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## Chapter



# Tree and Shrub Identification

Stephen Fitzgerald and Viviane Simon-Brown

**Y**our backyard woodland probably contains many kinds of trees and a host of shrubs, grasses, and flowers. Did you ever wonder what their names are and how you might learn to tell one species from another?

No matter how you use your property, it's good to be able to identify species growing on it. First, that might simply satisfy your curiosity. But more important, it's useful to identify trees and shrubs because they all respond differently to management. For example, some species grow best in shade; others like open conditions. Knowing what species you have allows you to learn how to manage them to enhance their growth, health, and abundance. It is part of the stewardship concept. Finally, some plants are harmful to humans, such as poison-oak and poison-ivy. Knowing how to positively identify them will help you avoid an encounter and perhaps a trip to the doctor.

How do you go about identifying trees and other species on your woodlands? There are several approaches. First, you could ask a neighbor, who may have the same tree or shrub species and know what it is. Or, you can take samples to an expert. Your sample should include:

leaves; cones, flowers, or fruit; bark; and a general description of where the plant grows. Look for experts at:

- A local arboretum or nursery
- Your local OSU Extension office, including the Master Gardener volunteers there
- Your local office of the Oregon Department of Forestry; ask to speak to a service forester

If you want to learn to identify trees and other plants on your own, these methods probably won't help you very much. This chapter provides basic information on tree and shrub identification, as well as other resources to help you learn how to identify what's growing on your property.

## Distinguishing characteristics

Trees and shrubs come in all shapes and sizes. It is these differences or characteristics that we use to tell them apart. Specific characteristics used to identify trees and shrubs include:

- Leaves or needles (size, shape, arrangement, and color)

- Fruits (including cones and seeds)
- Flowers
- Bark
- Overall shape and branching pattern

## Using keys to identify trees and shrubs

There are two main categories of trees: conifers and broadleaves.

Conifers have needlelike or scalelike leaves which they usually hold all year long (but there are exceptions). Because of this, they are referred to as *evergreen*. Pines, firs, and spruces fit into this category.

Broadleaved trees usually have wide, flat leaves which usually drop in the fall (but, again, there are exceptions). They are referred to as *deciduous*. Alders, aspen, and maples fit into this category. You may also hear the terms *softwoods* and *hardwoods*. Conifers typically are referred to as softwoods and broadleaves as hardwoods.

At first, it may be a bit overwhelming to remember all the distinguishing characteristics of trees and shrubs. Using a tool called a *dichotomous key* is a good way to learn. A key is a systematic way of looking at specific characteristics and determining whether the tree or shrub in question either has those characteristics or does not. Keys typically group trees and shrubs based on similar characteristics. The key works by posing a series of either/or questions that lead you, eventually, to the correct identification (Figure 3.1). For example, is your tree a conifer or a broadleaf? If a conifer, does it have needlelike or scalelike leaves? By regularly using a key when you encounter a tree or shrub you don't know, soon you'll begin to

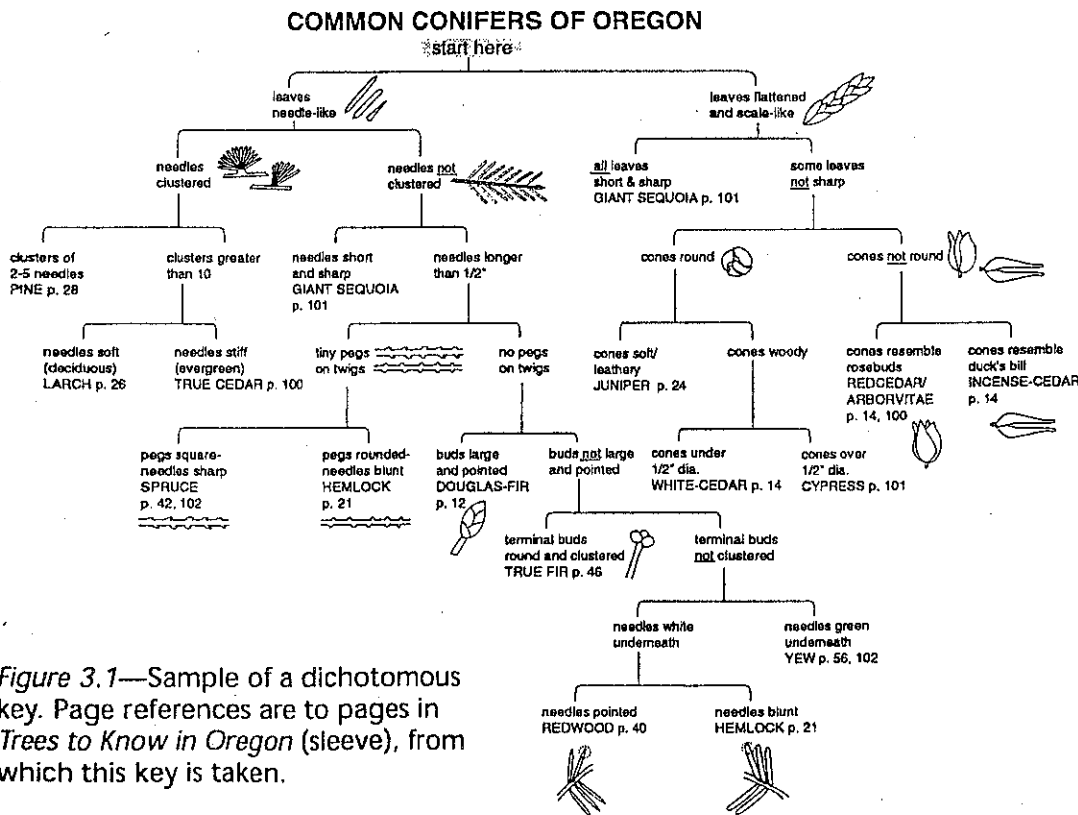


Figure 3.1—Sample of a dichotomous key. Page references are to pages in *Trees to Know in Oregon* (sleeve), from which this key is taken.

remember the "key" distinguishing characteristics of tree groups (for example, pines versus firs and firs versus spruces).

You can test your skill at using a key by visiting the Oregon State University Web site "Trees of the Pacific Northwest" [www.orst.edu/instruct/for241](http://www.orst.edu/instruct/for241) Click on "mystery tree." You can practice using a key on four mystery trees.

The keys in *Trees to Know in Oregon* (sleeve) are quite comprehensive. Other identification books for trees and shrubs are listed on this page. Note that you'll probably have to use different resources to identify trees, wildflowers, and grasses that aren't native to Oregon. You can find these other publications at your local library or bookstore.

### **Understanding tree and shrub names**

All plants have a common name and a scientific name. Many times, trees and shrubs (and other plants) have more than one common name, which can vary from one region to another. However, they will have only one scientific name (which is in Latin). For example, Douglas-fir (the common name) also is known as Oregon pine, even though it is not a pine at all. Common names often create confusion. That's why botanists use Latin or scientific names that don't change. So, whether you use the common name of "Douglas-fir" or "Oregon pine," its scientific name is always *Pseudotsuga menziesii*.

Often, a plant's common or scientific name is taken from a famous explorer or scientist who first presented the plant in scientific literature. For example, Douglas-fir is named after the famed botanist David Douglas who explored the Pacific Northwest. For a more detailed discussion of tree names, see *Understanding Names of Oregon Trees in the sleeve* at the end of this chapter.

## **Other resources**

### **In the sleeve**

*Trees to Know in Oregon*, EC 1450. Edward Jensen and Charles Ross. 1999. Corvallis: Oregon State University Extension Service and Oregon Department of Forestry, 128 pp.

*Understanding Names of Oregon Trees*, EC 1502. Scott Leavengood. 2001. Corvallis: Oregon State University Extension Service, 8 pp.

