



TRUCKEE TAHOE AIRPORT DISTRICT

Land Management Report

*Annual Report on Open Space Stewardship,
Wildfire Mitigation & Carbon Management*

2025



C O N T E N T S

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<p>2,350</p> <p>Acres Managed</p>	<p>114.7</p> <p>Acres Treated 2025</p>	<p>331,452</p> <p>MT</p> <p>CO₂e Stored</p>	<p>0.11%</p> <p>Carbon Released 2025</p>
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About the Truckee Tahoe Airport District



Truckee Tahoe Airport — aerial view showing runways, hangars, and the surrounding Martis Valley open space managed by the District.

The Truckee Tahoe Airport ("the Airport") is a regional aviation facility located southeast of the Town of Truckee and northwest of Lake Tahoe, spanning both Nevada and Placer counties. The Airport is owned and operated by the Truckee Tahoe Airport District ("TTAD" or "the District"), a California Special Airport District encompassing approximately 485 square miles across eastern Nevada and Placer counties.

As part of its commitment to land conservation, the District manages approximately 2,350 acres in partnership with the Truckee Donner Land Trust (TDLT), Trust for Public Land, Northern Sierra Partnership, and the Town of Truckee. These lands function as a buffer between airport operations and surrounding communities, supporting aviation safety, noise mitigation, and compatible land use, while also providing scenic, recreational, and ecological benefits to the region.

In partnership with NZero, the District has published annual land management reports since 2023, documenting its ongoing programs related to wildfire mitigation, carbon management, and open space stewardship. The 2020 to 2023 and 2024 reports established the baseline and multi-year trajectory; this 2025 report summarizes activities undertaken during the year and their associated outcomes.

In 2025, the District continued to advance its land stewardship program with a focus on wildfire risk reduction. Key initiatives included a CAL FIRE supported prescribed burn at Waddle Ranch under the Vegetation Treatment Program (VTP), Protection Zone Management and fuels reduction activities at the Ponderosa Golf Course, and hosting a public demonstration of BurnBot technology on Airport property.

02 GUIDING PLANS & REPORTING

Policy Framework

Committed to responsible land management, the District values the Truckee Tahoe community's role in shaping decisions. Its approach is guided by a comprehensive set of adopted plans and policies that ensure responsible stewardship, mitigate wildfire risks, promote conservation, and enhance public access.

Land Use Compatibility Plan	Land Management Plan	2023–2026 Strategic Plan
<i>Adopted October 27, 2016</i>	<i>Accepted March 24, 2021</i>	<i>Approved August 23, 2023</i>
Provides essential guidelines for managing land use surrounding the airport, minimizing conflicts between aviation operations and neighboring land uses.	Outlines strategies for managing open spaces and recreational areas. Emphasizes collaboration with the Truckee River Watershed Council in conserving ecologically significant areas.	Prioritizes preserving open space, improving forest health, reducing wildfire risks, and protecting natural habitats. Includes commitments to climate resilience and carbon neutrality.
Read the plan →	Read the plan →	Read the plan →

Each year's Land Management Report tracks progress against these plans and provides the community with a transparent account of the District's stewardship activities, investments, and outcomes.

03 LAND MANAGEMENT OVERVIEW

2,350 Acres Under Management

The District owns 2,199 acres across five land areas and holds a 151-acre conservation easement at the Jones Property (Elizabethtown Meadows), for a total of 2,350 acres under management. These six areas span the Martis Valley and surrounding region, balancing recreation, conservation, wildfire mitigation, and aviation support.

PROPERTY	SIZE	STATUS	DESCRIPTION
Truckee Tahoe Airport	602 ac	OWNED	Open land, glider port, skydiving. Primary regional wildfire air base; ~5,000 glider flights annually.
Waddle Ranch	1,512 ac	OWNED	Largest property and critical carbon sink. Permanently protected by TDLT conservation easement. ~7 miles of public trails, seasonal lake, conifer forest.

