



Truckee Tahoe Airport

Land Use Report

2024



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Introduction

The Truckee Tahoe Airport (“the Airport”) is a regional airport situated southeast of the Town of Truckee and northwest of Lake Tahoe, spanning both Nevada and Placer counties. It is owned and operated by the Truckee Tahoe Airport District (“TTAD” or “the District”), a California Special Airport District covering approximately 485 square miles in eastern Nevada and Placer counties.

As part of its commitment to land conservation, the District manages over 2,199 acres of open space in partnership with the Truckee Donner Land Trust (TDLT), Trust for Public Land, Northern Sierra Partnership, and the Town of Truckee. This land serves as a buffer between the airport and surrounding communities, providing scenic views, recreational opportunities, and environmental benefits for the region.

In 2023, the District completed its **2020-2023 Land Use & Management Report**, providing information on its managed lands, conservation efforts, wildfire mitigation, recreation, and carbon sequestration. As the District's land holdings remain unchanged in 2024, [click here](#) to view the report for detailed property information.

This year, the District continues its commitment to responsible land stewardship, with a strong focus on wildfire prevention across its managed lands. The District remains focused on managing its lands responsibly while balancing environmental priorities, community interests, and airport operations. Through ongoing wildfire prevention and land management efforts, it aims to reduce risk, maintain open spaces, and support long-term sustainability.

Guiding Plans & Reporting

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. These plans include:

- The **Truckee Tahoe Airport Land Use Compatibility Plan**, adopted on **October 27, 2016**, provides essential guidelines for managing land use surrounding the airport. The plan aims to minimize conflicts between aviation operations and neighboring land uses, promoting safety and ensuring the long-term compatibility of both.
 - ◆ [Read the Truckee Tahoe Airport Land Use Compatibility Plan here](#)
- The **Truckee Tahoe Airport District's Land Management Plan**, accepted on **March 24, 2021**, outlines strategies for managing open spaces and recreational areas. The plan emphasizes collaboration with organizations like the Truckee River Watershed Council, which plays an important role in conserving ecologically significant areas, including Waddle Ranch and East Martis Creek.
 - ◆ [Read the Land Management Plan here](#)
- The **2023-2026 Strategic Plan**, approved on **August 23, 2023**, aligns land management efforts with broader District goals. It prioritizes preserving open space, enhancing recreational opportunities, improving forest health, reducing wildfire risks through sustainable forestry, and protecting natural habitats. Additionally, the plan emphasizes climate resilience, carbon neutrality, and partnerships for environmental sustainability.
 - ◆ [Read the Strategic Plan here](#)

In partnership with [NZero](#), which tracks the airport's greenhouse gas emissions, the District began providing an **Annual Land Management Report** in 2023 to track progress and share updates on key initiatives. The 2020-2023 report focused on conservation, wildfire mitigation, recreation, and carbon sequestration, providing an overview of the District's land types, management practices, and vegetation coverage.

This 2024 update highlights actions taken over the past year and upcoming initiatives. Through these reports, the District aims to promote transparency, ensure accountability, and provide accessible resources for the community.

Land Management Overview

The District oversees six key land areas, balancing recreation, conservation, wildfire mitigation, and aviation support. These include:

- **Truckee Tahoe Airport (602 acres):** This area encompasses open land, a glider port, a skydiving business, and managed conifer woodlands.
- **Waddle Ranch (1,512 acres):** As the largest property, Waddle Ranch serves as a critical carbon sink with extensive forest management and public trails.
- **Jones Property (151 acres):** Focused on wet meadow restoration and habitat protection through a conservation easement.
- **Ponderosa Golf Course (53 acres):** Maintained for recreation and sustainable land use.
- **Martis Valley Estates (18 acres):** Serves as a community trail corridor.
- **Alder Hill Beacon (14 acres):** Provides essential access for aviation infrastructure.



Of the 2,350 acres under District management, open space (land actively managed for public access, ecological preservation, and wildfire mitigation) comprises 78% (1,827 acres), while the remaining 22% consists of aquatic resources (314 acres), intensive recreation facilities (190 acres), and developed land (19 acres).

The majority of the District's open space is concentrated in two areas: Waddle Ranch (70%) and airport-adjacent lands (23%). Smaller portions of open space are located on the Jones Property conservation easement (6%) and Martis Valley Estates & Alder Hill Beacon (1%). The open spaces feature diverse vegetation, with the primary land cover being Eastside Pine (45%), Sagebrush (21%), and Sierran Mixed Conifer (18%).

