stabilization, including, but not limited to, terraces, ditches, levees, and dams or other structures and the planting of trees, shrubs, grasses, or other vegeta

The forests of the Sierra Nevada are some of the most productive tree growing areas in the world. With careful thought and planning, you should be able to grow a healthy stand of trees that achieves your goals as a landowner. Reforestation and restoration projects yield better air and water quality, enhanced wildlife habitat, greater biodiversity and ecosystem sustainability, healthier forests, reduced soil erosion, and increased timber production.

A number of private tree nurseries can supply seedlings grown from parent trees native to the same elevation and geographical zone as your property (known as seed zones). Planting seedlings from the appropriate seed zone will ensure that they will tolerate the climate and soil type where you are.

All seedlings grown at the USFS Placerville Nursery are grown to USFS Region 5 specifications and shall meet phytosanitary certification regulations pertaining to shipments of trees.

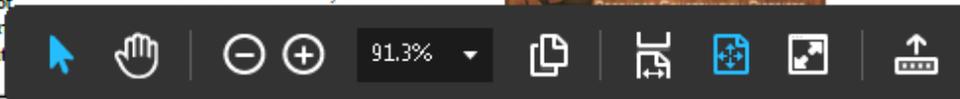
Species	Top Height	Tolerance	Diameter	Tolerance	Root Length
All	10 cm	-3 cm	3 mm	- 0.5 mm	20.5 to 26 cm max.
		+6 cm		+ 4 mm	



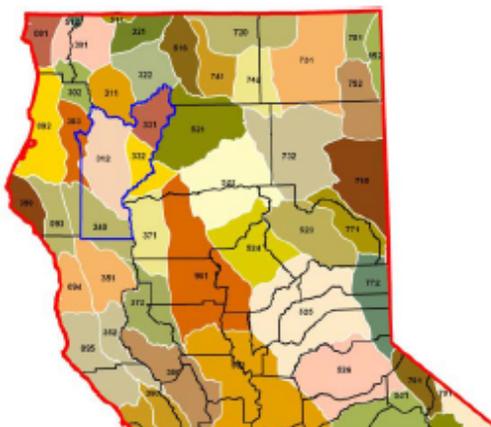
FOR QUESTIONS  
OR TO ORDER SEEDLINGS, CONTACT:  
Resource Conservation District  
(530) 295-5630  
100 Forni Road, Suite A.



# Seedling Order Form



**CALIFORNIA TREE SEED ZONE MAP**  
NORTH HALF



**Bare Root and Plug Seedling Price List - Effective 3/2017**  
Price per 1000 Seedlings

**1 year plug seedlings (1P): \$444**

- Douglas fir (DF)
- Sugar pine (SP)
- White fir (WF)
- Ponderosa pine (PP)
- Jeffrey pine (JP)
- Incense cedar (IC)
- Sierra redwood (SR)



**1 year bare root seedlings (1B): \$375**

- Douglas fir (DF)
- White fir (WF)
- Ponderosa pine (PP)
- Jeffrey pine (JP)
- Incense cedar (IC)
- Sierra redwood (SR)



**Special Order**

For any species, deeper plug container stock is available. **Notes:** Plug seedlings are grown one year in Styrofoam block. Prices do not include shipping costs. See order form

**TECHNICAL ASSISTANCE**

Landowners may receive planning assistance for tree planting projects from the NRCS &/or RCD by contacting your local RCD office that serves their county.