PROPERTY	SIZE	STATUS	DESCRIPTION
Jones Property / Elizabethtown Meadows	151 ac	EASEMENT	Wet meadow system. Trail corridor connecting Waddle Ranch to Northstar. Habitat restoration with Truckee River Watershed Council.
Ponderosa Golf Course	53 ac	OWNED	Acquired 2008. Leased to Truckee Donner Recreation & Park District. Active fuels management at forest-recreation interface.
Martis Valley Estates	18 ac	OWNED	Undeveloped. Community trail and emergency access road.
Alder Hill Beacon	14 ac	OWNED	Maintenance access for Alder Aviation navigation beacon. Predominantly undeveloped conifer forest.

Of the 2,350 total managed acres, open space — land actively managed for public access, ecological preservation, and wildfire mitigation — comprises 1,827 acres (78%). The remaining area consists of aquatic resources (314 acres), intensive recreation facilities (190 acres), and developed land (19 acres). Primary vegetation cover includes Eastside Pine (45%), Sagebrush (21%), and Sierran Mixed Conifer (18%).

2025 Land Use and Vegetation Updates

No acreage changes or new development occurred in 2025. Vegetation coverage remained largely stable. Montane Chaparral held at 6 acres, reflecting the reduction from 9 acres in 2024. All other cover types were unchanged from the baseline established in the 2020–2023 report.

04 2025 LAND MANAGEMENT ACTIVITIES

114.7 Acres Treated Across Three Properties

In 2025, the District undertook four land management activities across three properties, treating a combined 114.7 acres. Each activity contributes to a shared goal: reducing the fuel available to uncontrolled wildfires, improving the long-term health of the forest, and strengthening the resilience of the landscape the District is entrusted to protect.

80

Acres — Prescribed Burn, Waddle Ranch

32.4

Acres — Mastication, Airport Grounds

1

Acre — BurnBot RX Precision Burn

1.3

Acres — Fuels Reduction, Ponderosa GC

Prescribed Burn at Waddle Ranch (80 Acres)



Prescribed burn at Waddle Ranch, 2025.

CAL FIRE crews working with TTAD partners during the Waddle Ranch VTP burn.

A prescribed burn was conducted on 80 acres at Waddle Ranch as part of the Waddle Ranch Vegetation Management Project. The burn was carried out by CAL FIRE in cooperation with TTAD and local fire district partners under the Vegetation Treatment Plan (VTP), with controlled ignitions set under carefully monitored weather conditions. CAL FIRE's participation enabled TTAD to expand treatment from 60 acres in 2024 to 80 acres in 2025, and to leverage additional state grant funding. The burn is part of a larger strategic fuel break developed with U.S. Forest Service partners.

Benefits of Prescribed Burns

Prescribed burns are one of the most effective tools available for proactive wildfire risk reduction and long-term forest health:

- **Wildfire risk reduction:** Removing accumulated surface fuels and duff reduces what is available to an uncontrolled wildfire, lowering flame lengths, slowing rate of spread, and reducing fire intensity.
- **Ecosystem restoration:** Reintroducing low-intensity fire restores ecological processes that support biodiversity, promote native plant regeneration, and create wildlife habitat.
- **Forest health improvement:** Removing duff and surface competition exposes mineral soil, improving germination conditions and reducing the dominance of fire-sensitive white fir.
- **Carbon protection:** The 2025 burn released approximately 377 MT CO₂e — 0.11% of the carbon stored in Waddle Ranch's standing timber — while significantly reducing the probability of a larger uncontrolled release.
- **Long-term landscape resilience:** Forests treated with prescribed fire recover faster, sequester carbon more efficiently, and are better positioned to withstand drought, heat, and insect pressure.

Mastication and Precision Prescribed Burn at Airport Grounds (33.4 Acres)



BurnBot RX Equipment.

In 2025, the District hosted the Truckee-Tahoe Regional BurnBot Pilot on airport grounds, providing a demonstration of remote-operated fuel reduction technology across a combined 33.4 acres.

Remote Mastication (32.4 Acres)

Thirty-two and a half acres of airport property underwent mechanical mastication using a remote-operated BurnBot masticator. Mastication grinds or mulches vegetation into small pieces, reducing combustible material without combustion and converting accumulated fuels to decomposing ground material. This retains carbon in the soil system while reducing the wildfire fuel load.

Precision Prescribed Burn (1 Acre)

A 1-acre precision prescribed burn was conducted using the BurnBot RX remote-operated fire system, which delivers controlled fire lines within a fully enclosed mobile burn chamber. The BurnBot system operates at 3 to 4 times the speed of hand-firing and is capable of year-round operation on slopes up to 30 degrees.

