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U. S. DEPARTMENT OF AGRICULTURE
PACIFIC NORTHWEST FOREST AND RANGE EXPERIMENT STATION
R. W. COWLIN, DIRECTOR

FOREST SERVICE

Research Note



Number 164

Portland, Oregon

December 1958

PORT-ORFORD-CEDAR PLANTATIONS IN THE PACIFIC NORTHWEST

by

George A. James^{1/}

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In the recent past, Port-Orford-cedar was one of the most valuable timber trees in southwestern Oregon and northwestern California. Special characteristics of the wood uniquely fitted it for special uses--battery separators in particular.

Due to the high value of Port-Orford-cedar logs, many landowners in the coastal zone of California, Washington, and Oregon established small test plantations. A study was started in 1949 to determine (1) how successful these plantations were, (2) factors influencing success or failure, and (3) the best possible combination of factors for establishing future plantations. Twenty-six plantations were sampled in an area along the coast extending from Humboldt County in northern California to Puget Sound in Washington.

Since the study was completed, conditions have changed. Port-Orford-cedar is no longer a valuable species in high demand. Other materials have replaced Port-Orford-cedar to a large extent for special uses, except for arrows, and it is of minor importance as a general-use wood because of the low remaining volume. In the natural range of Port-Orford-cedar, Douglas-fir--usually the most abundant tree in the stand--

^{1/} Formerly research forester, Siskiyou-Cascade Research Center, Pac. NW. Forest and Range Expt. Sta. Now on the staff of the Alaska Forest Research Center.

is now far more valuable than Port-Orford-cedar. Furthermore, aside from present low value, Port-Orford-cedar is no longer considered a desirable tree for reforestation projects outside its natural range because it is more susceptible to cold injury than native species and because it is subject to a very destructive root disease.^{2/}

Although the original objectives no longer apply, the study has given additional reasons for not planting Port-Orford-cedar.

It was found that Port-Orford-cedar is more heavily browsed by animals than are other common associates--thus verifying a common observation. Nineteen percent of all Port-Orford-cedar trees examined were moderately or severely damaged by animals, whereas only 8 percent of Douglas-firs examined were moderately or severely damaged by animals. Deer and elk caused approximately 60 percent of the animal damage. The rest of the animal damage was caused by domestic animals and small mammals. As these plantations varied from 8 to 26 years in age, the complete picture of animal damage could not be recorded at time of examination. In a closely related study on the Cascade Head Experimental Forest, R. H. Ruth^{3/} found that 70 percent of the Port-Orford-cedar had been damaged by animals, whereas 20 percent of the Douglas-fir had been damaged.

In the 26 plantations sampled, Port-Orford-cedar grew slower in height than did Douglas-fir. Mean annual height growth was 0.8 feet and 1.4 feet, respectively. When only unbrowsed trees growing in full sun were considered, the mean annual height growth of Port-Orford-cedar was 1.2 feet--14 percent less than for Douglas-fir. Average height of unbrowsed Port-Orford-cedar growing in full sunlight was 17.9 feet, whereas the average height of Douglas-fir for the same age was 26.4 feet.

In summation, Port-Orford-cedar is not a desirable tree for reforestation projects outside its natural range because it is highly susceptible to animal damage, slower growing than Douglas-fir, more susceptible to cold injury than native species, and subject to a very destructive root rot.

^{2/} Hunt, John, and Dimock, Edward J. II. Port-Orford-cedar--a poor risk for reforestation. U. S. Forest Serv. Pac. NW. Forest and Range Expt. Sta. Res. Note 139, 3 pp. 1957.

^{3/} Ruth, Robert H. Ten-year history of an Oregon coastal plantation. U. S. Forest Serv. Pac. NW. Forest and Range Expt. Sta. Res. Paper 21, 15 pp. 1957.