

Spring Issue 2015

OREGON Fish & Wildlife JOURNAL



**Furthering The Concept of Multiple-Use of Our Lands
For More Than 35 Years!**

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About Our Cover



Steve Keitges of Portland, Oregon catches his first ever Chinook!

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“A government big enough to give you everything you want
is a government strong enough to take everything you have.” *Thomas Jefferson.*

MY VOICE

By *Cristy Rein*

What is the agenda for information being fed to our natural resource managers? Do they want to know the truth? Or, are they only looking to document what they already believe to be true?

You may recall in the 1980's when we were first trying to determine the actual numbers of spotted owls, millions were spent to document the numbers. The shocking part was the teams did not look for owls or count owls in wilderness lands or old growth forests, which is where they are supposed to be

Why would we so obviously not look where we most expect to find them?
in the first place.

Why would we so obviously not look where we most expect to find them? It was already believed the owls were threatened and needed habitat locked up for their benefit. The mission was to prove this in order to lock up land. Why look at land that was already set aside as wilderness? The goal was not truly to count owls but to lock up land. So their mission became documenting their own beliefs to accomplish their goals. This is not science.

When salmon populations were questioned millions were spent to determine the numbers of salmon.... it was decided to separate hatchery salmon (not farmed) salmon from non-hatchery salmon. Now hatcheries have been in place for some 70 to 80 years in Oregon and the salmon have been in the same waters together ever since. The DNA of so called wild salmon and hatchery salmon are absolutely identical.

Did we count all the salmon to see if their numbers were in jeopardy? Nope, we only counted the salmon that were believed to have not come from a hatchery. How could we tell the difference? Some 30 to 40 years ago Oregon Department of Fish & Wildlife biologists started clipping the fins of all

fish they believed came from a hatchery. These fish were not counted. Thus, another proven theory the numbers were low. But the count was manipulated and that was and is the part people don't realize. This is not science.

It's common to hear people who believe in multiple use of our resources ask repeatedly for science to be the main factor in long term management decisions. But how does that happen when scientists aren't looking for truth?

Recently a report came out from Oregon State University regarding a study looking into forest life cycles. The purpose is to document "averages" on how forests grow, die, accumulate biomass and store carbon.

Published by Mark Harmon, professor in Forest Science at OSU, Professor Harmon completely ignores documented research from 30 years ago by Dr. Bob Zybach showing that these averages do not even exist. Professor Harmon is simply trying to prove what he already believes. This is not science.

I remember when I first started covering these issues in this magazine over 35 years ago, I was and am unhappily surprised that when these facts are brought to light, no one steps up and says, Oh My Gosh, let's fix this!

Every issue we face could be a debate. Opposing sides are able to make an argument for their beliefs. We need scientists that aren't pursuing an outcome but looking instead for what truth is and determining an outcome from there.

We have raging forest fires we can't afford to fight. We import lumber while our trees become fuel for fire, We create jobs for other countries that produce lumber. It's nonsense. The time has come to stop creating controversy over good public land management policies that are based on science.



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LEGISLATION WORTH SUPPORTING!

LOCAL CONTROL OF OUR LAND

78th OREGON LEGISLATIVE ASSEMBLY

2015 Regular Session • House Bill 3240

Sponsored by Representative CARL WILSON.

A BILL FOR AN ACT

Relating to federal lands; and declaring an emergency.

Whereas more than 32 million acres, constituting 52.3 percent, of the land base in Oregon is owned by the federal government; and

Whereas Oregon has 13 national forests covering more than 14 million acres, or nearly one quarter of this state's land mass; and

Whereas Oregon also has the federally revested Oregon and California Railroad grant lands, covering 2.4 million acres across 18 counties in a checkerboard array with private lands; and

Whereas Oregon has 15.7 million acres managed by nine federal Bureau of Land Management districts, over a variety of landscapes, including grasslands, shrublands, woodlands, wetlands and nonforested deserts; and

Whereas the State of Oregon manages the same variety of landscapes on state lands; and

Whereas congressional budget reductions have significantly diminished the capacity of federal land management agencies to fulfill their responsibilities; and

Whereas federal nonmanagement of federal lands has stopped progress on the overlapping values of economic growth, social good and healthy ecosystems and has created catastrophic fire conditions on these lands; and

Whereas 40 percent of Oregon forestland is at high risk for a catastrophic fire; and

Whereas in 2013, the State of Oregon had to pay an extra \$40 million for fire suppression; and

Whereas the State of Oregon is pursuing the strategy of collaborative processes and state investments to increase the pace and scale of federal forest treatment, but the state's present pace is at least two-thirds too slow to address treatment needs long-term; and

