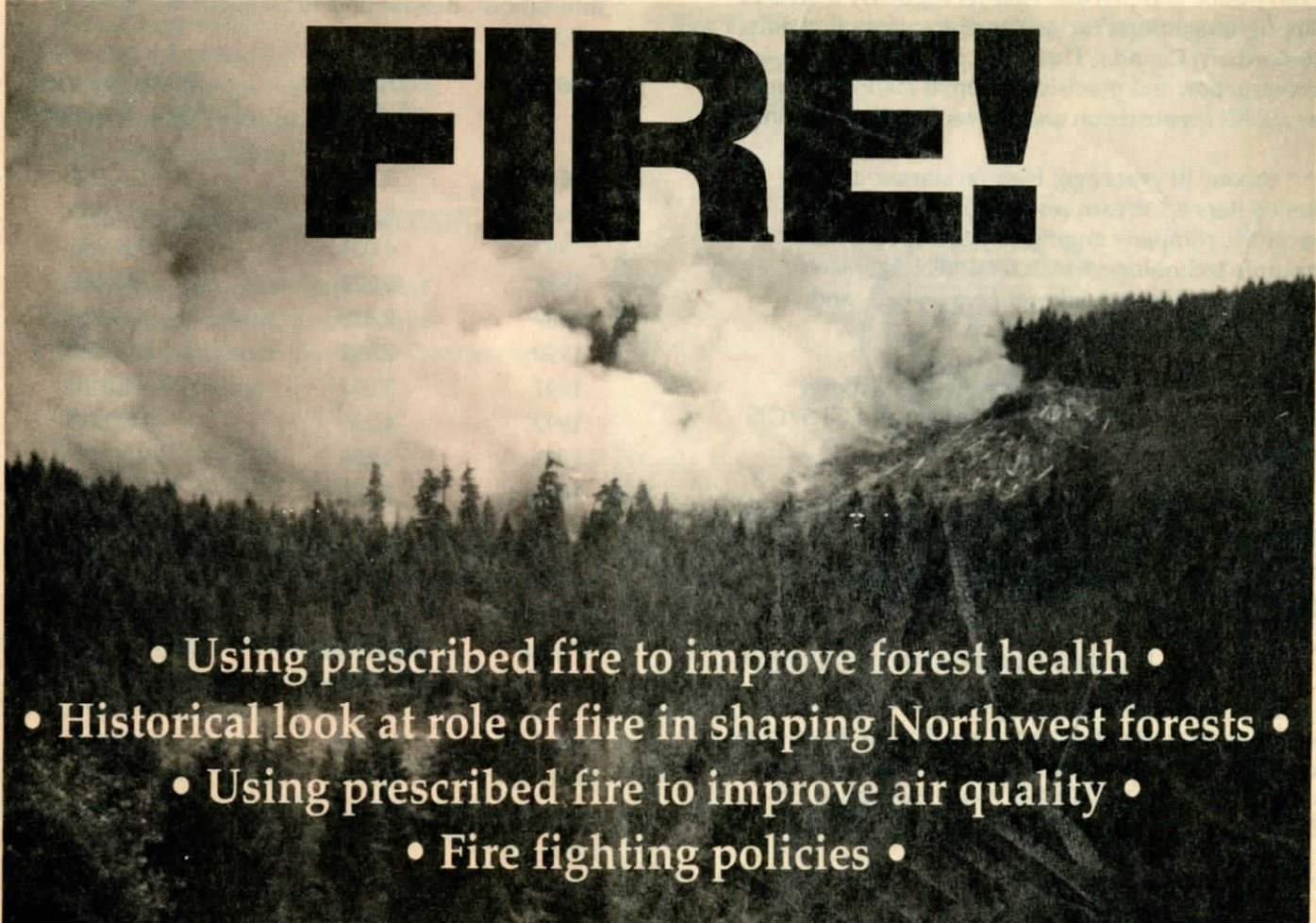


# *Forests*®

TODAY & FOREVER

Vol. 9 Iss. 5, 1995

## **FIRE!**

- 
- Using prescribed fire to improve forest health •
  - Historical look at role of fire in shaping Northwest forests •
  - Using prescribed fire to improve air quality •
  - Fire fighting policies •



# FOREST FACTS

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Forests Today & Forever is pleased to welcome our newest sponsor, **Heli-Jet Corporation** of Eugene, Ore. Founded in 1976 by veteran pilot Rod Kvamme, Heli-Jet is a leader in the utility helicopter industry, specializing in forestry-related work.

