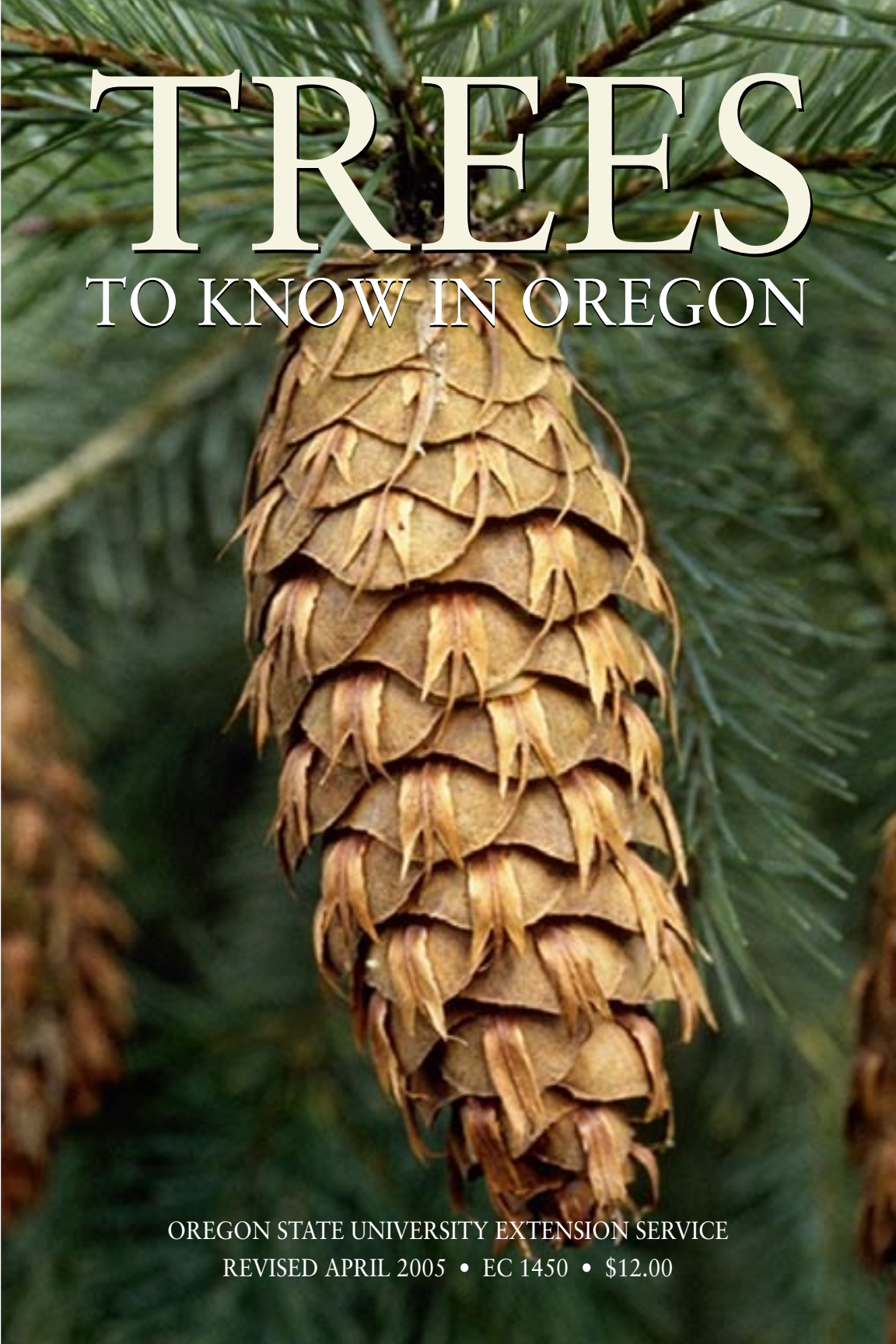

TREES
TO KNOW IN OREGON

OREGON STATE UNIVERSITY EXTENSION SERVICE
REVISED APRIL 2005 • EC 1450 • $12.00

"Happy is the man to whom every tree is a friend."

John Muir
explorer and naturalist

About This Book

Anyone familiar with earlier editions of *Trees to Know in Oregon* will immediately notice the inclusion of color photographs for the first time. I hope that this will increase the usefulness of the book as a guide to identification, as well as enhance its overall appearance. The text of the 2005 edition is similar to recent editions except for updated sections on Oregon's Forests and Oregon's Big Trees, and a few additions to Common Horticultural Trees in Oregon.

Since its publication in 1950, *Trees to Know* has become the most requested publication in the Oregon State University Extension Service's library. Since its inception it has been a mainstay of 4-H and youth education; more recently it has become popular with community college and university students, all the while serving as a resource for home owners, gardeners, small woodland owners, and visitors to Oregon.

This speaks well for the work of *Trees To Know's* original author, Charles R. Ross, and the many people who assisted him in his initial effort, including: Warren R. Randall, Quentin Zielinski, Ralph Salisbury, Cathrine Young Feikert, and Hugh Hayes, whose unique artistic style contributed so greatly to the success of earlier editions of the book. Contributors to more recent editions include reviewers Barbara Middleton, Faye Sallee, Rick Fletcher, Bob Cooper, Virginia Thompson Bourdeau, Rachel Walker, Doug Decker, Rick Cooper, Anna Torgerson, and artist Don Poole.

The 2005 edition owes much of its look and feel to its designer, Tom Weeks, and Andrea Dailey, both of OSU's Department of Extension and Experiment Station Communications.

With the inclusion of color photos in the 2005 edition, I owe a special debt of gratitude to my family (Linda, Chris, Nick, and Courtney) for their extraordinary patience during a lifetime of family trips as I pulled off the road or took a sudden detour when just the right light was hitting a particular tree on the hillside.