### **Publications**

*Manual of Oregon Trees and Shrubs*, 7<sup>th</sup> edition. Warren Randall, Robert Keniston, Dale Bever, and Edward Jensen. 2000. Corvallis: Oregon State University, 305 pp. \$9.50 ISBN 0882460196.

Available from:

John Bell & Associates, P.O. Box 1538, Corvallis, OR 97339; fax 541-757-8078.

*National Audubon Society Field Guide to Trees, Western Region*. Elbert Little. 1998. New York: Chanticleer Press, Inc. and Alfred A. Knopf, Inc., 638 pp. \$19.00 ISBN 0394507614

*What Tree Is That?* National Arbor Day Foundation, Nebraska City, NE 68410. No charge.

### **Internet**

OSU College of Forestry, Trees of the Pacific Northwest

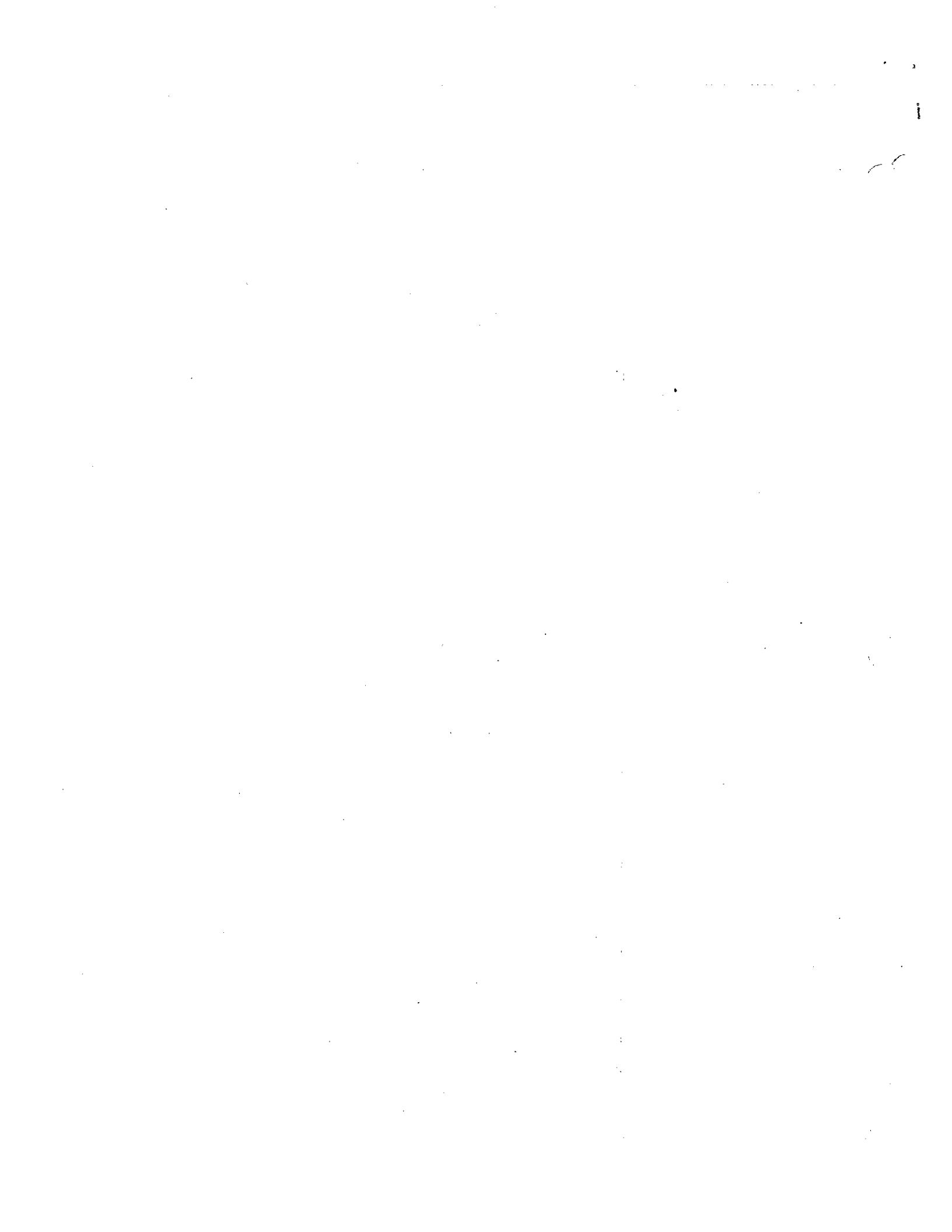
<http://www.orst.edu/instruct/for241>

Click on topics of interest.

OSU College of Forestry, Tree of the Month

<http://www.cof.orst.edu/cof/fr/outreach/treemonth/>

Click on the tree pictures to learn more about each species.



## Notes

### <sup>1</sup> Growth

S=slow (1' per year), M=medium (2' per year), F=fast (3' year), VF=very fast (>3' per year)

### <sup>2</sup> Tolerance of major SW Oregon species to environmental stresses

H=high, M=medium, L=low

### <sup>3</sup> Commercial value

H=high (local markets available, higher price range); M=medium (local markets available, lower price range); L=low (few or no local markets)

### Insect and disease resistance:

If grown in a suitable site, most native species are resistant to insect and disease problems. Problems usually occur when trees are grown on sites they are not well suited to. Special problems of note:

Pines: Very susceptible to Sequoia pitch moth in urban areas and at lower elevations.

Incense cedar and madrone: Very susceptible to site disturbance such as soil compaction, trenching, backfilling, etc. All native species are more vulnerable to insect and disease problems with site disturbance, drought, and other factors that lead to stress and reduced plant vigor.