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## Fire Trends on Oregon's Forests

The following is forest fire data compiled from reports issued by the Oregon Department of Forestry and the Northwest Interagency Coordination Center.

The figures represent fires and acres on state and forest protective association lands, as well as Forest Service and Bureau of Land Management lands.

Note that the increases parallel changes in forest management laws which have restricted treatment alternatives, resulting in insect infestations, disease and subsequent increases in wildfires.

Year	Number of Fires	Number of Acres Burned
1985	2,578	414,180
1986	2,991	472,600
1987	4,051	506,866
1988	2,322	192,066
1989	2,670	134,621
1990	2,952	255,782
1991	3,354	41,916
1992	4,235	147,600
1993	1,803	12,745
1994	3,626	243,604

The following figures represent fires and acres burned on state and forest protective association lands only.

Year	Number of Fires	Number of Acres Burned
1984 - 80	4,337	34,848
1979 - 75	5,539	30,322
1974 - 70	6,248	41,837
1969 - 65	5,497	110,423
1964 - 60	4,932	114,097

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## Historical Research Reveals

The current focus in forest management is aimed at recreating "native" or "natural" landscapes of plants and animals. As such, forest and wildlife managers, both public and private, must deal with an increasing number of laws regarding old-growth, snag retention, endangered species protection, riparian management regulations, logging road construction, and wildfire policies. The intent of these laws is to maintain viable populations of "native" species of plants and animals in their natural (or wild) state. Thus, resource managers are becoming more dependent upon basic understandings of local forest and fire histories for their interpretations of the required and intended practices.

Managing for "native" species presents the question, "Which species really are native?" Many species common to the Northwest such as honeybees, bullfrogs, orchardgrass, opossums, and foxglove have actually been introduced. On the other hand, grizzly bears, timberwolves and California condors were native to western Oregon prior to white settlement but have since become locally extinct. And what about the American Indians? Are they considered a 'native' species? In addition to their biological role at the top of the food chain, they also played a cultural role as firewood gatherers and fieldburners. Now the question becomes, "How many species were dependent upon Indian burning practices for the

maintenance of their preferred environments?"

Perhaps the best way to begin answering those questions is to examine historical maps, diaries, photographs, and oral histories of an area. This is exactly what Bob Zybach researched and documented while a graduate student in the College of Forestry at Oregon State University. Zybach has scoured literally tons of evidence which paints a picture of what the Northwest landscape looked like before white settlement. Why is there sudden interest now in his research on pre-white settlement? Because the President's Forest Plan seeks to recreate pre-settlement conditions — those which existed in the early 1800s. (see story page 7.)

Zybach's evidence includes photographs, passages from diaries written in the early 1800's by explorers and settlers, notations in journals written by scientists in search of new wonders in a new world, log books from ships which sailed the region's coastline in the 1700's, interviews with Indians whose ancestors inhabited the area, and state and federal forest inventory maps from the 1890's to the early 1900's. All these rich resources reveal a forest history much different than what is promoted in today's media — and the President's Forest Plan.

An attempt to describe natural conditions in the Northwest would require volumes of manuscripts. However, the following

descriptions and quotations, selected on the basis of the time, accuracy, and nature of the observation, create a picture of what existed before white settlement, as revealed in Zybach's research.

### OREGON AND WASHINGTON COAST RANGES.

Available accounts of the indigenous human populations which lived along these coasts begin with a daily journal kept in 1788 by Robert Haswell, an officer aboard Robert Gray's fur trading sloop, *Washington*. Traveling northward from California in nearly constant view of the shoreline, Haswell noted that "this Country must be thickly inhabited by the many fiers we saw in the night and collums of smoak we would see in the day time," and "a delightful countrey thickly inhabited and cloathed with woods and verdure with maney charming streams of water gushing from the vallies." By the time the crew had reached the Salmon River, along the central Oregon Coast, Haswell noted that the Indians had "both Iron and stone knives" and that "two or three of our visitors were much pitted with the small pox"; both certain signs of local European contact and influence.