To all those mentioned here, and to others who have helped along the way but have been inadvertently left off my list, my sincerest thanks.

Edward C. Jensen
April 2005

TREES TO KNOW IN OREGON

EC 1450
Revised April 2005

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Contents

Don't Go into the Woods
—before learning to identify this!

poisonoak *(Toxicodendron diversilobum)*
(formerly *Rhus diversiloba)*

Poisonoak is not really an oak; therefore, its common name is correctly written either as one word rather than two (poisonoak) or hyphenated (poison-oak).

ITCH, ITCH, ITCH. Poisonoak gives most people an itchy rash when they touch it. All parts of the plant—the leaves, stems, flowers, fruits, and roots—contain an irritating chemical, so no part is safe to touch. And because the chemical is present throughout the year, you must always be careful around poisonoak. Many people are so allergic to poisonoak that they develop a rash after handling a pet who has walked through a patch of it, and some even get it from the smoke of burning plants.

LEAVES OF THREE—LET IT BE. Poisonoak leaves are pinnately compound with three leaflets per leaf, but the leaflets may range dramatically in size and shape. When growing in the sun, they are commonly 2 to 3 inches long but in shade may reach 6 inches long. Their margins are wavy and irregularly lobed, often with several lobes on one edge and no lobes on another. Their leaves turn beautiful reds and yellows in the fall. Poisonoak has three diverse growth forms: it can grow as an upright shrub, crawl along the ground, or climb high into trees, sending down long, thin branches to "catch" those passing by.

RANGE. Poisonoak grows primarily at low elevations on the west side of the Cascades from southern British Columbia through southern California. It grows in both sun and the shade but is especially fond of dry places.

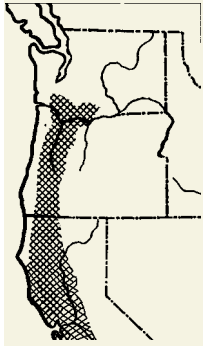
FOLKLORE ABOUT POISON OAK. Folklore says eating a poisonoak leaf when you're young will make you resistant to its toxin. **DON'T BELIEVE IT—**you're likely to end up with a terrible rash! Some people seem to have a natural immunity to poisonoak, but most don't. Also, immunity may change with your age and exposure to the chemical. Learn to recognize poisonoak and then protect yourself either by wearing long clothing or by avoiding it altogether.

Habit: Grows as a trailing or climbing vine, or as an upright shrub.

Leaves: Pinnately compound (usually in threes), deciduous, and alternate. Wavy margins with irregular lobes. Size of leaflets varies dramatically (2–6" long).

Twigs: Slender, tan. May have grasping tendrils. Have naked buds.

Flowers and fruit: Flowers are small, clustered, and inconspicuous. Fruits are small white drupes with fine, black lines.



Tree Detective

Identifying trees is a lot like identifying people. You can easily recognize a close friend, even if you catch only a glimpse. In fact, you can often recognize a friend from a fast-moving car, or even from a picture in a photo album when the friend was a very different age or had a different appearance. However, if you meet a room full of strangers, you need to concentrate on individual characteristics before you can begin to tell them apart. And even then you might struggle to get their names right!

It's the same with trees. When you know a tree well, you'll be able to name it whether you see its leaves, its fruit, its flowers, or even its shape and color. When you know it well enough, you'll be able to recognize it in different stages of growth, in different locations, and even from fast-moving cars! You may even want to learn its formal or scientific name, which is written in Latin.

How can you get to know trees that well? First, learn to identify their leaves, flowers, and fruit. Then, as you become better friends, examine each tree more carefully. Look at its bark, its branching pattern, its color, and its shape. Eventually, you may even get to know many trees by where they live.

This book can help you start to know Oregon's trees. Keep it handy—you'll be surprised how easy and fun tree identification can be!

Name That Tree

Tree names can be very confusing until you understand how they're developed. All plants have two names: a **common name** and a **scientific name.** Common names are written in English (or in German if you're in Germany, or in French if you're in France), but scientific names always are written in Latin, so they can be used anywhere in the world.

In addition, most trees have two-part common names and two-part scientific names. One part of each name refers to the general type of tree (like "larch" in western larch), while the other refers to the specific type of larch (like "western" in western larch). In this case, larch is the **genus** and western is the **species.** In the scientific name, the order is reversed—the genus name comes first and the species name comes second. Therefore, the Latin name of western larch is *Larix occidentalis,* where *Larix* indicates the genus and *occidentalis* indicates the species.

For example:

western larch: *Larix occidentalis*

Name	Genus	Species
Common	larch	western
Scientific	*Larix*	*occidentalis*

All other larches have the same genus name in both English and Latin, but they have different species names. For example:

subalpine larch: *Larix lyallii*
eastern larch: *Larix laricina*

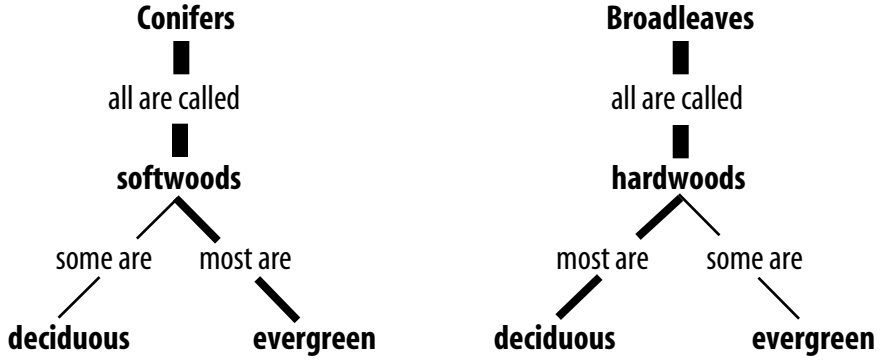
Although this naming system takes a while to get used to, you'll soon realize that learning tree names can be fun. They often tell you something special about the tree—such as who discovered it, a particular growth characteristic, or where it grows. When you encounter a new plant, see what you can learn from its name.

