

Summer Issue 2018

OREGON **Fish & Wildlife** JOURNAL



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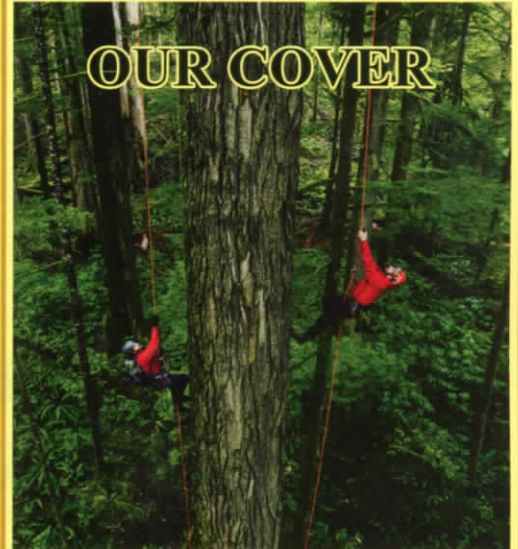
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OUR COVER



Our cover photograph, Ascending the Giants. Brian French and Damien Carre climb a giant Douglas Fir tree in Eastern Coos County, Photo by Paul Coangelo. See story on page 31.

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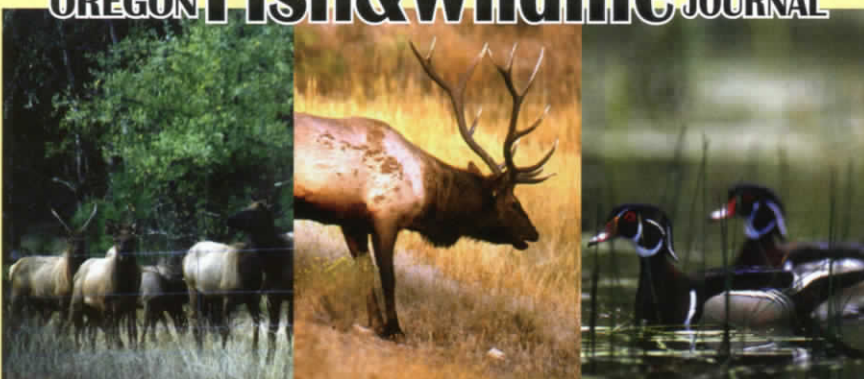
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MY VOICE By Cristy Rein

It's late June and already many public lands are closed due to fire risk, or landslides from prior fires. Summertime, when people look forward to outdoor activities and camping, many are disappointed. Our lands are not healthy. It's been decades of hands off, no management.

Last year it was a mess! Towns were shut down like Cascade Locks, Oregon due to the Eagle Creek Fire in the Gorge. And now, after decades of neglect by the government they can blame the whole thing on a 15 year old boy who threw away a firecracker.

What would that firecracker have caused in a healthy well taken care of forest? We ran a picture in our magazine of men golfing nearby with fire raging all around them because the golf course wasn't full of dead trees and limbs to catch a spark and ignite.

So the entire cost of fighting this fire and all the loss is the sole responsibility of the boy? Sure, he was wrong and should have consequences, but all of it?

In 2017, nationally there were 71,499 wildfires, compared to 65,575 wildfires in 2016, according to the National Interagency Fire Center. About 10 million acres were burned in 2017, compared with 5.4 million in 2016. Nationally acres burned in 2017 were also higher than the 10-year average.

In 2017 in Oregon we had 1,069 reported wildfires that burned a total area of 451,863 acres.

If you read the Forest Report from the state of Oregon for 2015 they state that on the 30 million acres of forestland 1.68 million trees were dead by insect, disease or bear damage. So, if they knew that, how much of it did they salvage or treat? The federal government openly states over 70 million acres nationwide are at high risk for fires. How much have they treated or salvaged? Neglect?

This raises the question of responsibility. If your adjoining

landowner (neighbor) is negligent can't you hold them responsible to loss or damage on your land? Of course you can!

The landowners of all the acres burned are us, every American citizen. The people we have hired to manage our lands have brought them to this state of unhealthiness. They know it and they continue to do little to really address the magnitude of it!

I'm sure you remember the Chetco Bar fire in the southern coast area of Oregon last year? It burned more than 190,000 acres of land. A year later our paid land managers are planning to salvage just over 4,000 acres. All the rest will be left to rot or will be the next big fire when lightning strikes!

The Eagle Creek Fire burned 50,000 acres. If the land managers we employ had been taking care of this land, how many acres would have burned? How fast and far would it have spread in a healthy forest?

