

Common Fungi Affecting Pacific Northwest Trees

Latin name	<i>Phellinus sulphurascens</i> (formerly <i>Phellinus weirii</i>)						
Typical Host tree in the Pacific Northwest Region	Douglas-fir, grand, amabilis, subalpine fir, Sitka and Engelmann spruce, western larch, western hemlock, lodgepole, ponderosa, western white pine. Western redcedar is considered to be resistant (but not immune). Deciduous trees are immune.						
Form of fruiting body	Perennial		Annual	✓	Polypore	✓	Gilled
Type of decay	White rot		Brown rot		Soft rot		
White rot - preferential loss of lignin, some break down lignin & cellulose. Brown rot - preferential loss of cellulose. Soft rot - breaks down cellulose.							
Typically attacks:	Live wood	✓	Dead wood		Both		
Typical location of decay	Root rot	✓	Butt rot	✓	Sap rot		Heart rot
Comments:							
<p>A root rot that extends up into the lower butt log of infected trees. Early signs of infection include reduced height and crown growth. By the time the crown foliage is sparse and yellowing the entire root system is extensively decayed. A heavy stress-induced cone crop may also be noted. The bark at the base of the trunk may be darkened, and have a water stained appearance shortly before the tree dies. In forested areas infected trees may be found as a disease centre with a large group of infected trees, or they may be individuals scattered throughout the area.</p> <p>The fruiting body, which may last several years, is a buff colour when young, turning dark brown with age. It is not often seen as it grows on the underside of roots and decayed wood. There may be white to light brown ectotrophic mycelium on or in the bark close to the root collar. This may be found in conjunction with a brown crust-like mycelial growth at the root collar or on the roots, that resembles blistering paint. In its advanced stage, the wood causes annual rings to separate leaving sheets of soft wood. The disease spreads by root contact and can remain viable in stumps and roots for several decades. A simple test is to peel away a small piece of bark on a root and look for the telltale red or red/brown setal hyphae resembling fine hair or fur right under the bark. The pathogen decays the roots first of all so the presence of decay in the butt log implies that few roots remain.</p> <p>On redcedar, the conk is perennial and mainly causes butt rot. Cedars are seldom killed by the disease, but extensive butt rot may lead to stem breakage.</p> <p>Risk assessment and management implications Trees infected with the Douglas-fir form will have few if any viable structural roots, and are very susceptible to windthrow. Some literature suggests any trees within 50 feet of an infected tree may be compromised. Management can include removal of infected trees, thin out trees around infected pockets of disease, remove stumps and turn them over to expose roots, replant with different species such as redcedar, western white pine or hardwoods.</p>							



Typical windthrown tree, with all of the structural roots decayed.

Phellinus sulphurascens



The fungal fruiting body on the underside of a windthrown stump.



Stand of Douglas-fir showing typical disease centre of trees infected with laminated root rot.