Incident Summary Page for the 100 Fires Project

Incident Name: Great Fire of 1845 Sometimes confused with the Nestucca Fire	**Incident Date & Time:** Late September 1845
Incident Location: Willamette Valley and Coast Range of Oregon	**Incident Size:** 400,000-1.5 million acres (conflicting observations and research)
Types of resources involved: Civilian pioneers and native Indian tribes	**# of Fatalities/injuries:** Unknown

Reason this fire was selected for the 100 Fires list:

- Fire is historically significant

Conditions leading up to the event:

What records exist indicate that Oregon was unusually warm and dry in 1845. That year, a frontiersman Stephen Meek took a wagon train through the region, expecting to come across the same large lakes he had seen a decade prior. The drought was severe enough to render the area unrecognizable, as the lakes had shrunk significantly. One settler recalled searching for *"40 or 50 miles in every direction"* to find water but finding none. The Willamette Valley typically receives fewer than ten rainy days each summer, and it is quite likely that it received no rain in the summer of 1845.

Brief description of the event:

The fire is believed to have begun when a new arrival to the area attempted to burn some heavy "slashing" on the ranch upon which he was squatting. He lost control of the burn, which quickly spread through the tall grasses whose growth had been encouraged by prior Indigenous cultural burning.

A west wind pushed the fire east across the Willamette Valley, but a sudden reversal pushed the fire back on itself, pushing it around the previously burned path and into timber. From here, the fire expanded north, west, and south through thick, old-growth forest. Indians camped along the Big Nestucca River, many miles from the origin of the fire, reported that smoke from the fire approached them for several weeks before the fire forced them to flee in their canoes down the river to the Pacific Ocean.

The fire burned until it was extinguished by fall rains. The massive burn scar led one newspaper editor to compile oral histories of the fire a half-century later.

Fire behavior factors that were present during the event:

The Great Fire of 1845 was initially wind-driven rather than fuel-driven, as it tore through the grasses to the east of the settler's camp before reversing and taking to the timber. Western Oregon often has strong, dry, easterly "foehn winds" in the fall, which likely pushed the fire west for its duration. If and when those winds subsided, the fire would likely have followed all available timber up sun-aligned slopes throughout each day.

The fire was reported to consume all the trees in its path except for the trunks. It burned intensely enough that its *"bright red glare"* woke the Nestucca tribe at night and moved quickly enough that from the time they saw it at the summits of nearby hills, they did not take the time to gather their belongings before taking to the river. Presumably, the river was downhill from the summits of the hills, so the fire was likely backing downhill at a rapid rate of spread. Observers reported that the fire outran *"bands of elk and deer,"* which were found burned in "piles."

Operational lessons available for learning from this incident:

Although settler and Indigenous burning practices differed significantly from the modern "prescribed burn," this nonetheless may be an early example of an out-of-control planned burn. No recorded suppression efforts for this fire have been found.

Notable impact or historical significance for the wildland fire service from this incident:

As is the case with many Relic Era fires, details on the Great Fire of 1845 are fuzzy. Sources are limited to a few secondhand accounts recorded years and decades after the fire took place, as well as a massive burn scar stretching some 60 miles north-south and 40 miles east-west. This burn scar was later recorded as a very large expanse of 80-year old timber in the 1930s. However, it should be noted that the southern portion of this burn scar was recorded as "dense forest" in 1849, so it is quite possible that the massive scar was created by a few relatively smaller fires. Even if the "Great Fire of 1845" was two or even four fires sometime in the late 1840s, the fact remains that Oregon endured a spate of catastrophic wildfires in the middle of the 19th century. Additionally, since the fires would be aligned north-to-south, and not-east-to-west, it is plausible that each fire would have been initially wind driven, and then fuel-driven.

The Great Fire of 1845 occurred only two years after the founding of Portland, Oregon and before the onset of large scale white settlement. Therefore, it is not as well-documented or well-remembered as the fires of the 1850s and 1860s.

