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1954 MIDSUMMER FUEL MOISTURES IN OREGON AND WASHINGTON NATIONAL FORESTS COMPARED WITH OTHER YEARS ^{1/}

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For the third successive year mid-fire-season fuel moistures on national forests of Oregon and Washington averaged higher than in the preceding year, and forest flammability was correspondingly lower. Generally high fuel-moisture conditions during 1954 are reflected in fire occurrence, which approached an all-time low. Fuel-moisture ratings are based on the 25 lowest daily observations of fuel-moisture indicator sticks in the period July 16 to August 31. Records are from 65 fire-danger stations near the exterior boundaries of the national forests (table 1).

Moisture content of the indicator stick gives a direct measure of moisture content and consequent flammability of exposed forest fuels such as dead brush, branch wood, and surface of snags or logs. These fuels are particularly important in determining the rate at which fires spread in the Pacific Northwest. A more detailed discussion of the relation of fuel moisture to fire weather and forest flammability may be found in an earlier report. ^{2/}

1/ Summaries of midsummer fuel moistures for 1948, 1949, 1951, 1952, and 1953 are given in Research Notes Nos. 47, 58, 77, 85, and 96, respectively.

2/ Cramer, Owen P. 1951 midsummer fuel moistures in Oregon and Washington national forests compared with other years. Pacific Northwest Forest and Range Experiment Station, Research Note No. 77, 7 pp. February 1952.

Second highest fuel moistures on record occurred in western Washington during midsummer 1954. The record for 1941-54 shows that only 1948 was damper throughout the State. East of the Cascades 1954 was fourth dampest with 1947 and 1949 readings exceeding slightly those of the current season. Record high readings were established for low-level stations west of the Cascade divide.

Average midsummer fuel moistures were third highest of record in Oregon. Highest fuel moistures occurred in 1948 and second highest in 1947. Comparative standing of the 1954 readings varied around the State. East of the Cascades and in the Rogue-Siskiyou area, midsummer fuel moistures were less than in 1953 and were approximately equal to the average of the preceding 13 years. West of the Cascades, except in the Rogue-Siskiyou area and at lower elevations, 1954 readings were higher than in 1953.

As in previous years, the comparative level of fuel-moisture readings agrees with ratings of the severity of fire-weather conditions ^{3/} for the entire summer.

3/ Cramer, Owen P. 1954 forest fire weather in western Oregon and Washington. Pacific Northwest Forest and Range Experiment Station, Research Note No. 106, 6 pp. November 1954.

Table 1. --1954 subregion averages of the 25 lowest daily minimum fuel moistures at selected stations on the national forests during the period July 16 - August 31 and comparative data

Area	No. of stations	Current year 1954	Previous year 1953	13-year average 1941-53	Highest of record ^{1/} 1941 - 54	Lowest of record 1941-54	Year of low record
----- Fuel moisture percent ^{2/} -----							
Oregon and Washington	65	8.3	7.6	7.3	9.6	6.1	1951
Washington	22	10.3	8.5	8.2	11.8	6.6	1951
Western Washington	16	11.4	9.1	8.9	12.8	7.1	1951
Cascades	12	10.8	9.0	8.7	12.3	6.8	1951
Olympics	4	13.5	^{3/} 9.5	9.3	13.9	7.5	(1942 (1946
Eastern Washington	6	7.1	6.6	6.2	9.5	4.6	1943
Oregon	43	7.4	7.1	6.9	8.6	5.9	1951
Western Oregon	29	8.2	7.6	7.4	9.2	6.3	1950
Cascades	12	8.5	7.4	7.4	9.3	6.2	1951
Rogue-Siskiyou	10	6.3	6.9	6.3	8.0	5.4	1950
Coast Range	7	10.3	^{3/} 8.9	9.0	11.8	7.7	1946
Eastern Oregon	14	5.6	6.1	5.7	7.3	4.7	1951
Blue Mountains	9	5.5	5.9	5.8	7.6	4.8	(1951 (1945
Deschutes-Fremont	5	5.8	6.5	5.6	6.8	4.4	1942

^{1/} All high records occurred in 1948 except Oregon Coast Range (1947).

^{2/} Average for number of stations indicated.

^{3/} Figure low--probably due to instrumental errors.