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DISTRIBUTION OF POLE BLIGHT OF WESTERN WHITE PINE

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Disease surveys conducted in 1953 and 1954 to determine the distribution of pole blight^{1/} of western white pine (*Pinus monticola*, Dougl.) reveal that most areas of damage have now been found. During 1953 extensive surveys of pole blight distribution disclosed 20 new diseased areas and a number of affected stands adjacent to or near old disease centers. The 1954 distribution surveys, limited to a 2-week period, revealed no diseased locations and only a few enlarged zones. The established range of the disease has not increased in the past 2 years except for some extension to the northeast on the Coeur d'Alene National Forest and extensions east and northwest on the St. Joe National Forest.

Aerial scouting was reduced to 25 hours in 1953 and was eliminated in 1954. Approximately one-half of the flying time in 1953 was spent scouting for signs of blight in healthy stands and healthy portions of diseased stands. Nineteen suspicious areas were discovered, 15 of which were verified as having pole blight after detailed ground examination. The rest of the flying time was spent checking known diseased areas for accuracy of location and boundaries and recording any increase in size. Table 1 summarizes the number of new diseased areas discovered during each year of the survey. The reduction from year to year had little to do with the corresponding reduction in aerial scouting because: (1) most of the diseased areas were found prior to 1953; (2) the number of healthy pole stands and healthy portions of diseased stands to survey became progressively less from year to year; and (3) spread of the disease is a slow process.

^{1/} A disease of unknown cause affecting pole-sized western white pine. An account of the disease and its symptoms is given in "Pole blight, what is known about it," a cooperative report by the Pole Blight Investigations Steering Committee, Northern Rocky Mountain Forest and Range Experiment Station Miscellaneous Publication No. 4, July 1952.

Table 1.--Summary of the new diseased areas discovered

Year of survey	Diseased areas located				Time flown
	Aerial	Ground	Total		
	survey	survey			
	<u>Number</u>				<u>Hours</u>
1950	72	29	101		120
1951	64	22	86		115
1952	38	7	45		75
1953	15	5	20		25
1954	-	0	0		0

During 1953 and 1954 all major pole stands along the southernmost limits of pole blight on the St. Joe National Forest were closely inspected from roads and lookout points. In addition, these stands were examined intensively by ground crews. No new areas or extensions of old areas were found south of the previous southern limits. All major pole stands on the Clearwater National Forest, including several suspected tracts, were examined from the ground and found to be free of pole blight.

During 1953 an examination of all major white pine pole stands on the Colville National Forest was completed. The only known pole blight on this forest is on the Sullivan Lake ranger district.

The survey program was extended to western Washington and Oregon in 1953 to determine if pole blight was present in the Cascades and along the coast. The survey was conducted entirely from the ground and approximately 125 pole-sized stands containing white pine were inspected. Only a few damaged stands warranted very close, and sometimes repeated, examination. In all cases, suspicious trees were damaged by agencies other than pole blight. Since portions of most of the important white pine pole stands in the region were checked, it is doubtful that the disease exists west of the Cascades in the United States.

The acreage of western white pine affected by pole blight in the United States is now estimated to be between 90,000 and 95,000 acres of moderate to severe damage. At the end of survey activities in 1952, the diseased acreage was estimated at approximately 70,000 acres.^{2/} The increase is partly the result of the discovery of new acreages and the enlargement of previously discovered areas. However, greater efficiency and ability in estimating acreage and extent of damage within a diseased stand is probably the largest factor contributing to the increase. Visible symptoms of diseased trees and damage within the stands have also intensified making the boundaries of a diseased area more readily recognizable.

^{2/} Forty-second annual report for the calendar year 1952. Northern Rocky Mountain Forest and Range Experiment Station, Missoula, Montana.

In a number of stands, ground reconnaissance has revealed the damage to be greater in extent than it appeared from the air. Therefore, it is possible that some areas not adequately examined from the ground may actually be larger than shown by aerial mapping. Also, in addition to the 90,000 to 95,000 acres, there is an undetermined acreage with scattered pole blight trees where damage may later become appreciable. Table 2 gives the white pine pole acreage and the estimated acreage affected by pole blight in the Northern Rocky Mountains. The estimates consist largely of moderate to severe damage but do include some light scattered damage.

Table 2.--Total and blighted acreage of pole-sized white pine

Forested area ^{1/}	: Pole-sized : white pine ^{2/}	: Pole : blight	: Acreage : diseased
	<u>Acres</u>	<u>Acres</u>	<u>Percent</u>
Clearwater	71,000	0	0
Coeur d'Alene	152,000	36,000	24
Colville	26,000	300	1
Kaniksu	277,000	31,000	11
Kootenai	42,000	4,000	10
St. Joe	172,000	21,000	12
All areas	740,000	92,300	12

^{1/} Areas within and adjacent to the national forests listed.

^{2/} Acreage of 40- to 100-year-old white pine stands calculated from Forest Survey data, national forest records, Blister Rust Control records, and other sources.

No reduction in the seriousness of pole blight can be detected either from the results of these surveys or from other widespread observations. What has actually occurred is an intensification of the disease and an increase of mortality within affected stands.

It is recommended that pole-blighted timber be salvaged whenever economically possible. Several diseased areas have already been logged and others are now undergoing salvage operations. Results of the pole blight surveys, in many instances, can serve as a guide in the selection of diseased areas where timber salvage operations may be feasible.