**SEEDLING ORDER FORM**  
RESOURCE CONSERVATION DISTRICT - EL DORADO COUNTY

<b>RCD USE ONLY</b>		<b>USE</b> <input type="checkbox"/> Reforestation <input type="checkbox"/> Erosion Control/Watershed Protection <input type="checkbox"/> Windbreak <input type="checkbox"/> Christmas Tree <input type="checkbox"/> Fuel Wood <input type="checkbox"/> Approved Research Project	<b>Cost-Share Program?</b>  <input type="checkbox"/> NRCS <input type="checkbox"/> CALFIRE
Order #:			
Seed Zone:			
Nearest Town:			
County:		<b>PLANTING SITE</b>	
Elevation:			
Customer Name and Billing Address:		Shipment: <input type="checkbox"/> Pick-up at Nursery <input type="checkbox"/> Delivery Delivery Address:	
EMAIL:			
Cell Phone:			
Other Phone:			

Lot#	Seed Source (RCD USE)	Stock Type	Quantity	Seedling Cost (Unit)	Seedling Cost

Sales Tax Exemption? Attach documentation. Subtotal: \_\_\_\_\_

Mail this order form with check payable to: Sales Tax: \_\_\_\_\_

El Dorado County Resource Conservation District Shipping Cost: \_\_\_\_\_

100 Forni Road, Suite A Total Cost: \_\_\_\_\_

Placerville, CA 95667 40% Deposit: \_\_\_\_\_

(phone) 530-295-5633 Date Deposit Received: \_\_\_\_\_

Mark.Egbert@ca.usda.gov Balance: \_\_\_\_\_

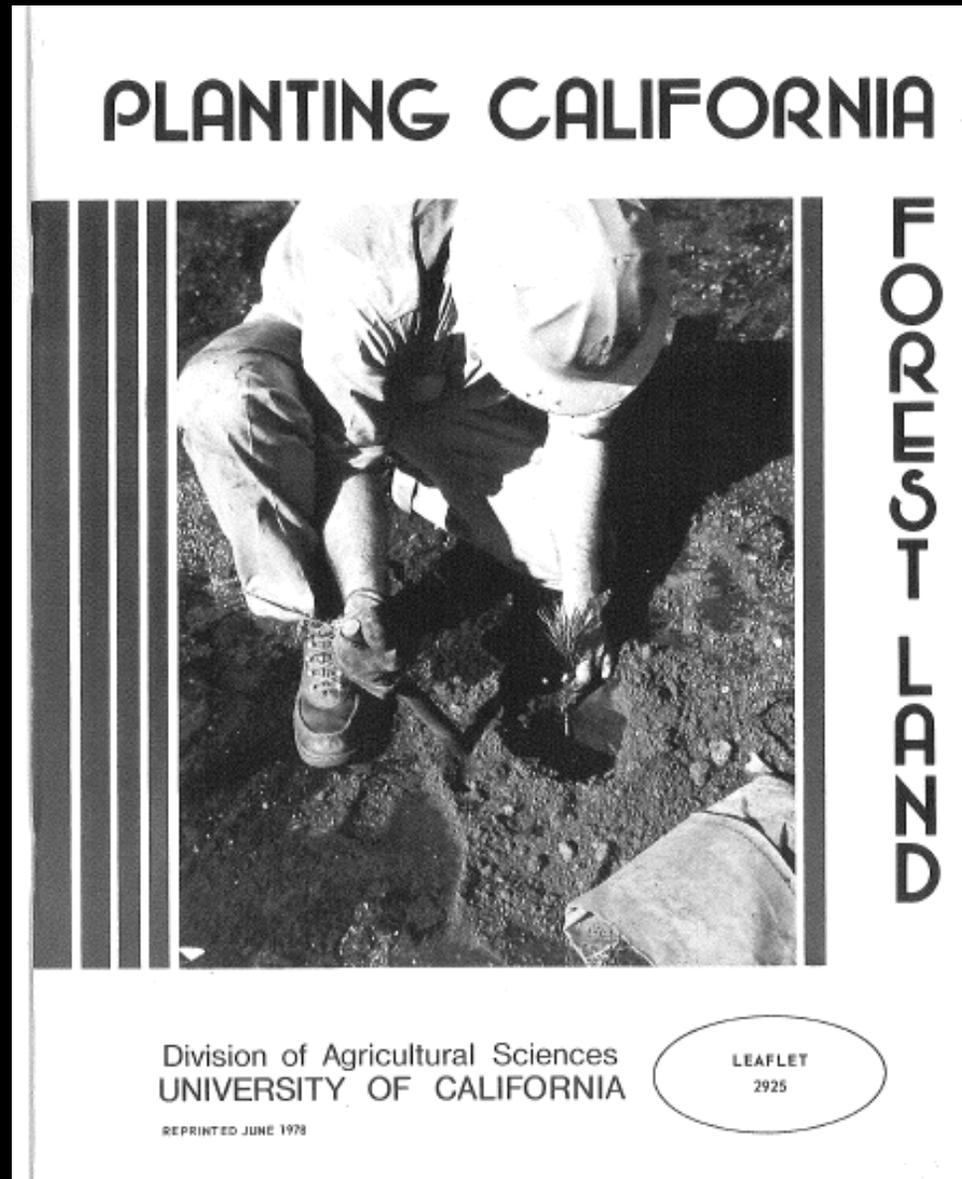
Signature: \_\_\_\_\_ Date Balance Received: \_\_\_\_\_

