GIANT SEQUOIA
LANDS COALITION

2025 Giant Sequoia Lands Coalition Progress Report

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Cover photo: During a research climb, Anthony takes a quick photo from the crown of a giant sequoia in Calaveras Big Tree (CBT) State Park. Photo Credit: Anthony Ambrose, Ancient Forest Society

Introduction

Giant Sequoias

Giant sequoias (*Sequoiadendron giganteum*) are iconic and beloved trees that can grow over 300 feet tall and dozens of feet in diameter, making them the world's most massive trees and among the largest organisms on earth. Giant sequoias co-occur with other mixed conifer species but are the most visually striking and generally dominant in size. Today, naturally-occurring giant sequoia trees are contained within 94 groves covering approximately 25,039 acres (Hart 2023). Giant sequoia groves span over 260 miles across California's Sierra Nevada mountain range but occur only on the western slopes. In addition to being some of the largest trees in the world, these groves support biologically diverse plant and animal communities.

The health and persistence of these magnificent mixed-conifer ecosystems are severely threatened by destructive and stand-replacing high-severity wildfires. Such fires have been increasing in frequency and severity, thanks to fire exclusion practices that have resulted in overly dense forests and the unnatural accumulation of fuels. In addition, these ecosystems are threatened by warming temperatures and drought driven by changing climate conditions. Extreme wildfires over the last decade have killed nearly 20% of giant sequoias and severely limited their ability to reproduce. Bark beetle attacks, while historically not a cause of giant sequoia mortality, are an emerging secondary threat.

The base of a giant sequoia standing tall at Alder Creek Grove. Photo Credit: Alaina Kuhlman, Save the Redwoods League.

About the Giant Sequoia Lands Coalition

The Giant Sequoia Lands Coalition (GSLC) is a landscape-scale, multi-partner collaboration dedicated to the conservation and stewardship of the remaining giant sequoia grove ecosystems. The Coalition is composed of federal, tribal, state, and local agencies and organizations that directly manage giant sequoia groves in public, tribal, or private nonprofit ownership, known as GSLC Members. In addition, GSLC's Affiliate Members include select federal and state conservation agencies, nongovernmental organization conservation groups, and academic research partners with a shared commitment to protect giant sequoias and their ecosystems from emerging threats associated with climate change and the extended absence of natural, low-severity wildfire processes on the landscape.

This 2025 Progress Report summarizes the Coalition's achievements over the past three years. In 2025, the GSLC Partnership Coordinator, Alaina Kuhlman—who began the role

in October 2024—continued to support and work alongside the Coalition throughout the year. This key position was made possible through the financial and administrative support of Save the Redwoods League and a grant from the Sierra Nevada Conservancy. Kuhlman's appointment addresses a critical need identified by the Coalition, enhancing the GSLC's capacity for coordination and collaboration. Her contributions have proven valuable over the last year and a half, as she has planned numerous GSLC workshops, facilitated GSLC meetings, coordinated the 2025 annual meeting, and played a major role in compiling this report.

The following organizations represent the GSLC:

GSLC Members:

- California Department of Forestry and Fire Protection
- CA State Parks: Calaveras Big Trees State Park
- National Park Service: Sequoia and Kings Canyon National Parks
- National Park Service: Yosemite National Park
- Tulare County
- Tule River Indian Tribe of California
- University of California, Berkeley
- U.S. Department of the Interior, Bureau of Land Management
- U.S. Forest Service: Sequoia National Forest
- U.S. Forest Service: Sierra National Forest
- U.S. Forest Service: Tahoe National Forest

GSLC Affiliate Members:

- American Forests
- Ancient Forest Society
- Giant Sequoia National Monument Association
- Save the Redwoods League
- Sequoia Parks Conservancy
- Southern Sierra Conservancy
- Stanislaus National Forest
- US Geological Survey—Western Ecological Research Center
- Yosemite Conservancy

A Letter from the Giant Sequoia Lands Coalition Co-Chairs

Throughout 2025, the Giant Sequoia Lands Coalition (GSLC) has continued to advance critical work in science, education, and land stewardship—all while facing tremendous trials and tribulations. From severe wildfires and unpredictable climate conditions to bark beetle threats across sequoia groves, the obstacles before us have been significant. Yet, in meeting these challenges head-on, the Giant Sequoia Lands Coalition has become more resilient, more unified, and more resolute in our commitment to protecting these irreplaceable giants and the ecosystems they anchor.

What first began as a collective response to urgent need has grown into a strong and enduring partnership grounded in shared knowledge, mutual trust, and a profound respect for giant sequoias. A manifestation of our partnership is the rangewide grove assessment and prioritization project which, for the first time, creates shared priorities to guide scarce resources to the highest risk groves regardless of ownership. Our efforts extend beyond individual projects–they reflect the strength of collaborating and the impact of working together toward a common mission.

As we look to the future, we do so with great appreciation for the progress achieved and clarity about the work that still lies ahead. United by a shared vision and sustained by our collective commitment, we will continue to rise to the moment–rooted in purpose and inspired by the towering sequoias we strive to protect. We look forward to highlighting our collaborative achievements in the pages of this report.

With gratitude,

Kevin Conway
State Forests Program Manager, CAL FIRE

Dean Gould
Supervisor, Sierra National Forest

Shine Nieto
Chairman, Tule River Tribe

Executive Summary

Collective Impact of the Giant Sequoia Lands Coalition

	2022	2023	2024	2025	Totals
Total sequoia grove treatment acres	4,257	8,526	5,960	4,508	23,251*
Fuels Reduction and Forest Health Improvements	2,099	4,657	3,579	2,021	12,356
Broadcast Burning	1,719	874	1,558	492	4,643
Pile Burning	439	1,655	537	1,038	3,669
Reforestation (planting)	Data not collected	1,340	286	957	2,583
Total acres treated for fuels reduction in buffer areas around groves	Data not collected	4,651	3,851	2,952	11,454
Total number of groves treated	36	29	29	25	44^
Native trees planted within groves	248,000	294,293	74,838	65,345	682,476
Number of personnel	824	941	1,652	Data not collected	N/A

*Includes acres that have been treated across more than one treatment category from 2022-2025.
^Some groves have been treated across more than one treatment category from 2022-2025.

The 2020 and 2021 fire seasons included three large wildfires; The Castle Fire, KNP Complex Fire, and Windy Fire. These fires burned into a large number of giant sequoia groves, catalyzing the creation of the Giant Sequoia Lands Coalition (GSLC). In the four years since the GSLC was created, the threats of climate change, extreme wildfires, and bark beetle have inspired collective action by coalition members and affiliates, demonstrating tremendous progress in protecting the world-renowned giant sequoia groves from existential threats.

In this current progress report, the GSLC presents its collective ecosystem wide achievements for 2025. The following are some of the highlights:

- Completing restoration treatments on 4,508 priority grove acres, covering 25 groves and planting 65,345 locally sourced native trees, increasing the wildfire resilience of forests and communities, improving giant sequoia grove health, and expanding the pace and scale of treatments to reduce forest fuels through prescribed burning and restoration to more natural conditions.
- Expanding seed collection efforts.
- Addressing stewardship and emergency actions, including thinning and piling of ladder fuels and conducting prescribed and cultural burns.
- Conducting scientific research and monitoring to better understand the long-term persistence of giant sequoias, tree hydrology, and the impact of wildfires and bark beetles on the health of giant sequoias.
- Strengthening interagency collaboration to improve funding access and enable faster implementation of landscape restoration projects, engaging many staff to complete the work.

The GSLC's essential restoration work has significantly enhanced the wildfire resilience of giant sequoia groves through a multi-faceted approach. The primary focus has been on reducing the unnatural accumulation of hazardous and combustible plant material, commonly referred to as fuels. Since 2022 fuels reduction has been conducted on 12,356 acres using various methods that include the following:

- Manual and mechanical fuels removal
- Prescribed fires
- Managed wildfires
- Cultural burning practices

This restoration work focused on areas that experienced uncharacteristically high wildfire intensity where overstory seed trees have died, burned seeds were not able to develop, and insufficient regeneration has occurred naturally.

