

## Pest and Fire Resistance

Healthy plantations are better able to resist bark beetle attacks, an increased concern during years of drought. When there are too many trees for the space, they begin to compete with each other and become less healthy due to the lack of resources such as water, sunlight, and nutrients. Typical ways to assess competition are to examine annual growth rings by using an increment borer to take a core sample, by determining percent canopy cover, and by looking at the amount of overlap of tree crowns.

Resistance to a wildfire is also a huge concern. The more spacing between trees, and the less fuel, in the form of low branches, surface fuel, and slash, the less chance of a fire becoming or maintaining itself as a crown fire, which will kill the trees. As with health, fire resistance can be increased by keeping the trees spaced adequately and the fuel loading to a minimum. Measuring canopy cover, assessing crown closure, and measuring the distance between the surface fuel and the lower branches of the trees helps the forest manager know how fire resistant the stand is. A rule of thumb is that flame height is typically 3 to 4 times the height of the fuel.