Date: \_\_\_\_\_

<b>Species Codes:</b>		<b>Stock Codes:</b>	
Species	Code	Stock Type	Code
Douglas fir	DF	One year plugs	1P
Sugar pine	SP	One year bare root	1B
White fir	WF		
Ponderosa pine	PP	Special order	SO (consult with RCD)
Jeffrey pine	JP		
Incense cedar	IC		
Sierra redwood	SR		



# Planting Techniques



# Planting Seasons

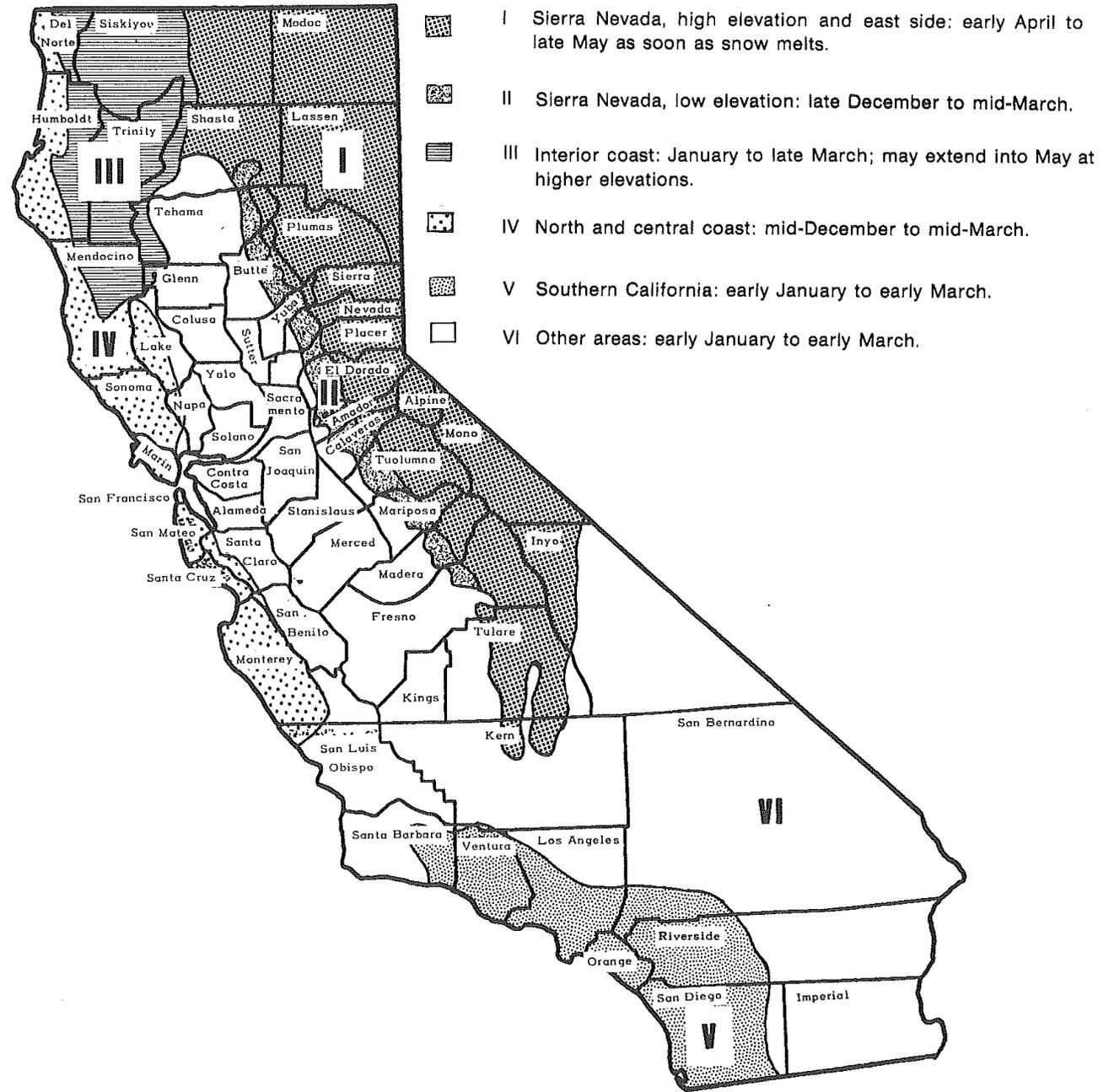


Figure 12. Best planting seasons for different areas of California.



# Planting Techniques

Three main conditions determine the best planting time:

- Growth stage of the seedling

- Soil temperature

- Amount of soil moisture at depth of > 1 foot.

Other conditions:

- South & West facing slopes dry out quicker

- High elevation may be affected by late snow fall

- Dry winds and heat

# Common Planting Problems

## 1. Too Deep

needles buried  
hole okay  
tree position poor



## 2. Too Shallow

roots exposed  
hole too shallow



## 3. Air Pocket

from improper  
tamping



## 4. 'L' Roots

hole shallow



## 5. 'J' Roots

hole shallow  
roots often exposed  
to air



## 6. Compacted Roots

hole too narrow  
not properly  
opened



## 7. Not Vertical

shallow planting  
caused by improper  
digging of hole



## 8. Too Loose

improper  
tamping after  
planting



## 9. Poor Planting Soil

planting in rotten wood,  
deep duff or debris,  
not damp mineral soil



## 10. Satisfactorily Planted Tree



From Rose and Haase, 2006. *Guide to Reforestation in Oregon*. FRL Research Contribution 31, OSU College of Forestry, Corvallis. <http://ir.library.oregonstate.edu/xmlui/bitstream/handle/1957/7854/RC31.pdf?sequence=1>