Whereas in Oregon, state forest management has resulted in more than \$46 million annually in revenue to forest trust land counties from managing merely three percent of the forestland base; and

Whereas management of private forestlands under the Oregon Forest Practices Act has resulted in a sustain-

ably harvested range of 2.5 billion board feet to 3.5 billion board feet annually from 34 percent of the forest landscape, in contrast to the 400 million board feet harvested from 60 percent of the federal forestlands; and



This photo taken in the Mt. Hood National Forest shows the unhealthy state under current federal control and (lack of) management. *Photo by Cristy Rein*

Whereas as a direct result of nonmanagement of federal lands, unemployment rates in federally dominated counties have consistently been the highest in this state, including unemployment rates of 11.6 percent in Harney County, 10.7 percent in Crook County, 10.2 percent in Curry County County; and

Whereas nearly one in five people lives in poverty in Oregon's noncoastal counties; and

Whereas the American County Platform of the National Association of Counties states that "every state should receive everything that was promised to them in their enabling acts, including land transfers, if requested by an individual state with consultation with the affected counties"; and

Whereas other western states with large amounts of federal land ownership are considering or have begun a study of the legal, economic, social and practical benefits and risks associated with the transfer of federal lands to the states; and

Whereas a potential transfer of federal lands to the State of Oregon should not include any national parks, lands designated as part of the National Wilderness Preservation System under the Wilderness Act of 1964, lands belonging to an Indian tribe that are held in trust by the United States, lands affirmatively ceded to the United States by state statute and national monuments; now, therefore,

Be It Enacted by the People of the State of Oregon:

SECTION 1. (1) The Task Force on the Transfer of Federal Land Ownership in Oregon is established, consisting of eight members appointed as follows: (a) The President of the Senate shall appoint two members from among members of the Senate. (b) The Senate Minority Leader shall appoint two members from among the members of the Senate. (c) The Speaker of the House of Representatives shall appoint two members from among members of the House of Representatives. (d) The House Minority Leader shall appoint two members from among members of the House of Representatives. (2) The task force shall investigate and gather research, including but not limited to testimony on the following issues with relation to federally owned and managed lands other than those federal lands constituting national parks, lands designated as part of the National Wilderness Preservation System under the Wilderness Act of 1964 (P.L. 88-577, 16 U.S.C. 1131-1136), lands belonging to an Indian tribe that are held in trust by the United States, lands affirmatively ceded to the United States by state statute and national monuments: (a) The legal, economic, social and practical benefits and costs of a transfer of federal land ownership to the state, including an analysis of the potential timber revenue and mineral leasing revenue from the transferred lands; (b) The estimated costs to state agencies to conduct an adequate and defensible analysis of the costs and benefits of a federal land transfer; (c) The potential impacts of a federal land transfer on the ownership of Oregon and California Railroad revested lands; (d) The potential effects of a federal land transfer on federal payments to the state and counties; (e) State legislation that may be required to assist in or to accommodate

a federal land transfer; (f) Any changes in the application of certain federal laws that may result from a federal land transfer, including but not limited to potential changes in the application of the Endangered Species Act of 1973 (P.L. 93-205, 16 U.S.C. 1531), as amended, the Federal Water Pollution Control Act (P.L. 92-500), as amended, the National Forest Management Act of 1976, the Federal Land Policy and Management Act of 1976 and the Equal Access to Justice Act (5 U.S.C. 504 and 28 U.S.C. 2412); (g) The effect of a federal land transfer on the management of public lands in Oregon; (h) The potential reduction of the local presence of federal representatives in small communities due to a federal land transfer, and the potential for those federal representatives to be replaced by state representatives; (i) The effect of a federal land transfer on federal participation in wildfire suppression, and the potential increased costs to the state and private landowners that may be associated with any potential changes in federal wildfire suppression participation; (j) The potential for the costs of a federal land transfer to require the state to sell transferred lands into private ownership; and (k) Any other issues deemed applicable by the task force. (3) A majority of the members of the task force constitutes a quorum for the transaction of business. (4) The task force shall elect one of its members to serve as chairperson. (5) Official action by the task force requires the approval of a majority of the members of the task force, except that in the event of a tie vote, the vote of the chairperson shall decide the action. (6) If there is a vacancy for any cause, the appointing authority shall make an appointment to become immediately effective. (7) The task force shall meet at times and places specified by the call of the chairperson or of a majority of the members of the task force. (8) The task force may adopt rules necessary for the operation of the task force. (9) The task force may pre-session file legislation in the manner provided in ORS 171.130 for interim committees. All legislation recommended by official action of the task force must indicate that it is introduced at the request of the task force. (10) The task force shall report to the Legislative Assembly in the manner provided in ORS 192.245 at any time within 30 days after its final meeting or at such later time as the President and Speaker may designate. (11) The Legislative Administrator may employ persons necessary for the performance of the functions of the task force. The Legislative Administrator shall fix the duties and amounts of compensation of these employees. The task force shall use the services of continuing legislative staff, without employing additional persons, to the greatest extent practicable. (12) All agencies of state government, as defined in ORS 174.111, are directed to assist the task force in the performance of its duties and, to the extent permitted by laws relating to confidentiality, to furnish such information and advice as the members of the task force consider necessary to perform their duties. **SECTION 2.** Section 1 of this 2015 Act is repealed on December 31, 2016. **SECTION 3.** This 2015 Act being necessary for the immediate preservation of the public peace, health and safety, an emergency is declared to exist, and this 2015 Act takes effect on its passage.