Tree Terms

Trees are woody plants that typically have one main stem, called a trunk, and are over 20 feet tall at maturity. Shrubs, on the other hand, are woody plants that typically have multiple stems and are less than 20 feet tall at maturity. Although there are exceptions to this, it's a good rule of thumb.

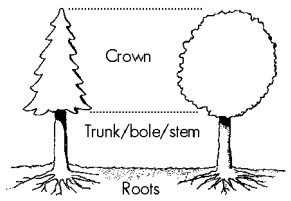
Oregon's trees fit into two major categories: conifers and broadleaves. **Conifers** have needlelike or scalelike leaves and usually bear seeds inside woody cones. Conifers are often called **evergreens** because most hold their leaves all year long; however, some conifers are deciduous—they drop their leaves in winter. All conifers are also called **softwoods** because their wood is relatively soft when compared with that of other trees. Broadleaved trees, or **broadleaves**, usually have wide, flat leaves and bear their seeds inside soft fruits. All broadleaved trees are referred to as **hardwoods** because their wood generally is harder than that of conifers. A few, however, like cottonwoods and balsa, have very soft wood. Most broadleaved trees are **deciduous** —that is, they drop their leaves in winter—but a few are evergreen.

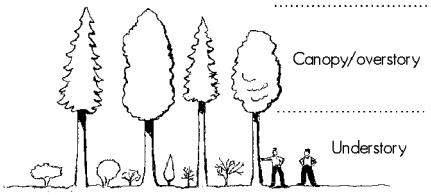
The following diagram may help you understand the relationship between these terms.



Thousands of terms are used to describe trees. Luckily, we need only a few to begin identifying trees successfully.

Trees and Groups of Trees

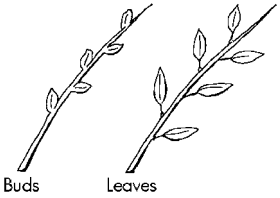




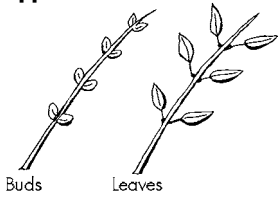
How To Identify Trees

Leaf and Branching Patterns

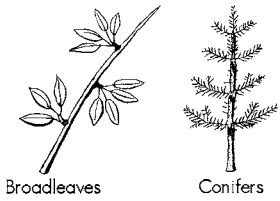
Alternate



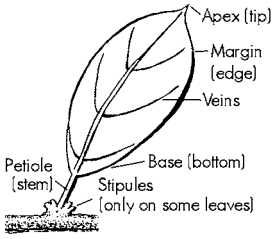
Opposite



Whorled

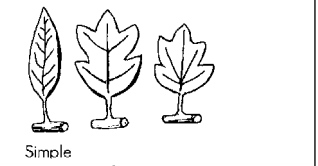


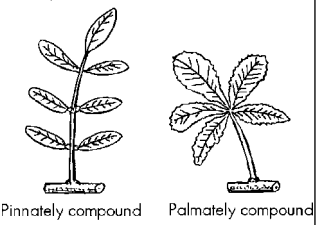
Parts of a Leaf



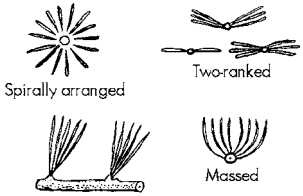
Leaf Types and Arrangements

Broadleaves



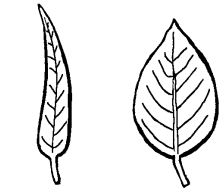


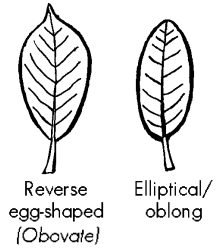
Conifers



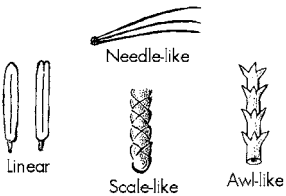
Leaf Shapes

Broadleaves

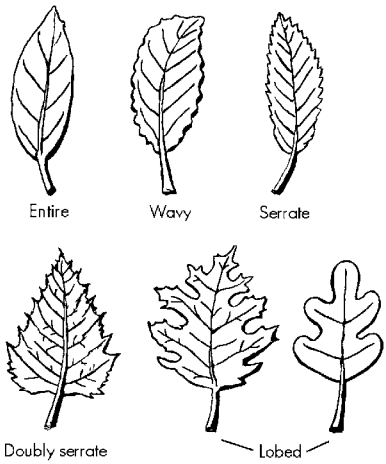




Conifers



Leaf Margins



Leaf Tips and Bases

Tips

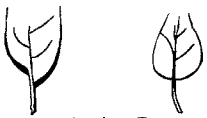
Acute
(pointed)

Rounded
(blunt)

Notched

Truncated
(cut off)

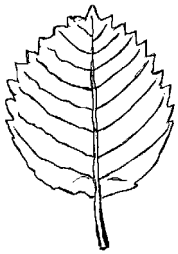
Bases



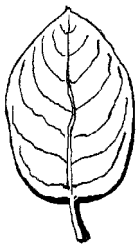
Asymmetrical
(uneven)

Truncated
(cut off)

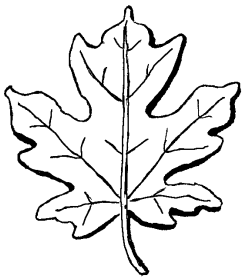
Leaf Veins



Pinnate



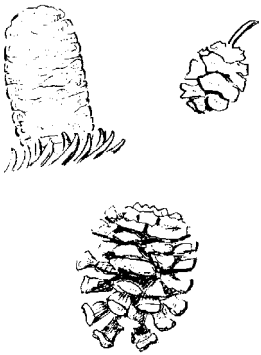
Arcuate
(curved)