Groves Treated in 2025

Alder Creek
Atwell/East Fork
Belknap
Big Stump
Black Mountain
Board Camp
Cherry Gap
Cold Springs
Converse Basin
Evans Complex
Freeman Creek
Grant
Homers Nose
Landslide
Mariposa
McKinley
Middle Tule
Mountain Home
Nelder
New Oriole Lake
Packsaddle
Parker Peak
Red Hill
Redwood Mountain
Upper Dillonwood

A Field Crew Conducts a Prescribed Burn at Alder Creek Grove in the Fall of 2025. Photo Credit: Luis Vidal, Save the Redwoods League

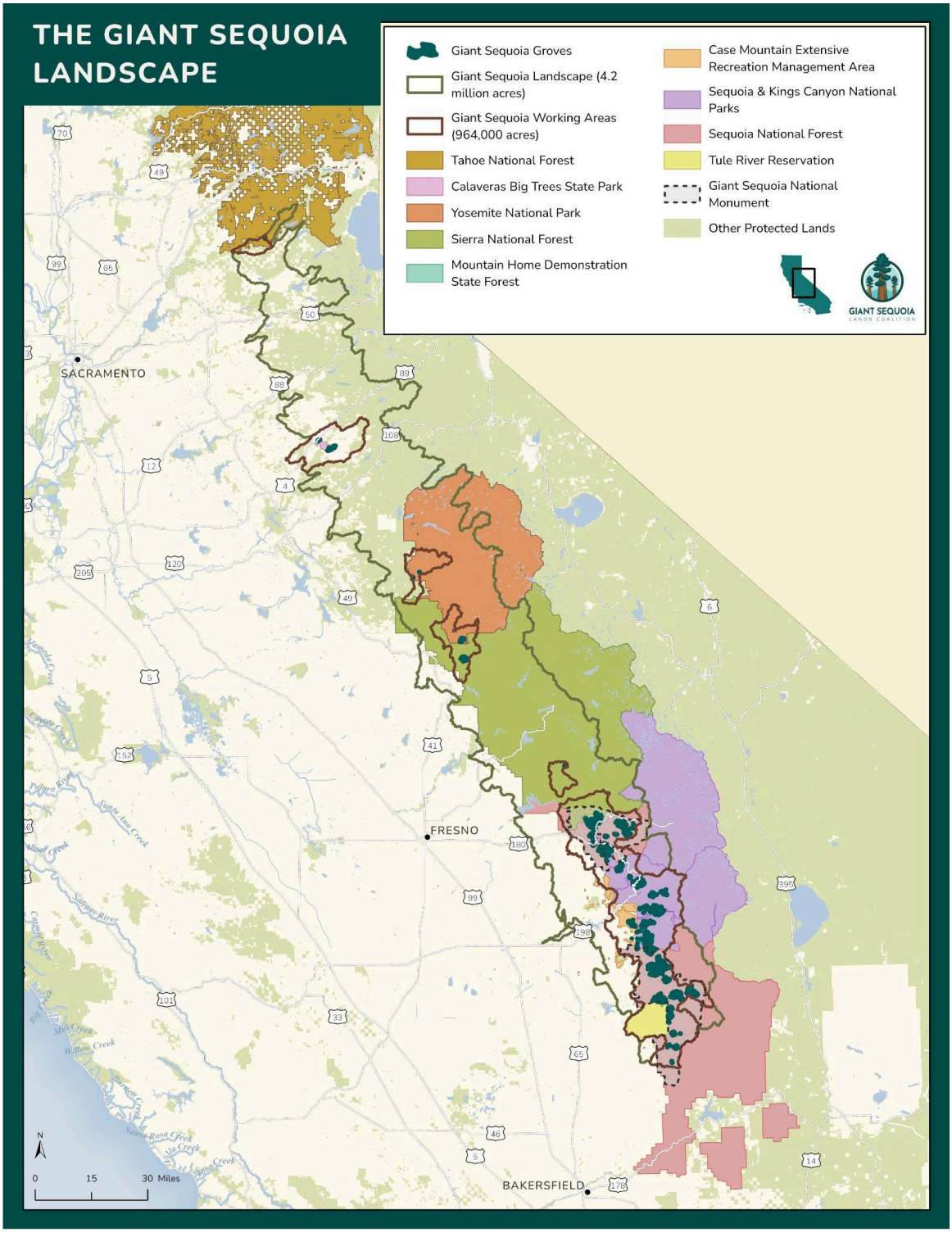
Scientific Studies Guide Restoration Work

Scientific research, combined with Traditional Ecological Knowledge, plays a vital role in shaping restoration efforts across the giant sequoia range. For generations Indigenous communities used cultural burning to maintain healthy forests, reducing fuel loads and promoting resilience. Today, science reaffirms the importance of these practices, alongside other strategies, in addressing major threats—such as the absence of beneficial fire, the rise in high-severity wildfires, and the shifting conditions driven by climate change. Though land managers operate under different mandates, there is strong agreement on the need for proactive restoration. Decades of research and real-world experience continue to guide the Coalition's conservation work, ensuring that the lessons of the past inform the restoration efforts highlighted in this report.

Teams of scientists and partners also continue to collect, analyze, and share data pertaining to the giant sequoia range to further advance the GSLC's knowledge and inform land management activities. This includes ecologists and professionals from the following organizations, institutions, and agencies:

- Ancient Forest Society
- California State Parks
- Colorado State University
- National Park Service
- Save the Redwoods League
- Tule River Indian Tribe of California
- University of California, Berkeley
- University of California, Los Angeles
- University of California, Santa Barbara
- University of Nevada, Reno
- U.S. Department of Interior, Bureau of Land Management
- U.S. Geological Survey—Western Ecological Research Center
- USDA Forest Service

Giant Sequoia Grove Locations



2025 Highlights

A Landscape Under Threat: The Garnet Fire

On August 24, 2025, lightning struck near a remote ridge in the Sierra National Forest, igniting a wildfire. Fueled by winds and stands of dead timber, the Garnet Fire quickly exploded, growing thousands of acres a day and spreading through rugged country to the north. Before long, it was threatening the McKinley Grove, a small, isolated patch of giant sequoias, some between 1,000 and 2,000 years old.

As soon as the threat to these iconic giants was perceived, the California Interagency Incident Management Team 10 jumped into action, taking extraordinary measures to protect the trees. Crews applied aerial retardant, deployed sprinkler systems and removed duff around individual large trees. Others worked along a nearby road to keep the fire from entering the grove. Smokejumpers with the U.S. Forest Service used ropes and pulleys to scale the enormous trees so they could snuff out fires, sparked by flying embers, that were smoldering in the crowns.

The sprinklers ran day and night, effectively raising the relative humidity in the grove to around 20 percent. A shift in the weather helped, as cooler, moister conditions subdued fire activity. The fire swept through McKinley Grove at moderate intensity, leaving most of the monarch giant sequoias singed but not scorched.

2025 Garnet Fire. Photo Credit: Sierra National Forest Facebook Page

McKinley Grove is located between Kings Canyon and Yosemite National Parks—one of just two giant sequoia groves in the Sierra National Forest. It includes between 150 and 200 mature giant sequoia that are over four feet in diameter.

An easy and popular walking path winds through the big trees in the lower portion of the grove, where dogwoods bloom among the giants in spring. The upper portion above the road sees far fewer visitors; before the

fire, it was clogged with ladder fuels and downed wood.

The grove had not seen wildfire in nearly 100 years, and the national forestland surrounding the grove was “ground zero” for tree mortality following the recent drought, says Blom. “There were vast swaths of forest with beetle-killed trees; really dense forests that clearly were ready to burn.”

The Giant Sequoia Lands Coalition knew that McKinley Grove was at risk, and had identified it as a high priority for reducing fuels to protect it from catastrophic, high-intensity fire. In 2022, McKinley Grove was included in the Forest Service Chief’s Emergency Response for fuels reduction and restoration, and in 2024, the Sierra National Forest developed the Gigantea IRSC, a fuels reduction project aimed at protecting the McKinley Grove. Its scope includes thinning, piling, and burning woody fuels on over 1,000 acres within and near the grove. About 20 percent of the work had been completed when the Garnet Fire struck.

After the fire burned through, silviculturists from Sequoia National Forest and Yosemite National Park surveyed McKinley Grove. While the lower portion was relatively unscathed, the middle and upper parts of the grove burned at higher severity, killing many conifers of all species and sizes. Two dozen large giant sequoias sustained significant heat injury to the crown, bole, or roots.

“Post-fire, fewer than 5% of trees exhibited full crown scorch,” says Olivia Roe, silviculturist at the Sierra National Forest. “These trees will be monitored over the next few years to assess long-term effects.”

Ironically, now that the McKinley Grove has burned, it is a lower priority for active management. However, the Forest Service plans to remove snags and other fuels to reduce vulnerability to future fires.

Since 2015, Nearly 20% of the world’s large giant sequoias have been lost to wildfire. Several groves throughout the giant sequoia’s range are still at high risk. Sustained and adequate funding is needed to treat these vulnerable groves.

“On the state side, Prop 4 is a great opportunity for us to invest in stewardship of these groves,” says Blom. “We need to continue the momentum we’ve made as a coalition and doing so requires funding and resources.”

“Some groves have very difficult fuel conditions to mitigate, and while costs vary widely, they can range up to several thousand dollars per acre or more,” says Marianne Emmendorfer, silviculturist at the Sequoia National Forest.

