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## 1954 FOREST FIRE WEATHER IN WESTERN OREGON AND WASHINGTON

By

Owen P. Cramer, Meteorologist

EDITOR'S  
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For the second successive fire season forest fire weather in western Oregon and Washington was far below normal severity. The low danger is reflected in record low numbers of fires reported by forestry offices of both States and by the U. S. Forest Service for their respective protection areas. Although spring and fall fire weather was near normal, a rain-producing weather pattern persisted over the Northwest from late May to mid-September. The resulting summer fire danger was as low as any on record. Summer weather also had a direct effect on fire occurrence since 1954 lightning storm frequency over the national forests averaged less than one-fourth the 1953 number.

As in previous years, the 1954 fire season has been rated by: (1) total number of days when no rain fell, (2) average number of days since a wetting rain of one-fourth inch or more, and (3) burning index, a rating of the combined effect of relative humidity and wind speed on rate of fire spread. High burning index means high rate of spread. Seasonal ratings are determined by averaging daily observations from scattered Weather Bureau stations. Relative severity is then determined by comparing ratings of the current season with those of previous years. A graphical record of seasonal ratings was published with the report of 1952 fire-weather conditions.<sup>1/</sup>

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<sup>1/</sup> Cramer, Owen P. Fire weather in western Oregon and western Washington in 1952 compared with other years. Pacific Northwest Forest and Range Experiment Station, Research Note No. 86, 11 pp. July 1953.

## Western Oregon

For the entire season, fire weather averaged more severe in 1954 than in 1953 (table 1). Spring fire weather averaged near normal for each index. The predominantly dry weather between April 14 and May 25 was offset by the following cool rainy period which, except in the extreme south, extended to July 10. Rainy weather confined the summer dry spell to the period between July 11 and August 19. For the second successive year, a new low record was established for summer burning index. A new summer record also was set for low number of rainless days. Greatest departures from normal summer fire weather were found in northern sections. The periods September 16 to October 8 and October 23 to 31 were predominantly dry, resulting in a greater than average number of rainless days in the fall portion of the season. Fall burning index was near normal. Average time since wetting rain was far below normal since there was no carryover of the summer rainless period into the fall.

Rainfall and temperature records reflect the low fire danger in 1954. Temperatures were below normal throughout the April - October period.<sup>2/</sup> A new low record of average temperature for the State was set for August, and June was the second coldest of record. Rainfall was above normal in April, June, July, and August; below normal in May and September; and normal in October. The pattern of fall rains provided excellent slash-burning weather.

Relative humidities were above normal except in the Rogue River watershed. Number of days with a 4:30 p. m. relative humidity of 30 percent or lower in the past three fire seasons was as follows:

	<u>1954</u>	<u>1953</u>	<u>1952</u>
Portland	10	12	29
Eugene	14	17	39
Sexton Summit	14	13	26
Medford	110	66	102

Fewer lightning storms were reported over national forests of western Oregon than in any year from 1950 to 1953. In those years the

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<sup>2/</sup> U. S. Weather Bureau. Climatological Data--Oregon.  
Vol. LX, Nos. 4 - 9.

Table 1. -- 1954 fire-weather indexes and comparative data for  
western Oregon <sup>1/</sup>

	Current year (1954)	Previous year (1953)	10-year average 1945-54	Lowest of record <sup>2/</sup>	Year of low record	Highest of record <sup>2/</sup>	Year of high record
<u>Spring (April 1 - June 30)</u>							
<u>Burning index</u>	22.5	15.9	24.8	15.9	1953	33.7	1951
Average days since rain	17.1	7.6	14.8	5.5	1933	22.9	1935
Total rainless days	59.3	47.8	60.2	46.2	1948	75.8	1924
<u>Summer</u>							
<u>Burning index</u>	<u>3/</u> 25.3	25.8	32.1	25.8	1953	37.8	1945
Average days since rain	29.0	30.6	37.9	15.9	1947	75.5	1935
Total rainless days	<u>3/</u> 59.3	66.8	67.1	61.2	1941 1947	74.8	1929
<u>Fall</u>							
<u>Burning index</u>	19.6	11.3	18.2	10.0	1940	26.4	1936
Average days since rain	11.8	10.7	20.8	6.0	1941	94.4	1932
Total rainless days	35.5	34.5	30.9	22.2	1950	42.5	1936
<u>Season</u>							
<u>Burning index</u>	22.8	18.5	26.4	18.5	1953	31.3	1951
Average days since rain	20.2	16.3	23.7	13.5	1941	48.8	1932
Total rainless days	154.0	149.1	159.5	139.5	1948	176.0	1952

<sup>1/</sup> Indexes based on observations at the following Weather Bureau stations: burning index-- Portland International Airport, Eugene, Sexton Summit, and Medford; rainfall indexes-- Portland, Eugene, North Bend, and Medford.