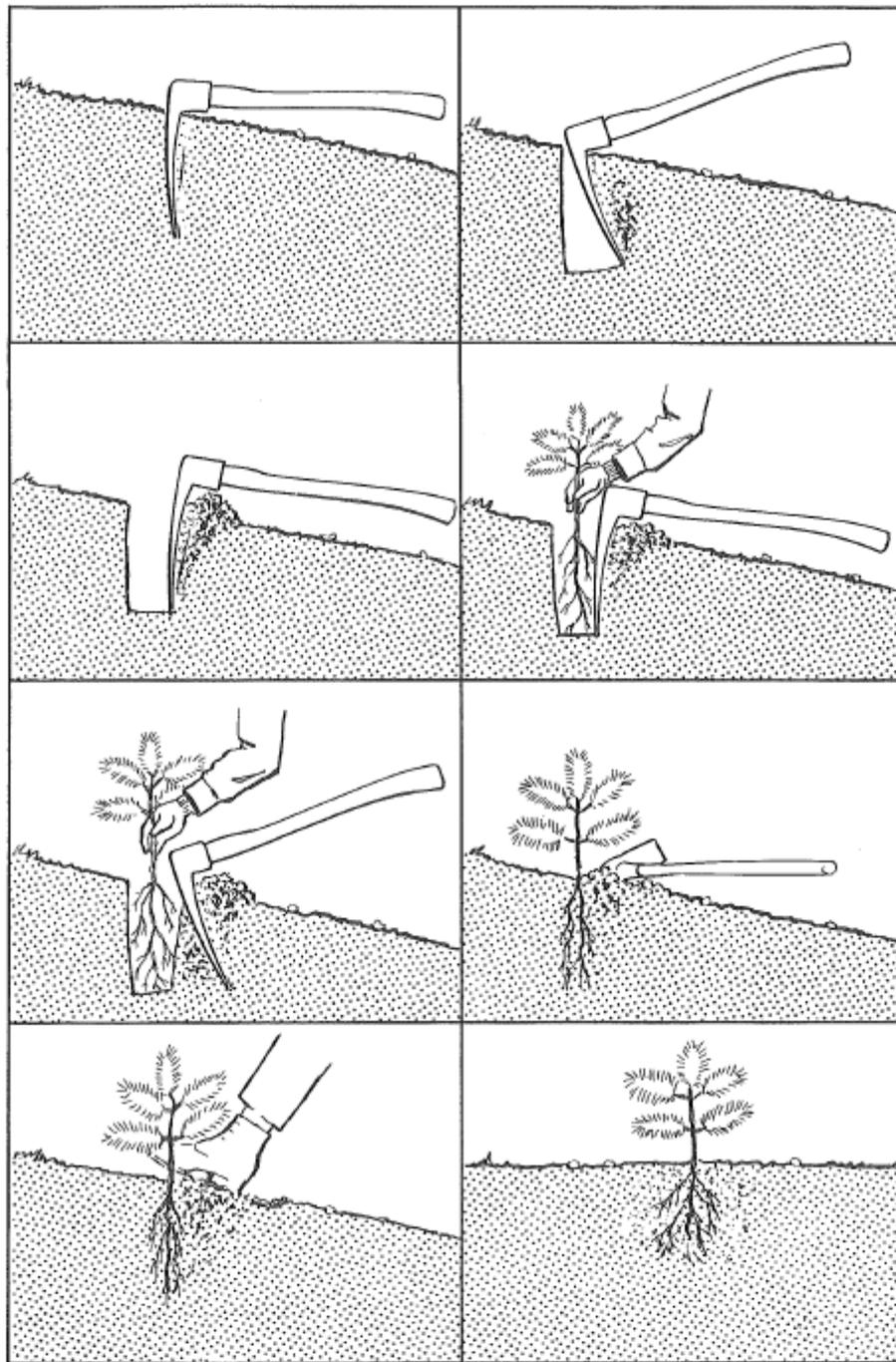


Figure 18. Steps in tree planting, using the western planting tool.

**TABLE 3. NUMBER OF TREES REQUIRED FOR DIFFERENT SPACINGS**



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Spacing in feet	Number of trees/acre
4 x 4	2,722
5 x 5	1,700
6 x 6	1,210
6 x 8	908
6 x 12	605
8 x 8	681
8 x 10	544
8 x 12	454
10 x 10	436
12 x 12	303
14 x 14	222
16 x 16	170