Douglas-fir: Not tolerant of "wet feet" and excessive irrigation. Poorly suited to many lower elevation sites in the Rogue Valley, even though it seeds in under the canopy of oaks and madrones.

Oaks and madrone: Vulnerable to root disease with summer irrigation.

### Suitability for home landscapes:

Most natives are not well suited to home landscapes due to their growth rates and size. For home landscapes, drought and fire-resistance are often the key criteria. See EC 15 SW Oregon Plant Selection Guide for suggestions for landscape ornamentals.

### For reforestation:

For droughty sites, ponderosa pine and Jeffrey pine are the best. Incense cedar is also fairly drought tolerant, though not as much as the pines. For north slopes and higher precipitation zones, Douglas-fir is a good choice. White fir is suited to higher elevation areas. For streamside areas, alder, cottonwood, ash, and maple are good choices. Maple can also be planted on upland sites in higher precipitation zones (35"+ per annum).

### Christmas trees:

Douglas-fir or Scotch pine is the best option for lower elevation areas in Jackson Co; in higher precipitation zones and at higher elevations, true firs (e.g., Shasta fir and grand fir) may be grown. Scotch pine is more drought and heat tolerant than Douglas-fir.

### Other species:

Redwood is poorly suited to the area due to our hot, dry climate, but may be successful further west in higher precipitation areas. Frost is also a concern.

Giant sequoia is worth considering for droughty sites.

KMX (knobcone – Monterrey pine cross) has excellent growth and drought resistance, but is susceptible to needle diseases and western gall rust.

Leyland cypress is increasingly used as a hedgerow planting. Fast growth, good drought tolerance.

unipers are not recommended because of their highly flammable foliage.

