

Water Sprouts and their Application to Forestry

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As with all scientific disciplines, the science of forestry has fashioned a vocabulary that can be confusing to those outside the profession. Forester's vocabulary is an unusual mix of formal language and common expressions. One term that has confounded our efforts to educate forest landowners is water sprout.

When read side by side, the words "water" and "sprout" are an awkward fit. A water sprout is actually one of the many physiological responses of trees to disturbances. They are also known as epicormic branches. A water sprout, or epicormic branch, is a small shoot arising spontaneously from a dormant bud on the stem or branch of a woody plant. They are small branches, springing outward, leaving a viewer to observe an unnatural appearance of a tree, as if the

branches do not conform to the traditional crown and trunk structure.

In most cases, water sprouts are a result of a disturbance to a tree or to the tree's surroundings. Most commonly, water sprouts follow sudden exposure to increased light levels, for instance, after a forest has been released via thinning or selective harvesting. The number of water sprouts experienced by a tree is directly related to the degree of release and to the level of growth suppression prior to release. In other words, if trees are released too heavily, or if the release occurs on trees that were severely suppressed due to overstocking, water sprouts will more likely occur. They are more common with hardwoods than with pine. White oak trees are especially susceptible.

Water sprouts can result from other disturbances too, such as fire. Ground fire can temporarily affect the availabili-

ty of moisture and nutrients, triggering the formation of water sprouts.

Sometimes they will even develop on trees with no apparent sign of disturbance. However, such trees will normally be experiencing growth suppression, and the sprouts are a response to that suppression.

Water sprouts can have a profound effect on the quality of lumber produced in a forest. Newly formed water sprouts do not penetrate deeply into the interior wood, but if allowed to grow, can become sizable branches, significantly lowering lumber grade and value. When thinning and selectively harvesting forests, much thought should be given to the residual stocking. Only well-trained foresters should make the decision of which trees to harvest, and which should continue growing, thereby minimizing the likelihood of water sprouts. ♣

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