

# Forest Disease Management Notes

United States  
Department of  
Agriculture

Forest Service  
Pacific Northwest  
Region



## Hemlock Dwarf Mistletoe

Hemlock dwarf mistletoe, *Arceuthobium tsugense*, infests 21% of the western and mountain hemlock types in the Pacific Northwest. Severe infestations cause growth loss, wood quality reduction, and tree killing. Damage is much more serious in stands over 100 years old than in younger stands.

**Hosts:** Principal- western and mountain hemlock; Secondary Pacific silver, subalpine, and noble fir, coastal lodgepole, western white, and white-bark pine.

**Recognition:** Leafless, green or red dwarf mistletoe shoots (about 2 in. long) a pear on infected branches; basal cups of old detached shoots remain on branches. Branch and stem swellings, witches'-brooms, dead tops, branch flagging; branch mortality is accentuated by fungi that invade mistletoe infections; severely infected true firs are predisposed to attack and mortality by fir engravers (*Scolytus ventralis*).

**Disease Spread:** Seeds are sticky and forcibly shot as far as 50 feet from fruits in the fall; seeds germinate in the spring, infection occurs on thin bark wood; spread is most rapid in multi-storied stands; spread in singlestoried stands averages 1-2 feet per year; spread is faster in open than dense stands; death of host results in death of dwarf mistletoe.

**Management:** Clearcut severely infested stands, remove infested overstory if a manageable susceptible understory is present; remove severely infected trees in lightly infested stands; destroy infected live residuals left after clearcutting, fires, or blowdown; favor nonhosts in mixed stands; trees with open-faced stem cankers or with dead tops should be treated in recreation areas; prune witches'-brooms in recreation sites to prolong tree life.

**May be Confused With:** True fir dwarf mistletoe on true firs, but the effects are the same. Suppressed western hemlocks form simulation brooms when they are-released. Simulation brooms do not have dwarf mistletoe shoots.

Hemlock dwarf mistletoe plants



Western hemlock severely infected by dwarf mistletoe



Flagging in noble fir caused by hemlock dwarf mistletoe and canker fungi