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PEST REPORT

Pacific and Yukon Region • Pacific Forestry Centre • 506 West Burnside Road • Victoria, B.C. • V8Z 1M5

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INSECT DAMAGE ON GARRY OAK INCREASES FOR FIFTH CONSECUTIVE YEAR IN GREATER VICTORIA AREA

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Reports of premature browning, scorching or defoliation of Garry oak increased sharply in 1990. This damage is caused by either of two insects: an oak leaf phylloxeran (an aphid-like sucking insect), Phylloxera sp. nr. glabra, or the jumping gall wasp, Neuroterus saltatorius. Most of the increased damage apparent in Greater Victoria was caused by the jumping gall wasp.

The present damage on oaks is not to be confused with the extensive and widespread defoliation caused by the winter moth, Operophtera brumata, during the 1970's and early 80's. Winter moth defoliation occurs in May-June and is not preceded by browning or scorching of foliage. Following successful parasite releases from 1979-81 winter moth defoliation has generally declined to very low levels. At present localized defoliation of Garry oak by winter moth is occurring only in the Lansdowne area.

Damage caused by these insects can be readily distinguished by examining the lower surface of affected foliage - phylloxeran-injured leaves are covered with numerous minute orange insects resembling aphids, while foliage affected by the jumping gall wasp have large numbers of small, 1.0- to 1.5-mm round galls attached to the leaf.

The oak leaf phylloxeran is a European insect and has been known in the Victoria area since the mid 1950's. Garry oak and, rarely, English oak are attacked. In North America, this insect is only known to occur on Vancouver Island from Nanaimo south to Victoria.

Phylloxeran damage to individual trees is generally more serious than that of the jumping gall wasp since the same trees are repeatedly defoliated over many years, gradually weakening the host tree. Typically, phylloxeran-damaged trees turn completely brown by mid-to-late July; the dead leaves drop shortly thereafter. Many defoliated trees produce a second flush of leaves which remain green into November. The same trees are preferentially attacked each year with very little spread to other nearby oaks. Trees under attack for several consecutive years are visibly weakened with many dead branches, weak growth and poor foliar development. It is not certain at this time if the oak leaf phylloxeran is entirely responsible for the decline or if trees stressed by other factors are preferentially attacked. However, continued defoliation will likely accelerate the decline. At present about 10% of the Garry oaks in the Greater Victoria area are affected. Damage reported here is much more severe than in Britain where only an occasional oak is affected in some years.

At present, no viable chemical control options are available as affected trees are usually very large and are located in urban areas. Small high value trees could be sprayed with dormant oil in winter to kill overwintering eggs or, alternately, in spring (early May) with summer oil to kill newly emerged nymphs. As oak leaf phylloxera is not considered to be a serious pest in Britain chemical or biological controls have not been developed there. Cultural remedies such as irrigation and fertilization may help reduce attack and improve tree vigor.

The jumping gall wasp is native to western North America but has only recently become abundant in the Greater Victoria area where damage reports have increased steadily over the last five years. Early damage reports in 1986-87 were centered mainly in the View Royal - Mill Hill area. Since then, the infestation has spread to include a broad area from Langford Lake in the west through parts of Colwood, Langford, View Royal, Esquimalt, south and west Saanich to Brentwood Bay. Damage has not been reported in Victoria or north of Brentwood Bay.

Individual trees affected by jumping gall wasps generally are not scorched or defoliated as severely as is the case with the oak leaf phylloxeran. On most trees, 20 - 60% of the foliage is scorched but damage may range from light speckling to almost complete scorching of foliage and defoliation. Virtually every tree within an infested area may have some damage.

The local outbreak pattern in which almost every tree is attacked over a steadily expanding area is more severe than reported in the United States where typically only an occasional widely scattered oak is attacked in some years. Rearing of galls by the Pacific Forestry Centre in 1990 indicate a very low (3 - 15%) level of parasitism. Therefore, continued damage with possible expansion of the area under attack is expected in 1991. Increased levels of parasitism in the future should reduce jumping gall wasp damage.