That 15 year old's life is a mess for a bad choice. The people we hire to take care of our resources and land have no consequences and no accountability. They publish reports showing their own knowledge of insect, diseased killed forest. Then when a fire breaks out they blame it on climate change. Dead trees standing for years become firewood, regardless of the climate.

That kid needs a better lawyer and we need to hire competent land managers!



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Oregon Coast Range Old-Growth: Part II

Size Matters

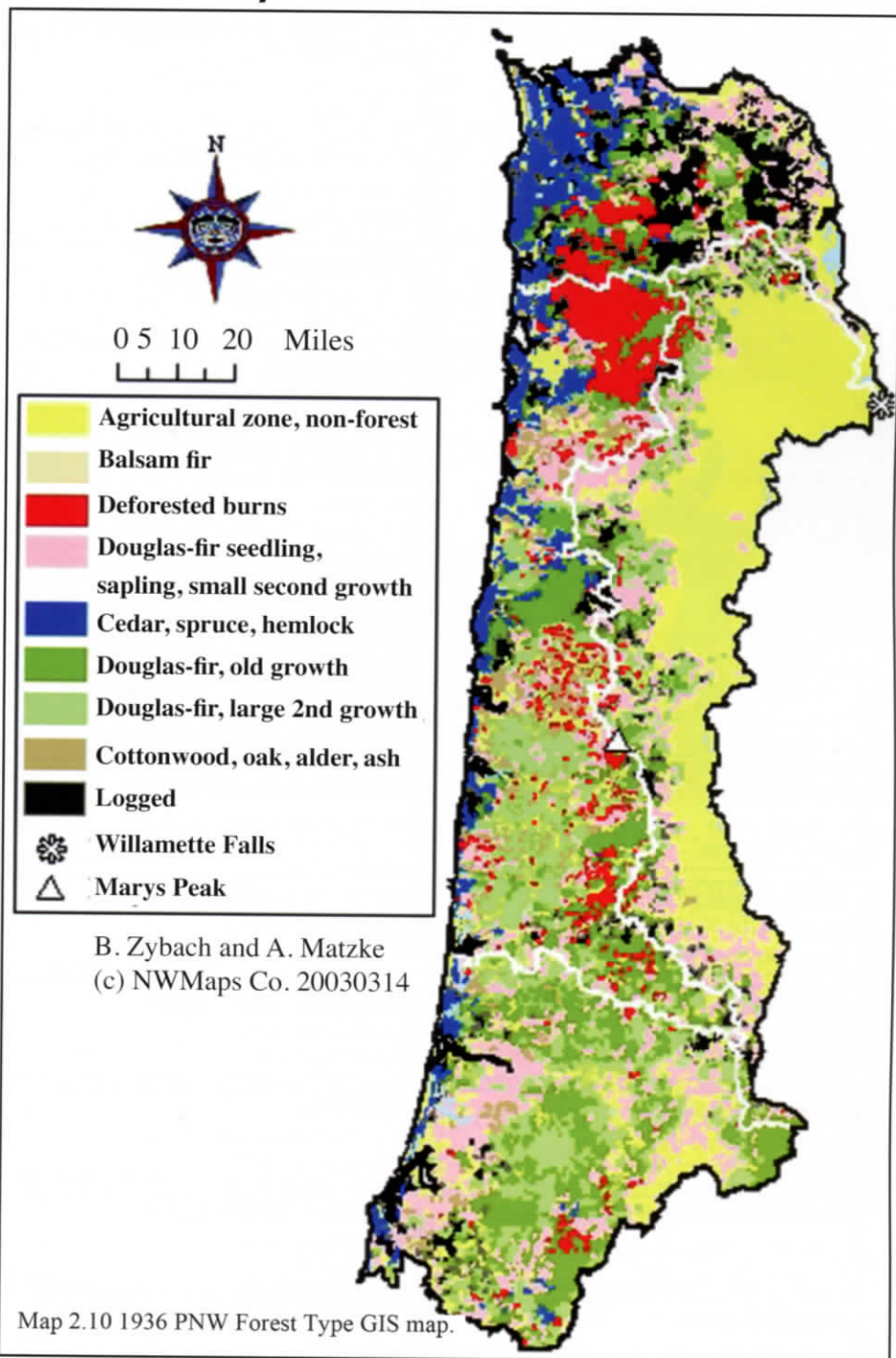
Dr. Bob Zybach

The previous article in this series focused on the age and distribution of old-growth trees in the Oregon Coast Range. A detailed 1945-1947 forest inventory of the Weyerhaeuser Millicoma Tree Farm in eastern Coos County and my own western Oregon fire history research were used to arrive at the following conclusions: 1) during most of the past 500 years most of the western slope of the Oregon Coast Range was covered by second-growth Douglas fir forests; 2) about 90% of the trees in these stands were even-aged Douglas fir; 3) surviving old-growth stands (191 years and greater) typically began degenerating and dying at 200-300 years of age, and 4) it is/was extremely rare for Coast Range trees of any species to reach 500 years of age.