Proactively reducing fire fuels is an effective, scientifically validated approach to protecting groves from high-severity wildfire, and the Garnet Fire underscores the urgency of treating vulnerable giant sequoia groves before it's too late.

Though heroic efforts helped avoid catastrophic losses at the McKinley Grove, luck may not be with the ancient trees next time a wildfire threatens one of these high-risk groves. There's no guarantee firefighting resources will be available, or that firefighters can safely work in and around groves when a fire is actively approaching.

"The best time to treat giant sequoia groves is long before an active fire becomes a threat," says Blom.

Cultural Burning Helps Restore Giant Sequoia Groves

Since 2024, regional Tribes have been leading cultural burns at Alder Creek, a magnificent giant sequoia forest that contains one of the world's largest living trees. Last summer, about 40 Tribal youth from the Tule River Tribe Boys and Girls Club were invited to join them.

At Alder Creek, cultural burning can help protect giant sequoias from high-intensity fires by clearing out brush and small trees. The practice also promotes important medicine plants and species that provide basketry materials. Tribal leaders are using the burns to revive cultural connections and help teach a new generation about "good fire."

"Cultural burning is not just about fuels and flames; it's about connecting back to the land that we once lived on," says Jesse Valdez, North Fork Mono Tribal member and Tribal Liaison for Save the Redwoods League. The kids attended the morning ceremony and safety meeting before the burn; they also enjoyed one-on-one time with elders, who taught them about specific plants.

"It was a really magical moment for everybody involved," says Ben Blom, stewardship coordinator at Save the Redwoods League, who attended the burn. "You had these youth who were just really excited and hearing the songs and the stories from the elders."

A cultural burn is distinctly different from the prescribed burns that land management agencies conduct, although it accomplishes some of the same goals. Typically, the practice involves lighting small, controlled fires to clear overgrown shrubs, small trees, and duff on the forest floor. In the Sierra, these low-intensity fires

can be used to promote certain plants, manage wildlife habitat, and maintain giant sequoia groves, which are adapted to frequent fires.

Left to Right: Harold Santos, Tule River Tribe; Dirk Charley, Dunlap Band of Mono; Chairman Ron Goode, North Fork Mono Tribe; Shelby Charley, Dunlap Band of Mono at the October 2025 Cultural Burn at Alder Creek. Photo Credit: Dirk Charley, Dunlap Band of Mono

Indigenous people have used fire to help manage forests for millennia. California banned the practice in 1850, as part of a mass campaign to forcibly remove Indigenous people from their ancestral lands. California Senate Bill 310, which was signed into law in 2024, acknowledges federally recognized tribes' sovereignty to conduct cultural burns. Increasingly, land managers are acknowledging the important role cultural burns play in maintaining landscapes and meeting conservation goals.

William Garfield, Tule River Tribe member and Tribal Relations Specialist at the US Forest Service, has been co-developing a unified Cultural Burn Implementation Plan for both the Sequoia (SQF) and Sierra (SNF) National Forests. One of their goals is to create a “familiar language” around cultural burning.

“Historically, the gap between agency terminology and tribal traditional ecological knowledge has created hurdles,” says Garfield. “By establishing a framework that respects tribal practices while meeting agency requirements, we are clearing the path for a smoother, more intuitive process.”

Save the Redwoods League acquired 540 acres at Alder Creek in 2019, and the Castle Fire swept through the grove the next year, killing over 100 of the giants. The League has planted some 30,000 seedlings in portions that burned at high severity and are unlikely to regenerate on their own. The first cultural burn at Alder Creek took place

in October 2024, with the Tule River Indian, North Fork Mono, and Tübatulabal Tribes leading the demonstration.

“It all comes down to the partnerships,” says Garfield. “Save the Redwoods League has been helping the tribes reestablish their cultural burn practices and providing the place where that can be done.” In exchange, the tribes are helping restore this special place.

A Tribal Liaison Working Group formed last year, composed of tribal liaisons from entities that are part of the Giant Sequoia Lands Coalition. This group is enabling broader engagement among the region’s recognized and unrecognized Tribes, along with coordinated progress toward mutual goals. The Working Group has been developing a priority list of giant sequoia groves they would like to treat. In addition, they’re collaborating on a list of plant species they hope to promote through cultural burns.

“That list has been changing each year because they're thinning and the sunlight's coming back and we’re seeing new flowers,” says Valdez. “The species list has started growing.”

A lot of preparation goes into a cultural burn, starting with a burn plan. Garfield likens it to the layers of an onion, with the elders and cultural burn practitioners in the center. “And then invisibly behind them you have actual firefighters and natural resource crews who are watching their backs, making sure nothing gets out of control,” says Garfield. “What really makes me feel good is being behind the scenes, putting it all together, and then people can show up and participate whether they’re Native American or not.”

The burns are occasions of mutual learning. “I try to remind everybody in the morning, this is knowledge sharing. Let's have fun today,” says Valdez. “We want everybody to connect and say, what are you doing in your lands?”

Agency soil scientists that attend the burns have validated the Tribal practice of mixing the ash back into the soil—what Garfield calls the “Mono massage”—as an effective way to incorporate vital minerals. The Coalition is using cultural burns to inform its practices.

“Chairman Goode of the North Fork Mono always talks about the ‘see-through’ concept—the idea that these groves are homes, and you need to be able to see through the village,” says Blom. That’s how these groves were managed for thousands of years. The practical outcome is that the groves are a lot more open. “Now I use that vision as a touch point when we're working on projects in other

places," says Blom. "It's bolstering our practices more generally across the whole range."

On a cold morning last December, Tule River Tribe hosted a cultural burn in the Parker Peak Grove at Redwoods Cabins Meadow. Tribal members and work crews from the tribes' Forestry, Wildland Fire and Natural Resource Departments gathered for three days, thinning conifers that were encroaching across the meadow and removing ladder fuels around the giant sequoias. Now, they're focused on outreach and planning for a burn on the Hume Lake Ranger District.

"We are applying the lessons learned from our recent cultural burns as we lay the groundwork for future burns," says Garfield. The goals for this burn, which is slated for fall of 2026, are cultural revitalization by enhancing the growth of basketry fibers and medicinal plants and the protection of monarch giant sequoias from high-intensity wildfires.

"As we look toward the future of these landscapes, my relationship with the Giant Sequoia Lands Coalition has been vital," says Garfield. "Through the Coalition, we are able to amplify tribal voices within a massive partnership of land managers, ensuring that the protection of these giants is inseparable from the revitalization of tribal culture."

Which Groves Are Most at Risk? A Data-Driven Prioritization and Analysis of Sequoia Groves

GSLC Task Force is using data and on-the-ground knowledge to create a priority list for fuels reduction and replanting projects.

Catastrophic wildfires have devastated giant sequoias in recent years, killing nearly 20 percent of some of the world's largest trees. In some cases, these groves are unlikely to regenerate on their own. Groves that haven't burned in a long time desperately need thinning and fuels reduction to protect them from high-severity fires, and groves that burned need to be helped along by replanting seedlings. But with 94 groves scattered across vast landscapes under different land management agencies, how do you decide which groves to help first? The Giant Sequoia Lands Coalition (GSLC) Grove Assessment Task Force formed to answer this daunting question.

In 2024, Plumas Corp and Conservation Biology Institute landed grant funding to develop a data portal that centralizes giant sequoia data, conduct a health and resilience assessment for all 94 groves, and develop a five-year plan for prioritizing projects in these groves. With Prop 4 funding on the horizon, they decided to fast-track the third task. First, CBI created separate vulnerability models that looked at how vulnerable each grove is to three distinct threats: wildfire, lack of regeneration, and drought.

"CBI collected all this information to feed the models from the various giant sequoia scientists and specialists, and we went through multiple iterations of vetting it with GSLC members and leadership," says GiaNina Martynn, executive director at Plumas Corp.

With help from Marc Meyer, Southern Sierra Province ecologist at the U.S. Forest Service and science advisor to the Task Force, they rolled these models into a composite evaluation of overall risk for each grove. In June of 2025, the Task Force convened in person to discuss the modeled results and develop a list of groves prioritized for fuels treatment and replanting.

"The data-driven part of the process is very systematic," says Deanne DiPietro, Senior Science Coordinator at Conservation Biology Institute. "The process of deciding what to do is more nuanced." Agency staff and land managers contributed what they knew about specific groves—for instance, details about fuels reduction work that had already been done.

“Not all treatments are considered the same when it comes to wildfire,” explains Meyer. For example, thinning out small trees can help a grove weather a drought, but the wildfire risk isn’t significantly reduced until that woody debris is piled and burned. In other cases, land managers could provide fine-grained information about what parts of a grove burned, or notes about a grove’s geography that could hamper work. Some groves are in remote, steep country or located within Wilderness Areas, which limits the type of equipment that can be used for restoration or replanting.