# NATIVE TREES FOR SW OREGON FORESTS AND LANDSCAPES

Prepared by Max Bennett, Extension Forester

	Growth <sup>1</sup>	Tolerance level <sup>2</sup>										Fire resistance	Commercial value <sup>3</sup>	
		Shade	Browse	Wet soils	Drought	High heat	Frost	Low nutrients	Flammability					
<b>CONIFERS</b>														
Douglas-fir	M-F	M	M	L	M	M	M	M	?	L-M	M	M-H	H	
White fir	S-M	H	H	M	L	L	M	M	?	L	M	L	M	
Ponderosa pine	S-M	L	H	H	H	H	H	H	?	M	M	H	M	
Jeffrey pine	S-M	L	H	H	H	H	H	H	H	M	M	H	M	
Sugar pine	S-M	M	H	?	M	M	M	M	?	M	M	M	H	
Incense cedar	S	M	M	L	H	H	M	M	H?	L	M	M	H	
<b>HARDWOODS</b>														
Red/white alder	F	L	L	H	L	L	L	L	?	L	L	L	L	
Bigleaf maple	M-F	H	L	L	M	L	L	L	?	M	L	L	L	
Oregon ash	S	M	L	H	L	L	L	L	?	M	L	L	L	
Hybrid cottonwood	VF	L	L	H	L	H	M	M	?	L	L	L	L	
Black cottonwood	VF	L	L	H	L	L	L	L	?	L	L	L	L	
Oregon white oak	S	L	H	H	H	H	L	L	?	M	M	M	L	
Madrone	S	L	H	L	H	H	M	M	?	L	L	L	L	
California black oak	S	L	M	L	H	H	M	M	?	M	M	L	L	

**Native & Ornamental Trees for Southern Oregon Forests and Landscapes**  
**SOREC Forestry Note #1**

	Growth <sup>1</sup>	Tolerance level <sup>2</sup>				
		Shade	Browse	Wet soils	Drought	Frost
<b>CONIFERS</b>						
Douglas-fir	M-F	M	M	VL	M	M
White/grand fir	S-M	H	H	M	M	M
Ponderosa pine	S-M	L	H	H	H	H
Jeffrey pine	S-M	L	H	H	H	H
Sugar pine	S-M	M	H	L	M	M
Incense cedar	S	M	M	L	H	M
<b>HARDWOODS</b>						
Red/white alder	F	L	M	H	L	L
Bigleaf maple	M-F	H	L	L	M	M
Oregon ash	S	M	M	H	M	M
Black cottonwood	VF	L	L	H	L	M
Oregon white oak	S	L	H	H	H	M
Madrone	S	L	H	L	H	M
California black oak	S	L	H	L	H	M

<sup>1</sup> Growth S=slow (1' per year), M=medium (2' per year), F=fast (3' year), VF=very fast (>3' per year)

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**Other natives:**

**Port-Orford-cedar.** Western Josephine County, higher precipitation zone. Beautiful foliage, very shade tolerant. Various cultivars grown as ornamentals throughout world. Very susceptible to root disease.

**Chasta red fir.** Close cousin to white fir. Grows at high elevations. Good Christmas tree. Not drought or heat tolerant.

**Western white pine.** Another higher elevation tree. Very frost tolerant.

**Lodgepole pine.** Very tolerant of frost, swampy soils. Found mostly at higher elevations.

**Tanoak.** Grows in western Josephine County. Very shade tolerant, a prolific sprouter.

**Canyon live oak.** As the name suggests, found in the canyon country.

**Chinkapin.** Not abundant, found in upland forests. Beautiful wood.

**For reforestation:**

For droughty sites, ponderosa pine and Jeffrey pine are the best. Incense cedar is also fairly drought tolerant, though not as much as the pines. For north slopes and higher precipitation zones, Douglas-fir is a good choice. White fir is suited to higher elevation areas. For streamside areas, alder, cottonwood, ash, and maple are good choices. Maple can also be planted on upland sites in higher precipitation zones (35"+ per annum). When planted in the appropriate area, these species should not require summer watering, except perhaps during the establishment phase or during periods of exceptional drought.

**Non-native species:**

Redwood is poorly suited to the area due to our hot, dry climate, but may be successful further west in higher precipitation areas. Frost is also a concern.

Giant sequoia is worth considering for droughty sites.

KMX (knobcone – Monterrey pine cross) has excellent growth and drought resistance, but is susceptible to needle diseases and western gall rust.

Leyland cypress is increasingly used for hedgerow plantings and screens. Fast growth, good drought tolerance.