2024 Updates: Land Use Management & Vegetation Types

- **Land Ownership:** No acreage changes.
- **Land Use Changes:** No new development or reforestation.
- **Vegetation Coverage:** Montane Chaparral decreased from 9 to 6 acres due to a prescribed burn.

2024 Land Management Activities

In 2024, the District undertook several land management activities aimed at reducing wildfire risks, promoting forest health, and fostering climate resilience. These efforts included prescribed burns, tree removal, and mastication projects that align with broader goals of ecosystem restoration, wildfire mitigation, and sustainable land use.

Prescribed Burn – Waddle Ranch (60 Acres Treated)

A prescribed burn was conducted on 60 acres at Waddle Ranch in 2024. This controlled fire was intentionally set to remove duff, partially decomposed organic material on the forest floor. The burn aimed to:

- Reduce wildfire risk by clearing excess vegetation that could fuel uncontrollable fires.
- Promote forest health by restoring natural fire cycles that support biodiversity and ecosystem stability.
- Enhance soil quality by exposing nutrient-rich mineral soil, which fosters better plant growth.

Prescribed burns, also known as controlled burns, are carefully planned and executed under specific weather conditions to mitigate wildfire risks, enhance ecosystem resilience, improve soil fertility, and support biodiversity. As climate change drives more frequent and intense wildfires, prescribed burns serve as a proactive strategy to reduce fuel buildup and prevent catastrophic fires that release large amounts of greenhouse gases like CO₂. While prescribed burns initially release carbon stored in vegetation, they help maintain forest health by reducing the likelihood of larger, uncontrolled wildfires. Over time, resilient forests can recover and reabsorb carbon through new growth, contributing to long-term climate adaptation and landscape stability.

Tree Removal – Truckee Tahoe Airport (7 Acres Treated)

A tree removal project at the Truckee Tahoe Airport in 2024 cleared 7 acres of right-of-way trees. This action was driven by the need to address safety concerns related to aviation operations, infrastructure protection, and wildfire risk. The benefits of this tree removal included:

- Reducing fuel loads by removing overgrown or weakened trees to prevent fire hazards.
- Minimizing the risk of damage to buildings, power lines, and roadways.
- Removing diseased, dead, or overcrowded trees to allow for stronger, more resilient growth.

Climate change has intensified extreme weather, droughts, and pest outbreaks, weakening tree health and increasing the risk of large-scale mortality. While the removal of living trees from the airport site may result in a carbon release, it is important to note that these trees, if left standing, would eventually contribute to increased wildfire risks as a result of their weakened state. Dead or stressed trees are more flammable, exacerbating wildfire severity. By managing tree density and removing overgrown or compromised trees, the project not only reduces these risks but also helps preserve the carbon storage capacity of the forest, ensuring a more resilient and sustainable ecosystem.

Mastication – Truckee Tahoe Airport (40 Acres Treated)

In 2024, 40 acres at the Truckee Tahoe Airport underwent mastication, a mechanical fuel reduction process designed to mitigate wildfire risks and promote healthier forest conditions. This method involves grinding or mulching vegetation into small pieces to reduce combustible material and enhance forest health. Key benefits include:

- Reducing the intensity and spread of wildfires by lowering the available fuel.
- Promoting stronger tree growth by thinning overstocked forest stands and reducing competition for resources.
- Enhancing wildlife habitats by opening up the canopy, allowing a greater diversity of plant species to thrive.

As temperatures rise and droughts intensify due to climate change, proactive land management becomes more essential. While wildfires release large amounts of CO₂ and worsen climate change, mastication helps reduce the fuel load, preventing larger, more destructive fires. By grinding vegetation rather than letting it accumulate, mastication prevents the immediate release of carbon stored in the trees. Additionally, thinning overstocked stands promotes healthier tree growth, allowing the forest to better capture and store carbon. This process not only reduces wildfire risks but also aids in carbon sequestration, preserving biodiversity, and supporting long-term forest resilience in the face of changing environmental conditions.

Wildfire Risk Assessment & Mitigation Efforts

In 2024, the District conducted an updated wildfire risk assessment at Waddle Ranch, analyzing key fire behavior indicators, including flame length, rate of spread, and fire intensity. The assessment revealed a reduction in flame length from moderate to low, while both the rate of spread and fire intensity remained consistently low, highlighting the effectiveness of previous mitigation efforts.