“It's very unlikely we're going to go in there and do active management in [Wilderness Areas],” says Martynn. “If there's a natural wildfire that we can manage effectively, that will probably be the most we're going to do.”

After layering expert opinion on top of the data analysis, the Task Force ranked the 94 groves for relative management priority, from “low” to “severe”. They considered a number of factors while hashing out the list: Are management projects feasible? Is the grove accessible? Have there been prior treatments? Is the compliance work done?

Most of the groves that ranked highest for regeneration risk have burned in high-severity fires that incinerated seeds and killed mature trees—the source of new seeds. Groves that are ranked high for vulnerability to wildfire are at high risk for burning because they haven’t been treated or seen fire for many decades. Ironically, fewer groves desperately need fuel reduction than five years ago because so many burned in the 2020 and 2021 wildfires.

“We bought ourselves a little bit of time in those groves that have burned severely,” says Meyer. “The ones that rank the highest for fuel reduction are those few remaining groves that haven't burned in 50-plus years.”

In a few cases, the group decided to make a highly vulnerable grove a lower management priority. For example, when the Board Camp Grove burned in the 2020 Castle Fire, nearly every giant sequoia died, and it’s unlikely to regenerate on its own. However, because of its remote location within a Wilderness Area, replanting there is a challenge.

Grove managers largely agreed on the results, says Meyer. “I thought it was pretty encouraging to see that level of consensus.”

The Task Force is also wrapping up its health assessment of the 94 groves, which is based on on-the-ground observations of how healthy trees appear, how dense the grove is, the build-up of fuels, and other factors. After the assessment is approved, they will revisit the priority list.

“There's certainly an opportunity to go back and refine the list based on the assessment and on further knowledge of on-the-ground conditions that's been gained over the last year,” says Martynn.

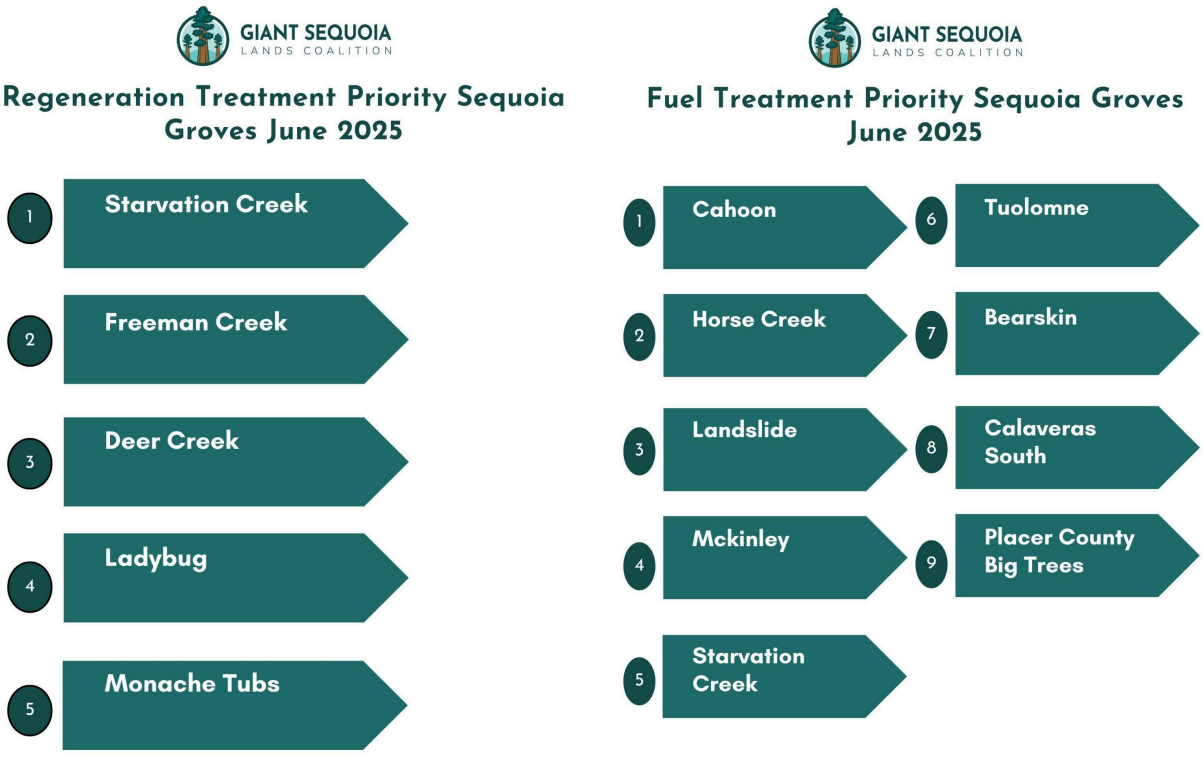
They will continually update the list as projects are completed and new fires occur—and as new research becomes available. Scientific research on how giant sequoia groves respond to wildfire is abundant. Less well understood are emerging threats like bark beetles and climate change and bark beetles.

“Models have gotten better and better, but they still haven't really gotten good enough to where we trust them to help us prioritize where to treat grows or which ones might be vulnerable to the increasing temperatures,” says Meyer.

All of the data, including an interactive map and detailed information about each grove, is available through the Grove Resilience Dashboard, which CBI hosts and manages. Users can easily learn what data informs a grove’s ranking and access information about its wildfire history and any fuels reduction or replanting projects that have taken place.

“It’s our flagship platform for making data accessible to everyone, not just land managers,” says DiPietro. “We’re making data completely transparent.” Meanwhile, GSLC is developing a five-year strategy for implementing and funding the re-planting and fuels reduction projects. If they succeed, the future of our giant sequoia groves looks bright.

“Fuel reduction treatments, when done correctly or completely, are very effective, even in these large wildfire events,” says Meyer. “As long as they're of sufficient size and longevity, they make a huge difference.”



Grove Prioritization Lists, Featuring the most eligible groves for replanting / regeneration (left) and most eligible groves for fuel treatment (right). Graphic Credit: Alaina Kuhlman, Save the Redwoods League

Moon Trees Land in Two Giant Sequoia Groves

In April of 2025, Forest Service personnel ceremoniously planted a dozen giant sequoia seedlings in two different groves in Giant Sequoia National Monument. Just a few years before, the seeds of these trees literally traveled beyond the moon and back as part of NASA's Artemis I mission, logging nearly 1.4 million miles aboard the Orion spacecraft.

The 2022 mission included 2,000 seeds from five North American tree species: American sycamore, Douglas-fir, loblolly pine, giant sequoia, and sweetgum. They were chosen because they are common, with geographic ranges that collectively represent a broad swath of the contiguous United States. (Giant sequoia was the exception: though its natural range is limited, it is widely planted in parks and arboreta.)

Upon their return, the seeds were germinated into seedlings. Thanks to a collaboration between NASA's Next Gen STEM project and the U.S. Forest Service, a host of schools and other organizations are stewarding Artemis Moon Tree seedlings on campuses around the country.

These are not the first Moon Trees. In 1971, the Apollo 14 mission carried hundreds of tree seeds, thanks to Stuart Roosa, command module pilot and a former Forest Service smokejumper. Roosa tucked packets of seeds of five tree species in his personal kit, though he included coast redwood instead of giant sequoia. Afterwards, the Forest Service germinated the seeds and distributed Apollo Moon Tree seedlings around the country. Many were planted as part of the U.S. bicentennial celebration in 1976.

The first moon landing had only just taken place a few years before, and interest in space travel was high. Now, 50 years later, NASA hopes to spark curiosity among a new generation of young aspiring scientists and conservationists, while preserving tree genetic material in parks and campuses nationwide.

The giant sequoia seeds on the Artemis I mission were harvested from the McKinley Grove; the seedlings were planted at Long Meadow and Indian Basin Groves.

"Each location was chosen by the Forest Service, giant sequoia specialists, and silviculturist Marianne Emmendorfer, who used her knowledge and experience to determine where they would best grow and thrive," says Luis Vidal, giant sequoia

stewardship manager at Save the Redwoods League. The plantings were attended by Forest Service staff and members of the Giant Sequoia Lands Coalition.

“The event really showcased the collaboration and solidarity among a lot of the different partners,” says Vidal. The Moon Trees initiative demonstrates the kind of out-of-the-box thinking that may be required to save giant sequoias in the long term.

“We need extensive research in a short timeframe, as we risk losing forest to insects, disease, and wildfire. These challenges have been especially acute in the past 25 years in the Sierra Nevada, a narrow range with high sensitivity to climate change,” says Vidal.

Just last year, the Garnet Fire swept through McKinley Grove, a small, isolated grove with many large monarch trees. Thanks to heroic efforts on the part of firefighters, the fire moved through at moderate intensity, and many of the large monarchs will likely survive.

