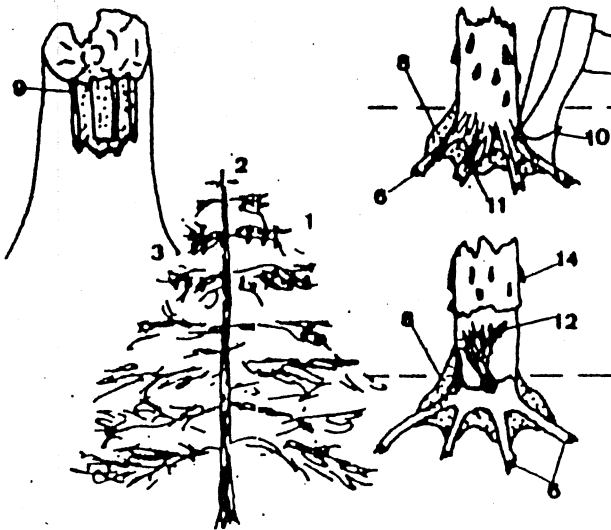


CONIFER DISORDERS

First Level Diagnosis

Use these clues to help you decide which category the problem fits. Then go to other sources for specific information.

ROOT ROT



ROOT ROT SYMPTOMS:

1. Uniform crown fade
2. Slowly shortening leader; 2-3 years
3. Distress cone crop
4. Trees in several stages of mortality
5. Mortality in patches; rotted stumps evident
6. Broken, rotted roots on pulled up trees
7. Blowdown without root wad
8. Reek-soaked soil at root crown

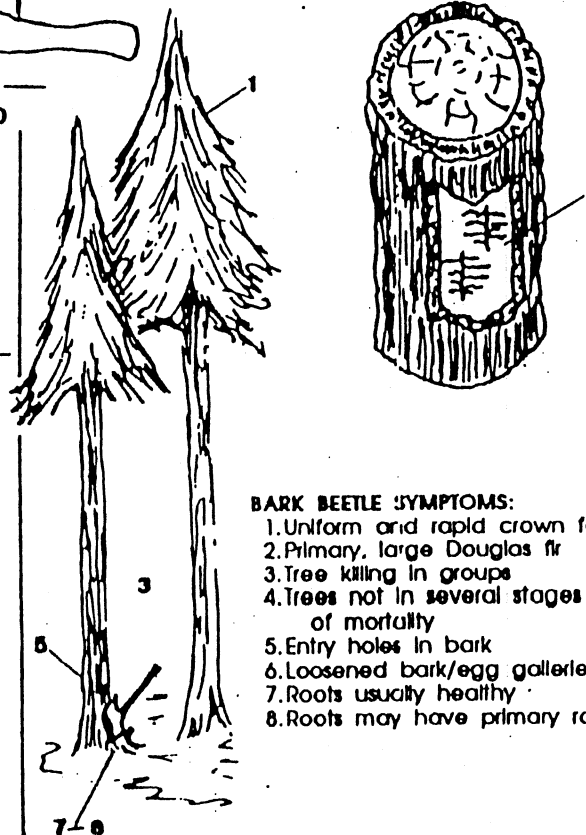
PHELLINUS WEIRII ROOT ROT SYMPTOMS:

9. Rotted wood separates at growth rings
10. Reddish-colored sored hyphae in pockets under bark (use lens)
11. Thin, buff-colored fungus covering root surface

ARMILLARIA ROOT ROT SYMPTOMS:

12. White, fan-like fungus felt under bark
13. Mushrooms at base of tree in fall
14. Considerable pitching above root crown

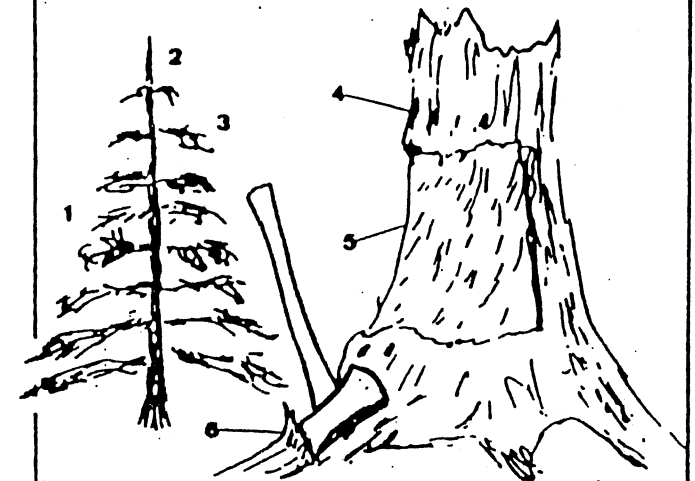
BARK BEETLES



BARK BEETLE SYMPTOMS:

1. Uniform and rapid crown fade
2. Primary, large Douglas fir
3. Tree killing in groups
4. Trees not in several stages of mortality
5. Entry holes in bark
6. Loosened bark/egg galleries
7. Roots usually healthy
8. Roots may have primary root rot