Forests And Our History ... Or, How Did Things Get This Way?

By Dick Powell, Retired Western Oregon Forester

In mid-January 2015, the Oregon Society of American Foresters in partnership with the Oregon Forest Resources Institute, hosted the annual Forestry Leadership Academy. This was for forestry leaders from both Oregon and Washington that included the Society of American Foresters, small woodland owner's association, Tree Farm, and others from the two states. I made a presentation that dealt with the relationship between the development of human civilization and forests. It was well received and it was suggested the gist of the presentation be written as an article.

To effectively communicate about forests to the public, a forestry leader needs to understand the history of the forest and the role forests played in human civilization – both past and present. Schools are good about teaching history and biology as distinctly separate subjects but are very poor about teaching history AND biology as a single subject. In other words, when looking at the landscape, one is looking at both its biology AND its history. History and biology are so intertwined they cannot be separated if one is to understand the landscape.

WOOD FOR FUEL, MANUFACTURING AND TRANSPORTATION

At the beginnings of mankind, once people learned that fire was a useful tool and could be made on demand, people also understood that a source of fuel was necessary. A readily available fuel was wood.

Then, as civilizations evolved from hunter/gatherers and became more agrarian with stable population centers, they found that wood was useful as a building material as well as a source of fuel.

At some point, people discovered that clay could be fired and made into pottery amphora and pots. These allowed people to store grains and wines for future use and more easily transport their goods. Firing clay required heat and wood was a very available fuel.

Later, it was discovered that copper and other metals could be extracted from the earth and shaped into useful objects. This led to the Bronze Age and a huge step forward in human civilization. Again, wood made the smelting and shaping of metal possible.

Initially, people moved about and transported their goods by foot. Then, someone probably noticed that wood floats and could be shaped into rafts and ships. These greatly facilitated the movement of people and eventually large quantities of goods across the seas and to distant lands.

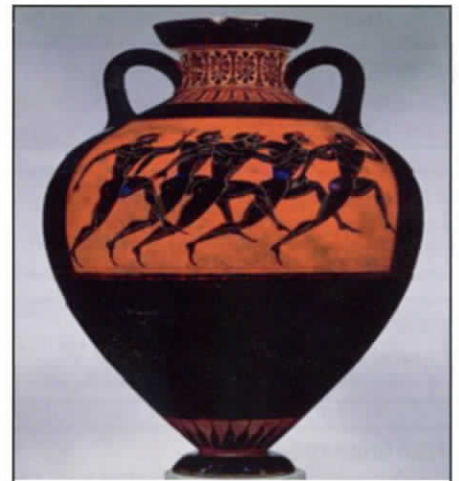
When the wheel was invented and carts and wagons came into use, it became much easier to transport larger quantities of goods and for people to travel greater distances. Wood was light, easily shaped, and available.

FORESTS AND EROSION

Though they do have forests and foresters (including Saudi Arabia), most of us think of the Middle East as a dry, desolate, barren, and treeless land. However, at one time, it was once a land of forests. The problem was that the idea of sustainability and reforestation was unknown to those early civilizations. When the hillsides were stripped of their trees and heavily grazed by sheep and goats, soil tended to erode.

The Roman city of Ephesus on the west coast of today's Turkey was thought to be the third largest Roman city in Asia Minor (around 50,000 people) and a bustling seaport that opened onto the Aegean Sea. Due to deforestation, over-grazing, and erosion and despite attempts to divert the river and dredge the harbor, Ephesus' harbor silted in; today, it is five-six miles inland!

When a civilization ran out of wood they sometimes looked to their neighbors. The Romans, for instance, had so



Ancient Greek Pottery.



Mesopotamian Clay Jar, 5000BC

deforested the Italian peninsula that they had trouble firing their baths. Wood was needed to produce silver coins and the shortage of wood was affecting their monetary system.



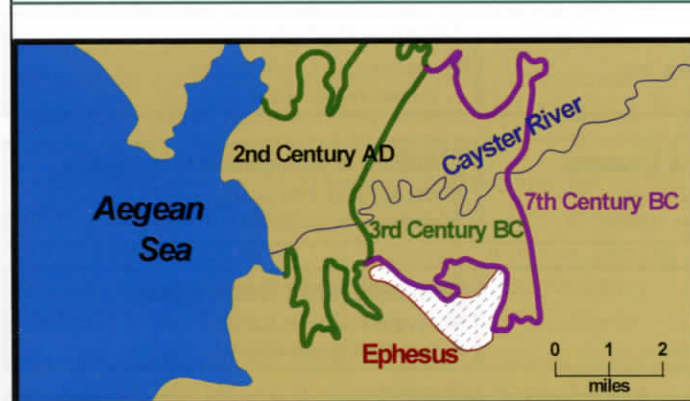
Bronze Age Artifacts.



Phoenician Ship, 700 BC



The Roman Empire



Ephesus - The Adriatic coastline as it was in the 7th Century BC, 3rd Century BC and 2nd Century AD

Furthermore, they were having trouble building the wooden ships necessary for the maintenance of the Empire. In part, the Romans conquered their neighbors for new sources wood.

FORESTS, HUMAN DISEASES AND FIRE

Here in the New World (both N. and S. America), the indigenous people were sophisticated managers of their land. Because there were no easily domesticated large herbivores (elk, bison, etc.), these people did not have livestock as was found in other parts of the world and they had no need for pastures or fences. Instead, they manipulated the landscape to provide better forage for the game they hunted and for the crops they grew. [One might say these were their “pastures” but, without fences and plowed fields, these were not recognized for what they were by the Europeans.] Their favorite tool was fire.

When Hernando de Soto traveled through the southeastern US in 1540, he found large, stable, agrarian societies and sophisticated population centers. He found fields of four square miles! Clearly, the people he encountered were not nomadic hunter/gatherers.

But, his travels and his animals spread Old World diseases. These diseases (cow pox, chicken pox, swine flu, etc.) were unknown by the Indian because they did not have livestock they lived. They had built up no immunity to deadly diseases nor did they have medicines or other means of coping. Consequently, it is estimated that 90-95% of the New World’s native population died from these introduced diseases.

When de la Salle travelled through the southeastern US 140 years later, the civilizations found by de Soto had all but disappeared.

When so many of these people disappeared from the landscape, their management practices also ceased. Though native, trees can be very invasive and they soon occupied the previously Indian-managed landscape.

FORESTED LANDSCAPES AND WESTERN CIVILIZATION

By the mid to late 1700’s, 250-300 years had passed – plenty of time for trees to invade large areas and become well established forests. By now, the Euro-Americans had come to dominate the landscape in colonial America and they were pushing over the Appalachians and westward toward the Mississippi River. They encountered this forest and thought it a wilderness and an obstacle to settlement. This “wilderness” entered into American lore and texts during the Romantic Period of American history (early 1800’s) though it might more correctly be described as an artifact of introduced Old World disease!

The settlers cleared land for their farms and for fuel, fences, and building materials for their homes and barns and their new cities. As they advanced westward, they began to clear that forest.

With the advent of the railroad in the mid-1800’s, large numbers of people could travel easily and ship their commodities over long distances. Other than the locomotive,

rails, spikes, and the car's undercarriages, the train was a wooden enterprise as the cars and railroad ties were wood. Very importantly, the fuel was wood. By the late 1800's the railroads were using 15-20 million acres of forest a year! (It is probably fair to say that the wooden railroad hugely influenced the settlement of the American West.)

WOOD PRODUCTS AND MODERN TECHNOLOGY

By 1920, American energy needs from wood decreased from about 90% in 1850 to about 10%. Up until 1900, virtually all iron was produced with charcoal (a wood product).



An image of the American "wilderness" as depicted during the Romantic Period of American history (early 1800's) that entered into American lore and texts. Today, this image is probably very much what people have when they think of the "wilderness" encountered by the settlers.

By the late 1800's and early 1900's, things were changing. Coal and oil had been discovered and were coming into widespread use as an energy source.

People had discovered wood preservatives and railroad ties were lasting 30- 40 years instead of 5-7 years. Farmers had improved crop varieties and developed pesticides. Machines were replacing draft animals on the farm and in the city.

As a result, farms were becoming much more productive and less farm land was needed to feed the nation; in other words, the excess farmland was being abandoned. Being rather invasive, trees soon occupied this land and became much of the forest we know today.