Indian Basin and Long Meadow Groves highlight the challenges facing these iconic forests—and the innovative and collaborative efforts being taken on their behalf. Both were included in the US Forest Service Giant Sequoia Emergency Response in 2022, an initiative to reduce wildfire risk in a dozen giant sequoia groves.

Indian Basin, a 212-acre grove in the Kings River watershed, was once home to many exceptionally large giant sequoias but was heavily logged in the early 20th century. Now, second-growth sequoias dominate the grove. The Forest Service thinned vegetation and piled and burned there in 2023.

The Trail of the Hundred Giants threads through a portion of Long Meadow Grove, one of the most accessible and popular groves in the Monument. The old-growth monarch sequoias have never been logged, though other conifers were harvested in the mid-1980s. Long Meadow Grove burned in the Meadow and Windy Fires in 2016 and 2021, and Save the Redwoods League and the Forest Service began restoring the forest in 2022, removing dead, burned trees and thinning ladder fuels around the living giants.

Though the seedlings are mostly on their own, Emmendorfer will keep an eye on them. As they mature, only time will tell if they behave any differently because of their trip into space. Other giant sequoia Moon Tree seedlings have found homes at schools and other campuses in California and beyond. (NASA maintains an interactive map that shows where the moon trees have landed.)

Member Organization Reports

California Department of Forestry and Fire Protection (CAL FIRE)

CAL FIRE manages the Mountain Home Grove within the Mountain Home Demonstration State Forest (MHDSF). In 2025, staff completed the old-growth giant sequoia (OGGS) re-tag inventory that began in 2024. This effort re-inventoried all OGGS trees within both MHDSF and Tulare County's Balch Park.

Approximately 150 acres in the SQF Complex burn area were logged after the fire. These logging areas are inside or right next to the giant sequoia grove.

The operation produced 796.75 thousand board feet (MBF) of merchantable saw logs, which were sold to a log buyer. Revenue from the sale of these high-quality timber products resulted in net proceeds of $22,375.40 for the State Forest.

Following the salvage work, 23,900 seedlings were planted in post-fire regeneration units in April under ideal soil-moisture conditions. CAL FIRE fire crews also constructed roughly 120 hand piles within and adjacent to the Shake Camp Campground to reduce stand density and address accumulated logging slash. After the forest closed to public use, 87 of these piles—covering about 10 acres—were burned in early November. Remaining campgrounds received light fuel-reduction treatments and hazard-tree removal prior to reopening to the public.

California State Parks

California State Parks manages the North and South Groves at Calaveras Big Trees State Park. In 2025, crews treated 937 acres through manual fuel reduction and preparation for prescribed fire. State Parks along with CAL FIRE planned to treat 720 acres with beneficial fire in the South Grove area and an additional 105 acres near West Moran to continue restorative treatments in the park. A 17-acre prescribed burn increased protection between the South Grove and private land, but due to weather conditions, the team struggled to conduct large scale broadcast burns in October and November. Precipitation eventually made conditions too wet and ended broadcast burning for the season, so crews focused on burning 416 piles in old-growth sugar pine forest directly north of the South Grove. This area contains a handful of monarch giant sequoias that stand outside the South Grove.

In April, the South Grove Prescribed Burn Project Team received the Climate Adaptation Award through the State Parks Director's Recognition Awards Program for planning efforts preceding the successful 1,317 acres South Grove prescribed burn

in 2024. State Park volunteers, nicknamed the Sequoia Seedling Squad, collected giant sequoia reproduction and location data in the 2022 and 2023 North Grove prescribed burn areas to help inform future management in the North Grove. Work was funded by the State of California through the Wildfire and Forest Resiliency Program (WFRP). WRFP expands the climate resilience and critical land management that California State Parks has been carrying out for decades through active stewardship.

Calaveras Big Trees State Park continues to be part of the multi-grove Ancient Forest Society Giant Sequoia Beetle Study. Crews assisted in trapping beetles for the study, which aims to better understand the threat bark beetles represent and aid in conservation strategies in giant sequoia groves.

National Park Service

There are only two national parks that manage sequoia groves. Yosemite National Park and Sequoia and Kings Canyon National Park. Sequoia & Kings Canyon National Park contain about 40 giant sequoia groves within their boundaries, home to some of the world's largest trees, including the General Sherman Tree, the biggest tree on Earth by volume. Yosemite National Park has three giant sequoia groves—Mariposa, Tuolumne, and Merced—with Mariposa Grove alone holding over 500 mature sequoias.

Sequoia and Kings Canyon National Parks

Sequoia and Kings Canyon National Parks are home to 37 giant sequoia groves. Some of these groves contain only a few trees, while others include tens of thousands. In 2024 and 2025, the parks continued their work to reduce wildfire risk in these groves. This included using prescribed fire in parts of Big Stump, burning piles of excess branches and brush in Grant Grove, and preparing an area in Atwell Grove for a future prescribed burn.

Park scientists also continued to study how past fires have affected the groves. They collected data from long-term monitoring plots—six in 2024 and eleven in 2025—to better understand how fuel treatments are working. Earlier assessments after the Castle Fire and the KNP Complex Fire showed that some groves suffered extremely high losses, with thousands of mature sequoias killed and very few young seedlings growing back. Five of the six heavily burned groves showed large areas with high tree mortality and low natural regeneration.

Because of these concerning conditions, the National Park Service began replanting efforts. In fall 2023, seedlings were planted in Redwood Mountain and Board Camp.

In spring 2025, the parks added more plantings in those groves and began the first plantings in Homers Nose, Dillonwood, and New Oriole Lake. Suwanee Grove was not replanted, since park managers determined it still had enough surviving mature sequoias to produce seeds naturally. Altogether, 21,026 seedlings were planted in 2025, helping boost the chances that these groves will thrive into the future.

The parks are working with researchers at the University of California, Berkeley, to track how these seedlings survive over time. They are also partnering with the U.S. Geological Survey to study how soil and beneficial soil microbes—like certain fungi that help tree roots—may improve young sequoias' chances of survival. Past plantings in the parks have struggled, so understanding these relationships could make future restoration efforts more successful.

Yosemite National Park

Yosemite National Park contains three remarkable giant sequoia groves: the Mariposa, Tuolumne, and Merced Groves, each representing an important piece of the park's natural and cultural heritage. These groves not only showcase some of the oldest and largest living organisms on the planet but also serve as vital ecological sanctuaries that support a wide range of forest species. In 2025, Yosemite made significant progress in restoring resilience within these iconic landscapes. The park completed 221 acres of mechanical work in the Mariposa Grove, a project made possible through funding from California Climate Investments. This effort marked a major step forward in improving forest health and reducing hazardous fuel loads in one of the most visited and ecologically significant areas of the park.

As part of the rehabilitation process, materials generated from the mechanical treatments were carefully transported out of the grove to maintain the grove's natural appearance and reduce on-site fuel accumulation. Stumps were also ground down, contributing to a smoother and more natural forest floor profile. The majority of this work focused on the upper grove, where drought conditions over the past several years had resulted in extensive fir and pine mortality. Removing these dead and dying trees not only improved visitor safety but also created conditions more conducive to supporting the long-term health of the remaining giant sequoias.

In addition to the mechanical work, Yosemite partnered with three tribal crews whose expertise and connection to the land played a central role in the project's success. These crews carried out detailed manual thinning efforts, carefully selecting and removing smaller vegetation to support forest restoration goals. Their work resulted in the creation of approximately 700 burn piles, which will be used in future prescribed fire operations aimed at reintroducing cultural burning practices and restoring the fire-adapted ecology of the grove. This collaboration reflects Yosemite's

ongoing commitment to working with Tribal Nations to bring traditional ecological knowledge into modern land management practices.

Tulare County

Balch Park is a County-managed park surrounded by the Sequoia National Forest and adjacent to the Mountain Home Demonstration State Forest. The Park is home to a portion of the Mountain Home Grove of giant sequoias. In 2025, hazard tree removal activities within Balch Park treated approximately 1,537 tons of hazard trees to address public safety and forest health concerns. Approximately 40 miles away in Sequoia Crest, Phase I Hazard Tree Removal activities mitigated hazardous conditions across approximately 237 acres along County and U.S. Forest Service rights-of-way. These efforts resulted in the treatment of 2,609.21 tons of hazard trees. Collectively, hazard tree removal activities across both projects resulted in a total of 4,146.21 tons of hazard tree volume treated to date in 2025.

In parallel with implementation efforts, the Upper Grouse Valley Project, located about 21 miles from Balch Park, is underway to support forest inventory, stand examinations, and timber cruising and layout activities. These planning and assessment activities are critical to identifying future hazard trees and informing subsequent treatment and removal efforts across priority forested areas.

