

The Difference between an Oak Seedling and Advanced Oak Regeneration



A Landowner Resource

It takes a lot of effort, planning, and management to properly regenerate oak species. There are multiple reasons for this, and it primarily comes down to the basic physiology of how oak seedlings develop early on in life.

Oaks are drought tolerant. One reason for this is because oaks spend a lot of time when they are young growing their root systems. In fact, during the first few years of life, they put most of their resources into developing their root systems. That is why oaks are considered slow growers. But in reality, they are not growing slow, they are just growing down.

Developing this root system is critical to the future survivability of oaks. One way they develop this root system is through being top killed or browsed. When an oak seedling is top killed via a fire, they are not literally killed. At the root collar are adventitious buds that re-sprout when an oak is top killed. After a fire rolls over an oak seedling and kills the top, these buds sprout and become a

new oak seedling. In contrast, most other tree species that are top killed tend to "freak out", or shoot for the sky, competing for sunlight and utilizing a lot of resources. But oaks keep their heads about them, and redirect their resources where they are most needed, to the root system. Each time an oak seedling is top killed, they put additional growth into their roots. This is what turns an oak



seedling into advanced oak regeneration. Advanced oak regeneration has an advanced root system. These root systems can be several years old, while the actual seedling can look only a couple of years old.

This is advantageous to oaks later in life. When they are finally released from overstory suppression, either through a timber harvest or natural disturbance, they have the ability to grow fast, thanks to their highly developed root system. It allows them to effectively compete with fast growing species like sugar maple, elm, ironwood, and yellow-poplar.

Therefore, advanced oak regeneration is what is needed for oaks to effectively compete against faster growing tree species. If a one, two, or even three year old oak seedling is released from suppression, they will just sit there, continuing to grow its root systems while its competitors shoot for the sky, creating shade and outcompeting the oak seedling.

In summary, there are two different kinds of oak regeneration. An oak seedling is usually young, less than four years old, and grows very slowly. It has a small root system, and cannot compete with other tree species upon release. The second kind of oak regeneration is advanced oak regeneration. It is typically several years old, has a developed root system, and can compete with other tree species upon release. Advanced oak regeneration is what is needed to regenerate oaks in the forest. It takes forest management to develop these advanced seedlings, typically forest thinning, prescribed burning, and selective timber harvesting. A forest management plan can help put these practices in the right order so management can be done right the first time.

The staff at Long Forestry has the knowledge and resources to provide forest landowners with the education, tools, and financial resources they need to properly manage their land in order to achieve their goals.

Long Forestry is available to private landowners help to plan, implement, and fund forest management activities. Call and speak to a consultant today.

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Sustainable Forest Management