Year	Property Name	Flame Length	Rate of Spread	Intensity	Mitigation Measures Undertaken
2023	Waddle Ranch	Moderate	Low	Low	Thinning, mastication, biomass removal
2024	Waddle Ranch	Low	Low	Low	Prescribed Burn

To further mitigate wildfire risks, a prescribed burn was conducted on 60 acres at Waddle Ranch in 2024. This controlled fire reduced surface fuel loads, cleared duff, and strengthened ecosystem resilience, contributing to improved fire behavior metrics and supporting long-term wildfire prevention and forest health. Ongoing assessments and management efforts will ensure Waddle Ranch remains well-prepared for future wildfire threats.

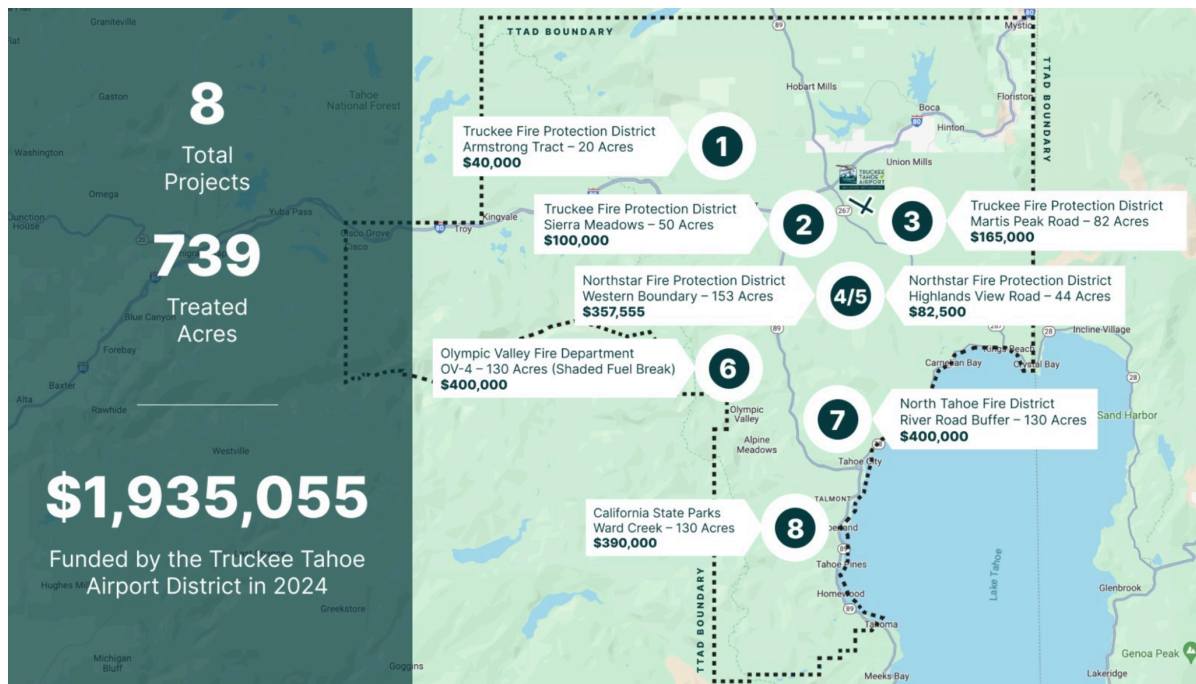
Beyond site-specific actions, the District committed nearly \$2 million to shovel-ready regional wildfire mitigation projects—a significant investment in responsible land management and community safety. This contribution aligns with TTAD’s mission to protect the environment, enhance community safety, and provide lasting benefits to the entire Truckee Tahoe region. These funds will support eight key projects spanning more than 700 acres within TTAD boundaries.

These efforts will be carried out in collaboration with local agencies, including CalFire Truckee-North Tahoe Battalion, Northstar Fire Department, Truckee Fire Protection District, Olympic Valley Fire Department, and North Tahoe Fire Protection District. Projects will include shaded fuel breaks and vegetation management in high-risk areas, designed to limit wildfire spread, protect critical infrastructure, and enhance community resilience.

