



**LAKE TAHOE**  
ENVIRONMENTAL  
IMPROVEMENT  
PROGRAM

AUGUST 2023



*Lake Tahoe*

ENVIRONMENTAL IMPROVEMENT PROGRAM

2022 ACCOMPLISHMENTS + LOOKING FORWARD

"Summer Day at Emerald Bay" by Jonathan Thompson,  
Twilight & Rust, [www.twilightandrust.com](http://www.twilightandrust.com)

# ENVIRONMENTAL IMPROVEMENT PROGRAM

# EIP

This landscape-scale collaboration is a partnership between more than 80 public and private organizations working together since 1997.

## CLIMATE RESILIENCE THROUGH THE EIP

**Lake Tahoe is one of the clearest, largest lakes in the world.** Ringed by snowy peaks and mountain communities, the alpine lake is known as the Jewel of the Sierra. However, in the late 1990s, Lake Tahoe was in trouble. Clarity was declining, urban centers were decaying, and overstocked forests posed a profound fire threat. California's Sen. Dianne Feinstein called it a time of "environmental emergency."

The first Lake Tahoe Summit in 1997 brought President Bill Clinton and Vice President Al Gore to the lake. They called for an unparalleled partnership to restore Tahoe's threatened environment and pledged to increase the federal funding for this national treasure. The Lake Tahoe Environmental Improvement Program (EIP) answered that call. The program lays out the blueprint for Lake Tahoe's climate resilience, outlining the priority projects necessary to reach the region's environmental goals.

The EIP is implemented through a strong collaborative partnership that spans all jurisdictions and government sectors and includes the private business community, the science community, and the Washoe Tribe of Nevada and California. Twenty-seven years later, "Team Tahoe," has made progress by investing \$2.8 billion in nearly 800 projects. The lake's clarity loss has stabilized. Mountain streams are clearer. Forest thinning is underway. However, emerging threats from climate change are challenging the partnership in unprecedented ways. Continued investment in the EIP is vital to building a sustainable future for the region.

### 1997-2022 ACCOMPLISHMENTS



198

miles of bike and pedestrian trail constructed or improved



836

miles of roadway updated to reduce erosion and stormwater pollution



107,436

boats inspected for aquatic invasive species



3,386

feet of public shoreline added



200

acres treated to remove aquatic invasive weeds and Asian clams



92,233

acres of forest treated to reduce hazardous fuels



# Lake Tahoe

## IMPROVING LAKE CLARITY

A central goal of the EIP is to restore Lake Tahoe's famed clarity to its historic level of nearly 100 feet. Since 1997, partners have implemented hundreds of projects to reduce stormwater pollution from roads and urbanized areas, restore wetlands, and remove invasive species to make progress toward this goal. As a result, scientists have seen clarity loss stabilize. Last year, Lake Tahoe's average annual clarity jumped to a remarkable 71.7 feet, compared to 61 feet in 2021. While this change is good news, scientists and managers continue to rely on long-term trends to understand how clarity is responding to management action as well as ecological factors and climate change.

UC Davis has measured clarity and other health indicators at Lake Tahoe since 1968, providing agencies with a valuable long-term data set. The Tahoe Science Advisory Council plays a critical role in connecting science with management decisions to make progress toward the basin's water quality and clarity goals.

Review the story map  
published by the Tahoe Science  
Advisory Council: Understanding  
Lake Tahoe Water Clarity



Photo by Drone Promotions.



# WATERSHEDS AND WATER QUALITY

*Lake Tahoe*

Restoring the region's meadows, rivers, and streams is a key part of building climate resilience. Over the past five years, EIP partners have initiated some of the largest wetland restoration projects to date. The Upper Truckee River Marsh, Taylor Tallac, and Meeks Bay Ecosystem projects aim to return the natural flow of water through historic wetlands, improve wildlife habitat, sequester carbon, and make meadows more resilient to climate change. These projects also re-establish natural water filtration to improve lake clarity.

EIP projects help to improve Lake Tahoe's famed clarity. Photo by Brant Allen, UC Davis TERC.

## WATERSHEDS AND WATER QUALITY

### 2022 ACCOMPLISHMENTS »

- Two key Lake Tahoe tributaries, Saxon and Trout creeks, underwent improvements in 2022. Partners used innovative approaches such as beaver dam analog structures to repair stream banks and improve creek flows damaged in the Caldor Fire.
- Caltrans improved flood control in Kings Beach by replacing 14 culverts around roadways to better handle the large amount of water from extreme weather events.
- The Nevada Tahoe Resource Team repaired an eroding slope on the shore of Lake Tahoe at Cave Rock State Park through a mix of slope stabilization, revegetation, and redirecting social trails away from sensitive areas.
- Caltrans and partners secured funding to replace the Meeks Creek Bridge on Highway 89. Replacing this bridge will be an integral part of the restoration of Meeks Bay to improve fish passage and provide a bike and pedestrian crossing.

- The U.S. Fish and Wildlife Service and the Washoe Tribe of Nevada and California united to reintroduce 100,000 native Lahontan cutthroat trout to Lake Tahoe in their historic range.

### FUTURE PRIORITIES »

- Complete the Meeks Bay Ecosystem and Máyala Wáta meadow restoration projects in partnership with the Washoe Tribe of Nevada and California.
- Continue progress on Upper Truckee River watershed restoration including the California State Parks' Golf Course reach and the Tahoe Conservation Resource District's Johnson Meadow reach.
- Pursue priority acquisitions of sensitive lands, including developed properties in wetlands, to support restoration objectives in the 2012 Lake Tahoe Regional Plan.

### PROJECT SPOTLIGHT

#### RESTORING THE UPPER TRUCKEE RIVER WATERSHED

The Upper Truckee River is the largest tributary to Lake Tahoe, draining approximately one third of the basin's land into the lake. The watershed is also home to the City of South Lake Tahoe and the basin's largest residential population. The watershed underwent significant changes during the 1960s from development activities, grazing, and redirecting the river channel. Over the last 25 years, partners have made progress to return it to a more natural state. Most recently, the California Tahoe Conservancy restored the lower sections of the Upper Truckee River and Marsh, revitalizing more than 250 acres of floodplain. The re-establishment of wetland conditions enhances biodiversity and helps fortify the region against the impacts of drought, flooding, and other consequences of climate change.



Photo by California Tahoe Conservancy.



## AQUATIC INVASIVE SPECIES

Lake Tahoe's aquatic invasive species (AIS) program continues to protect the lake from the devastating effects of non-native invaders. Lake Tahoe's renowned watercraft inspection program has held strong with no new invasions detected since the program's inception in 2008. Lake Tahoe partners are also working together to stop the spread of Eurasian watermilfoil and curlyleaf pondweed. Both weeds entered the lake decades ago and are being removed through innovative methods such as ultraviolet light treatments, underwater bottom barriers, and diver teams.

### 2022 ACCOMPLISHMENTS »

- Aquatic invasive species inspectors conducted 5,816 watercraft inspections in 2022, with the majority of boats arriving Clean, Drained, and Dry. Fifty-six boats were found with AIS onboard and eight of those were carrying quagga or zebra mussels.
- Partners treated 68 acres of invasive weeds, the most acres ever treated in one year. This included 41 acres of treatment for the Tahoe Keys Control Methods Test and 27 acres of treatments in Lake Tahoe including Taylor Tallac Ecosystem Restoration, Meeks Bay, Tahoe Keys offshore, and Upper Truckee River Marsh.

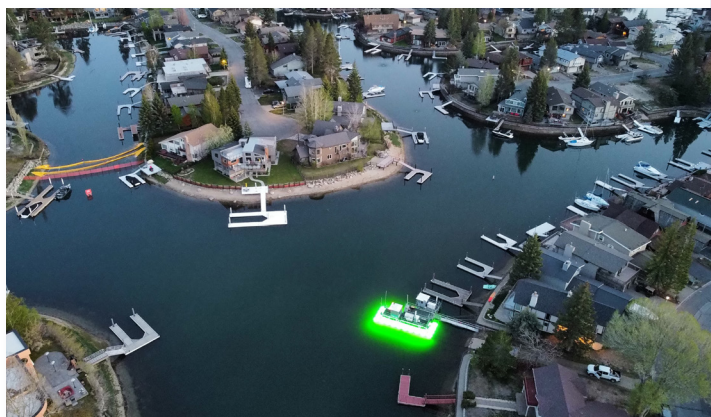
### FUTURE PRIORITIES »

- Complete the Tahoe Keys Control Methods Test to find solutions to the region's biggest invasive weed infestation.
- Establish permanent watercraft inspection stations in both states.
- Build on the success of the League to Save Lake Tahoe's Eyes on the Lake program to engage the community and marinas in detecting invasions of AIS.



A watercraft inspector decontaminates a boat prior to entering Lake Tahoe.  
Photo by Novus Select.

The Bipartisan Infrastructure Law is providing a historic investment to the Lake Tahoe Basin for aquatic invasive species, watershed restoration, native species recovery efforts, and traditional land management from the Washoe Tribe of Nevada and California.



Tahoe Keys ultraviolet light test. Photo by Inventive Resources, Inc.

### PROJECT SPOTLIGHT

#### FINDING INNOVATIVE SOLUTIONS TO CONTROL WEEDS IN THE TAHOE KEYS

The Tahoe Keys Control Methods Test began in the summer of 2022 to find the best combination of methods to treat the largest weed infestation in the lake. Ultraviolet light, aquatic herbicides, and laminar flow aeration were tested across 41.5 acres in the Tahoe Keys on the South Shore of Lake Tahoe. The first year of tests returned a wealth of information (75,000 data points) and promising initial results. Year two of the test is now underway to see if the initial knockback of weeds achieved in the first year can be maintained with non-chemical methods.

## FOREST HEALTH

### *Lake Tahoe*

Still a vivid memory for many Lake Tahoe residents, the 221,000-acre Caldor Fire of 2021 has become a testament to the bravery of professional firefighters and the effectiveness of almost two decades of fuel treatments by the Tahoe Fire and Fuels Team (TFFT), coupled with the gift of shifting weather and winds. The fire demonstrated the critical need to invest in water infrastructure, persistently conduct and maintain forest fuel treatments, and engage communities in completing defensible space. Since the 2007 Angora Wildfire, partners have treated more than 70,000 acres of Tahoe's forests to reduce wildfire risk. Additionally, the Caldor Fire spurred data collection and studies on the effects of heavy smoke and ash in our ecosystem that can equip Tahoe for future extreme fire events.

The 2021 Caldor Fire. Photo by CAL FIRE.

#### 2022 ACCOMPLISHMENTS »

- TFFT partners conducted 2,555 acres of forest health treatments, including over 1,000 acres of pile burning and prescribed fire, to enhance landscape resilience and reduce the threat of catastrophic wildfire.
- NV Energy and Liberty Utilities partnered with the USDA Forest Service, both states, and local fire districts to complete hundreds of acres of fuels treatments along powerline corridors.
- For the fourth consecutive year, a record number of parcels (7,962) were inspected for defensible space.
- Tahoe Forest Products and the Washoe Tribe of Nevada and California broke ground on a new sawmill on Washoe-owned land in Carson City. The much-needed sawmill will support forest-thinning projects in the Tahoe Region by creating a local market for biomass.

#### FUTURE PRIORITIES »

- Treat nearly 11,000 additional acres in the Wildland Urban Interface (WUI) by 2025. This will complete all priority WUI treatments identified in the 2019 Lake Tahoe Basin Forest Action Plan.
- Expand the Tahoe Fire Adapted Communities network to generate neighborhood leaders that help residents and visitors prepare for wildfire.
- Maintain federal and state appropriations to continue progress and maintain the investment to date.
- Continue progress on energy resilience corridor projects with NV Energy and Liberty Utilities.

#### PROJECT SPOTLIGHT

##### EXPANDING THE FORESTRY WORKFORCE

Lake Tahoe Community College (LTCC) launched its new forestry program in the Fall of 2022 with generous scholarships for participating students, thanks to a grant from the Tahoe Fund. The Lake Tahoe Basin Fire Academy at LTCC is also receiving grant funding from the Tahoe Truckee Community Foundation for gear and equipment purchases, allowing even more students to participate in the program. Both academic programs will expand the workforce in the broader Western United States and regionally for critical forest health and fire mitigation work.



Photo by Lake Tahoe Community College.





Lines of hose staged at Heavenly's California Base during the 2021 Caldor Fire. Photo by South Tahoe Public Utility District.

## WATER INFRASTRUCTURE FOR FIRE SUPPRESSION

Many of Lake Tahoe's water systems were built more than 50 years ago and are not equipped to fight the catastrophic wildfires California and Nevada are now experiencing due to climate change. Last year, the Tahoe Water for Fire Suppression Infrastructure partnership received \$2.12 million through the Lake Tahoe Restoration Act to leverage \$13.85 million in projects that upsized waterlines, installed fire hydrants, and increased water fire flow capacity. This funding was critical to accelerate the pace and scale of project implementation to protect Tahoe communities from wildfire.

### COMPLETED PROJECTS IN 2022 »

- South Tahoe Public Utility District Bijou/Bowers: 5,547 linear feet of water line and 12 hydrants
- South Tahoe Public Utility District Black Bart: 7,427 linear feet of water line and 13 hydrants
- Tahoe City Public Utility District: 2,800 linear feet of waterline and 6 hydrants
- Incline Village General Improvement District Crystal Peak Road: 2,300 linear feet of waterline and 5 hydrants
- North Tahoe Public Utility District Carnelian Bay: 2,500 linear feet of waterline and 7 hydrants

### FUTURE PRIORITIES »

- Increase federal funding for water infrastructure projects to accelerate progress.
- Prioritize hazardous fuels reduction surrounding existing water infrastructure.



The 2021 Caldor Fire nearly devastated the Arrowhead Tank. Photo by South Tahoe Public Utility District.





## TRANSPORTATION AND SUSTAINABLE RECREATION

*Lake Tahoe*

Lake Tahoe is making progress toward its vision of a fully connected multi-modal transportation system. In the last few years, partners have expanded free-to-the user transit programs, launched on-demand microtransit services, and built key connections along the Tahoe Trail – a class one, shared-use trail that will circumnavigate Lake Tahoe. Sustainable funding remains a challenge to fully fund the transportation needs illustrated in the Regional Transportation Plan. Partners are working together to fund new programs and to identify sustainable revenue sources to reduce reliance on the automobile and support a regionally connected transportation system.

An aerial view of Tahoe City's improved transportation flow. Photo by Luxuri Media.

### TRANSPORTATION

#### 2022 ACCOMPLISHMENTS »

- Partners determined a trail around Emerald Bay is possible to construct after a feasibility study. The study demonstrated the possibilities of connecting existing segments of the Tahoe Trail through technically challenging segments of the State Route 89 corridor.
- The City of South Lake Tahoe completed a crucial gap in the multi-use path connecting South Tahoe High School to the upcoming Sugar Pine Village affordable housing community.
- The South Shore Transportation Management Association began operating Lake Link, a free, on-demand microtransit service within the South Lake Tahoe tourist core. In its first six months, Lake Link served nearly 60,000 riders.
- Nearly 1 million passengers rode transit within the Lake Tahoe Basin.

- Partners secured funding for two major projects—a roundabout in Meyers at Pioneer Trail and the Spooner Summit mobility hub. Each will improve traffic congestion, pedestrian crossings, and transit connections.
- North Tahoe's microtransit service, TART Connect, served 266,485 passengers and assisted in increasing overall public transit use in the region by 53 percent.

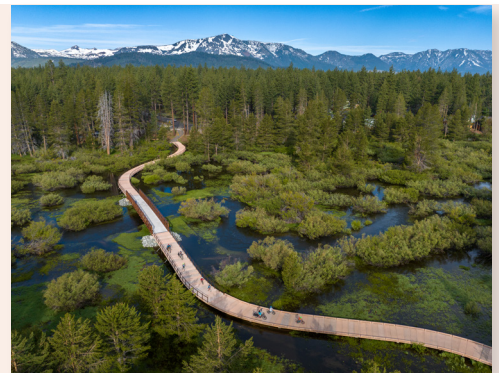
#### FUTURE PRIORITIES »

- Identify sustainable funding solutions to implement the "7-7-7" shared funding strategy for Lake Tahoe's transportation system.
- Improve transit linkages to recreation sites and mobility hubs.
- Continue implementation of the Tahoe Trail, which will provide a car-free option around the lake.

#### PROJECT SPOTLIGHT

##### DENNIS T. MACHIDA MEMORIAL GREENWAY

With the recent completion of phases 1B and 2 of the Dennis T. Machida Memorial Greenway, momentum is building to realize the full vision of a continuous multi-use path from Stateline to Meyers in the South Shore. The path features raised trail and bridge sections over creek and meadow crossings to protect wildlife habitat and to keep the trail open during high water flows from extreme weather events. El Dorado County, Tahoe Resource Conservation District, and the City of South Lake Tahoe are finalizing plans and identifying funding sources to complete the next phases which will replace the washed-out bridge over the Upper Truckee River and fill in key connections through South Lake Tahoe neighborhoods and town centers.



A segment of the trail near the Lake Tahoe Community College. Photo by California Tahoe Conservancy.



## SUSTAINABLE RECREATION

Last year, EIP partners launched an extensive public engagement and visioning process to develop a shared plan for tourism and recreation in the region. The newly launched Lake Tahoe Destination Stewardship Plan aims to carefully balance the diverse needs of the environment, local businesses, visitors, and the surrounding communities, to create a sustainable future for Lake Tahoe's recreation and tourism sector. The plan advances a culture of caring for Tahoe to preserve the natural beauty and cultural heritage of the region while providing equitable access to recreation. EIP partners around Lake Tahoe are also upgrading recreation facilities and teaching visitors and residents how to Take Care of Tahoe.

### 2022 ACCOMPLISHMENTS »

- The California Tahoe Conservancy realigned the heavily visited Cove East Trail and made it accessible to users with disabilities as part of the Upper Truckee River Marsh restoration project.
- The Tahoe Backcountry Alliance expanded its successful ski-shuttle program to link skiers with recreation sites and reduce traffic and parking impacts.
- EIP partners completed the first-ever Regional Trails Strategy that outlines priorities and projects to improve Lake Tahoe's dirt trail network.
- The USDA Forest Service completed a new entrance and parking improvements to Lake Tahoe's Round Hill Pines Beach Resort. The improvements now allow for transit access, safer entry from the highway, and an upgraded parking area for improved water quality.
- The Tahoe Fund and California Tahoe Conservancy funded several programs that expand access for underserved groups to Lake Tahoe's recreational destinations.

### FUTURE PRIORITIES »

- Partner with the destination stewardship council to better manage outdoor recreation and tourism.
- Acquire sustainable funding sources, upgrade and maintain recreation infrastructure to increase accessibility, better manage changing visitor patterns, and prepare for fluctuating lake conditions.
- Construct public piers to increase access to Lake Tahoe, including the Kings Beach Public Pier.

#### PROJECT SPOTLIGHT

##### SPOONER LAKE PARK NEW AMENITIES

In the fall of 2022, the Nevada Tahoe Resource Team and Division of State Parks completed a new visitor center and educational amphitheater for Spooner Lake Park. These amenities will serve as the heart of Spooner's natural and cultural history programs and ranger-led hikes and tours, as well as provide a one-of-a-kind outdoor science venue for students. These improvements are central to the goals of the EIP to improve infrastructure for Lake Tahoe's recreation facilities and engage the community and visitors in environmental stewardship.



Photo by Nevada Division of State Lands.



Adventure Risk Challenge community leadership program participants kayak on Lake Tahoe. Photo by Tahoe Fund.

## SCIENCE, STEWARDSHIP, AND ACCOUNTABILITY

*lake Tahoe*

The Tahoe Science Advisory Council continues to provide an important venue for scientists and resource managers to discuss pressing topics, including lake clarity, forest management, invasive species, and recreation impacts. EIP partners are also expanding science and nature-based stewardship programs to engage residents and visitors in protecting the environment and collecting data. Through these citizen science programs, volunteers can contribute to science initiatives while learning about the history of Tahoe and the importance of restoration, resilience, and sustainability.

Divers remove aquatic plants outside of the Tahoe Keys. Photo by Marine Taxonomic Services.

### 2022 ACCOMPLISHMENTS »

- The Tahoe Science Advisory Council initiated a study to better understand Lake Tahoe recreation patterns and impacts. The project will provide a roadmap for tracking visitor use and dovetail with the Destination Stewardship effort to guide policy.
- The Tahoe Science Advisory Council has been reviewing forest fuel treatment methods in relation to Caldor Fire burn intensity. By evaluating how the fire burned in areas that received different forest management practices, scientists can help inform future actions to protect Tahoe communities.
- The Washoe Tribe of Nevada and California worked with the USDA Forest Service, Great Basin Institute, and the Blue Waters Exchange Group to replant the Washoe Tending Garden and host a cultural exchange at the Tallac Historical Site in South Lake Tahoe.
- The League to Save Lake Tahoe's Blue Crew Program completed 316 volunteer beach cleanups and picked up 6,835 pounds of litter.
- Nonprofits such as the Tahoe Area Mountain Biking Association and the Tahoe Rim Trail Association worked with public agencies to leverage thousands of volunteer hours to maintain the basin's trails.

### FUTURE PRIORITIES »

- Establish a sustainable funding source to support critical science and stewardship programs in the basin.

### PROJECT SPOTLIGHT

#### THE FIRST LAKE TAHOE BEACH-CLEANING ROBOT

Lake Tahoe continues to be a proving ground for innovative technology. Last summer, the League to Save Lake Tahoe, in collaboration with ECO-CLEAN Solutions, launched a solar and battery powered beach sifting robot. The "BEBOT" can sift up to 4 inches below the sand's surface, collecting hidden trash that goes beyond what hand-picking crews can typically see and reach. In all, the BEBOT cleaned 11 public and private beaches and collected more than 6,000 pieces of trash last year. The BEBOT will expand its reach this summer working in tandem with clean-up crews and researchers to prevent trash and microplastics from reaching the lake.



Photo by ECO-CLEAN Solutions.





## THE IMPACT OF THE LAKE TAHOE RESTORATION ACT

The Washoe Tribe of Nevada and California's Máyala Wáta meadow restoration project highlights their integral role as stewards of Lake Tahoe. Photo by John Peltier Photography.

The Lake Tahoe Restoration Act (LTRA), first passed in 2000, has played a pivotal role in protecting the Lake Tahoe Region from the increasing threats of climate change. The US Congress has appropriated \$104.7 million since the bill's reauthorization became law in late 2016, which accounts for about 27 percent of the total \$415 million authorization. This funding leverages other federal, state, local, and private funding for projects and has allowed for the strategic implementation of the highest priority projects within the Environmental Improvement Program.

Since 2016, LTRA has funded:

- 19 projects to reduce hazardous fuels.
- 6 projects to upgrade water infrastructure to fight fire.
- 27 projects to restore watersheds and improve water quality.
- 14 projects to prevent and control aquatic invasive species.

LTRA is set to expire in 2023. The proposed 10-year extension would allow partners to build on the investment and continue progress in building a sustainable future for Lake Tahoe.

### FUTURE PRIORITIES »

- