Growth of Seedlings from the Big Basin Headwall Tree

-S. Singer, September 2017

How fast can redwoods grow if irrigation is provided?

Starting in December of 2014, two-year-old seedlings from the Headwall Tree were distributed to interested docents at Henry Cowell and Big Basin. At that time the Headwall Tree (328.1 ft.) was believed to be the tallest redwood in the Santa Cruz Mountains. Those seedlings that survived genetic recombination with a good gene mix had the potential to grow quite tall. Twenty trees were distributed and I kept 2, for a total of 22. A request for information in September, 2017, of how the seedlings fared produced only one response. I suspect that most of the seedlings died. The one response was about a seedling planted on a difficult hillside site and it had grown to 32 inches, a rate of about 12.5 inches per year.

Of the 22 seedlings, I expect that the survivors had only relatively slow growth rates as no one wanted to boast about their tree.

In my own case, I planted two seedlings in my backyard in Santa Cruz. I saved what I thought were the two best seedlings for me – one that was tall (20") and one that was densely bushy (11" tall). I planted each in full sun and added a few slow release fertilizer pellets in the bottom of each planting hole. I placed a mulch of a redwood litter layer around the base of each tree. Then I watered them once a month during the dry season. Currently the tall tree is 11.5 feet tall (average growth of 3.8' (45.6 inches) per year) and the bushy tree is 7.3 feet tall (average growth of 2.5' (30 inches) per year). Caliper (meaning diameter @ 12 inches high) = 3.3 inches on the tall one and 1.6 inches on the smaller one. One of my trees clearly had a good genetic mix.

For comparison, here are some redwood seedling growth rates for trees planted in the wild and irrigated, although less frequently. These were grown from average-size local ecotype trees. For 30 redwoods planted in the upper San Lorenzo River Watershed on soils with an extreme nutrient deficiency, the average annual growth was nearly 8 inches per year over 6 years. The tallest

redwood there grew at the rate of 21.6 inches per year. For 15 redwoods planted in the upper Gazos Creek Watershed on highly acidic soils, the average annual growth rate was 11 inches per year over 5 years. The tallest tree had an average growth rate of 22 inches per year.

For more information on these wildland planted redwoods, go to www.scmbc.org and click on “Our Bioregion”, then on “Restoring Redwood Forests”. The upper San Lorenzo River trees were at the Lompico site and the upper Gazos Creek trees were at the Welden site. Remember that natural regeneration of redwoods by seed would, in the absence of irrigation during the dry season, result in slower growth rates.

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