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It is notable largely because it was the first of several large, high-intensity fires that occurred over the next two decades in the Pacific Northwest. This happened again during the Tillamook Burn series which occurred from 1933 to 1951. Many of the same areas that burned during the 19th century burn series and the Tillamook Burn series, as well as during the Yacolt Fire of 1902, burned again in the historic wildfire season of 2020. It is possible that the region is once again undergoing a period of intermittent, large and high intensity fires, perhaps to be followed by another period of relative calm.

However, Oregon's fire regime defies easy characterization. Fred Swanson, a retired scientist at the Forest Service's Pacific Northwest Research Station, has described the regime as "*consistently sloppy and complex… ranging from zero tree-kill to total tree-kill, from a few acres singed to thousands burned to a crisp*."

Nonetheless, the major fires of the mid-19th century were quite similar to those experienced by Oregonians during the 2020 West Coast Wildfires, with the primary difference being the number of people in the area present to endure, observe, and document the burns.

Links to more information on this incident:

The following narrative was written by a Forest Service employee and draws heavily from the 1894 account

- https://cliffhanger76.tripod.com/c2sea/fire/

The following link contains the article in The Weekly Oregon Standard, August 31, 1894, in its entirety, as well as further commentary:

- https://ndnhistoryresearch.com/2021/11/11/nestucca-accounts-of-the-great-fire-of-1845-and-first-encounters-with-white-men/
- http://www.nwmapsco.com/ZybachB/DRAFT/PhD_Thesis/Chapter_4.htm

Munger , T. T. (1944, July). Out of the Ashes of Nestucca: Two Sequels to Oregon's Great Nestucca Fire of a Century Ago. American Forests, 342–368

- https://andrewsforest.oregonstate.edu/sites/default/files/lter/pubs/pdf/pub828.pdf

Duncan, S. (2002). When the Forest Burns: Making Sense of Fire History West of the Cascades. Science Findings, (46)

- https://www.fs.usda.gov/pnw/sciencef/scifi46.pdf

Book:

- *Oregon Wildland Firefighting: A History* ~ by Sean Davis

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Historic Oregon Forest Fires

YEAR	NAME	ACREAGE
1845	The Great Fire	1,500,000
1848	Nestucca	290,000
1849	Siletz	800,000
1853	Yaquina	482,000
1865	Silverton	988,000
1868	Coos Bay	296,000
1933	Tillamook	240,000
1936	Bandon	143,000
1939	Saddle Mountain	190,000
1945	Wilson River/Salmonberry	180,000
1951	North Fork/Elkhorn	33,000
1966	Oxbow	44,000

This table, showing historic Oregon fires, was compiled in 1986 by Leonard Whitmore, a forester on the Hebo Ranger District of the Siuslaw National Forest. It draws heavily from late 19th century oral histories.

Table 4.01 Historic Oregon Coast Range forest fires, 1750-1951.

Name	Year	Season	Acres	Authority
Millicoma	ca. 1765	Unknown	200,000	Phillips 1988: map; Smyth 2002
Yaquina (1)	1849	Aug./Sep.	450,000	Gannett 1902; Morris 1934b
Nestucca	ca. 1853	Aug./Sep.	350,000	Gannett 1902; Munger 1944
Yaquina (2)	1868	Aug./Sep.	300,000	Fagan 1885; Kirkpatrick 1940
Coos	1868	Sep/Oct	300,000	Kirkpatrick 1940; Phillips 2003
Tillamook (1)	1933	Aug.	311,000	Dague 1934; Fick & Martin 1992
Tillamook (2)	1939	Aug./Sep.	225,000	ODF 1951a; Fick & Martin 1992
Tillamook (3)	1945	Jul./Aug.	110,000	ODF 1951a; Fick & Martin 1992
Tillamook (4)	1951	Apr.-Sep.	49,500	ODF 1951b; Chen 1997: 4

This table, showing historic Oregon Coast Range fires, was produced by Bob Zybach for his PhD thesis:
"The Great Fires: Indian burning and catastrophic forest fire patterns of the Oregon Coast Range, 1491-1951."