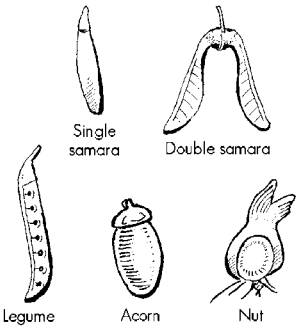
Palmate

Fruits

Cones



Dry Fruits



Single
samara

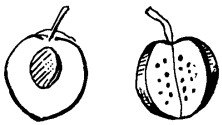
Double samara

Legume

Acorn

Nut

Fleshy Fruits

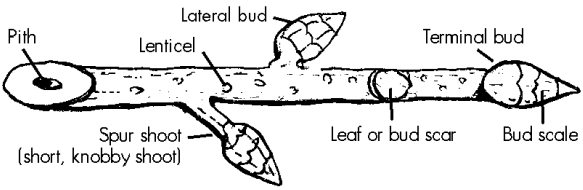


Drupe
(1 seed)

Berry
(many seeds)

Pome (apple, pear)

Twigs

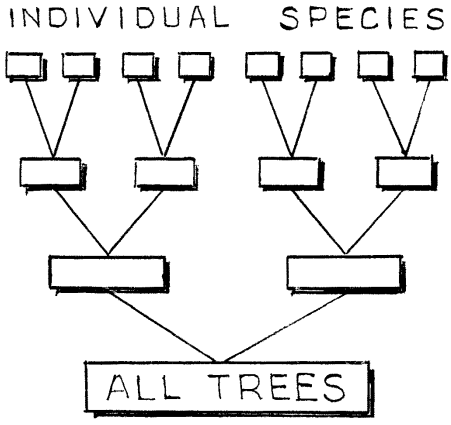


The Key to Successful Identification

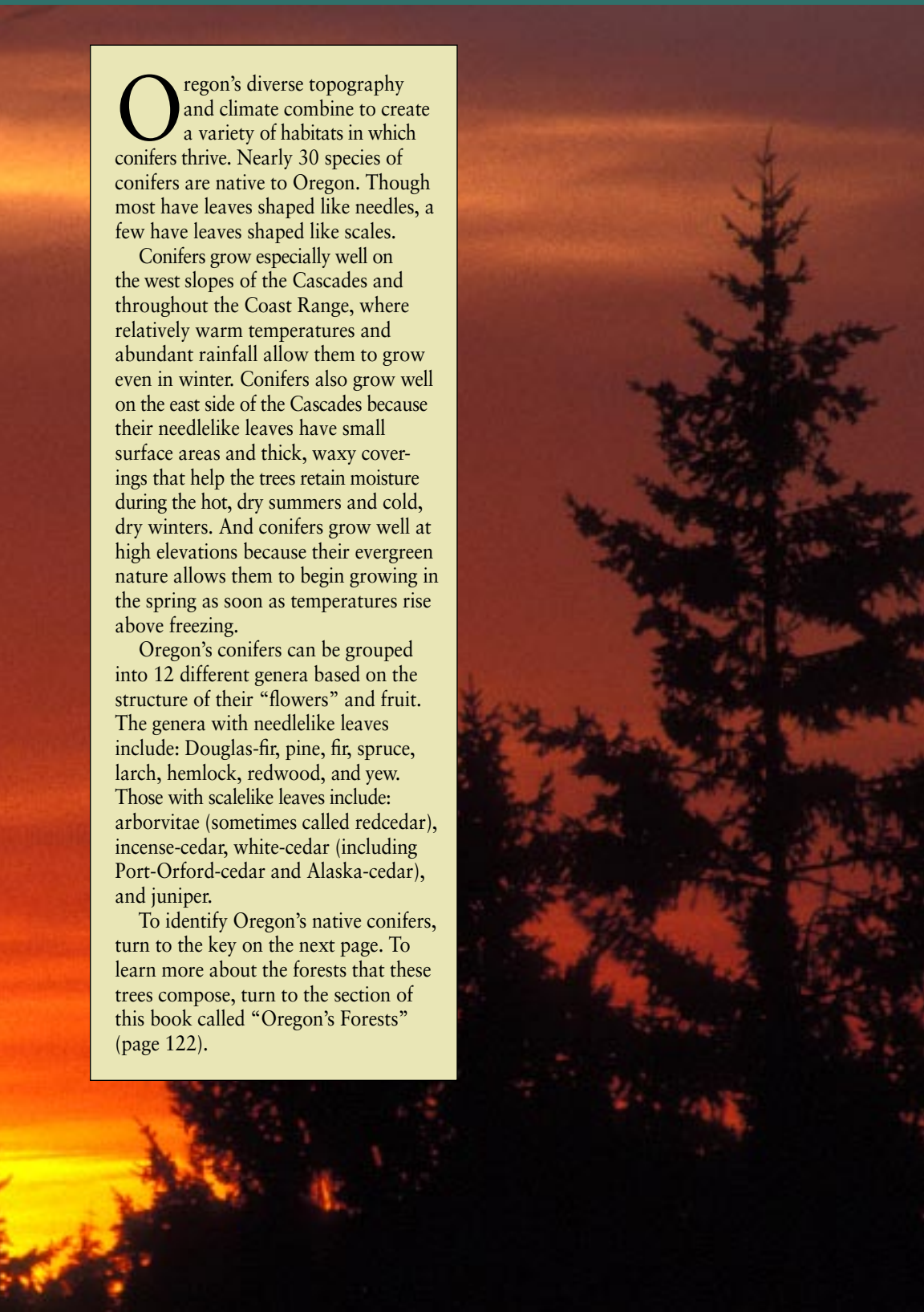
Fortunately, we don't need to remember all the characteristics of every tree. **Keys** help us make the most important distinctions. Keys come in all shapes and sizes. Some are based on pictures and some are based on words; some cover only trees while others cover only wildflowers; some are simple to use and some are very difficult. Most help us divide plants into two groups—those that have a particular characteristic and those that don't have it. If any group of plants is split often enough, eventually there will be only one plant left. If the key is accurate, and if we've made good decisions along the way, we'll have correctly identified the plant.