If the reader is trying to keep score, it seems that, as the American Indian was taken out of the landscape, the number of forested acres in the US increased for a time. During the westward movement of the Euro-American beginning in the mid to late 1700's, the forested acreage decreased until coal and petroleum began replacing wood as an energy source in the late 1800's. At that point, the acres of forest land began to increase. Since the early 1900's, the forested acreage in the US has stayed fairly constant.

FOREST HISTORY AND THE FUTURE

Understanding the development of the forested landscape as it relates to human history helps people understand the forests we see today. For example, today, worldwide, a little over half of all wood use is for heating and cooking. Thousands of things we use on a daily basis come from

Ephesus as it looks today. My guess is that the



flat, marshy ground below the Roman theater is the silt that eroded off the hills and filled in the harbor. The Arcadian Way (2000 ft. long and 35 ft. wide) was built by Emperor Arcadius in the 1st Century BC, probably to maintain

access to the sea. In the distance and between the hills seems to be the Adriatic Sea as it is today.



The Caddoans as de Soto found them (in the Arkansas/Texas region). Note their pyramids and ceremonial mounds in the background. Hardly what one would find with a nomadic hunter/gatherer society.

trees. With an understanding of yesterday and looking at today and tomorrow, the real questions are: what do we want from our forests? what do we want for our forests? And, very importantly, how do we get there?



Pacific Northwest Forests:

A History of Disturbing Events and Circumstances

By Dr. Bob Zybach

In late January I joined with recently retired Starker Forests forester Dick Powell to lead a seminar on forest history for the annual 2015 Pacific Northwest Forestry Leadership Academy held at Oregon Garden, near Silverton, and sponsored by various forestry organizations in the state.

Pacific Northwest, from the last ice age to the present.

What is "History?"

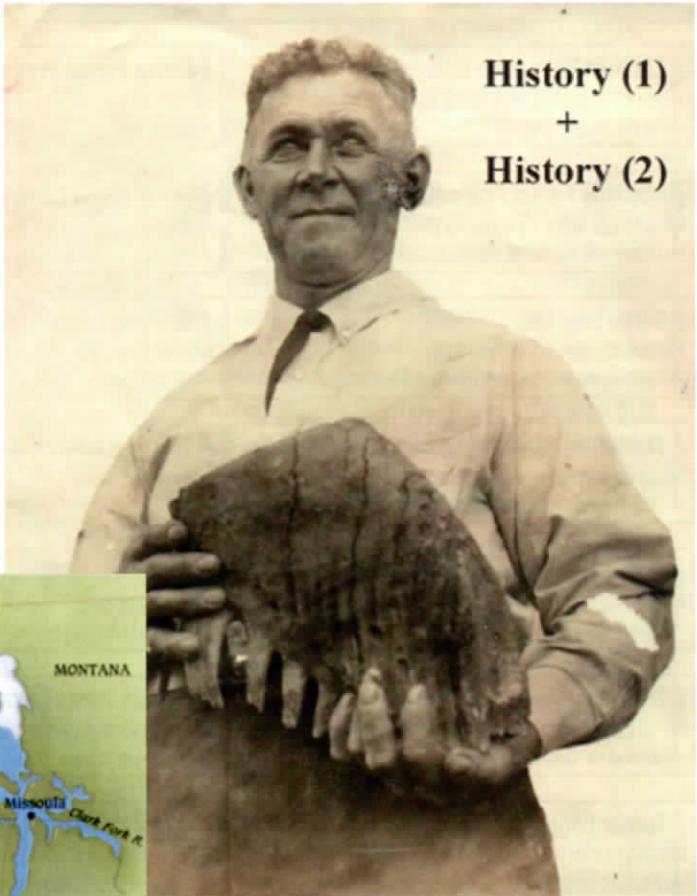
There are two basic definitions of history: 1) the period of time in which local events and conditions have been documented by eyewitness accounts via written words, maps,

History (1)

12 of the neck 7 1/2 inches; 20 of body circumference of this
 1st 13 inches; 21 of leg
 The eye
 is set of
 -
 which and occupies
 the diameter of the
 1/3 a part of the
 year 12. is measured
 ft that portion of it represented by bold (see ltr
 last. is composed of 12 feathers of equal length
 inches. The legs are 4 3/4 inches in length and of 2 inch



Fig. 1. Drawing and written description of a condor at Fort Astoria by Meriwether Lewis, Feb. 16, 1806.



History (1)
 +
 History (2)

Fig. 3. Glender Brothers elephant tooth taken from their Benton County, Oregon spring, circa 1919.



Fig. 2. Map of glacial extent and Bretz flood events 12,800 to 15,000 years ago in the Pacific Northwest.