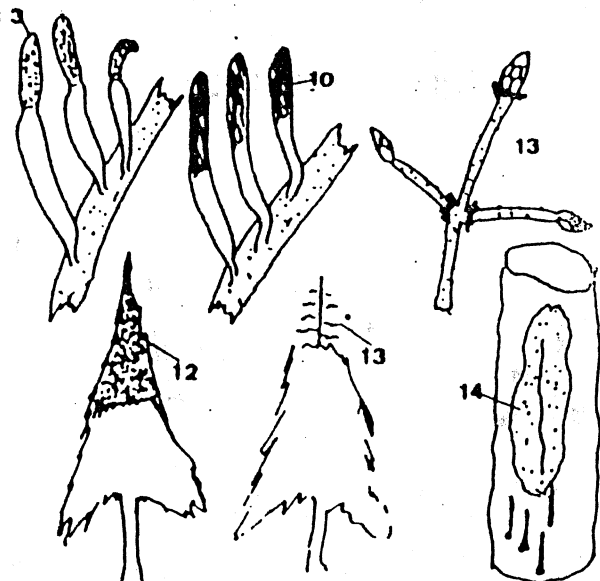
ANIMAL DAMAGE



ANIMAL DAMAGE SYMPTOMS:

1. Uniform crown fade to injury
2. Leader does not shorten
3. No distress cones
4. Bleeding resin
5. Chewing or girdling
6. Roots usually healthy

ADVERSE WEATHER



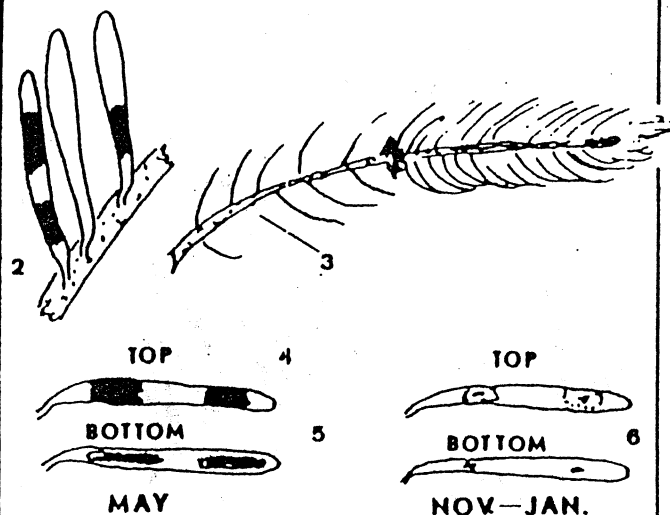
DROUGHT INJURY SYMPTOMS:

1. Tree has a yellow-brown cast
2. Injury usually confined to this year's needles
3. New needle tips yellow-brown and shrunk
4. Injury most evident late summer
5. Mortality occurring August-October
6. Root rot and beetle or herbicide symptoms absent
7. Roots dry but healthy looking

WINTER INJURY SYMPTOMS:

8. Tree has a red-brown cast
9. Current needles injured
10. Needle tips not shrunk, only red
11. Injury most evident early summer
12. Needles intact; tree top red
13. Top needles gone; buds intact; twigs succulent; no chewing
14. Bleeding cracks; bole, cambium dead
15. Roots healthy

NEEDLE DISEASES

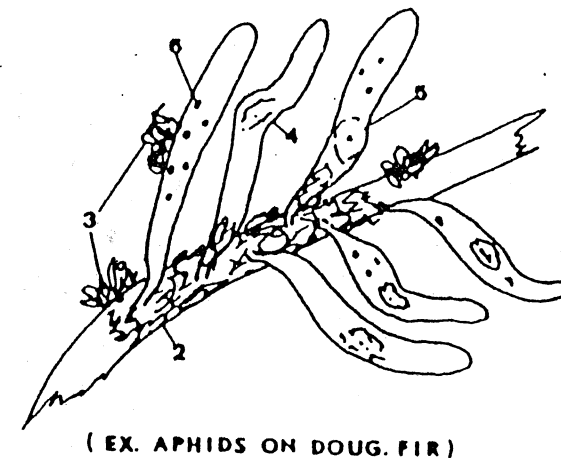


(EX RHABDOCLINE NEEDLE CAST DOUG FIR)

NEEDLE DISEASE SYMPTOMS:

1. Tree has red-brown cast
2. Random current year needles affected
3. Many of last year's needles gone
4. Top of needle has red patches - May
5. Fruiting structures underside needles - May
6. Small, reddish dots; yellow halo underside - Nov/Jan.

NEEDLE INSECTS



(EX. APHIDS ON DOUG. FIR)

NEEDLE INSECT SYMPTOMS:

1. Tree has yellow cast
2. Twigs and needles covered with honeydew; later turns moldy
3. Woolly egg mass on twigs and needles
4. Needles may be distorted
5. Small yellow spot on needle
6. Black crawlers on needle 1/32" diameter

Contact: Forest Health Specialists: Forest Pathologist or Forest Entomologist, Department of Natural Resources, Forest Health, PO Box 47037, Olympia, WA 98504-7037. Ph 360 902 1692
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