These numbers are significant because they directly contradict (in scientific jargon: “challenge”) the peer-reviewed information routinely used by universities and agencies to develop federal and state harvesting schedules and locations. That data describes “uneven-aged, species-rich, multi-layered canopied” forests as “non-declining, even-flow, naturally functioning ecosystems” in which individual trees “typically” exceed 800 years in age and in which the Oregon Coast Range was “mostly” covered with 450-year-old and older forests of trees, before white settlement.

These latter numbers have had a profound effect on the costly model-based management of “habitat” for rare bird and fish species in western Oregon for more than 25 years, yet cannot be verified; most likely because they are in error. In fact, to date there is no reliable information that documents even a single Coast Range tree reaching 600 years of age; and very, very few ever making it to 500 years – and usually then in a broken and

damaged condition, with hollow, rotted centers and infested with bugs and conks. Prime candidates for wind, fire, fatal diseases, and direct competition from younger trees; hardly



Map 1. Remaining Old-Growth Conifer Stands in the Oregon Coast Range, 1936

“critical habitat” for the “survival” of any known fish or bird.

The economic and biological effects of this misinformation can be measured over decades in terms of onerous government regulations, billions of taxpayer dollars,

History of Measuring Big Trees in Oregon

A secondary conclusion reached in my previous article on old-growth was that despite the relative youth of Oregon coastal forests when compared to their much older counterparts in the Cascades, Olympics, northern California, or



Figure 1. Measuring the circumference of a Giant Douglas Fir Tree near Astoria, Oregon, 1841.

millions of acres of burned forests, millions of killed animal wildlife, tens or hundreds of thousands of lost jobs and damaged families, months of unhealthy and unsightly smoke intrusions, occasional threats of dangerous wildfire, and deteriorating infrastructures throughout rural Oregon. A primary problem has been one of poor measurements being given scientific – and thus, political – credibility. And then being made into laws and regulations for lawyers to debate while abandoned forests burn and rural families and communities suffer. In my opinion.

While it is difficult to understand how academic and government reports regarding the age of Oregon Coast Range old-growth forests have become so inflated over time – or why these imaginary numbers have become so significant in the reduction of harvest schedules on public forestlands – it is comforting to know that other measures of giant coastal trees have become increasingly accurate over time, and have remained reasonably accurate for more than 200 years.

Vancouver Island, they still contain among the largest, tallest, fastest growing, and most voluminous members of their species ever measured.

The Brummit Fir (aka Ray Doerner Fir) in eastern Coos County, for example, has been measured at 327 feet in height, making it the tallest tree in Oregon and the tallest Douglas fir in the world. It is estimated to be 350-400 years of age, has a dead top (“normal” for this age group), and is beginning to lose height. Sometime in the foreseeable future other trees will become taller, whether through growth or attrition.

Throughout western Oregon history people have been fascinated by the sizes of many of the region’s gigantic trees, such as the Brummit Fir, and most likely have held similar thoughts for thousands of years. Figure 1 is an 1841 Wilkes Expedition “camera lucida drawing” by “Mr. Drayton” of sailors measuring a giant Douglas fir near Astoria. This method uses a lens to reflect an image onto paper, which is then traced, producing a drawing that can

be nearly as accurate as a photograph, particularly in regard to scale. The tree was “one of the largest” in the “primeval forest of pines” and measured 39 feet, six inches in circumference, with bark 11 inches thick at eight feet above the ground. The tree was “perfectly straight” and estimated to be “upwards of two hundred and fifty feet” tall.

Sixteen years earlier, in 1825, Scottish naturalist and namesake of Douglas fir, David Douglas, had measured a bark-less, three-foot high stump behind Fort Astoria that was 48 feet in circumference and had been logged, he noted, “to give place to a more useful