On September 23, 2025, Tulare County was awarded nearly $4 million through the Cycle 3 Community Wildfire Defense Grant, which will support vegetation management activities within the wildland–urban interface (WUI) aimed at reducing wildfire risk and enhancing community resilience. The County continues to collaborate with the Federal Emergency Management Agency (FEMA) to address hazardous trees along state and county transportation corridors in forested landscapes as part of a broader road maintenance and public safety initiative.

Collectively, these efforts represent coordinated activity focused on active management of forested landscapes through hazard tree removal, vegetation management, and strategic planning. By implementing proactive treatment activities across multiple projects, the County continues to reduce wildfire risk, protect public safety, and maintain critical infrastructure. These actions directly support our communities by enhancing resilience in the wildland–urban interface, ensuring safe access along transportation corridors, and promoting long-term forest health through sustained and strategic forest management.

Tule River Indian Tribe of California

The Tule River Indian Tribe of California manages portions of the Black Mountain, North Cold Spring, Parker Peak, Peyron, and Red Hill giant sequoia groves. This narrative summarizes the Tribe's 2025 management activities conducted within and adjacent to several groves located inside the Tule River Indian Reservation in Tulare County. All work was carried out by the Tribal Natural Resources Department crews, with prescribed-fire support provided by the Tule River Tribal Wildland Fire Department.

Field activities in 2025 focused primarily on the Parker Peak, Black Mountain, and North Cold Spring groves. Reforestation efforts covered approximately 200 acres, where 73,500 mixed-conifer seedlings were planted, including 2,000 one-year-old giant sequoia planted in the Parker Peak and North Cold Springs grove area. These lands experienced mixed-severity fire effects during the 2021 Windy Fire, and reforestation treatments were designed to accelerate recovery and promote long-term forest resilience.

The Tribe continued extensive fuels-reduction work within the Windy Fire footprint, including surface fuels reduction, hazard-tree abatement, and biomass removal completed near the Parker Peak and North Cold Spring groves. Crews also conducted individual-tree preparation around selected giant sequoias, clearing surface fuels at the base of mature trees and cutting or removing nearby hazard trees and snags to reduce fire risk. Woody material was treated through chipping, pile burning, and removal. Approximately 225 acres of pile burning occurred during the fall season, including areas within the Parker Peak and Black Mountain groves.

The Tribe remained an active partner in regional giant sequoia conservation efforts. This includes continued partnership and collaboration with the Ancient Forest Society, with data collected throughout the growing season from several monarch giant sequoias in the Parker Peak grove. The Tribe also partnered with the Sequoia National Forest to support restoration and hazard-reduction projects in the Red Hill grove.

Attendees of the October 2025 Cultural Burn in the Hume Lake Ranger District gather for the Opening Ceremony before heading off to spend the morning burning to promote health and resilience of the landscape and restore cultural resources. Photo Credit: Dirk Charley, North Fork Mono Tribal Member.

University of California, Berkeley

The University of California, Berkeley stewards Whitaker's Forest Research Station within Redwood Mountain Grove, in addition to supporting research across the range of giant sequoia. In 2025 projects continued on Whitaker's Forest with the goal of enhancing wildfire resilience while leveraging the impacts of the 2021 KNP Complex Fire for long-term research and stewardship. Manual thinning and piling occurred across approximately 12 acres to reduce mid-story density, with subsequent burning of the piles. Additionally, 11 acres of pre-treated area were subsequently treated with a broadcast burn. Burning was completed with assistance from CAL FIRE.

Evaluation of experimental point protection of individual large trees continued through monitoring of fuel development and giant sequoia regeneration in the study area. The impacts of the KNP Fire continue to be assessed and monitored through long-term monitoring plots and surveys. Work continues to be supported in part through CAL FIRE Forest Health Grant funding.

U.S. Department of the Interior, Bureau of Land Management

The U.S. Department of the Interior, Bureau of Land Management (BLM) manages the Case Mountain Extensive Recreation Management Area, which includes six giant sequoia groves totaling about 300 acres.

In 2025, a stewardship contract was awarded to complete hazard tree removal, salvage, and live tree logging in and around the groves by 2027. In addition, BLM personnel continued the post-fire inventory of old-growth giant sequoias impacted by the 2024 Coffee Pot Fire, as well as planning future fuels reduction and restoration projects to continue managing and protecting the Case Mountain giant sequoia groves.

USDA Forest Service

The USDA Forest Service manages Sequoia National Forest and Giant Sequoia National Monument, Sierra National Forest, and Tahoe National Forest (TNF). Sequoia National Forest contains 33 giant sequoia groves, Sierra National Forest contains two, and TNF contains one. Twenty-three giant sequoia groves suffered high-severity fire within the last five years. The USFS has increased its focus and active management in all of its groves.

Sequoia National Forest

In 2024, Sequoia National Forest personnel, along with several partners, carried out extensive grove health and fuels reduction work across numerous giant sequoia groves. Crews treated over 1,855 acres within groves and 779 acres in their ecological zones of influence, removing more than 4,300 tons of biomass and 393 MBF of sawlogs. Fuel reduction also advanced through pile burning, hazard tree abatement, and mechanical and manual treatments in groves identified as high wildfire risk under the 2022 Giant Sequoia Emergency Response. Significant work occurred in Indian Basin, Black Mountain, and Belknap Complex, and additional burning is planned for Abbott, Grant, and Landslide Groves, with the Alder prescribed burn rescheduled for fall 2025.

Partnerships were central to restoration progress. Under the Castle Fire and Windy Fire restoration projects, the Great Basin Institute and Save the Redwoods League (SRL) completed biomass removal, mechanical piling, and hazard tree abatement across groves including Freeman Creek, Converse Basin, Cherry Gap, Packsaddle, and Powerhorn Tree. CAL FIRE collaborated with forest personnel to underburn 244 acres in the Redwood Mountain Grove area. Reforestation efforts also continued at scale: since 2021, more than 634,000 trees have been planted on over 3,000 acres, with

American Forests and ACE interns supporting planting, contract oversight, cone collection, and stocking surveys across high-severity burn areas.

Public engagement and innovative projects rounded out the year's accomplishments. Outreach staff facilitated community communication about emergency work and restoration efforts, while ACE interns digitized historical management records for all 33 sequoia groves. Looking ahead, the Moon Tree program will bring a unique educational element to the forest: 12 giant sequoia seedlings grown from seeds that traveled around the moon on NASA's Artemis mission will be planted in 2025 near Converse Basin and Long Meadow Groves, at locations chosen for both successful establishment and public accessibility.

Sierra National Forest

Fuel reduction activities in the Nelder Grove Giant Sequoia Emergency Response (GSER) Integrated Resource Service Contract (IRSC) were completed in December of 2025. A total of 666 acres received multiple fuel reduction activities, including thinning of ladder fuels, cutting of shrubs, felling of dead trees, and piling of this woody material. Methods used include hand cutting with chainsaws, hand piling, and cutting, yarding and piling with mechanical equipment and helicopters. A total of approximately $11.5 million was spent on three contracts to perform all the above work on the Nelder Grove GSER IRSC. In addition, approximately 15,000 tons of cull logs were sold to and removed by Pacific Ultrapower Inc. to be used in their biomass for energy production. Numerous piles and a couple cull decks remain to be disposed of by burning on the 666 treated acres.

Fuel reduction work continued on the Gigantea IRSC in and near the McKinley Grove of giant sequoias. A contract modification for optional items was awarded to conduct specific fuel reduction activities on 211 acres that were previously not funded.

The Garnet Fire (approximately 60,000 acres) burned through most of McKinley Grove on 9/7-8/2025. Significant preparation work including operation of sprinkler systems occurred prior to the fire's arrival in the lower grove area (below McKinley Grove Rd). As the fire approached the Grove, severe fire behavior caused evacuation of personnel due to safety concerns, therefore no direct suppression actions occurred until one to two days later. The lower grove area received relatively little fire impact, with fire not spreading through much of the lower grove. The middle and upper grove areas burned with relatively higher severity, with a lot of mortality of other conifers of all sizes, and giant sequoias of intermediate and lower crown positions. Out of 159 large giant sequoias (larger than 42 inches dbh), 24 sustained significant heat injury to either the crown, bole, or roots. Sixty-nine large giant sequoias showed very little to no heat injury. None of the large giant sequoias were directly killed by

the fire, however it is possible that some of those severely injured may die from delayed fire effects in combination with secondary agents over the next two to three years. The impacts of the Garnet Fire on McKinley Grove large giant sequoias (including monarchs) were evaluated by Sierra National Forest silviculturists Ramiro Rojas and Olivia Roe, as well as Garrett Dickman from Yosemite National Park and Marianne Emmendorfer from the Sequoia National Forest. We greatly appreciate the assistance of Marianne and Garrett. The Gigantea IRSC will remove excess snags and other fuels to reduce the risk of a future severe fire threatening the Grove.