Note that the Nestucca Fire, here dated 1853, was dated *"1845, 1846, or 1847"* in earlier research by Thorton Munger, which was cited favorably in Zybach's thesis. Munger cited details from the 1894 article in his discussion of the Nestucca Fire and its burn scar. Suffice to say that the specifics of Oregon's fire history in the latter half of the 1840s remain hazy, but a catastrophic fire certainly occurred and was followed by several well-documented fires in later decades.

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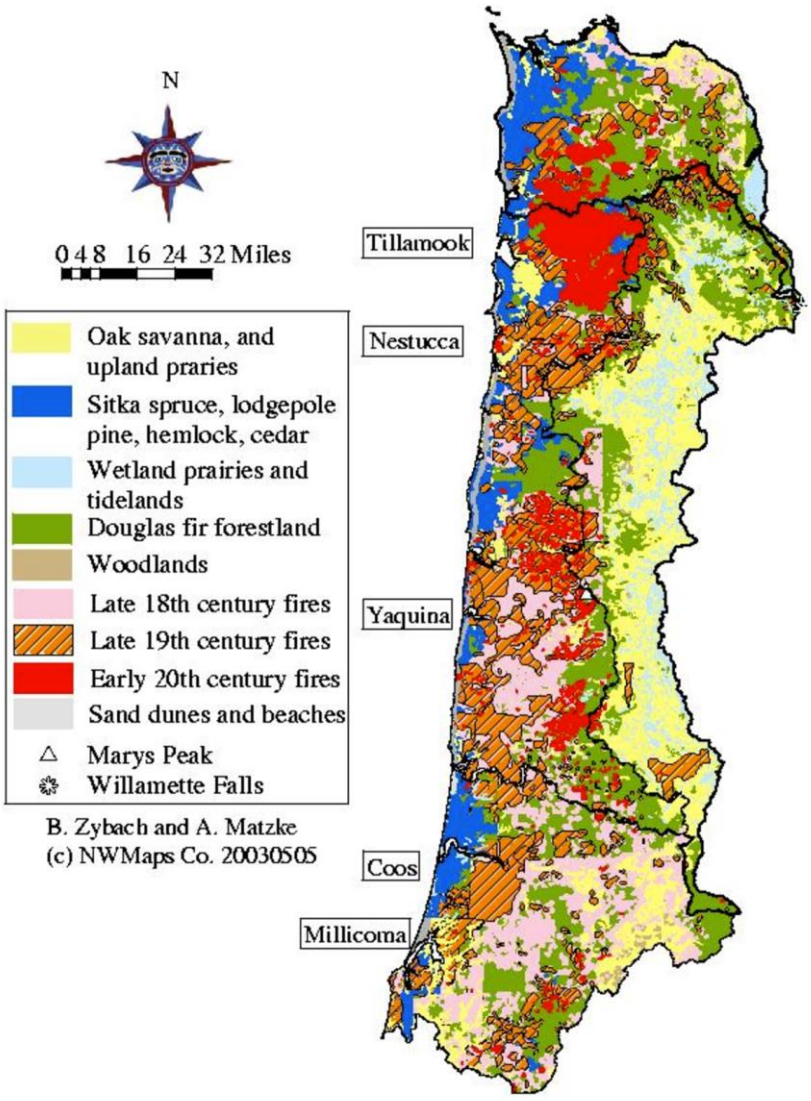

Map 4.01 Historic Oregon Coast Range forest fires, 1750-1933.

This map showing 19th century and early 20th century wildfire footprints, was produced by Bob Zybach for his PhD thesis:
"The Great Fires: Indian burning and catastrophic forest fire patterns of the Oregon Coast Range, 1491-1951."