Through this proactive approach, the District is not only safeguarding the airport and surrounding areas but also strengthening the long-term sustainability of the Truckee Tahoe region. This investment reflects a broader commitment to land stewardship and community well-being, ensuring the region remains safe and

well-managed in the face of increasing wildfire threats. The TTAD board remains committed to funding additional fire mitigation projects in the coming years, supporting firebreak buffers and strategic forest thinning to better protect all who reside within TTAD boundaries.

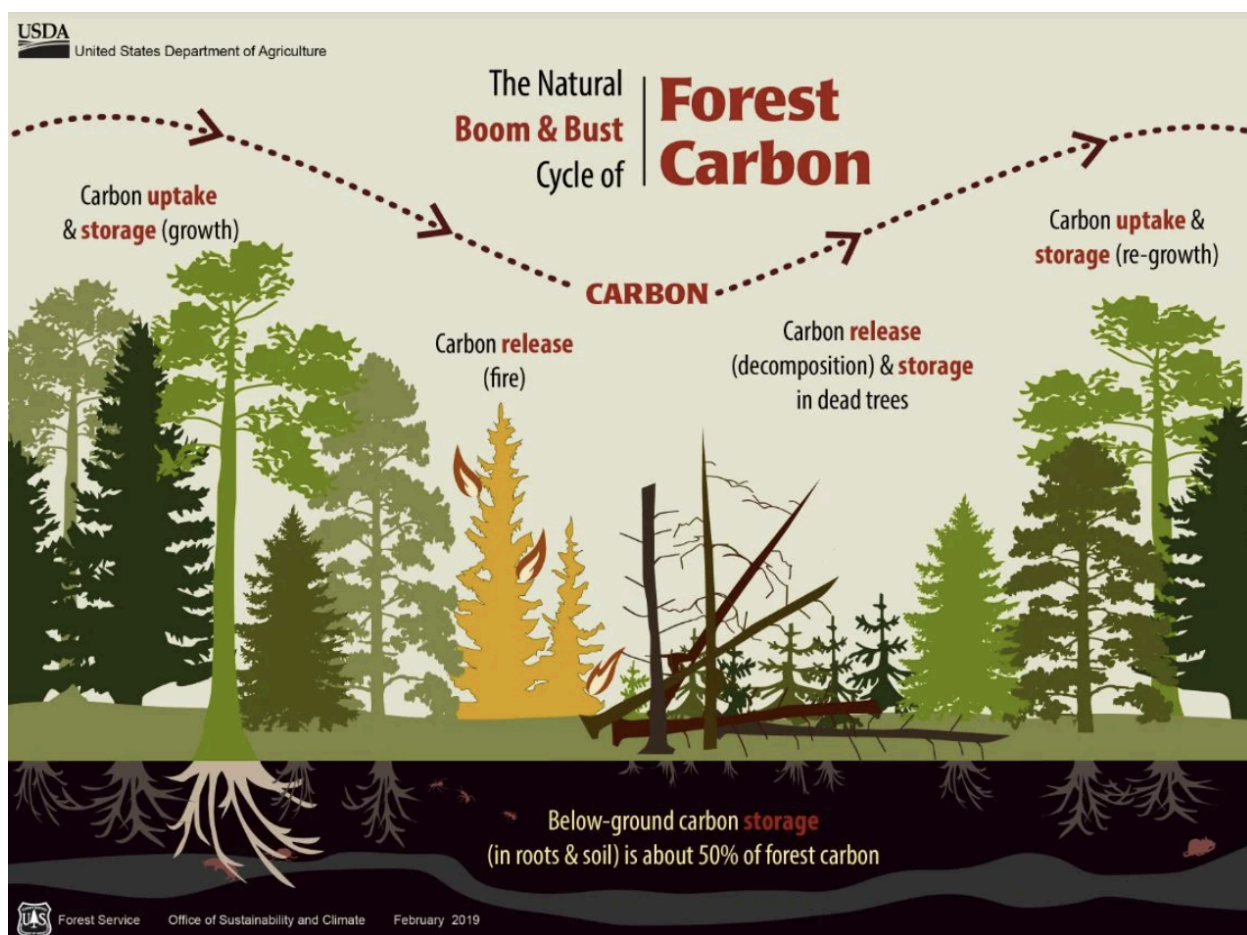
The following map shows project locations and details:



Carbon Impact

Effective forest management—through mastication, thinning, and tree removal—is important for reducing wildfire risk and maintaining long-term forest health. These activities help decrease tree competition, improve ecosystem resilience, and protect communities from catastrophic wildfires. However, they also have short-term carbon impacts, as removing trees releases stored carbon into the atmosphere.