<sup>2/</sup> Burning index computed 1932 - 1954 except for 1933, 1934, 1937, and 1939. Average time since wetting rain and total number of rainless days computed 1922-1954 except 1923 and 1927.

<sup>3/</sup> New low record.

least number was reported in 1950 and the greatest in 1953. The number of days with lightning storms between July 1 and September 15 for national forests in western Oregon is as follows:

	<u>1954</u>	<u>1953</u>
Rogue	3	13
Umpqua	2	11
Willamette	1	7
Mt. Hood	2	14
Siskiyou	0	6
Siuslaw	1	4

Western Washington

The spring portion of the fire season was about evenly divided between two rain-dominated periods and the dry period from April 14 to May 24. Though early, the spring dry period raised spring indexes to normal. Spring burning index was in fact the highest of any portion of the season (table 2). Summer rains confined predominantly dry weather to the period between July 12 and August 16. A new low record was established for summer burning index while the two rainfall indexes were well below normal. With rainless periods from September 20 to October 6 and October 23 to 31, fall indexes were close to normal.

With the exception of normal temperature in September, the April through October fire season was cooler than normal in all months.<sup>3/</sup> Rainfall was above normal in April, June, July, and August; and below normal in May, September, and October. Rain spacing and other weather factors were favorable to fall slash burning.

Humidities of 30 percent and below were the least frequent since 1948 and occurred mostly in the spring. No 4:30 p. m. reading below 31 percent was noted during the summer and only one during the fall. Total number of days with 4:30 p. m. humidity 30 percent and lower compares with the preceding two seasons as follows:

	<u>1954</u>	<u>1953</u>	<u>1952</u>
Toledo	5	8	22
Stampede Pass	3	7	15
Boeing Field	11	8	9
Bellingham	1	0	0

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<sup>3/</sup> U. S. Weather Bureau. Climatological Data--Washington. Vol. LVIII, Nos. 4-9.

Fewer lightning storms were reported over national forests of western Washington than in any year from 1950 to 1953. Of those years the least number of storms had previously been reported in 1951 and the greatest number in 1953. Frequency of days with lightning storms between July 1 and September 15 on national forests of western Washington is as follows:

	<u>1954</u>	<u>1953</u>
Gifford Pinchot	2	6
Snoqualmie	5	10
Mt. Baker	3	11
Olympic	0	4

Table 2. --1954 fire-weather indexes and comparative data  
for western Washington 1/

	Current year (1954)	Previous year (1953)	10-year average 1945-54	Lowest of record 2/	Year of low record	Highest of record 2/	Year of high record
<u>Spring (April 1 - June 30)</u>							
Burning index	16.3	11.6	17.9	11.6	1953	24.3	1951
Average days since rain	8.8	4.2	8.6	4.0	1942	15.7	1938
Total rainless days	51.0	43.7	55.2	43.7	1953	69.7	1938
<u>Summer (July 1 - Sept. 15)</u>							
Burning index	<sup>3/</sup> 10.0	16.5	19.4	14.2	1948	24.8	1945
Average days since rain	12.9	27.0	24.8	8.3	1943	60.5	1951
Total rainless days	53.0	61.7	59.9	49.3	1948	67.5	1951
<u>Fall (Sept. 16 - October 31)</u>							
Burning index	8.2	8.7	10.5	8.4	1947	15.6	1952
Average days since rain	8.2	11.8	7.4	2.9	1941	28.3	1942
Total rainless days	26.7	24.0	26.9	19.0	1941	38.0	1936
<u>Season (April 1 - October 31)</u>							
Burning index	12.3	12.8	17.3	12.8	1953	21.4	1951
Average days since rain	10.1	14.1	14.4	7.0	1948	28.9	1951
Total rainless days	130.7	128.7	143.4	122.7	1941	162.3	1938

1/ Indexes based on observations at the following Weather Bureau stations:  
burning index--Toledo, Seattle (Boeing Field), Bellingham, and Stampede Pass;  
rainfall indexes--Toledo, Hoquiam-Aberdeen, and Bellingham.

2/ Burning index computed 1944-1954. Average time since wetting rain and total number of rainless days computed 1936-1954.

3/ New low record.