Using a key is like following the branches of a tree—each additional branch gets smaller and smaller until you reach a single branch tip. All the species described in a key are represented by the trunk, while each branch tip represents a single species of tree.

This book contains two keys: for conifers (page 10) and for broadleaved trees (page 61). They work exactly the same way, although the broadleaf key is longer because it contains more trees. To identify a plant, first decide whether the tree you want to identify is a conifer or a broadleaf. Then turn to the appropriate key.



Oregon's Native Conifers



Oregon's diverse topography and climate combine to create a variety of habitats in which conifers thrive. Nearly 30 species of conifers are native to Oregon. Though most have leaves shaped like needles, a few have leaves shaped like scales.

Conifers grow especially well on the west slopes of the Cascades and throughout the Coast Range, where relatively warm temperatures and abundant rainfall allow them to grow even in winter. Conifers also grow well on the east side of the Cascades because their needlelike leaves have small surface areas and thick, waxy coverings that help the trees retain moisture during the hot, dry summers and cold, dry winters. And conifers grow well at high elevations because their evergreen nature allows them to begin growing in the spring as soon as temperatures rise above freezing.

Oregon's conifers can be grouped into 12 different genera based on the structure of their "flowers" and fruit. The genera with needlelike leaves include: Douglas-fir, pine, fir, spruce, larch, hemlock, redwood, and yew. Those with scalelike leaves include: arborvitae (sometimes called redcedar), incense-cedar, white-cedar (including Port-Orford-cedar and Alaska-cedar), and juniper.

To identify Oregon's native conifers, turn to the key on the next page. To learn more about the forests that these trees compose, turn to the section of this book called "Oregon's Forests" (page 122).

To Use This Key

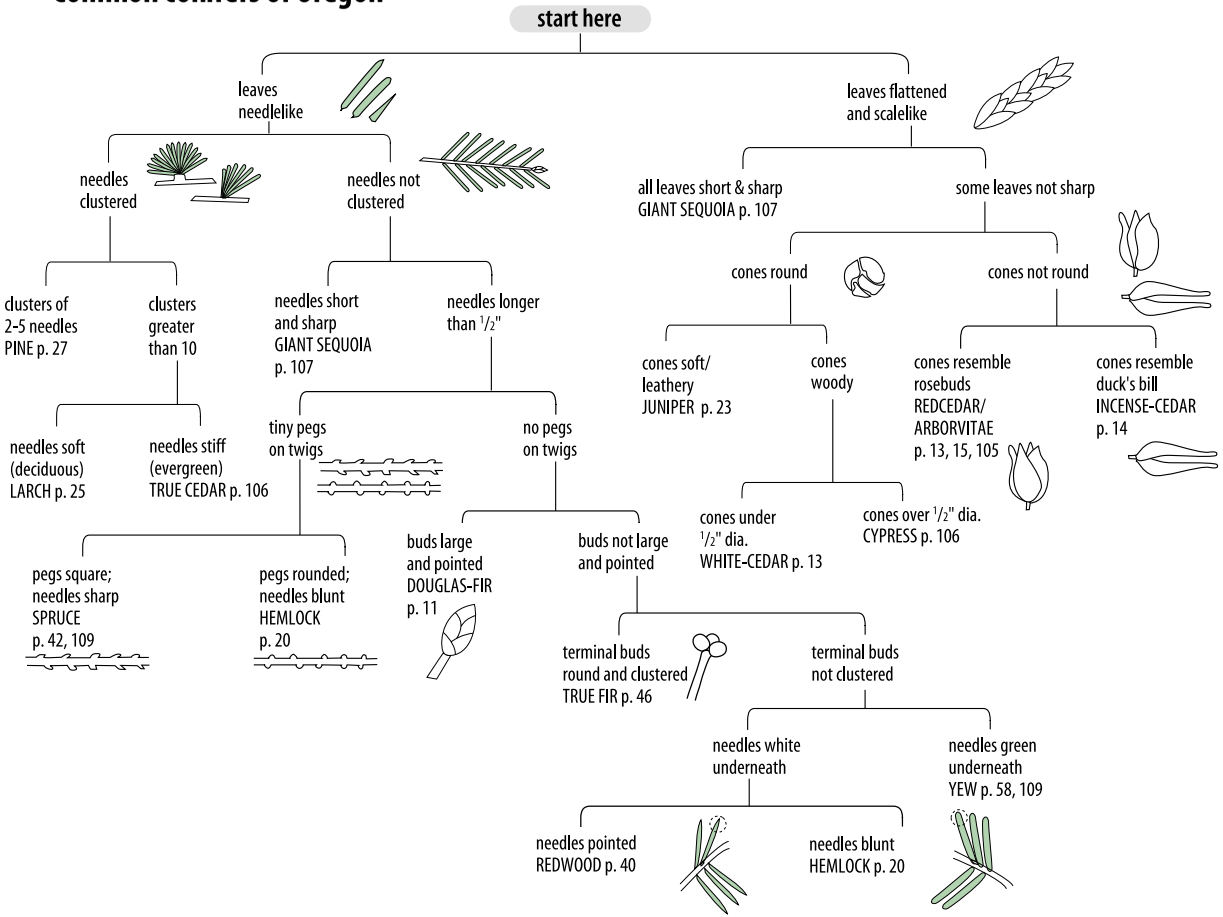
1.Start at the top of the key. Then read each of the two statements directly below the starting point.