Junipers are not recommended because of their highly flammable foliage.

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## Sources for Native Forest Tree Seedlings

### **Althouse Nursery**

5410 Dick George Rd  
Cave Junction, OR 97523  
**(541) 592-2395**

Sells native trees and shrubs grown from seed collected in SW Oregon, mostly from Illinois valley (new seed zone 5), 1,200-1,500 elevation. All container stock ranging from small plugs to one gallon tree pots and larger.

### **J. Herbert Stone Nursery**

2606 Old Stage Road  
Central Point, OR 97502  
**(541) 858-6100**

Surplus conifers only. Stone will not know what surplus stock is available for sale until after the first of the year; call them after Jan 1 for info. Minimum order: One box/bag.

### **Plant Oregon**

8651 Wagner Creek Road  
Talent, OR 97540  
**(541) 535-3531**

Sells native trees and shrubs grown from seed collected in SW Oregon and elsewhere. Wide range of species. Mostly container stock, some bare root.

### **Weyerhaeuser**

Central Point Seed Orchard/Nursery  
Sue Woodall (orders)  
**(541) 917-3652**

Ken Monroe (availability info) **(541) 899-7714**  
Conifers. Ponderosa pine for local seed zones.

### **Sources of Native Forest Nursery Seedlings**

Lists most nurseries that grow reforestation seedlings for Oregon, and many would be willing to grow for the SW on contract. Available at your local ODF office or online.

[http://www.oregon.gov/ODF/PRIVATE\\_FORESTS/docs/ForestNurserySeedlingSources.pdf](http://www.oregon.gov/ODF/PRIVATE_FORESTS/docs/ForestNurserySeedlingSources.pdf)

### **Forest Seedling Network**

Online clearinghouse for surplus seedlings.  
[www.forestseedlingnetwork.com](http://www.forestseedlingnetwork.com)

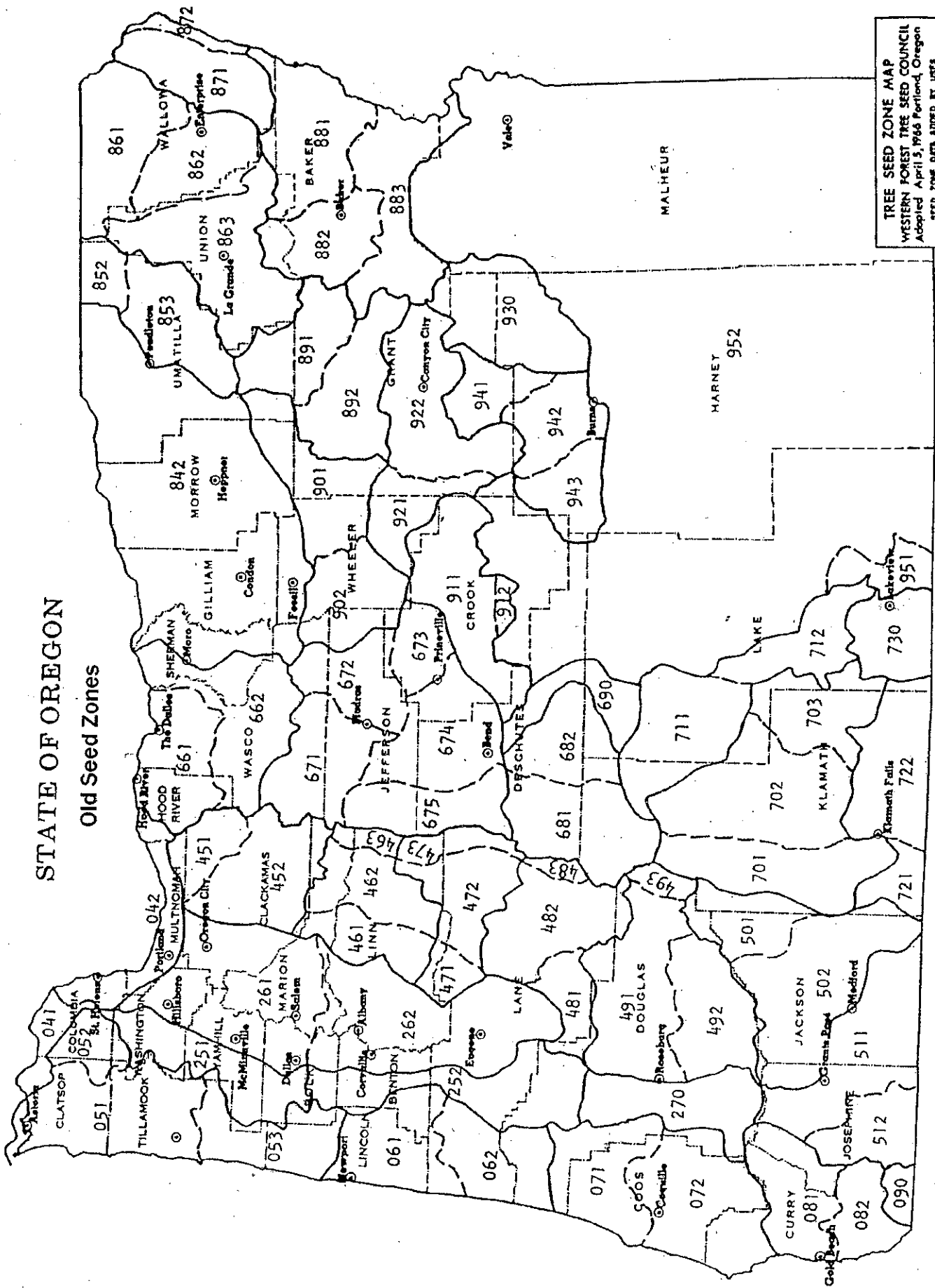
Looking for tree planting tools, pre-cut weed mats, and other reforestation supplies? Try Terra Tech,  
<http://www.terratech.net/>, 1-800-321-1037