Tahoe National Forest

Tahoe National Forest (TNF) maintains a 160-acre Special Botanical Area for the Placer County Big Trees Grove, the northernmost and smallest grove of giant sequoias in the Sierra Nevada.

For the last two years post the 2022 Mosquito Fire, the TNF has been focused on reducing downed fuels created during fire suppression. In 2024, the TNF hosted an AmeriCorps crew that continued ongoing efforts of hand thinning, piling, and prescribed pile burning within the Placer County Big Trees Grove. This eight-member crew was composed of young professionals from across the country. They were given a variety of professional development and natural resources experiences during their 12-week term on the TNF; however, working with the iconic giant sequoias was one of their favorite and most meaningful experiences. When conditions allow, the TNF plans to implement prescribed burns on an additional 200 acres in the vicinity of the grove to reduce fuels.

Affiliate Member Organization Reports

This section includes highlights from the impressive work completed in 2024 by GSLC Affiliate Members. The Affiliate Members are government agencies, conservation NGOs, or academic research institutes that play a critical role in the Coalition and in the protection of giant sequoias.

Giant Sequoia Lands Coalition Members and Affiliate Members at Calaveras State Park for Harold Biswell Day in September 2025. Photo Credit: Alaina Kuhlman, Save the Redwoods League.

American Forests

In 2025, American Forests advanced landscape-scale forest health work in the Southern Sierra and continued statewide initiatives including the Reforestation Pipeline Cooperative and the California Cone Corps program. In partnership with the Sequoia National Forest, staff oversaw the planting of 376,435 seedlings across 2,054 acres, including 4,180 giant sequoias. Reforestation occurred on five wildfire footprints, including in Sequoia Crest, Converse Basin, and Packsaddle. Seedlings were planted using a microsite cluster design across four units, and fall monitoring assessed initial survival, growth, and microsite conditions. In collaboration with the U.S. Forest Service, the goal is to improve seedling performance and refine future prescriptions. American Forests developed implementation and monitoring

resources for this planting design and shared early lessons at the Region 5 Ecological Reforestation Pilot Implementation Workshop in April.

Natural regeneration surveys were completed throughout the field season to support planning for approximately 1,200 acres of reforestation in 2026. A total of 519 plots were surveyed across more than 1,000 acres, including Red Hill, Black Mountain, and Freeman groves. American Forests partnered with the Tule River Indian Tribe to provide training on survey techniques and protocols, and developed a Survey123 tool for Tribal Youth to support surveys in groves adjacent to the Tule Reservation. In collaboration with Save the Redwoods League, cone surveying and monitoring were also completed at Alder Creek Grove, resulting in the collection of giant sequoia cones in fall 2025 for potential future reforestation efforts.

American Forests also advanced work under a $6.5 million CAL FIRE California Climate Investments Forest Health award focused on collaborative post-fire treatments in sequoia groves burned by the Windy Fire on both the Sequoia National Forest and the Tule River Indian Reservation. In partnership with the National Forest Foundation, multiple field trips were held to begin planning fuels reduction treatments scheduled to start in 2027 in and around Peyrone Grove.

Ancient Forest Society

Ancient Forest Society (AFS) had another productive year in 2025. In collaboration with Colorado State University, AFS finished the final spring and fall sampling periods for their giant sequoia bark beetle research project, concluding two years of field work for this study of 90 giant sequoia trees in five sequoia groves. They will now focus on analyzing data and sharing findings and important insights into the interactions between giant sequoia tree physiology and defense, beetle behavior, and environmental stress. AFS also completed the bulk of the field work for their tree fire damage assessment project, gathering multiple LiDAR, sonic and electrical resistance tomography scans on 23 trees to better understand how fire affects water transport in giant sequoias. AFS also started a new giant sequoia bark beetle monitoring project mapping giant sequoia tree die-back. Through GSLC member observations and AFS fieldwork, 6619 acres were surveyed. AFS climbed and sampled 14 declining trees that were showing signs of beetle attack. This critical monitoring work will shed light on how widespread bark beetle attack is throughout the giant sequoia range. AFS continued their ongoing measurements of giant sequoia water use in eight study trees in Sequoia National Park (SNP) in collaboration with UC Santa Barbara. This study will help identify sequoia water-use patterns, drought vulnerability thresholds, and landscape variations, while providing insights for forest management. They also completed processing and analysis of all stable isotope

samples for a five-year study examining giant sequoia tree water use. AFS is wrapping up this project in 2026.

In another project examining the impact of drought on giant sequoia trunk growth and canopy water content they made progress scanning and cross-dating cores and compiling remote airborne data. In their seed collection program, AFS gathered a total of 148 bushels of cones from 74 giant sequoia trees in five different groves. Observations of bark beetle activity were also made during the collections. They also collected 105.5 bushels of sugar pine cones from 30 trees in SNP and needles for blister rust resistance testing. These collections support NPS seed banking efforts for the purpose of forest restoration.

Plumas Corp & Conservation Biology Institute

In 2023, Plumas Corp secured funding from the Sierra Nevada Conservancy to assist the Giant Sequoia Lands Coalition (GSLC) in developing a giant sequoia data access portal, a grove resilience assessment, and a five-year management strategy with a priority project work plan for the GSLC region. Plumas Corp subcontracted Conservation Biology Institute (CBI) to assist with all the deliverables.

This year, the first version of the GSLC Data Portal became available for Coalition members to use. The Data Portal provides a single point of access to resources supporting giant sequoia management, making it easy to find, use, and share data and information in a variety of formats.

The GSLC Priority Project Work Plan was developed and finalized in an effort to prioritize the most critically-imperiled groves for management actions. It contains a priority list of the top nine groves for fuel reduction projects and the top six groves for reforestation projects. This important document will guide funding proposals and grove treatment investments over the next five years. Following final approval of the workplan, we shifted focus to developing the Giant Sequoia Health and Resilience Assessment.

The Giant Sequoia Health and Resilience Assessment aims to provide the GSLC an evaluation of the current condition and vulnerability of giant sequoia groves across their range. Providing a range-wide assessment allows the Coalition to plan for the long-term conservation of giant sequoias. The Assessment is the result of a collaborative effort incorporating numerous data resources combined with information provided by grove managers, agency scientists, and academic researchers. Together with the GSLC Assessment Task Force, we defined the metrics needed for evaluating grove health and a system for analyzing them. The Grove Vulnerability Models, developed in 2024, were a crucial component of prioritizing

projects for the Work Plan and for the Assessment. The models ranked giant sequoia groves based on their risk from severe wildfire, drought, and lack of recruitment (seedling/sapling survival). Additional metrics were identified and the data for evaluating them were acquired, organized, and analyzed.

The GSLC Grove Resilience Dashboard was created to display the results and information contained in the Assessment. This Dashboard is a dynamic, online platform that allows grove managers to easily view and access pertinent information regarding the health and vulnerability of all sequoia groves in the range. The Dashboard provides an index that lists all sequoia groves that can be quickly compared based on the Relative Overall Vulnerability and Relative Management Priority ranks (0.0 – lowest, 10.0 – highest). The Dashboard also contains an individualized Grove Page for each sequoia grove in the range which provides the detailed data and calculations behind those ranks and a wealth of additional information useful to the grove manager, including: different levels of vulnerability, fire perimeters and high-severity burned areas, current known status of tree mortality and beetle activity, and restoration/fuel treatment history. Interactive maps also display the data spatially, and showcase the various grove health metrics.

In addition, Plumas Corp subcontracted with the Tulare County Resource Conservation District (TCRCD) to develop an implementation plan for private lands in the Case Mountain Grove Complex in collaboration with the Bureau of Land Management. This plan was completed in 2025.

All of the tools and resources described above are documented in the Giant Sequoia Health & Resilience Assessment Analysis Methods, and supporting information: a Glossary, How to Use the Giant Sequoia Health & Resilience Assessment, and a searchable GSLC Scientific Publications Library.

Save the Redwoods League

In 2025, Save the Redwoods League (League) continued its stewardship of Alder Creek Grove and collaborated with other GSLC members in continuing forest health treatments through cultural burning, prescribed burning, pile burning, manual, and mechanical treatments.

The focus of this year's work at Alder Creek Grove was to continue pile burning material from its 2024 manual fuel treatments and implementing the first broadcast burn at Alder Creek Grove since the League acquired the property in 2019. The League burned approximately 160 acres of piles within Alder Creek Grove in the fall of 2025, completing the fuel treatment it started in 2023. The League followed the pile burning treatment with broadcast burning on 12.7 acres in a second-growth stand at

Alder Creek. This multi-objective treatment, supported by a grant from the Sierra Nevada Conservancy, brought prescribed fire back to Alder Creek Grove and served to build the League's capacity to host larger burns in future years, as well as build trust with the adjacent Sequoia Crest Community. The League also hosted two cultural burn events at Alder Creek Grove, led by its Tribal Liaison, Jesse Valdez. The two cultural burns totaled approximately 10 acres, focused on shrubs and culturally significant plants. The League saw an attendance of 70-100 people at both cultural burns, one in the spring and one in the fall. Participation included multiple regional tribes including: Tübatulabal, Dunlap Band of Mono, North Fork Mono, Tule River, Wukchumni, Wuksachi and Pomo Tribes. CAL FIRE, the U.S. Forest Service and the Tule River Tribe also supported the events with fire engines and crews.