Forests naturally act as carbon sinks, absorbing CO₂ through photosynthesis and storing it in trees, soil, and organic matter. When trees are thinned or removed, this stored carbon is released. While this represents an immediate carbon loss, well-managed forests can ultimately sequester more carbon over time by promoting healthier tree growth, reducing the risk of large-scale tree mortality, and preventing high-intensity wildfires that would release even greater amounts of CO₂.



As part of the Truckee Tahoe Airport tree removal project in 2024, approximately 8,000 board feet of biomass were removed, resulting in an estimated release of 27.3 metric tons (MT) of CO₂e emissions. While this represents a short-term carbon loss, the intervention significantly reduces the likelihood of uncontrolled wildfires, which could release exponentially higher greenhouse gas emissions and cause widespread ecological damage. These proactive efforts of strategic tree removal increase the area's resilience by reducing overcrowding, improving tree health, and lowering overall fire risk.

A previous assessment (2020-2023) estimated that the 1,445 acres of Eastside Pine and Sierran Mixed Conifer at Waddle Ranch collectively store approximately 331,453 MT of CO₂e. This includes carbon stored in live trees, standing deadwood, understory vegetation, and downed material. This baseline data is key for tracking the long-term impact of ongoing management strategies on carbon sequestration and ecosystem health, and for monitoring the balance between carbon sinks and sources as the District continues to implement land use activities.

By integrating wildfire risk reduction with sustainable forest management, these efforts strike a balance between short-term carbon impacts and long-term climate benefits. The goal is to foster healthier, more resilient forests that continue to serve as carbon sinks while mitigating the growing risks posed by climate change and wildfires.

Conclusion

The Truckee Tahoe Airport District remains committed to proactive wildfire mitigation, land conservation, and sustainable land management. The wildfire risk assessments and fuel reduction projects completed in 2024 mark significant progress in increasing forest resilience and protecting the surrounding community.

Looking ahead, the District will continue expanding wildfire prevention efforts, supporting ecosystem resilience, and maintaining open spaces. Future initiatives include expanded fuel reduction projects and ongoing collaboration with local agencies. With nearly \$2 million allocated for wildfire mitigation, these efforts will further strengthen prevention strategies, improve ecosystem health, and ensure the long-term sustainability of the District's managed lands.

Carbon Calculation Methodology

The general methodology for calculating the carbon sequestered in forested lands the airport manages includes choosing the appropriate emission factor for the amount of carbon sequestered in a particular forest type - in the airport's case, Ponderosa pine - and then multiplying that factor by the acres of forest. It was assumed that the forest had not been clear-cut within the last 120 years. The following equation was used for calculating the carbon sequestered in the forested land that Truckee Tahoe Airport manages:

$$[\text{acres of forested land}] \times [\text{carbon/acre in Ponderosa pine stands}] = \text{CO}_2 \text{ sequestered}$$

To estimate the amount of carbon removed from thinning activities, the volume of biomass of each species removed was estimated by applying the percentage breakdown of tree species in Waddle Ranch to 500,000 board feet removed, and then a standard factor of 0.55 carbon/biomass of tree was used to estimate the amount of carbon in the biomass removed. The carbon was then converted to carbon dioxide by multiplying by 3.67. The general equation is as follows:

$$[500,000 \text{ board feet}] \times [12 \text{ cubic feet/1 board foot}] = 41,666.67 \text{ cubic feet of wood}$$

$$[41,666.67 \text{ cubic feet of wood}] \times [\text{species wood density}] = \text{volume of wood for each species}$$

$$[\text{volume of wood}] \times [0.55 \text{ carbon/tree biomass}] \times [3.67 \text{ carbon dioxide/carbon}] = \text{total carbon dioxide removed}$$

Sources

Hoover, Coeli M.; Bagdon, Ben; Gagnon, Aaron. 2021. Standard estimates of forest ecosystem carbon for forest types of the United States. Gen. Tech. Rep. NRS-202. Madison, WI: U.S. Department of Agriculture, Forest Service, Northern Research Station. 158 p. <https://doi.org/10.2737/NRS-GTR-202>.

Climate Action Reserve, 2014. Regional biomass equations used by FIA to estimate bole, bark, and branches.
https://www.climateactionreserve.org/wpcontent/uploads/2018/04/2014_FIA-Biomass_CAORWA.pdf