DID YOU KNOW?

The BurnBot system can treat up to 9 feet of fuel height on slopes of up to 30 degrees — 3 to 4 times faster than a hand crew. For the Truckee Tahoe region, where terrain and weather windows are often narrow, that speed and flexibility could significantly expand the number of acres treated each season.

Fuels Reduction at Ponderosa Golf Course (1.3 Acres)

The District completed fuels reduction work at the Ponderosa Golf Course covering 1.3 acres, including hand cutting and chipping of understory vegetation and removal of hazard trees at the forest-recreation interface. The Ponderosa Golf Course is managed by the Truckee Donner Recreation and Park District under a lease agreement. This work will continue in 2026.

A Regional Firefighting Asset



CAL FIRE Precision FireCat helicopter at Truckee Tahoe Airport. Photo: Marc Lamb.

TTAD command center — coordinating aerial firefighting operations across the northern Sierra Nevada region.

Reducing wildfire risk on District lands is not only about protecting open space and carbon stores. It also preserves the operational capability of one of the most important aerial firefighting bases in the northern Sierra Nevada.

The Truckee Tahoe Airport serves as a base of operations for aerial firefighting resources during the wildfire season, providing refueling, maintenance, logistical support, and crew staging for air attack aircraft. The airport's location and elevation enable rapid response to ignitions across a wide geographic area. TTAD operations staff coordinate directly with state and federal fire agencies to ensure aircraft can be received, serviced, and redeployed with minimal delay.

We are often asked to act as a base for air attack aircraft, and our operations crew works tirelessly to always provide the needed support for emergency services.

— Robb Etnyre, General Manager, Truckee Tahoe Airport District

Wildfire response in the Truckee Tahoe region involves close coordination across multiple state, local, and federal agencies. During initial attack, 5 to 8 agencies may be on scene simultaneously. Air and ground teams operate in tandem, with aerial units providing real-time fire behavior intelligence, terrain assessment, and tactical guidance. Annual pre-season exercises ensure operational interoperability.

Moderate to Low: The VTP at Work

Waddle Ranch Risk Assessment

In 2025, the District conducted an updated wildfire risk assessment at Waddle Ranch, analyzing three key fire behavior indicators: flame length, rate of spread, and fire intensity. The assessment confirmed that all three indicators remained at Low, consistent with 2024 results.

Flame length had been assessed at Moderate as recently as 2023. Following the first prescribed burn in 2024, it dropped to Low and has held there through 2025. A Low flame length means direct suppression attack is feasible, crown fire transition is unlikely, and crews can engage safely under a wider range of conditions.

YEAR	FLAME LENGTH	RATE OF SPREAD	INTENSITY	KEY TREATMENT
2023	Moderate	Low	Low	Thinning, mastication, biomass removal
2024	Low	Low	Low	Prescribed burn — 60 acres (VTP Year 1)
2025	Low	Low	Low	Prescribed burn — 80 acres (VTP Year 2)

DID YOU KNOW?

A “Low” flame length rating means fire crews can directly attack a blaze on the ground rather than relying solely on aerial resources — faster suppression, less acres burned, and lower risk to both crews and communities. Just two years ago, Waddle Ranch’s flame length was rated Moderate. The VTP treatment program changed that.

Regional Wildfire Mitigation Investment

<p>\$1.94M</p> <p>Invested in 8 Regional Projects 2024</p>	<p>700+</p> <p>Regional Acres Treated</p>	<p>\$800K</p> <p>Glenshire–Hirschdale 2025</p>	<p>460</p> <p>Acres in Corridor Project</p>
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The District’s commitment to wildfire mitigation extends well beyond its own property lines. In 2024, the District committed nearly \$2 million to eight regional projects spanning more than 700 acres, carried out in collaboration with CAL FIRE Truckee-North Tahoe Battalion, Truckee Fire Protection District, North Lake Tahoe Fire Protection District, Northstar Fire Department, and Olympic Valley Fire Department.

In 2025, the District contributed \$800,000 to the Truckee Fire Protection District’s Glenshire to Hirschdale Egress Fuel Reduction Project. This project treats 460 acres through thinning overstocked pine stands, removing dense brush, and restoring natural tree spacing. The corridor is designated high risk in the Truckee Community Wildfire Protection Plan.