The settlements and landscapes described by Haswell were also noted by other coastal ship traders in the 1780s and 1790s. The first records of extensive overland explorations along the Oregon coast begin in 1826. During those times, local

# Northwest Forests Were Shaped by Fire

Indian settlements were found near the mouths of nearly all the rivers and major creeks which empty into the ocean. Grass prairies and "brakes" (brackenfern prairies), created and maintained by human fires, surrounded most of the Indian settlements and provided habitat for a wide variety of plants and animals.

Writing about conditions in the Tillamook Bay area in 1856, pioneer Warren Vaughn noted:

*"At that time there was not a bush or tree to be seen on all those hills, for the Indians kept it burned over every spring, but when the whites came, they stopped the fires for it destroyed the grass and then the young spruces sprang up and grew as we now see them."*

Seventy-seven years later, many of those trees fueled the Tillamook Fire of 1933 which burned over 220,000 acres in a single August day, creating a mushroom cloud 40 miles wide that extended eight miles into the atmosphere. When the embers cooled, there was more fuel on the ground than before. Three more fires ravaged that same general area during the next 18 years, often burning hotter than the first fire because all the snags and other fuel had become dry and more flammable.

**INTERIOR VALLEYS.** The Rogue, Umpqua, and Willamette Valleys in western Oregon and the Puget lowlands of western Washington were occupied by prehistoric peoples who

traditionally burned millions of acres of land annually. The result was a nearly contiguous series of great prairies and oak savannahs which extended almost the entire western length of the Cascade Mountains in the US. When the early pioneers headed westward

from Fort Vancouver to the Umpqua Valley. By 1832, most of the Kalapuyan Indians whom Douglas had encountered on his journey had been killed by infectious diseases. Hudson's Bay Company journals from 1825-1834 contain a substantial amount of

## Key Principles in Fire History Findings

Zybach's research findings include a number of basic principles useful for interpreting the evolution and fire history of today's forests:

- **CATASTROPHIC EVENTS.** Forest fuels and human activities in the western US have been shaped by such catastrophic events as volcanic eruptions (Mt. St. Helens), windstorms (Columbus Day Storm), wildfires (the Tillamook Burn), floods, landslides, and climate changes (glaciers, plant migrations, and disappearing lakes and shorelines).
- **HUMAN PRESENCE.** The incremental and cumulative effects of human families — representing the top of the biological food chain — have affected the plants, animals, and fire histories of nearly every acre of Northwest forests during the past 10,000 - 12,000 years.
- **HUMAN ACTIVITIES.** Specific cultural activities, such as firewood gathering and broadcast burning, helped establish local fuel distributions and efficient fire management strategies during prehistoric times.
- **WILDLIFE HABITAT.** Current populations of animal wildlife and patterns of wildlife habitat have been shaped and established by a combination of catastrophic events, climate changes, human presence, and family activities since the time of the last Ice Age.

(1835-1848), it was free land in these grassy valleys they sought.

The earliest accounts of prairie burning west of the Cascades dates from 1826, during which year botanist David Douglas traveled with a beaver hunting expedition

detailed information which complements and corroborates Douglas' accounts.

By 1842 only a few Kalapuyans lived in western

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## Continued from page 5

Oregon, but they were still burning and maintaining many of the prairies, wetlands, and oak savannah which provided their families with berries, seeds, nuts, bulbs, weaving fibers, fuel, construction materials and animals. To Indian families an oak tree was a much more valuable species than Douglas-fir because it provided shade in the summer, firewood, protein from the acorns, a hunting perch, and a meeting place. The oak savannahs were maintained by fire up to elevations of about 1500'-2500,' depending on local topographic conditions. Tribes from Chehalis, Vancouver, and Olympia to Sacramento and valleys in between all practiced burning to maintain their environments.

