



## JDSF and the Reforestation Pipeline

January is tree planting season on the North Coast and this year at JDSF approximately 30,000 one year-old redwood seedlings were planted in the Chamberlain Confluence timber sale area.

While it may take place over a matter of days or weeks, these planting efforts are the culmination of years of cooperative effort. As part of the preparation of a Timber Harvest Plan (THP) a reforestation plan is also developed which lays out how the forest will be restored. This year's planted trees represent a mix of 10,000 redwood clones and 20,000 seed grown redwood trees, all from genetic material obtained on JDSF through cooperative projects with other government agencies and area landowners.

Reforestation projects rely on a 'reforestation pipeline' of seed collection, seed storage, tree nurseries, and planting personnel. At the start of the pipeline, CAL FIRE tracks the development of cone crops across the state through yearly cone crop surveys with both agency and private personnel. Nursery grown seedlings rely on seed collected from the appropriate local 'seed zone'. The seeds for JDSF's seedlings was collected in 2009 as part of a cooperative regional effort between area landowners and the [CAL FIRE Reforestation Services Program](#). The seed has been stored at CAL FIRE's the LA Moran



Figure 1: Freshly planted redwood seedling.



Figure 2: Processing redwood cones in 2009 on JDSF as part of a cooperative cone collection project with area landowners.

Reforestation Center in Davis since that collection. The genetic material for the cloned trees was collected in 2012 and 2013 as part of a cooperative research project between forest landowners across the redwood region. These cloned trees help provide stability to the local reforestation stock, since cone crops can be several years to a decade apart.

Landowners can store seed at the Reforestation Center until it is time to start growing seedlings for the next



Figure 3: One year-old redwood seedling ready to go in the ground.



Figure 4: Planting crew loading bags. Each member loads 100 trees into a bag. Trees are tracked at each step in the process to ensure the right number of trees are going to each reforestation unit.

planting season. Conifer trees require different growing conditions and methodologies dependent on species and the project need. Tree nurseries grow seedlings based on the orders they receive, so a consistent demand is important for maintaining the nursery capacity of the reforestation pipeline. The redwood trees purchased by JDSF were grown in containers for one year in the nursery prior to planting. (Fig 3)

As planting approaches the trees are lifted from their containers and packed in boxes for shipping to the site. Trees must be kept cool to maintain dormancy until they are ready to be planted in the field. Storage in boxes for more than a few days requires large cold storage containers capable of maintaining temperatures a few degrees above freezing. For JDSF this required coordinating with area landowners to share cooler space and transportation costs.

Once the trees are at the site and the weather is right it is time to start planting. Reforestation foresters pay close attention to the weather to limit the seedlings' exposure to below freezing conditions, while still getting enough rain to see the seedlings through the dry season. JDSF contracted with a local reforestation company to complete this year's project. A crew of 12 planters spent two weeks on JDSF planting an average of 3,000 trees a day. (Figs 4 & 5)



Figure 5: Planting a timber harvest area in the Chamberlain Confluence Timber Harvest Plan.

Maintaining this reforestation pipeline requires consistent public and private investment at all stages. JDSF contributes to this effort through seed sourcing, cooperative research projects, and support for the nursery product. CAL FIRE has also made investments in seed storage, nursery capacity, and reforestation grant programs. Through these cooperative efforts stakeholders across the region are working to ensure the long-term availability of the conifer planting stock for post-harvest restocking and post-fire reforestation and climate change resilience projects.

Learn more about the CAL FIRE Reforestation Services Program [HERE](#).