Also, Forestry Suppliers & Ben Meadows (both out of state)



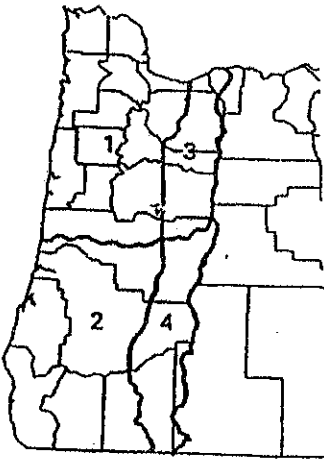
# STATE OF OREGON

## Old Seed Zones



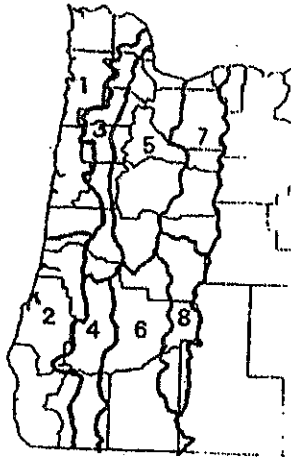
TREE SEED ZONE MAP  
WESTERN FOREST TREE SEED COUNCIL  
Adopted April 5, 1968 Portland, Oregon  
SEED ZONE DATA ADDED BY USFS