2. Decide which of the two statements better describes the plant you're trying to identify. Then read the two statements directly under that box.

3. Continue this process until you've identified a single group of trees (called a genus). Then turn to the page indicated and read the descriptions of individual species contained within that genus (there may be only one, or there may be several).

4. If the species description matches the plant you're trying to identify—GREAT! If it doesn't match, go back to the beginning of the key and try again.

Common conifers of Oregon



Douglas-firs *(Pseudotsuga)*

Douglas-fir is the name of an entire genus of trees that contains six species—two native to North America and four native to eastern Asia. Because of its similarity to other genera, Douglas-fir has given botanists fits. It has, at various times, been called a pine, a spruce, a hemlock, and a true fir. In 1867, because of its distinctive cones, it was given its own genus—*Pseudotsuga*—which means false hemlock. The hyphen in the common name lets us know that Douglas-fir is not a "true" fir—that it's not a member of the *Abies* genus.

Only one Douglas-fir is native to Oregon, and it's by far the most important member of the entire genus. Its common name is identical to that of the genus, reflecting its importance.

Douglas-fir *(Pseudotsuga menziesii)*

Oregon's most common tree. West of the Cascades, you could guess that any needle-leaved tree in the forest is a Douglas-fir and be right 8 out of 10 times. Douglas-fir also is common east of the Cascades, especially at mid to high elevations. Douglas-fir is Oregon's state tree.

The cone everybody knows. Put a Douglas-fir cone among all cones of the Northwest and it stands out. Only Douglas-fir has three-pointed bracts sticking out between the cone scales like little tongues. These bracts have been compared to a three-pronged pitchfork and to the hind feet and tail of a mouse diving into a hole. Cones are almost

always present, either on the trees or under them. Even young saplings often have them.

Other clues to identification. The buds of Douglas-fir also help identify it. They're sharp-pointed, have reddish-brown overlapping scales, and shine like a highly polished shoe. The needles usually surround the twig like the bristles of a bottle brush and are soft to touch. Cut bark reveals two layers of color that look like bacon (alternating layers of red and cream). Stands of Douglas-fir are striking from a distance because of the uniform angles of their limbs.

A special name. This tree's name reflects the uncertainty that surrounded it for so many years and, at the same time, honors two of the outstanding naturalists of all time. The common name, Douglas-fir, is hyphenated to show that it's not really a fir, while the scientific name, *Pseudotsuga*, means "false hemlock." The "Douglas" in the common name honors David Douglas, a young Scottish botanist who roamed the Northwest in the 1820s while working for the Royal Horticulture Society of England. The "*menziesii*" in the scientific name honors Archibald Menzies, the Scottish physician and naturalist who discovered the tree on Vancouver Island in 1791 while serving in the British Navy.

Tree of 1,000 uses. Douglas-fir trees are tremendously important to Oregon and the nation. They furnish more products for human use than any other tree in the world. They can be fashioned into poles and beams hundreds of feet long or can be broken into microscopic fibers for making paper. Lumber and plywood from Douglas-fir are used to build houses, farms, factories, bridges, docks, furniture, and boats. Resin from its bark is used to make glues and photographic supplies. Shredded bark is a popular mulch under trees and shrubs in home landscapes. Douglas-fir forests are home to a wide array of wildlife: elk, bobcats, cougars, bears, and deer; and a tremendous variety of birds, insects, and small mammals. The soil in Douglas-fir forests is rich in nutrients and soil organisms and plays a vital role in filtering Oregon's water supply. Oregon's Douglas-fir forests are also among the nation's most heavily used forests for recreation, and Douglas-fir is the nation's most popular Christmas tree.

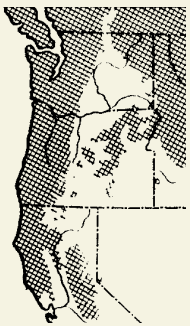
Size: Full-grown trees may exceed 250′ in height and 10′ in diameter. In 1994, the world's largest Douglas-fir grew in Coos County, Oregon; it stood 330′ tall and was over 11′ in diameter.

Needles: About 1″ long with a blunt tip. Spirally arranged, but may be two-ranked in the shade. Green above with two white bands underneath.

Fruit: Woody cone 3–4″ long; pitchfork-shaped bracts are longer than scales. Hang down.

Twigs: Large, pointed buds with reddish-brown, overlapping scales. Small, round, partially raised leaf scars.

Bark: Has resin blisters when young; deeply furrowed and reddish-brown when mature.



Fire—friend and foe. Fire is both a friend and foe to Douglas-fir, depending on the size of the trees and the size of the fire. Large Douglas-firs have very thick bark that can resist the heat of all but the hottest fires. Therefore, in an older forest, small fires simply clear competing vegetation from around larger Douglas-firs. Because Douglas-fir seeds need to germinate on bare mineral soil, they often seed-in after fires that consume the needles, branches, and green plants that typically occupy the forest floor. Large, catastrophic fires, however, kill trees both large and small. Many of the vast stands of old-growth Douglas-fir that currently occupy western Oregon and Washington owe their existence to huge fires that swept through the Northwest 400 to 600 years ago.

Eastside Douglas-fir. East of the Cascade summit, Douglas-fir is a smaller tree. In addition, its cones are shorter and have stiffer bracts. This eastside variety is sometimes called Rocky Mountain Douglas-fir, and it ranges from Canada to Mexico.

False Cedars (*Calocedrus, Thuja, Chamaecyparis)*

Common names can be confusing—and that is certainly the case with this group of trees. Oregon has four species of trees that are called cedars, but none of them is truly a cedar. In fact, they don't even resemble true cedars. True cedars belong to the genus *Cedrus* (a member of the Pine family) and bear their evergreen needles in dense clusters on small, woody spur shoots. Their cones are large, sit upright on their branches, and fall apart when the seeds are ripe. True cedars are native only to the Mediterranean and Himalayan regions of the world.