The regional grant program established in 2024 continues as an ongoing District priority, sustaining investment in community-scale wildfire mitigation across the TTAD boundary.

07 CARBON IMPACT

A Living Carbon Bank

The forests managed by the Truckee Tahoe Airport District are not just open space, they are a living carbon bank. The 1,445 acres of Eastside Pine and Sierran Mixed Conifer at Waddle Ranch store approximately 331,452 metric tons (MT) of CO₂e. That is the carbon captured over more than a century of forest growth, locked into the wood, soil, and organic matter of this landscape.

Why Prescribed Burns Release Carbon — And Why That’s the Right Tradeoff

Every prescribed burn releases some carbon. When duff and surface fuels are combusted, the carbon stored in those materials is released into the atmosphere. This is a real, quantifiable impact, and the District tracks it transparently.

The 2025 prescribed burn at Waddle Ranch was a low-intensity surface treatment targeting accumulated duff and fine surface fuels. Using the U.S. EPA Prescribed Fire Emissions Estimate tool, total emissions were estimated at approximately 377 MT CO₂e — 0.11% of the 331,452 MT stored in Waddle Ranch’s standing timber.

To put that in perspective: a high-intensity crown wildfire burning the same 80 acres would release an estimated 2,000 to 5,000 MT CO₂e — five to thirteen times more — uncontrolled, destroying the carbon storage capacity of those stands for decades. The prescribed burn does not diminish the carbon reserve. It protects it.

0.11%

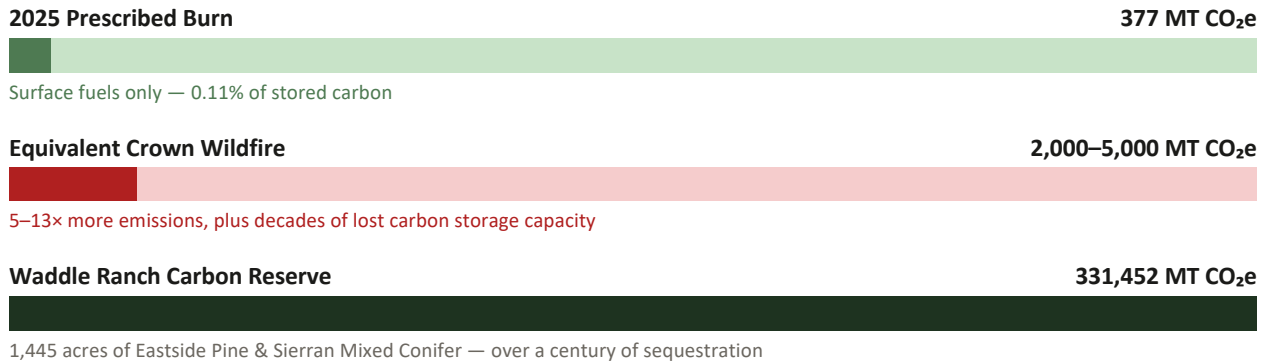
OF STORED CARBON
RELEASED IN 2025

The prescribed burn does not diminish the carbon reserve. It protects it.

DID YOU KNOW?

The difference between a managed prescribed burn and an uncontrolled crown wildfire isn't just about safety — it's about carbon. A crown wildfire consumes an estimated 20 to 35 dry tons of fuel per acre vs. just 3 tons per acre in a managed surface burn. A prescribed burn releasing ~377 MT CO₂e prevents a wildfire that could release 2,000 to 5,000 MT CO₂e or more.

CO₂E COMPARISON



Mastication: A Carbon-Neutral Approach to Fuel Reduction

The 32.4-acre mastication treatment converted accumulated fuels to decomposing organic material. Because that material stays in the soil system, the carbon is released gradually through decomposition over years, not minutes. There is no smoke, no flame, no combustion emission. The fuel load is reduced, wildfire risk is lowered, and the carbon largely stays in the ground.