In addition, the League partnered with the Sequoia National Forest (SQF) this year to implement forest health and wildfire-resilience treatments in three Sequoia National Forest-managed groves: Alder Creek, Freeman Creek. and Packsaddle. At Freeman Creek Grove, the League helped the SQF accomplish 676 acres of manual fuel reduction and 350 acres of mechanical fuel reduction. The League secured a $400,000 Hazardous Fuels Transportation (HAFTA) grant to support this work and complement a grant of $2.2 million from the Sierra Nevada Conservancy, which helped fund the fuel reduction treatments. Through this funding, the League also completed 41 acres of fuel reduction at Alder Creek Grove on Sequoia National Forest land. The League and SQF also followed up on last year’s fuel reduction work at Packsaddle Grove with 505 acres of pile burning, with this project being a novel collaboration between the League and the SQF’s Fire staff. This work was funded through a grant from CAL FIRE.

Sequoia Parks Conservancy

In 2025, Sequoia Parks Conservancy strengthened its role as an active partner in the Giant Sequoia Lands Coalition, advancing both the coalition’s public presence and its long-term collaborative capacity.

A central focus this year was expanding and refining the coalition’s public-facing website as a clear, accessible platform organized around three pathways: Learn, Rally, and Act. This framework helps translate complex land management, restoration, and fire resilience efforts into meaningful opportunities for public understanding and engagement. By incorporating these themes more deeply, the website now serves not only as an information hub, but as a bridge between science, stewardship, and community involvement.

Sequoia Parks Conservancy continues to fund both the coalition's public website and its internal collaboration platform, providing essential infrastructure that supports transparent communication and coordinated action among partners.

Yosemite Conservancy

Yosemite Conservancy is the official philanthropic partner and cooperating association of Yosemite National Park. For more than 100 years, Yosemite Conservancy has been supporting the conservation of Yosemite's natural resources and helping people develop deep ties to the park, funding science, restoration, cultural preservation, and visitor-focused work that helps protect Yosemite's ecosystems for generations to come. The Conservancy's work includes the stewardship of iconic giant sequoia groves within Yosemite National Park and across the Coalition's land base.

In 2025, Yosemite Conservancy provided more than $320,000 to support Giant Sequoia Vulnerability research — part of a total $1.26 million invested in sequoia research since 2022. This work examines how these trees respond to the compounding stressors of drought, fire, and bark beetle activity. While giant sequoias have long been viewed as nearly "invincible," recent findings highlight emerging risks associated with changing environmental conditions. Researchers found that native bark beetles are typically not the primary cause of mortality but instead attack trees already severely weakened by drought and other stressors. The research also reinforces that proactive human intervention — including fuels reduction, hydrologic restoration, and active grove management — is highly effective in preserving long-term grove health. Under the new Little Fires program, Tribal crews completed approximately four acres of fuels reduction in the upper Mariposa Grove, removing ladder fuels around giant sequoias to reduce wildfire risk and support ecosystem resilience.

Yosemite Conservancy also continued investments in the Merced Grove, including $276,000 for Moss Creek stream restoration planning and design (2024–2025) and $190,000 for fuels reduction work in 2024, matched by an additional $190,000 in federal funding. Restoration planning for Moss Creek was completed in 2025, with the National Park Service now seeking additional funding from the Wildlife Conservation Board to implement the project. Restoring natural hydrology is considered a critical component of giant sequoia protection, as maintaining appropriate water flow supports tree health and resilience against drought and insect stressors.

What's Next in 2026

The GSLC faces unprecedented challenges in protecting the ancient giant sequoias, resilient icons in a rapidly changing world. Building on its past collaborative successes, the Coalition is intensifying efforts to restore and safeguard these irreplaceable ecosystems.

GSLC Members and Affiliates are partnering to amplify their impact and implement shared goals, secure vital funding for collaborative research and projects, and deepen partnerships to accelerate progress. The GSLC understands that collaborative action and scalable stewardship solutions are the key to ensuring the survival and health of these magnificent forests for generations to come.

The following is a sampling of what's to come in 2026:

California Department of Forestry and Fire Protection (CAL FIRE)

Forest staff are now busy planning for the 2026 field season. An Emergency Protection Plan (EPP) covering 537 acres has been approved by the California Natural Resources Agency, enabling submission of a Notice of Exemption (NOE). Once approved, CAL FIRE crews and private contractors will continue post-fire cleanup and restoration activities. Staff are also preparing a Mitigated Negative Declaration for the entire 5,137-acre forest, which will ensure that any non-timber-harvest, CEQA-related project moving forward is properly addressed.

Plumas Corp & Conservation Biology Institute

In 2026 the project team plans to wrap up final updates to the Grove Resilience Dashboard and publish it on the Data Portal, continue to provide support to grove managers to use the Data Portal and Grove Resilience Dashboard, provide a process and tools for gathering ongoing updates to the Grove Resilience Dashboard from grove managers, and work with the GSLC Task Force to develop a 5-Year Giant Sequoia Grove Management Strategy.

Tule River Indian Tribe

The Tule River Indian Tribe has additional restoration, hazardous-fuels reduction, and forest-health treatments planned for implementation in 2026. These efforts will continue to support the long-term stewardship and resilience of the Tribe's giant sequoia groves.

Sequoia-Kings Canyon National Park

The parks currently have sequoia seedlings growing in the nursery in preparation for the Spring 2026 planting of the project area in Redwood Mountain. The monitoring and experimental projects will provide guidance for future post-fire restoration planting across the GSLC network. In 2025, sequoia cones were collected in Big Stump, Redwood Mountain, and Garfield groves to support future restoration needs and seed banking. Dr. Rainbow DeSilva at the University of California, Berkeley wrote a giant sequoia genetic conservation and cone collection plan for SEKI and YOSE. The plan includes groves outside the parks to capture the range of genetic diversity as well as seeds adapted to hotter, drier conditions that may be more suitable for restoration in future climates.

...and much more!

Photo of the crown of a sequoia tree. Photo Credit: Anthony Ambrose, Ancient Forest Society.

Thanks to Giant Sequoia Lands Coalition Supporters!

The GSLC is grateful for the support of the public, funders, agencies and organizations who recognize the importance of the work to restore giant sequoia groves. Many of the accomplishments of 2025 were possible thanks to generous contributions from Sierra Nevada Conservancy, Save the Redwoods League, Yosemite Conservancy and many other donors and supporters.

Glossary

Broadcast burning: controlled applications of fire to fuels under specified environmental conditions that allow fire to be confined to a predetermined area, producing fire behavior and fire characteristics required to meet forest health objectives identified in a burn plan.

Fuel(s): combustible plant material such as grasses, shrubs, trees, and dead leaves.

Fuel load: the total amount of combustible material in a defined space.

Hazard tree: a tree with a structural defect from age, fire, or disease that makes it likely to fall in whole or in part, causing injury or death to people or damage to property.

Manual treatment: vegetation management relying on hand pulling or breaking to either remove plants from the soil or break the top from woody plants

Mechanical treatment: vegetation management using cutting tools ranging from chainsaws to mechanized forestry equipment such as feller-bunchers.

Monarch tree: a giant sequoia tree over four feet in diameter at breast height (4.5 feet above the ground).

Overstory: the top foliage from multiple trees that combine to create an overhang or canopy.

Pile burning: prescribed fire used to ignite piles of cut vegetation resulting from vegetation or fuel management activities.

Prescribed fire (aka prescribed burn or prescribed burning): the planned and controlled application of fire to the land under specified predicted weather conditions to accomplish the desired goals such as reducing fuel loads to prevent severe wildfires.

Prescription: a planned treatment of a forest site designed to change current stand structure or condition to one that meets management goals.

Recruitment: the process in which seeds establish in an area and grow into new, mature individuals.

Reforestation: the process of replanting an area with trees.

Salvage logging: harvesting activity consisting of recovering timber that can still be used, at least in part, from lands affected by natural disturbances.

Slash: coarse and fine woody debris generated during logging operations or through wind, snow or other natural forest disturbances.

Snag: a standing dead tree.

Stand: a contiguous community of trees sufficiently uniform in composition, structure, age, size, class, distribution, spatial arrangement, site quality, condition, or location to distinguish it from adjacent communities.

Stem: a tree trunk.

Thinning: removal of some trees from a stand to give others more room and other resources to grow.

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