Oregon's false cedars have tiny, scale-like foliage and small cones that remain on the tree long after their seeds are gone. Why then are they called "cedars"? Although we can't be sure, it's probably because of their wood. In ancient Rome, *Cedrus* referred to a group of trees with fragrant wood. Our "cedars" also have aromatic wood, and that's probably how the confusion in names first started.

It's easy to recognize our false cedars as a group, but it's more difficult to tell one from another. Their tiny, scalelike leaves overlap like shingles and form flat sprays like a fern. Some have distinctive patterns of white bloom on their undersides; others don't. To make things even more complex, the four separate species fall into three different genera. Cones are often the best way to tell them apart.

Common Introduced Broadleaved Trees

Apple and Crab Apple: many species *(Malus* spp.)

(sometimes lumped into *Pyrus* genus)

Apple: the leading fruit tree in Oregon and the nation. Earliest recorded history calls apples the "gift of the gods." Apple trees are easily identified by their characteristic round fruit known technically as a *pome*—a fleshy fruit having seeds borne within papery cells at the core. There are many species of apple trees and several thousand varieties. Apple leaves are oval, mostly pointed at the tip and rounded at the base, soft in texture, and dull in color. The large, showy flowers are borne in clusters. Apple seeds are spread by animals and birds so that trees frequently escape to fence rows, abandoned fields, and even cutover forest land.

Crab apple: actually just a wild form of domesticated apples. As a result, crab apple trees resemble common apples except in size. They're usually stiff, low branching, and have multiple trunks. From the great number of varieties have come some of the most valuable ornamental trees in use today. Their branches are wreathed in blooms (white to red) so thick the foliage cannot be seen. Leaves may range in color from bright green to red or purple. Crab apple fruits are small and inedible, but in some cases they provide red, orange, or yellow color. Birds love them, especially in winter when other food is limited.

Basswood: several species *(Tilia* spp.)

North Americans call this tree "basswood," but others call it "linden." Basswoods are easily recognized by their unique "ribbon leaf," from which hangs a cluster of hard, pea-size fruits. White flowers produce a fragrant nectar that attracts bees. Basswoods have heart-shape leaves with uneven bases and are about 4 to 6 inches long. It's not uncommon for basswood leaves to have bright red spires on the upper leaf surface, a result of insects' laying their eggs inside the leaf.

Birch: several species *(Betula* spp.)

Several species of white-bark birches are marketed together under the name of European white birch. The differences between them are minor. Most have bright white bark similar to our native paper birch, but none peels to the same extent. All have typical birch fruits—long, papery cones that disintegrate at maturity. Most have droopy branches that drop resin on anything that's under them. All are popular ornamental trees and tend to be planted in clumps.

Buckeye: several species *(Aesculus* spp.)

Two common names for the same tree: buckeye because its reddish-brown seed with a huge white dot looks like a buck's eye; and horse-chestnut because its fruit is so similar to American chestnut. Ohio's nickname, the Buckeye State, comes from a common eastern species. All buckeyes have large, palmately compound leaves, the only common tree in North America to have this characteristic. The large brown nuts are packaged in a leathery husk that may or may not have spiny bristles. These husks split open cleanly, along straight lines. The flowers range from white to deep pink, resemble the head of an elephant, and come in huge, upright clusters, making this one of our most spectacular ornamental trees. The fruits are not edible by humans.

Catalpa: two species *(Catalpa* spp.)

Catalpas are noted for their spectacular summer flower displays. Their white, trumpet-shape flowers grow in huge, upright clusters covering the entire tree. Each flower has a yellow nectar guide to help bees find their pollen; when the pollen is gone, the nectar guide turns red and becomes invisible to bees. From the flowers develop long, thin pods resembling 12- to 18-inch-long string beans. Catalpa leaves are also spectacular: huge and heart-shaped. Both catalpas are native to the southeastern United States.

Yesterday and Today

Oregon is one of our most diverse states, whether we consider its geography, its climate, or its forests. Its environment ranges from cool, wet coastal lands to towering, snow-capped mountains to hot, parched deserts. Forests occupy nearly half of Oregon's total land base—almost 30 million acres. They include majestic stands of Douglas-fir and western hemlock in the Coast and Cascade ranges, snow-stunted spruce and fir forests near timberline, and open, parklike stands of pine and juniper east of the Cascades.

But it was not always so. In the distant past, before Oregon became a state, before people first roamed the continent, even before the mountains were formed, Oregon's forests were radically different from those of today.

From Tree Ferns to Towering Giants

Ralph E. Duddles, Allan Campbell III, and Lou Torres

Four hundred million years ago, Oregon, like much of North America, was a warm, swampy place. Giant tree ferns and horsetails lined the swamps and probably formed our first "forests." Although these ferns and horsetails reached the size of trees, they were not true trees: their stems were not woody, and they did not produce annual rings. About 200 million years ago, the first primitive trees—conifers, ginkgos, and cycads—began to develop. They probably grew on large islands within vast inland seas.

When the extensive chain of mountains now called the Rockies began to form about 70 million years ago, the North American West began a slow drying-out process that stimulated the development of land plants. Oregon's climate and forests became subtropical, dominated by trees such as palms, figs, laurels, avocados, cinnamon, and dawn redwood; the last is a primitive conifer currently native only to China.

Over time, these subtropical plants gradually disappeared from Oregon, and our forests began to resemble those that now grow in the eastern half of North America—a mixture of maples, oaks, basswoods, elms, and sycamores, as well as a host of conifers that now grow only in eastern Asia.