Dick gave the first presentation, and concentrated on the history of forests and forest product uses throughout the world, and particularly as they related to the evolution of western civilization. His article, summarizing his perspective precedes mine in this magazine. My presentation, intended to complement Dick's, focuses more specifically on the forests of the

drawings, photographs, videos and/or other common methods, and 2) the period of time in which people have been present in a given area.

Figures 1 through 3 illustrate these two definitions, showing environmental conditions that existed during early human occupation of the Pacific Northwest; eyewitness documentation of a currently endangered bird species that freely existed in the region 200 years ago; and a photograph of a man who had discovered an elephant tooth in his spring in western Oregon – left from when elephants, condors, and

Wind Mt., 1910
Event
+
Condition



owls, coho salmon, rare wildflowers, or certain varieties of crayfish or butterflies. It is often assumed that such circumstances existed in earlier times in which targeted species are further assumed to have existed in greater numbers.

These theoretical constructs have then been integrated into various laws and regulations in which management actions are focused on “restoring” such perceived conditions under the supposition that target species will also be “restored” to past presumed numbers.

A principal problem with these strategies is that the existence of people is typically not factored into the theoretical descriptions of the past. It is also apparently assumed that the past was more stable and less dynamic than the present and that extended droughts, volcanic eruptions, major wildfires and other events were little more than “perturbations” to the established order of the environment, which then must have necessarily returned to the imagined equilibrium. Documentary research and field observations typically disprove these theories, but by then it is often too late to reconsider the rules and regulations that have been established in response to these misconceptions.

Figures 4 and 5 show historical examples of landslides, wildfires and floods that have converted forested habitats to fish habitats within a matter of minutes and days. These abrupt transitions resulted in immediate changes in local plant and animal populations and are typical of the types of dynamic events that define forest history throughout the Pacific Northwest.

The Fire Triangle

The most consistent and widespread form of disturbance in our region’s forests is people, and for the past 15,000 years their principal management tool and agent

Fig. 4. Wind Mountain landslide and submerged forest, described by Lewis and Clark in 1805.



Fig. 5. 1894 landslide creating Gould Lake.

people all coexisted across the regional landscape.

Recent archaeological finds have placed people in the Pacific Northwest more than 15,000 years ago, a time when major glacial retreats and biblical-scale flooding and landslides were caused by the melting ice and rushing floodwaters. As glaciers and waters receded, it is very likely that human footprints preceded the first tree seeds and subsequent forests in those areas of northern Washington, the high Cascades and the Columbia and Willamette valleys that became forested during historical time. Some people have described Pacific Northwest forests as “ancient.” If that is true, then it must be recognized that people in this region must be more ancient still.

Circumstances vs. Events

Circumstances can be defined as a set of conditions, facts and other details that can determine the likelihood, extent or severity of an event -- and that will likely be changed or even eliminated as a result of such occurrences.

One example is the concept of “wildlife habitat” that has been developed in recent times to describe the set of circumstances that some scientists claim provide optimum forest conditions for select plant and animal species, such as spotted

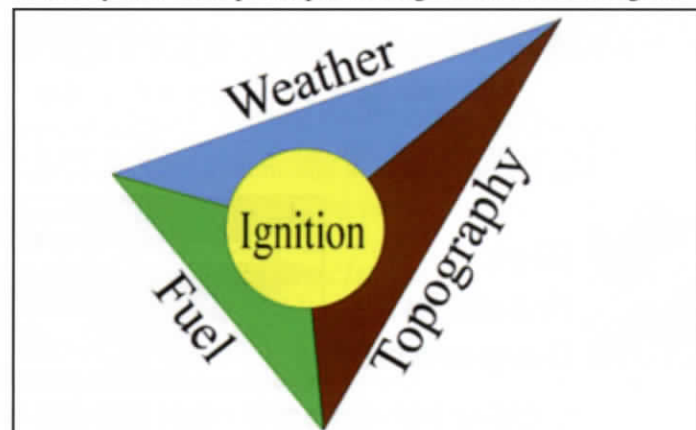


Fig. 6. Fire Triangle. Some versions of this model use oxygen and heat instead of weather and topography.

of change has been fire. People are the only animals who can start fire and that advantage has been used on a daily basis since they first began to occupy the Pacific Northwest.

Figure 6, the “fire triangle,” illustrates how fire is constrained across the landscape. First, fire must be created: this occurs occasionally along the Cascade Range by volcanic eruptions (Figure 7); seasonally in some areas of the region via lightning strikes (Figure 8); and on a daily basis by people everywhere (Figure 9). The duration and extent of each ignition is dictated by available fuel, local weather conditions, and – if the fire begins to spread away from its point of origin – by topography.

It is generally recognized that forest fires in the Pacific



Fig. 7. Mt. St. Helens eruption of 1847 resulting in major forest fires.

outright during these events find that their habitats have changed dramatically and irrevocably (Fig. 11). Many plants that survive these events find competition for sun, seedbeds, and other opportunities to grow and reproduce are greatly enhanced; whereas most animals are forced to relocate to undamaged areas in order to obtain food and

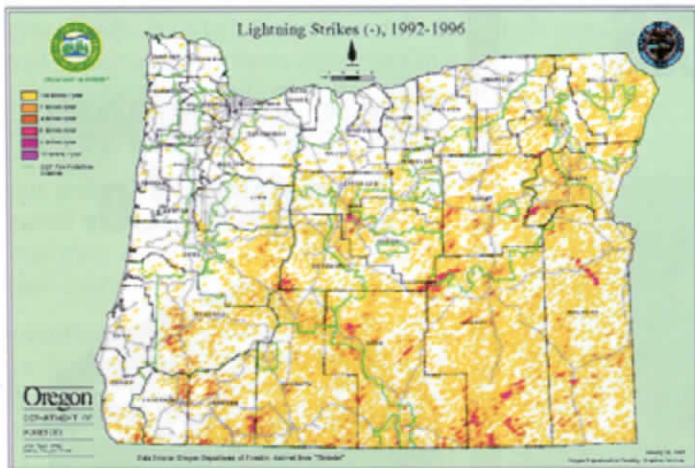


Fig. 8. Typical Oregon lightning strike patterns for the years 1992-1996.

Northwest tend to take place in late summer droughts when fuels are dry and humidity is low, that these conditions are exemplified during east wind events, and that fire travels uphill better.

The transformative effects of fire are also widely recognized, where in a matter of minutes, hours, and days entire creek basins are changed from conditions of protective shade and vegetative cover to barren landscapes of smoking snags, charred earth, and polluted air and waters (Fig. 10). Plants and animals that are not killed



Fig. 9. Backfire ignited on Warm Spring Reservation in 2012.

shelter in order to continue living; greatly favoring surviving predators and putting plant eating species at ever greater risk.

Conclusions

When I attended forestry classes at Oregon State University in the late 1980s and 1990s there was a lot of interest in such concepts as “preserving old-growth forests,” “maintaining spotted owl habitat,” and “riparian enhancement.” These concepts were typically rationalized by unfounded theories of “steady state ecosystems” and

Event

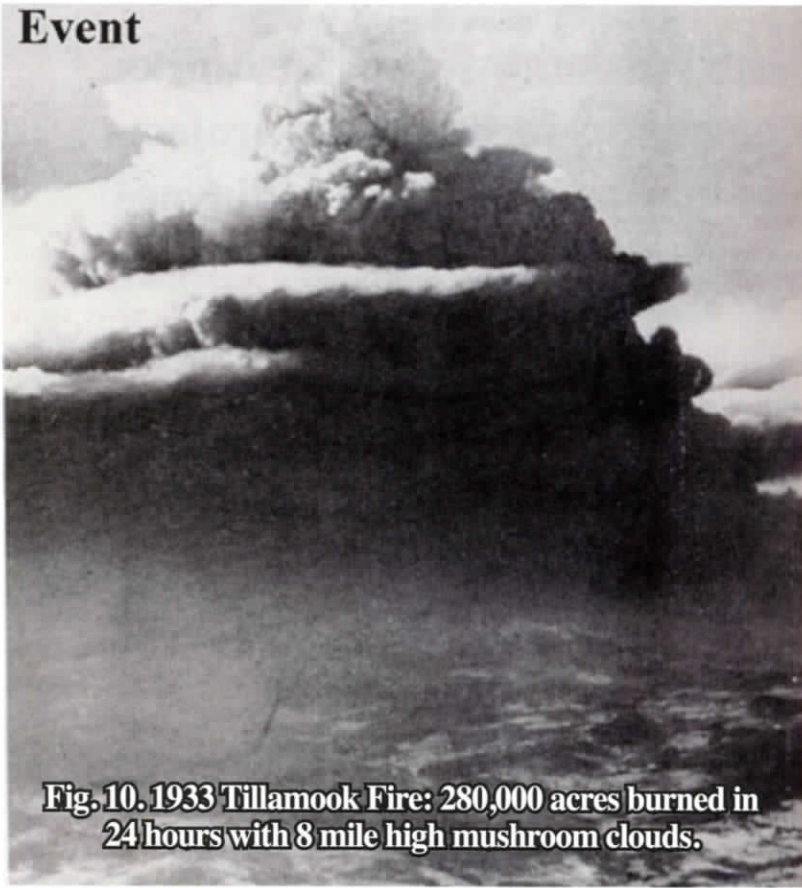


Fig. 10. 1933 Tillamook Fire: 280,000 acres burned in 24 hours with 8 mile high mushroom clouds.

idealistic descriptions of such circumstances as “non-declining, even-flow, naturally functioning” forests and grasslands. It didn’t seem to matter that such conditions had never actually been observed in nature, measured, or documented – only that, for some reason for some people, they were desired.

