

Slink Reforestation, Application, & Regeneration

It's been three strong years of post-fire restoration activities on the Slinkard Project in Mono County, CA. CDA partnered with the California Department of Fish and Wildlife (CDFW) in 2021 to implement the Slink Project following the 2020 Slink Fire and since has applied thousands of acres of restoration, research, and a plethora of surveys across the project area.

CDA, in partnership with the California Department of Fish and Wildlife, has been diligently working on post-fire recovery efforts within the Slink Fire burn scar. The fire ignited due to a lightning event in the Eastern Sierra and burned approximately 27,000 acres in and adjacent to the Slinkard Valley. Over 60% of the fire scar burned at high severity, which drove the strategies and prescriptions designed for the post-fire restoration efforts. CDFW and CDA outlined specific objectives for the project area that include hazard tree removal, erosion control, meadow restoration, and several revegetation goals. These treatments will achieve the desired forest conditions of creating a fire-resilient landscape, promoting forest health and diversity, and controlling invasive species.

To date, CDA has completed multiple entries of mechanical and aerial seeding, protection and monitoring of regenerating aspen stands, slope stabilization, hazard tree removal, and reforestation phase I of site preparation.

In further review, the following list includes some of the executed project activities to date:

- Over 3,000 acres of aerial seeding consisting of shrubs, grasses, forbs, and other native species
- 300 acres of mechanical seeding in Little Antelope Valley to improve forage for wildlife
- 2.3 miles of hazard tree removal along access roads
- 4.75 miles of vegetative fuel breaks in Slinkard Valley
- Production of a Forest Management Plan addressing forest health and wildlife objectives
- Project monitoring including but not limited to - botany surveys, soil analysis, wildlife reports, and post-treatment analysis to measure the effectiveness of treatment applications
- Reforestation site prep and hand-thinning of burnt trees
- Reforestation of 12,000 planted seedlings across the landscape

One of the most notable mentions of recovery since the Slink fire is that of the Aspen regeneration. Year after year, project site visits become more filled with discussions of how well the Aspen has recovered. Upon the ascent from Little Antelope Valley into the mountains, you will quickly find solid walls of bright green trees in nearly every direction. The Aspen regeneration is truly exceptional and, if nothing else, can be considered a great indication that areas within the Slink Fire footprint are recovering through both restoration efforts and natural occurrence.

Initially upon review of the landscape in 2022, wild mustard (invasive) had essentially asserted into the landscape as the





Before photo of wild mustard invasives

dominant recovering species. Prior to aerial seeding, hazard tree removal, mowing, and other applications, the wild mustard was lush ground cover. Today, there is a newly painted picture. Biodiversity has flourished with an array of species applied during the 2021 and 2022 aerial seedings and can be viewed throughout the area.

While the regeneration of Aspen is critical in the continuation of restoring the landscape, especially in out-competing invasives such as that of wild mustard, the reforestation of mixed-conifer species such as Sugar Pine, Western White Pine, Incense Cedar, Jeffrey Pine, and Douglas Fir is imperative in restoring the areas due to the need for:

- **Ecological Diversity:** Forest ecosystems are incredibly diverse, comprising various species of trees, shrubs, grasses, and other plants. Each species has its role to play in the ecosystem.
- **Adaptation to Different Conditions:** Different species of plants have evolved to thrive under different environmental conditions. For example, while aspen might do well in areas prone to fires, other species might be better adapted to other types of disturbances or different soil and moisture conditions.
- **Wildlife Habitat:** Forests support a wide array of wildlife, and these animals rely on diverse plant species for food / shelter.
- **Resilience to Pests and Disease:** Monocultures, or areas dominated by a single species, are more susceptible to pests and diseases. Having a diverse mix of species can help protect against outbreaks that could decimate a single species.
- **Succession Dynamics:** Forests undergo a process called ecological succession, where plant communities change over time in response to disturbances like fires. Different species are adapted to different stages of succession, and having a variety of species ensures that the forest can recover and evolve.

For 2024, the primary objective for the project area →was reforestation phase II, tree planting, within the fire-impacted Northeastern Sierra Mixed Conifer-Pine Forest. The CDA team was on-site in May to plant thousands of seedlings to promote mixed-conifer growth after the high-intensity fires ravaged established timber stands leaving a landscape of burnt trees.

Reforestation, whether by active planting or natural regeneration, is critical to the recovery of forested ecosystems following wildland fire. As a land manager, an important aspect of refor-



After photo of reestablished native species successfully regenerated/generated through aerial seeding.



The Slink Fire burned 3,800 acres of the Slinkard/Little Antelope Valley Wildlife Area (SLAWA). SLAWA is located in the Sierra Nevada mountains and provides critical winter range habitat for mule deer of the West Walker herd and the federally threatened Lahontan cutthroat trout.

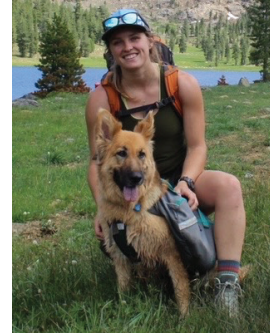
estation is determining whether a site may require tree planting, or if relying solely on natural regeneration would be the best management option. In the case of the 2020 Slink Fire, land managers determined that tree planting would be necessary to provide accelerated development and recovery of the post-fire forested ecosystem. The Slink Fire significantly impacted a critical migratory corridor for Mule Deer herds that migrate from summer range to winter range, therefore, accelerated recovery of this zone is imperative for supporting populations for forage and cover.

CDA was able to secure approximately 12,000 seedlings for a first-entry tree-planting effort on the project site. The ecoregion before the burn can be defined as Northeastern Sierra Mixed Conifer-Pine Forest with Sierra Nevada-Influence. As so, species such as Sugar Pine, Western White Pine, Incense Cedar, Jeffrey Pine, and Douglas Fir were identified, packaged, and transported for reforestation efforts. To achieve the desired conditions, site preparation was completed, and various planting techniques



were used across the project area. Planting density, spatial arrangement, and species composition were designed and adjusted as needed to increase the seedling survival. More specifically, trees were planted in a combination of clustered and regularly spaced seedlings, with microsites identified for natural shelter and favorable resource conditions (e.g. soil, sun, and water availability). Adjustments in design were also made based on ground cover and aspect. As replanting efforts were in full swing, CDA project managers Cherise MacDougall and Lauren Archer were directing crews, monitoring planting techniques and density, and completing inspections across the planted areas with support from additional CDA staff.

Reforestation in this burned zone will restore the forest structure and species composition, and provide improved wildlife habitat, soil stabilization, water resources, recreation opportunities, carbon storage, and so many other benefits. Our CDA team and partners look forward to continuing post-fire recovery work and monitoring the success of this reforestation effort.



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Big Chico Creek Ecological Reserve

The **Big Chico Creek Ecological Reserve (BCCER)** offers a unique hunt experience in a setting that is becoming more and more uncommon in California. The BCCER provides hunting opportunities for A1, C4 and G1 deer seasons as well as spring turkey hunts. We work hard throughout the year to improve wildlife habitat through implementation of prescribed burning, vegetation management and community education. The BCCER limits the number of hunters through lottery drawings that are hosted on the CDA website under the "Upcoming Hunts" link.

For more information please visit our website at www.csuchico.edu/bccer.