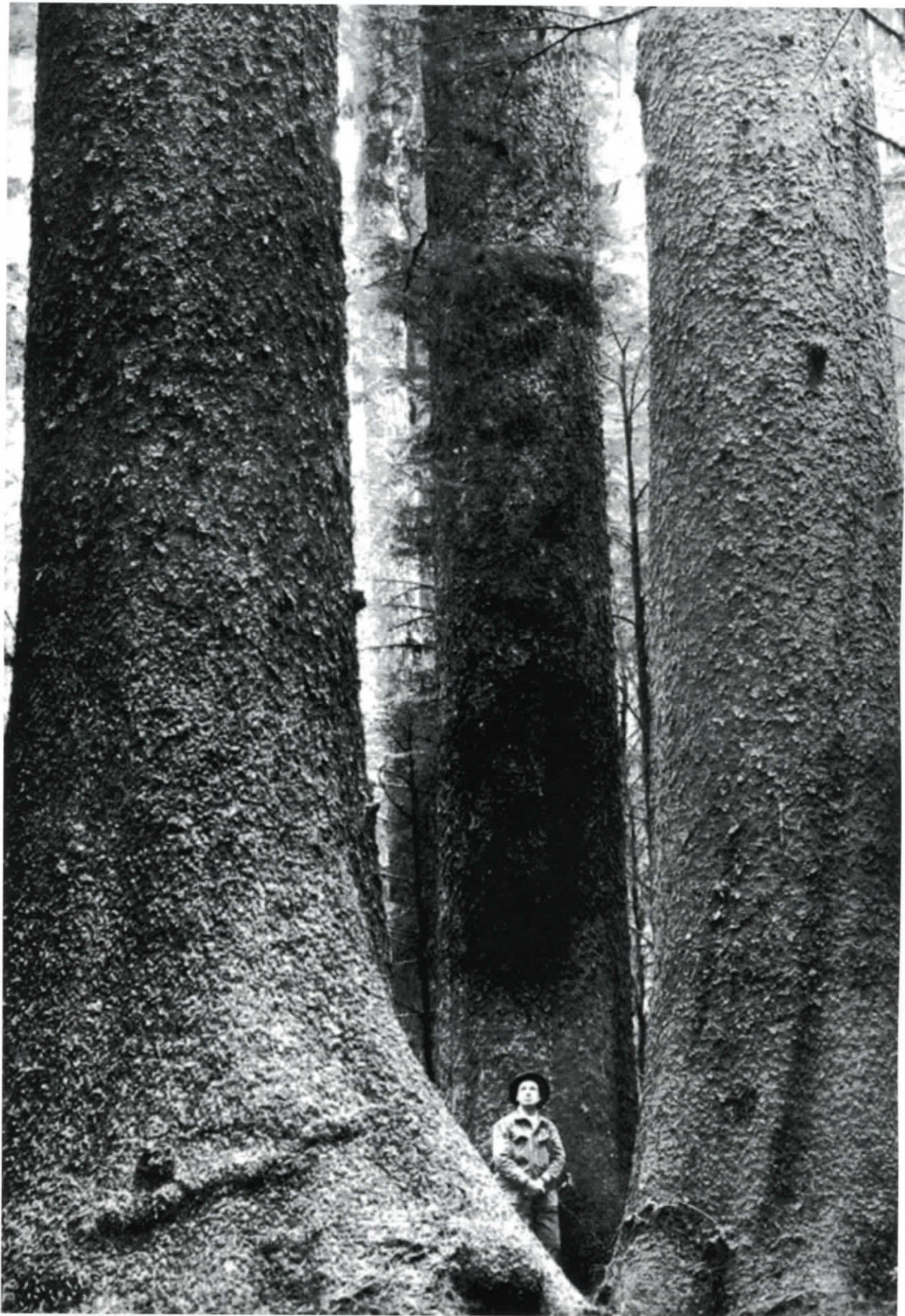


Figure 2. Giant Sitka Spruce Trees near Waldport, Oregon, 1923

vegetable, namely potatoes.” Douglas’ stump may have, in turn, belonged to the tree described 11 years earlier by Ross Cox, the Irish clerk, journalist, and fur trader, at Fort Astoria in 1814:

“The largest species [of “fir-trees”] grow to an immense size, and one immediately behind the fort at the height of 10 feet from the surface of the earth measured 46 feet in circumference! The trunk of this tree had about 150 feet free from branches. Its top had been some time before blasted by lightning; and to judge by comparison, its height when perfect must have exceeded 300 feet! This was however an extraordinary tree in that country, and was denominated by the Canadians Le Roi de Pins.”

Figure 2 shows a stand of Sitka spruce taken near Waldport, Oregon in 1923. People have documented the giant trees of western Oregon with photographs since the invention of photography was made popular in the late 1800s. This is the same impulse that makes people want to photograph the largest fish, largest hunting trophies, biggest snake, and etc. However, the size and age of these trees do not represent a normal condition or likely potential size of more than 99% of the trees on the Coast Range; rather, they are outliers that are recognized for their unique and awe-inspiring differences from others of their species.

Oregon Champion Tree Registry

In 1941 the Oregon Champion Tree Registry was created in order to begin keeping track and documenting the size of Oregon’s largest trees; typically growing in the most remote locations and/or in the process of being lost to bugs, wind, logging, and/or wildfire. This was taking place during the beginning of WW II and the list was established and maintained by the Oregon Department of Forestry (ODF).

A curious outcome of establishing statewide “champion trees” was the need to define a “tree.” The definition had to account for the arid conditions in eastern Oregon, limited growing seasons at higher elevations in the moun-

tains, and for tree species that were genetically small. The definition adopted by ODF was -- in order to be eligible for the Registry -- a “tree” had to be: 1) a native or non-native naturalized plant, 2) have one erect perennial stem at least 3 inches in diameter at 4.5 feet above the ground (DBH, or, “Diameter at Breast Height above the ground”), 3) a “more or less definitely formed” crown of foliage, and 4) the plant had to be at least 13 feet tall.

An unexpected result of using this definition was that a number of native Coast Range plants – formerly considered to be perennial shrubs – were now qualifying as the “champion tree” of their species, at both state and national levels.

Species	Latin Name	Height	DBH	Status
Alder, Red	<i>Alnus rubra</i>	098'	04.4'	US**
Alder, White	<i>Alnus rhombifolia</i>	091'	04.0'	US**
Ash	<i>Fraxinus latifolia</i>	081'	07.6'	US**
Bayberry	<i>Morella californica</i>	024'	02.6'	US**
Cedar, Port Orford	<i>Chamaecyparis lawsoniana</i>	242'	13.8'	US**
Dogwood, Western	<i>Cornus occidentalis</i>	025'	00.9'	US**
Douglas Fir	<i>Pseudotsuga menziesii</i>	327'	11.8'	US**
Elderberry, Red	<i>Sambucus pubens</i>	027'	01.5'	US**
Maple, Bigleaf	<i>Acer macrophyllum</i>	119'	12.3'	US**
Maple, Vine	<i>Acer circinatum</i>	043'	02.0'	US**
Oak, White	<i>Quercus garryana</i>	097'	07.6'	US**
Rhododendron	<i>Rhododendron macrophyllum</i>	024'	01.0'	US**
Willow, Hooker	<i>Salix hookeriana</i>	033'	00.6'	US**
Willow, Scouler (1)	<i>Salix scouleriana</i>	054'	04.3'	US**
Cherry, Bitter	<i>Prunus emarginata</i>	101'	01.2'	PV
Hawthorn, Black	<i>Crataegus douglasii</i>	046'	02.1'	PV
Maple, Douglas	<i>Acer glabrum</i>	044'	00.4'	PV
Snowbrush	<i>Ceanothus velutinus</i>	035'	00.3'	PV
Twinberry	<i>Lonicera involucrata</i>	015'	00.4'	PV
Willow, Columbia River	<i>Salix exigua</i>	029'	00.8'	PV
Willow, Scouler (2)	<i>Salix scouleriana</i>	060'	04.4'	PV
Cedar, Red	<i>Thuja plicata</i>	152'	17.0'	OR*
Chinquapin	<i>Chrysolepsischrysophylla</i>	106'	04.8'	OR*
Cottonwood, Black	<i>Populus trichocarpa</i>	141'	10.1'	OR*
Crabapple	<i>Malus fusca</i>	045'	02.0'	OR*
Fir, Noble	<i>Abies procera</i>	192'	08.1'	OR*
Hemlock, Western	<i>Tsuga heterophylla</i>	260'	06.9'	OR*
Huckleberry, Evergreen	<i>Vaccinium ovatum</i>	022'	00.4'	OR*
Madrone	<i>Arbutus menziesii</i>	084'	07.5'	OR*
Ninebark	<i>Physocarpus capitatus</i>	022'	00.4'	OR*
Oak, Black	<i>Quercus kelloggii</i>	105'	06.3'	OR*
Pine, Shore	<i>Pinus contorta</i>	104'	02.6'	OR*
Spruce, Sitka (1)	<i>Picea sitchensis</i>	144'	15.3'	OR*
Spruce, Sitka (2)	<i>Picea sitchensis</i>	192'	14.0'	OR*
Willow, Pacific	<i>Salix lasiandra</i>	070'	02.7'	OR*
Yew	<i>Taxus brevifolia</i>	065'	04.3'	OR*

Table 1. . This is a listing of all national (US) and statewide (OR) Champion native trees and shrubs growing on the Oregon Coast Range. Plants marked “PV” are in the process of being verified as current or future Champions.

Table 1 contains a listing of native state (OR*) and

national (US**) Champion Trees on the Oregon Coast Range, as of November 2017. A number of other plants have also been nominated for these distinctions, and the process of verification (PV) is currently underway, with most listed PV submissions ultimately expected to be upgraded to championship status in the near future.

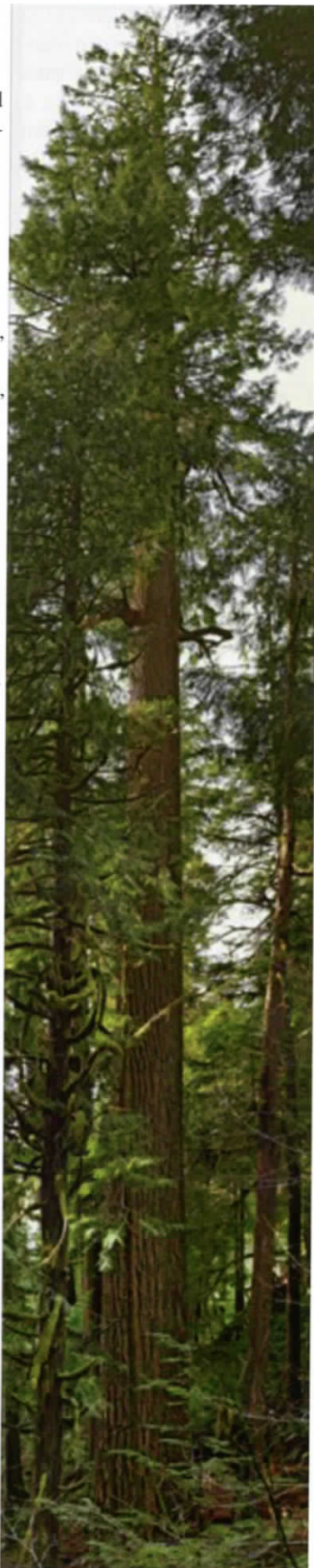
As might be somewhat expected, yet still surprising by their number, is that giant Oregon Coast Range Douglas fir, noble fir, hemlock, shorepine, Oregon ash, Sitka spruce, Port Orford white cedar, white alder, white oak, redcedar, red alder, black oak, black cottonwood, bigleaf maple, bitter cherry, chinquapin trees and yew are all listed as state and/or national champions.

Far more surprising is that a number of Coast Range perennial shrubs are also recognized for their “champion tree” status: red elderberry (18-inches DBH; 27-feet tall) and rhododendron (12-inches DBH; 24-feet tall) are National Champions (US**); evergreen huckleberry (5-inches DBH; 22-feet tall) and ninebark (5-inches DBH; 22-feet tall) are Oregon Champions (OR*); and snowbrush (4-inches DBH; 35-feet tall) and twinberry (5-inches DBH; 15-feet tall) nominations are currently in the process of being verified (PV), and soon likely to be upgraded.

Ascending The Giants

Throughout most of the 1900s, Oregon’s best known “Big Tree hunters” were Oliver Matthews, a “classic nineteenth-century botanizer who was fanatically devoted to the study of Oregon’s trees” and whose excellent 1906-1969 statewide arboreal photograph collection is a valuable part of Oregon State University Archives, and Maynard Drawson, the Salem barber who wrote books and newspaper columns about his adventures tracking down Oregon’s largest and most historic trees.

I had the good fortune to become a friend of Maynard’s over the years, beginning in the 1980s, and to accompany him on a number of “big tree expeditions” involving white oak and madrone in the Willamette Valley and claimed “300-foot-tall” Douglas fir in the western Cascades.



In addition to his many books, columns, and interviews, Dawson almost single-handedly created the successful Oregon Heritage Tree Program, which is managed in tandem with the state’s roadside Historical Markers Program. An annual award recognizing a tree or grove important to Oregon history is named in his honor.

Matthews died in 1979 and Drawson followed him in 2012. In 2005, after nearly 65 years of maintaining the Oregon Champion Tree Registry, ODF decided to cease funding the program and transfer responsibility to another organization. In 2007 two Portland-area arborists and “weekend warrior” big tree climbers, Brian French and Will Koomjian, formed the requisite 501 c(3) nonprofit -- which they named “Ascending the Giants” -- and took over responsibility for the Register; which French has continued to the present time.

There are about 120 species listed on the Oregon Register, including both native and introduced trees. When French and Koomjian agreed to maintain the Register, they did so with the intent of verifying all of the plants and measurements then listed. Working with friends and like-minded associates, by 2010 Ascending the Giants had measured over 100 trees and recorded 38 national champions in the Pacific Northwest, including the Brummit Fir. Information gathered from these precise measures and locations were kept by fellow big tree hunter, Jerry Black, who continued to maintain such records for more than 11 years until his resignation in 2017. The tables in this article are based on his most recent data.

American Forests Big Tree Registry

The National Big Tree Registry was founded in 1940 by the American Forests Association (now “American Forests,” or AF)

Figure 3. The Brummit Fir, also known as the Ray Doerner Fir, is located in eastern Coos County and was measured in 2013 at 327 feet tall, making it the tallest tree in Oregon and the tallest Douglas Fir in the world! It is nearly 12 feet in diameter and totals 792 AF Points, with only a red cedar in Clatsop County at 810 AF Points being larger. Because of its dead top, the Brummit Fir will never get taller and will lose height over time. Photograph by Paul Coangelo

and has worked cooperatively since then with several National Forests, municipalities, counties, and state programs – including the Oregon Champion Tree Registry -- to locate and measure the nation’s largest trees of each species.

In order to accomplish this objective, American Forests developed a points system to fully consider the size of

trees: rather than just DBH, which could favor short, squat trees with little height; or just height, which could favor tall, spindly trees with little girth. Instead, the “AF Points” system considers the size of an entire tree by measuring its circumference, height, and breadth. AF Points are given for each inch of a tree’s circumference at “breast height”



Figure 4. Ascending the Giants: Brian French and Damien Carre Climb a Giant Douglas Fir Tree in Eastern Coos County, 2013. Photo by Paul Coangelo.

(4.5 feet above the ground), for each foot of its height, and for “1/4 average crown spread,” also measured in feet. The total of these three numbers becomes the “Points” by which the nation’s Big Trees are recognized.

Table 2 lists the largest native Coast Range trees by County. It also lists total AFS Points for each Oregon Coast Range Big Tree, its most recent date of verification, and who the climbers were that verified the measurements. It is not surprising to see the names of French, Koomjian, and Black represented. It is reassuring to see trees nominated by Oliver Matthews (yew) and Maynard Drawson (his white alder and a Polk County crabapple that hasn’t been relocated in many years) still in competition!

In 2007 and 2008 the three largest Sitka spruce in Oregon blew down during windstorms. In 2011 the nation’s largest known bigleaf maple, a pioneer Oregon landmark, also blew down. Ascending the Giants is on a mission. Ac-

ording to Brian French:

“We’re spending our time and energy creating this documentation of the forests that we have now, and these ancient trees before they fall over and die, so future generations can look back and see what the world did look like when their grandparents were around, and hopefully inspire stewardship that allows for forests to grow back up to their former glory.”

Conclusions

Oregon Coast Range forests are highly dynamic and have been the location of some of the largest and most destructive forest fires, floods, and windstorms in US history. Insect and disease outbreaks, earthquakes, and landslides have also caused widespread tree mortality in the region during historical time.

Despite the magnitude and relative frequency of these disturbances, native Oregon Coast Range trees and shrubs

are among the largest, fastest growing, and potentially most valuable forest species in the world.

In many instances, partly due to disturbance history, they are also among the shortest-lived members of their species.

Although many individual Coast Range trees can attain extremely large sizes, this condition is very rare and unusual and not the norm: as Cox said in 1814 regarding the Le Roi de Pins, “[it] was however an extraordinary tree in that country.”

