

DROUGHT

DISTRIBUTION

Throughout the province in areas experiencing unusually low rainfall, especially on sites with dry aspects and shallow, well-drained soils or areas where excessive soil disturbance has occurred.

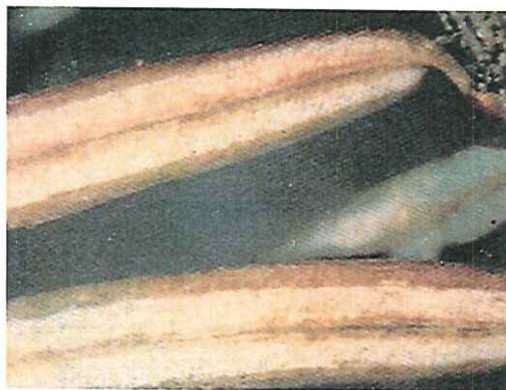


Figure 270. Detail of stress symptoms on needles.

HOST SUSCEPTIBILITY:

All conifer species are susceptible, especially seedlings or young saplings. Species or varieties adapted to dry sites are more tolerant than those adapted to moist sites. Understory or shallow-rooted trees are usually more severely affected.

SIGNS & SYMPTOMS:

Drought symptoms are most apparent in late summer to early fall and can occur over extensive areas. Younger trees become affected earlier than older trees since the former have a smaller root system. Trees undergoing only moderate moisture stress will shed older needles prematurely, usually on the lower crown. Seedlings show wilting, yellowing, and necrosis of the foliage. Older trees exhibit symptoms from the tip down and from the outside inward. Affected foliage eventually discolours brown in all species except larch. On larch, foliage turns yellow, droops, or shrivels around the stem or branches, and falls off abnormally early. With well-advanced drought conditions, foliage discolouration and needle death become more pronounced and tip dieback may



Figure 271. Symptoms move from crown top down and from branch tips inward.

be seen. On western white pine, drought-related stem cracks are sometimes found.

DAMAGE:

Drought can cause extensive mortality for four or five years after planting. Mortality of older, larger trees is usually not widespread. Damage can result in growth reduction, dead tops, and defoliation. However, if drought occurs over several successive years, large trees of intolerant species may die. A widespread decline of western white pine in 1950 to 1960 (poleblight) resulted from drought.

SIMILAR DAMAGE:

Many conditions that affect individual tree health can resemble drought damage. Root disease, needle cast, and insect defoliation can be distinguished by fruiting bodies and insect chewing. Other abiotic disorders such as frost and red belt can be distinguished by climatic or topographic conditions preceding or associated with the damage.



Figure 273. Mortality in a young stand due to prolonged drought. Immature trees are generally more susceptible to damage.



Figure 272. Foliage discolouration and necrosis caused by drought.