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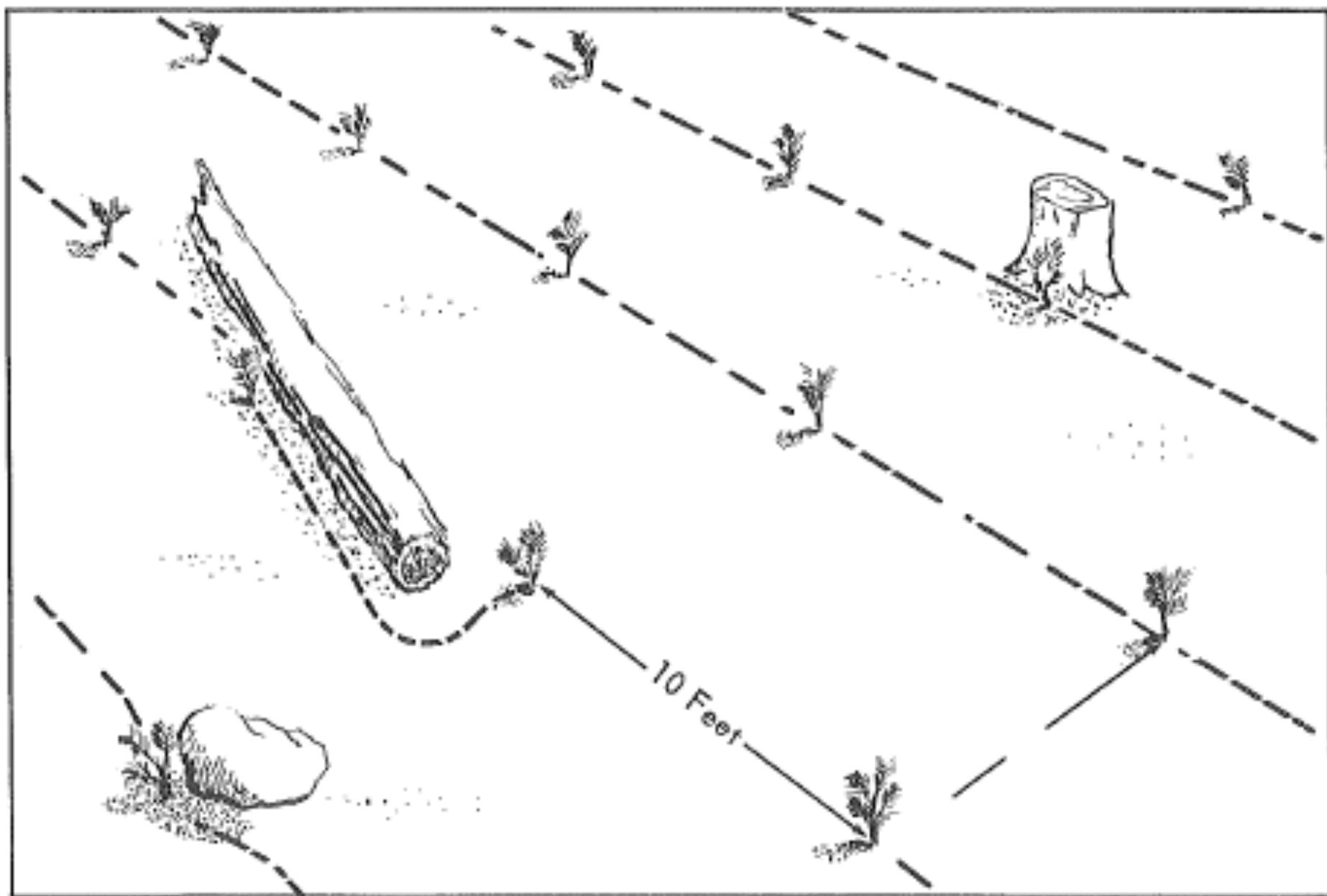
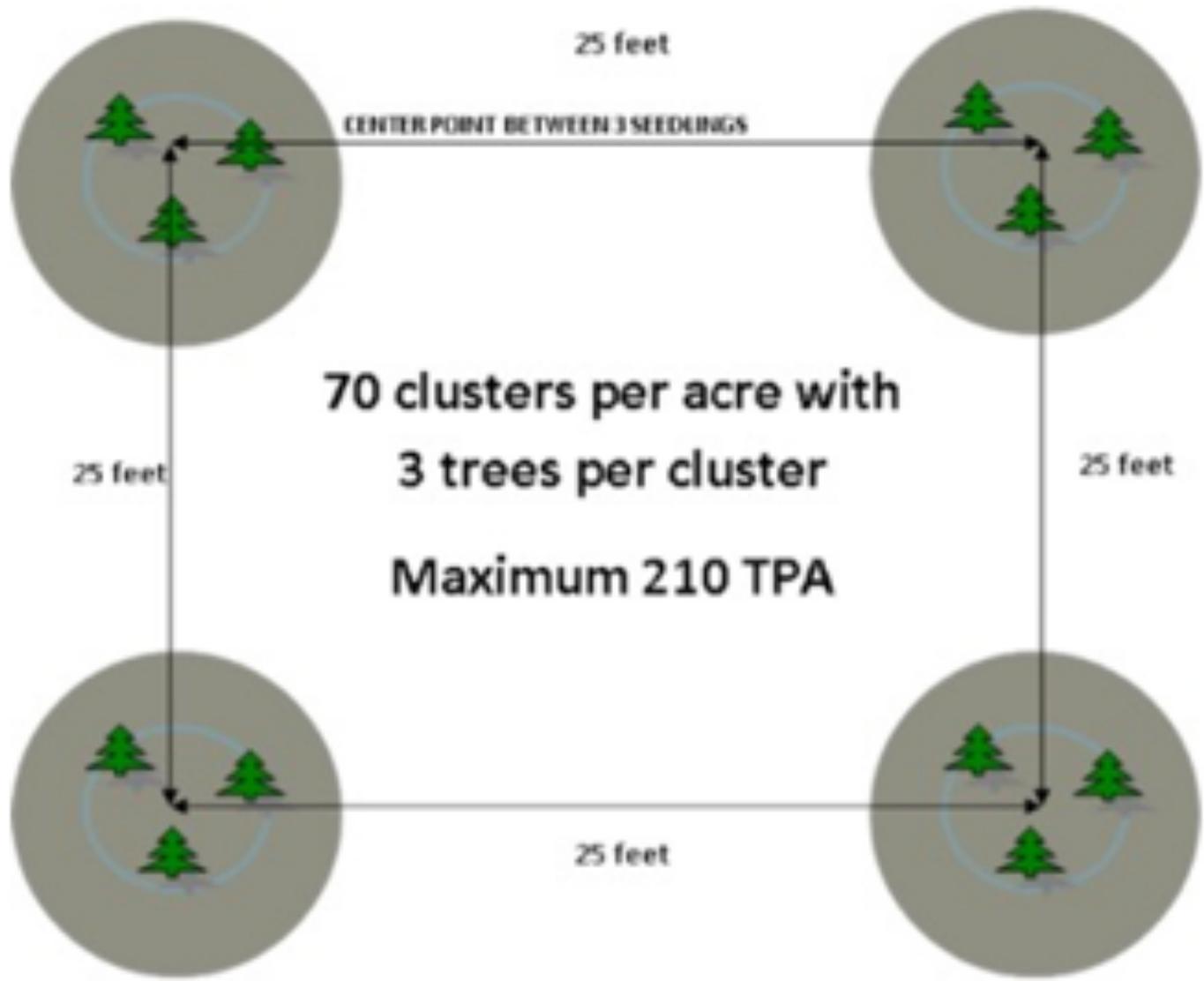


Figure 10. Break the uniform spacing to take advantage of shade or other good planting spots.



**70 clusters per acre with  
3 trees per cluster  
Maximum 210 TPA**

Graphic courtesy of Ryan Tompkins,  
Silviculturist, Plumas National Forest

Get help!



USDA – NRCS

CALFIRE

RCD

Private Registered Professional Forester

# Thank You

[www.eldoradorcd.org](http://www.eldoradorcd.org)

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