Species	County	Documentation	Year	Status	Points
Alder, Red	Benton	Ralph Anderson	2013	US**	280
Cherry, Bitter	Benton	David King	2014	PV	154
Fir, Noble	Benton	David King	2016	OR*	511
Hemlock, Western	Benton	Mahogany Aulenbach	2012	OR*	470
Maple, Douglas	Benton	David King	2014	PV	61
Snowbrush	Benton	David King	2015	PV	47
Cedar, Red	Clatsop	Brian French	2011	OR*	810
Maple, Vine	Clatsop	LaVelle McBee Goheen	2014	US**	124
Willow, Scouler (2)	Clatsop	Jerry Black, Ralph Anderson	2014	PV	234
Willow, Columbia River	Columbia	Ralph Anderson, Jerry Black	2015	PV	67
Willow, Scouler (1)	Columbia	Larry Rea, Ralph Anderson	2014	US**	228
Bayberry	Coos	George Miller	2013	US**	130
Cedar, Port Orford	Coos	Donald Denniston	1968	US**	773
Douglas Fir	Coos	Hank Williams	2008	US**	792
Chinquapin	Douglas	Kim Parsley	2007	OR*	297
Huckleberry, Evergreen	Lane	Ronald Sjogren	2013	OR*	39
Maple, Bigleaf	Lane	Brian French	2013	US**	605
Oak, Black	Lane	Ernest O'Byrne	2014	OR*	367
Pine, Shore	Lane	Ronald Sjogren	2007	OR*	210
Rhododendron	Lane	Ronald Sjogren	2007	US**	66
Ninebark	Lincoln	Ralph Anderson	2014	OR*	42
Twinberry	Lincoln	Ralph Anderson, Jerry Black	2014	PV	31
Ash	Multnomah	Brian French, Will Koomjian	2007	US**	385
Oak, White	Multnomah	Mike Warn	2014	US**	408
Alder, White	Polk	Maynard Drawson	2009	US**	250
Cottonwood, Black	Polk	Seth & Eric Crawford	2017	OR*	544
Crabapple	Polk	Maynard Drawson	1971	OR*	131
Dogwood, Western	Polk	Barbara Rupers	1987	US**	66
Elderberry, Red	Tillamook	Ed Schoppert	2008	US**	91
Spruce, Sitka (1)	Tillamook	Brian French, Will Koomjian	2007	OR*	743
Spruce, Sitka (2)	Tillamook	Casey Cochran	2013	OR*	738
Hawthorn, Black	Washington	Ralph Anderson, Jerry Black	2013	PV	133
Madrone	Washington	Lans & Trish Stout, Tom Andrews	2000	OR*	390
Willow, Hooker	Washington	Jerry Black	2015	US**	66
Willow, Pacific	Washington	Jerry Black	2014	OR*	74
Yew	Washington	Oliver Matthews	2007	OR*	236

Table 2. Listing of Champion Coast Range Trees and Shrubs by County, with AFS Points.



Trout Thrive After Logging

10 Year Study From Oregon State University

A decade-long study of cutthroat trout in the Oregon Coast Range has found that logging practices conducted in accord with the Oregon Forest Practices Act had no adverse impacts on coastal cutthroat trout and coho salmon populations or movements.



In studies of logging practices prior to passage of the act in 1971, changes to fish habitat were documented from the use of stream channels as transportation corridors for logs and from other changes to riparian areas adjacent to streams. One of the landmark studies of such practices occurred in the Alsea River watershed in the late 1960s.

Starting in 2006, a team of researchers from Oregon State University, the U.S. Geological Survey, Colorado State University and the forest products industry returned to the Alsea basin to study the impacts of modern logging practices conducted in compliance with the act. They assessed the numbers of cutthroat trout, aged one year old and older, annually through 2014 in the watersheds of Needle Branch and Flynn creeks. The researchers also documented forest cover, stream habitat conditions and stream temperature and discharge.

Logging occurred in Needle Branch in 2009, but Flynn Creek was left unharvested, just as it had been in the 1960s. The results were published March 1 in a professional journal, *Forest Ecology and Management*.

"In the 1960s, the stream channel in Needle Branch got hammered, and cutthroat took it in the shorts," said Doug Bateman, the lead author of the paper, now a retired researcher in the College of Forestry.


In the latest study, the biomass of cutthroat trout in Needle Branch increased after the tree harvest relative to the trout in Flynn. In the headwaters area of Needle Branch, nearly all of the trees were cut with the exception of the required buffer strip along the fish-bearing portion of the stream. By monitoring the movements of fish up and downstream, the researchers were able to determine that increases in Needle Branch were related to local changes rather than to influxes of fish from other areas.

"It's rare to be able to say that," said Bateman. "In other studies, it is often unknown whether changes in population size are associated with fish movement, but here we show that the fish responded to conditions in the harvested portion of the channel. We weren't set up to study the causes of the increase, so we can't really say for sure. It's possible that increases in sunlight or increased export of invertebrates from upstream areas contributed to the increased fish biomass, but it could also be related to any number of other factors, such as stream temperatures, changes in predators or disease."

The researchers also recorded changes in numbers of juvenile coho salmon, which were found generally downstream from harvested areas where increases in cutthroat trout were most apparent. No changes were observed in numbers of salmon over the course of the study, possibly due to the fact that these fish were located downstream from the logged area. The salmon numbers are also complicated, said

Bateman, by the species' migratory behavior, which exposes the fish to a variety of factors such as sport and commercial harvest and to conditions in the ocean and estuaries that most cutthroat trout do not experience.

"We can confidently say that, in this watershed, cutthroat trout were not negatively affected by logging activities over the course of the study," said Bateman. "We're cautious about generalizing these results to other watersheds since conditions can vary so much. Still, these fish are probably well adapted to changes in the streams, and forests provide some of the best remaining habitat for them. When you move downstream into areas adjacent to farm fields and urban areas, the changes to rivers and streams can pose significant challenges. It's important to look at the watershed as a whole."

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