NEW SEED ZONES



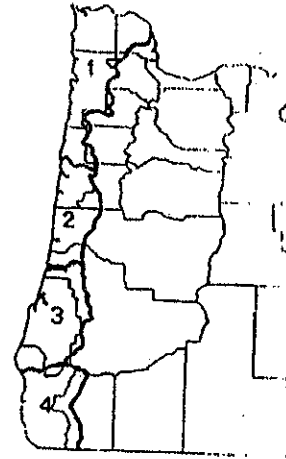
WESTERN RED CEDAR

NEW SEED ZONES



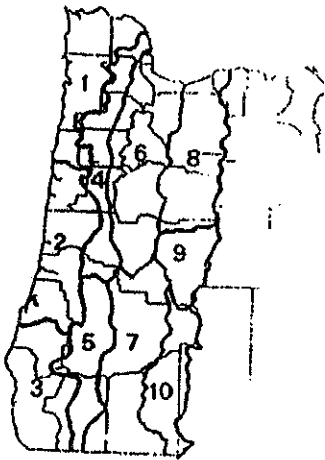
WESTERN HEMLOCK

NEW SEED ZONES



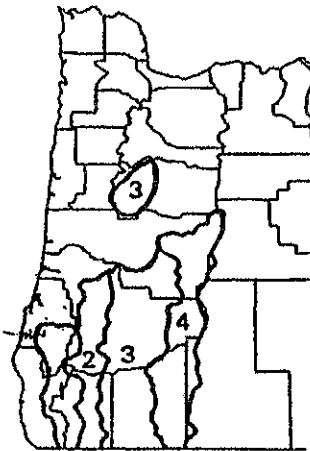
SITKA SPRUCE

NEW SEED ZONES





GRAND FIR

NEW SEED ZONES

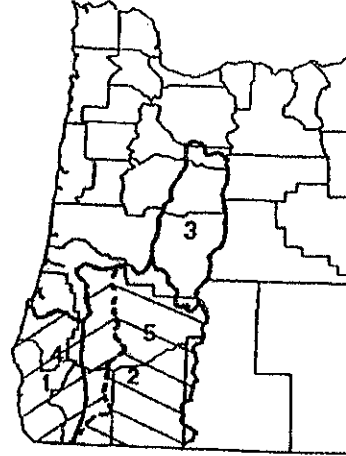


INCENSE CEDAR

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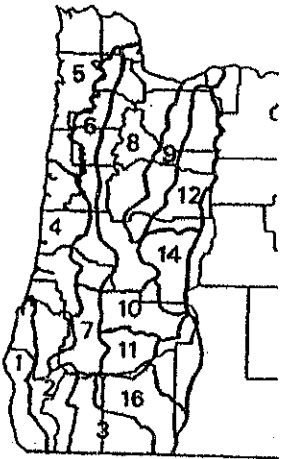
LESS THAN 2,500 FT.   
BETWEEN 2,500 AND 4,000 FT. 

ELEVATION



SUGAR PINE

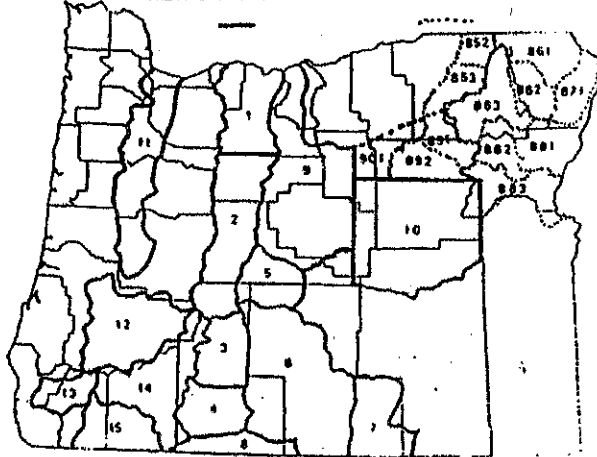
NEW SEED ZONES



DOUGLAS FIR

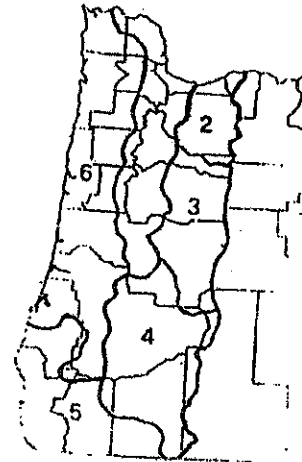
NEW SEED ZONES

OLD SEED ZONES



PONDFROSA PINE

NEW SEED ZONES



WESTERN WHITE PINE