Five Years of Carbon Management in Context

The 2020 mechanical thinning at Waddle Ranch released an estimated 1,086 MT CO₂ (500,000 board feet across 273 acres). The 2024 tree removal at the airport released approximately 27.3 MT CO₂e. The 2025 prescribed burn released approximately 377 MT CO₂e. Across five years, the cumulative short-term carbon impact has remained well under 0.5% of the 331,452 MT baseline, while the risk of a catastrophic wildfire has been meaningfully and measurably reduced.

DID YOU KNOW?

Forest management and carbon protection are not in conflict — they are the same goal. Every ton of surface fuel removed today is a ton that cannot feed an uncontrolled wildfire tomorrow. The District's cumulative five-year investment in fuels management has cost less than 0.5% of the carbon baseline it is designed to protect.

A Program That Is Working



Waddle Ranch — 1,512 acres of permanently protected forest and meadow in the Martis Valley.

At Waddle Ranch, the largest prescribed burn in TTAD history maintained all wildfire risk indicators at Low for the second consecutive year. Flame length, which stood at Moderate as recently as 2023, has held at Low since the VTP program began delivering results. At the airport, the BurnBot demonstration put next-generation fuel reduction technology to work in local conditions.

These results reflect a program that is working. Systematic investment in forest health and fuel reduction, sustained across multiple years and multiple tools, is producing outcomes that are measurable in the risk assessment data and meaningful for the communities the District serves.

2026 Priorities

1**Continue the Waddle Ranch VTP**

Additional prescribed burns in partnership with CAL FIRE, expanding the treated area and advancing the strategic fuel break toward completion.

2**Ponderosa Golf Course**

Continue fuels reduction work at the forest-recreation interface.

3

Regional grant program

Sustain investment in local fire agency fuels reduction efforts through the ongoing regional grant program across the TTAD boundary.

4

Airport brush management

Complete brush management on the airport operating area property.

In a fire-sensitive region, responsible land management is not a background function. It is how the District fulfills its commitment to the communities, ecosystems, and landscapes it was created to serve.

In 2025, the Truckee Tahoe Airport District advanced its land management program through a coordinated and partnership driven approach to wildfire mitigation and environmental stewardship. Collaboration with CAL FIRE on the Waddle Ranch prescribed burn demonstrated the effectiveness of applying traditional, low intensity fire as a land management tool, while continued fuels reduction and Protection Zone Management efforts at the Ponderosa Golf Course and across airport properties further reduced wildfire risk in priority areas. The District also supported innovation and public engagement by hosting a BurnBot technology demonstration, reinforcing its role as a regional leader in proactive land management.

These efforts reflect a broader, integrated strategy that supports both environmental objectives and the safe, sustainable operation of the Airport. By aligning land stewardship with aviation safety, community protection, and ecological resilience, the District continues to deliver multiple benefits across its managed lands.

Looking ahead to 2026 and beyond, TTAD will continue to implement its Vegetation Treatment Program at Waddle Ranch, expand fuels reduction efforts at the Ponderosa Golf Course and within the airport operating area, and support regional wildfire mitigation through targeted funding and partnerships. Guided by its Strategic Plan, the District remains committed to climate resilient practices, preservation of the natural environment, and its role as a responsible community partner.

Carbon Calculation Methodology

Carbon Sequestration Baseline

The general methodology for calculating carbon sequestered in the District's forested lands includes selecting the appropriate emission factor for Ponderosa pine, the dominant species at Waddle Ranch, and multiplying that factor by the forested acres. It is assumed the forest has not been clear-cut within the last 120 years.

Equation: [acres of forested land] × [carbon/acre in Ponderosa pine stands] = CO₂ sequestered.

Tree Thinning and Biomass Removal

To estimate carbon removed from thinning or biomass removal activities, the volume of biomass of each species removed is estimated by applying the species percentage breakdown at Waddle Ranch (56% Ponderosa pine, 24% Jeffrey pine, 20% white fir) to total board feet removed, then applying a carbon fraction of 0.55. That carbon value is then multiplied by 3.67 to convert to CO₂.

Prescribed Burn Emissions (introduced 2025)

Prescribed burn carbon emissions were calculated using the U.S. EPA Prescribed Fire Emissions Estimate tool (USFS Region 5, Pacific Southwest), with emission factors sourced from the NWCG Smoke Management Guide for Prescribed Fire and EPA AP-42. Total estimated emissions: approximately 377 MT CO₂e.

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