Many of the current laws and policies governing our federal, state, tribal, private and municipal lands are based upon these theoretical misconceptions. The fact that they are inherently racist and strongly biased against past cultures and current populations has gone largely

unnoticed and unchallenged. Why that is might be hard to explain, but the fact is that these biases are based on personal values and political realities far more than scientific findings or research. The additional fact that these laws and regulations are claimed to be science-based is even more

troubling.

The practice of science has been seriously compromised during this process, and our rural economies and environments have been significantly damaged as a result. The same argument can be made regarding related damages to our native plant and animal populations, the degraded quality of our air and waters, as well as the teaching of science itself.

From my perspective, it is time to again return to basic scientific principles of observation, documentation, experimentation and replication in the management of our natural and cultural resources. The recent fad of producing complex computerized “models” of our circumstances and desired future conditions was made possible by incredible recent advancements of technology that permitted sophisticated representations of actual environmental conditions. Graphic simulations and mathematical interpretations have been used to replace actual reality; traditional field scientists have been replaced by computer gamers; and voters and politicians have somehow become convinced that these are inherent improvements in our abilities to understand and manage our physical environments and the resources they contain.

After more than 30 years of this charade it has become obvious that digitizing reality and expecting computers to foretell our common futures has not worked as promoted.

There is a place for computerized modeling and the predictive capabilities of advanced mathematic simulations, but that place is not a replacement for actual reality or for human decision-making capabilities.

It is time we returned to traditional scientific methods and put our faith in legitimate experience and earned knowledge if we are to leave our descendants something similar to the wonderful conditions we were given by our own ancestors on the land. In my opinion.

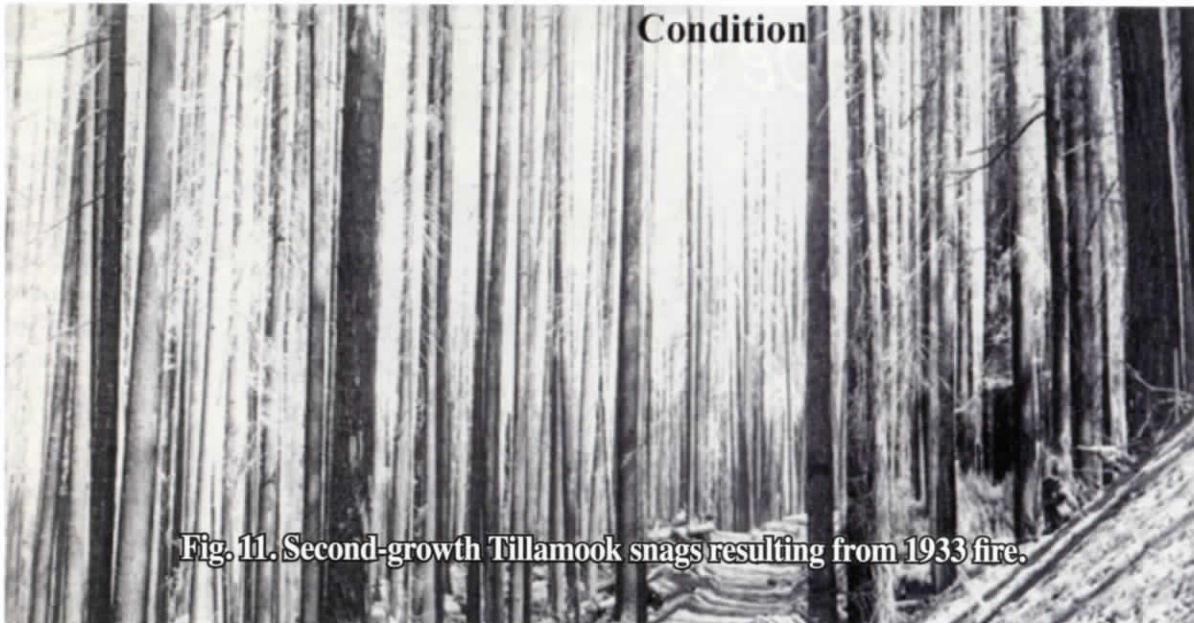


Fig. 11. Second-growth Tillamook snags resulting from 1933 fire.