About 13 million years ago, the Cascade Mountains and the Coast Range began to rise from the swampy sea, dramatically changing the climate of Oregon. Annual rainfall was drastically reduced east of the Cascades, and temperature began to fluctuate more widely. Subtropical trees disappeared. The survivors were trees that could tolerate cold winters and prolonged drought, such as aspens, spruces, and pines. In the western, more temperate, side of the state, willows, cottonwoods, cherries, and maples flourished. By about 1 million years ago, the forests began to resemble those of today.

Then came the ice. Massive glaciers pushed down from the north and also from the valleys emanating from the Cascades and other mountain ranges. The effect on the land was profound as the moving rivers of ice completely destroyed entire forests. Most of Oregon's forests are still recovering from the last glacial period, which ended almost 10,000 years ago.

Through time, prolonged dryness became a dominant part of Oregon's weather pattern. Recurring summer drought and wildfire emerged as significant factors in the evolution of our forests. Fires' severity and frequency—along with other disturbances such as flooding, windthrow, and the impacts of humans—have had a dramatic effect on the forests we see today.

About 13 million years ago, the Cascade Mountains and the Coast Range began to rise from the swampy sea.

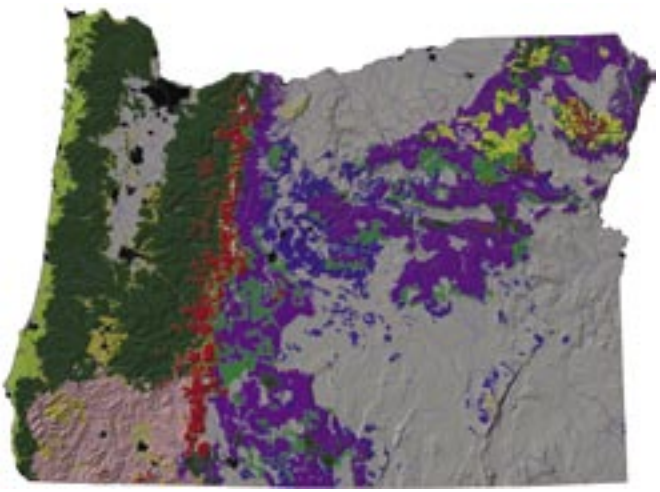
Oregon's Forests Today*

David A. Zahler and Edward C. Jensen

Today, Oregon's forests are among the most diverse, productive, and magnificent in the entire world. They range from the dry, open juniper- and pine-dominated forests east of the Cascades to the wet, majestic old-growth Douglas-fir and western hemlock forests west of the Cascades; they blanket most of western Oregon and all but the highest mountain peaks and driest plains and valleys of central and eastern Oregon. Although most of our forests are dominated by needle-leaved conifers, many species of hardwoods play important ecological roles. Nearly all tree species that grow in our forests achieve their largest size and reach their oldest age here.

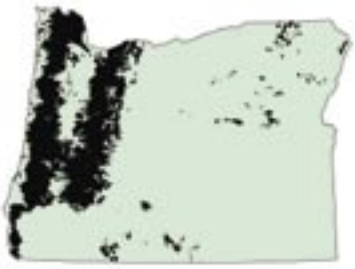
Although the percentage of Oregon occupied by forests hasn't changed much in the past 200 years, the structure, composition, and distribution of our forests have changed dramatically. Most forests of the early 1800s have been removed by fire, logging, and other disturbances and replaced with native trees but in mixes different from the original ones. Some old-growth forests remain, mostly in remote parts of public lands. Many low-elevation forests have been lost to agricultural and urban development, although many communities now try to preserve remaining stands. Fire suppression that has accompanied settlement has also created many changes; some will be described below.

Given the types and extent of change over time, much of modern forestry is directed at maintaining the health, diversity, and productivity of Oregon's forests while producing the wood, water, wildlife, and recreation that society demands.



*Note: Information in this section also is available as a large, double-sided poster from the Oregon Forest Resources Insititute. To order a poster, visit the OFRI website at: www.oregonsforests.org or write: OFRI, 317 SW 6th Avenue, Suite 400, Portland OR 97204.

Douglas-fir Forests



Douglas-fir forests are the most extensive in Oregon; they're also the most important for timber production. Although Douglas-fir is the dominant forest tree west of the Cascade crest, it's also an important component of eastside forests. West of the Cascades, Douglas-fir often forms vast, nearly pure stands, a result of both natural conditions and human management. Common associated species include western hemlock (the climax species for much of this region), western redcedar, noble fir, bigleaf maple, and red alder (the most common early successional species for most of this region). East of the Cascades, common associates of Douglas-fir include incense-cedar, sugar pine, western white pine, ponderosa pine, grand fir, white fir, and western larch, depending on moisture and stand history. Understories (the combined species growing beneath the tree canopy) vary from dense to sparse depending on the availability of moisture, but are generally rich in shrubs and herbs. Douglas-fir is a long lived, early- to mid-successional species. This means that it is among the first species to invade disturbed sites, but it can continue to dominate these sites for hundreds of years before it eventually is replaced by other species.

Douglas-fir forests grow under a wide variety of conditions. The climate of westside Douglas-fir forests ranges from wet and mild in the north to drier and warmer in the south. Eastside Douglas-fir forests are much drier than those of western Oregon and have more extreme temperature fluctuations, both daily and seasonally.

Prior to human management, Douglas-fir forests originated following large disturbances such as fire, landslides, and windstorms. Sometimes, Douglas-fir recolonized the sites rapidly, resulting in relatively even-aged stands; sometimes it took much longer, resulting in uneven-aged stands in which the dominant trees vary significantly in age. Although Douglas-fir trees become commercially valuable around age 30, time between harvests can range from 30 to 100 years (or more), depending on management objectives. Over most of the westside, timber management practices such as clearcutting and shelterwood harvests are followed by planting and thinning, resulting in even-aged forests. In drier areas like southwestern and eastern Oregon, management practices commonly include individual-tree and small-group-selection harvests that result in uneven-aged stands.

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