In 1920, George Riddle described his November 1851 impressions of the Umpqua Valley home of these people:

*"At that time Cow Creek valley looked like a great wheat field. The Indians, according to their custom, had burned the grass during the summer, and early rains had caused a luxuriant crop of grass on which our immigrant cattle were fat by Christmas time... Fortunately in our case the land was ready for plow. There was no grubbing to do. In all the low valleys of the Umpqua there was very little undergrowth, the annual fires set by the Indians preventing young growth of timber."*

In the same series of articles, Riddle also described another Indian use of fire:

*"The massacre of the Indians on Butte Creek occurred on the morning*

*of the 7th of October, 1855. On the 9th and 10th the country between Gold Hill and Galesville on upper Cow creek, a distance of 50 miles, was in a blaze."*

According to Zybach, the Indians used fire as a tool to control fire and they did so by removing fuels from the forest floor. "People gathered firewood systematically all along the river banks and mouths, and around the campsites — whatever was closest to the fire locations. In fact, they had canoes out in the streams fishing in logs and moving fuels for trade. In addition, campsites and prairies were seasonally burned to reduce insect populations, to hunt, to clear land and harvest crops. Because these land use patterns resulted in little coarse woody debris, there was often less smoke by today's standards. That's how the Indians controlled fire. They didn't have wildfires, that's a European phenomenon. The Indians were a fire-dependent people who taught by demonstration and word. To say that today we somehow have a better handle on fire is just wrong — and arrogant," Zybach explains.

### CASCADE MOUNTAINS.

There are few early contemporary accounts of Indian activities in the Cascade ranges before white settlement. That is mostly because the climate of these mountains is inhospitable to people during much or all of the year. In Oregon, written records of crossing the Cascades begin with beaver hunters in 1825 and 1826. In Washington, the first good records are from botanist William Brackenridge's May 1841 crossing near Mount Rainier. His journals revealed how ladder fuels often developed in wet coniferous forests and how quickly the fires could spread to unoccupied

forested areas:

*"We now pitched our Tent and there being no water near we melted snow to procure Water for Tea. As the Cooking of the Supper was going on, some one set fire to the moss covered trees, and in one minute all around was one glaring mass of flame. Now was a confusion and bustle — to get all of our luggage to windward, & in the midst of the conflagration Dr. P came near loosing the tails of his Coat by a brand of fire that had accidentally fallen into his pocket."*

Modern researchers have used tree rings to help overcome the lack of early written records for the Cascades. Tree rings from old-growth pine on the eastern slope of these mountains show that fire was frequently used by people, burning through some large forests at 5 to 10 year intervals. As a result, early settlers often found a grassy, brush free environment with huge wide spaced trees in which they could ride their horses and graze livestock.

West side Cascade forests were much different, Zybach says. Douglas-fir and hemlock grew instead of pine, and the wetter, steeper slopes were far brushier. With the exception of scattered high elevation meadows and huckleberry patches, there was often little obvious indication of human fire use or occupation.

### Let History Do The Talking

Prior to European contact, periodic burning practices were probably the most significant cultural influence on the Pacific northwest environment. Human changes to the environment since then include the introduction of domesticated grazing animals, new human diseases, exotic plants, private property laws (fencing);

metal tools and guns; widespread urban, agricultural and transportation development; organized fire suppression activities; and huge increases in the number of people, their pets, and their visitors.

Current populations of native Northwest plants and animals exist in an environment which has been heavily influenced by the actions of local people, families, and communities through time.

Today's forest plans promote naturally functioning ecosystems defined as those which operate outside of human influence. "Today's ecosystems are a function of Indian disease in the late 1830s, and federal fire suppression in the early 1900s, resulting in coarse woody debris buildup and increase in the incidence of snags. This concept of a naturally functioning ecosystem without human influence is not supported by the historical record," Zybach says.

Today's forest managers must consider that the primary difference in the forests of today, compared with those that existed before the time of European settlement, is the absence of people and their activities from the environment. Perhaps the most telling change is the removal of daily and seasonal fire. If we are truly to return to "pre-settlement conditions," we must first start by reintroducing these elements to ecosystems.



Bob Zybach is currently a forest history and public education specialist with New Albion Multimedia in Corvallis, an ecosystem analysis and curriculum development partnership. He can be reached at 503-757-8387.

## Zybach's Research and the President's Forest Plan

*excerpted from an interview with Bob Zybach which appeared in Evergreen Magazine, March/April 1994*

**E: Mr. Zybach, your criticism of the President's proposal for managing federal forests in the Pacific Northwest has caused quite a stir. Where did you find fault with the plan?**

**Z:** There is nothing in the plan that suggests an understanding of this region's natural and human history. Because many of the plan's goals are founded on erroneous historic assumptions, the plan itself is fundamentally flawed.

**E: Are you saying the President's plan is doomed from the start?**

**Z:** It is if its historical basis is not corrected. What is presented as history is both wrong and misleading. To make matters worse, there is a public perception that this plan is based on the best available scientific information. Far from it.

**E: What are the errors in history?**

**Z:** There is a poor understanding of the role of fire in Douglas-fir forests. The extent of American Indian involvement in altering forest landscapes is downplayed, and the effects of white settlement, particularly logging, are exaggerated.

**E: And these historic errors adversely affect the President's plan?**

**Z:** Yes. How can we expect to re-create pre-settlement forest conditions if we do not fully understand what conditions were present, or why those conditions were present?

**E: What are "pre-settlement forest conditions?"**

**Z:** Forest conditions thought to have existed before white settlement began in the early 1800s.

**E: And the President's plan seeks to re-create pre-settlement conditions?**

**Z:** Yes.

**E: Why?**

**Z:** The plan strongly suggests that the forests which were here before white settlement began were somehow more natural than are present-day forests. To accept this idea, you also have to believe pre-settlement forests were "naturally functioning ecosystems," untouched by human hands. This is their first big error in history. The fact is, people have been altering the character of this region's forests for at least 11,000 years.

**E: What would you say is the most glaring inadequacy in the President's plan?**

**Z:** I think the greatest inadequacy is revealed in a total lack of understanding of the historic relationship between this region's forests and the people who have lived here for the past 11,000 years.

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## Fire Improves Forest Health

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stop that process completely, the landscape gets out of kilter. When that happens, it skews all the forest processes and relationships. This is one reason we're seeing all these forest health problems — because the landscape has moved to one extreme and is unstable. We think our efforts in the Santiam Vegetation Forest Health Project will result in a better long-term balance.

**EDITOR'S NOTE:** *Two appeals on the Santiam Vegetation Forest Health Project EIS were filed during the appeal period which just ended.*

*Filed by the Oregon Natural Resources Council and the Sierra Club, the appeals are for the entire project, not any specific element. At this time, the Forest Service is preparing a written response to the appellants which will include a decision as to whether or not the appeals are denied.*

*If they are denied, the appellants may still go to federal court and ask for an injunction.*



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## The Research and the President's Forest Plan

Continued from page 7

Several years ago, a man named Hugh Raup, who was a forester and biologist, and taught at Harvard University for many years, wrote something about forest biologists that I believe now explains perfectly why the government's scientists have failed the President and the public. Let me read it to you.

"I think the largest single need in American forest biology is the study of man's relationship to forest land. Our foresters need to understand much more than most of them do about purely human motives and aspirations with respect to the land. They ought to become genuinely knowledgeable and respectful of people's economic, social and aesthetic institutions."

**E: What does that mean to you?**

**Z:** It means it is impossible to separate land from people. They exist together, as one culture. The government's scientists are trying to separate people from land they and their ancestors have occupied and worked for generations. This is not science. It is cultural engineering, and it is morally and ethically wrong. Moreover, it is environmentally dishonest.

**E: What do you think about the idea that we should return the region's forests to pre-settlement conditions?**

**Z:** That's a policy question best answered by the general public. But I can tell you this. The pre-settlement conditions the government's scientists have described are not the pre-settlement conditions seen by people who lived here 150-200 years ago. Thus, the management plans these scientists want to implement will not produce conditions which existed here when white settlement began. Apart from this failing, I don't find anything wrong with the idea that we should be managing forests in ways which mimic natural processes. Forestry provides the tools we need to do this, but the plan presents a clear bias against these tools, and to mask their bias, they have made up a story about what forests looked like before white men came here. The story isn't true. It is based on a romantic notion which leads people to believe they have few options for protecting forests. That's not true either. We have many, many more options for managing this region's forests than the few that are presented in the President's plan.



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