

 UI Extension Forestry Information Series

## Stress Kills Trees Too!

Chris Schnepf

We receive many calls on dying trees. What is killing them? “gouty pitch midge”... “bark beetles”... “diploдия tip blight”... “root rot”... are some likely responses. These are often affecting the trees, but there is a more important problem many forget in view of visible pest symptoms—STRESS.

Much is written about the critical role stress plays in human health. Stress is also very important to tree health. Trees can be stressed by many factors, including inadequate nutrients or sunlight, and pollution (ex. acid rain in Europe). But in droughty years, lack of moisture is probably the most important “root cause” of stress for Idaho trees.

Moisture stress can kill a tree outright, but more often it weakens the tree, lowering its natural defenses to diseases, bark beetles and other pests. Stands of trees growing in drier areas, and those growing at dense spacings are especially vulnerable.

**How do forests spell relief? THINNING.** Reducing moisture stress improves trees’ chances of surviving insects and disease. For agricultural and horticultural crops, moisture stress is often reduced by irrigation. Supplemental water may be helpful for yard trees, but it usually isn’t practical for forests.

A more common strategy is thinning, which increases the space between trees in a stand by cutting crowding trees. Forests “thin” themselves naturally. Dead and dying trees are a forests’ natural reaction to overcrowded trees. The best competitors survive.

But “natural thinning” can get out of hand. Insect populations may build up and take many more trees than you would prefer. Witness Yellowstone Park, where large acreages of overcrowded lodgepole pine were stressed, and killed by insects. Then fire started

the whole succession all over, from “scratch”. Many western forest ecosystems have evolved to behave in this manner.

Most landowners would rather not “start from scratch”, at least not until harvest. You can get ahead by thinning before “nature” does. Thinning reduces the stress of competition between trees – there are fewer trees competing for the same limited supply of water, sunlight and nutrients. Thinning also provides other benefits. By thinning you can:

- Concentrate growth on fewer trees, increasing their value, and reducing future harvest cost.
- Increase the lifespan of the remaining trees.
- Decrease the length of time to harvest.
- Use trees that might otherwise decay.
- Earn income (if trees removed are large enough to sell – “Commercial thinning”).
- Enhance non-timber values such as grazing, wildlife or recreation.
- Favor genetically superior trees or species of trees.

Thinning relieves moisture stress on trees and provides many other benefits. For more specific information on thinning, stop into your local Extension office and ask for PNW 184: *Thinning: An Important Timber Management Tool*. Cost-share assistance may also be available to thin your stand; contact your local Natural Resources Conservation Service Office or Idaho Department of Lands office for more information.

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**About the Author:** *Chris Schnepf* is an Area Extension Educator - Forestry and Professor at the University of Idaho.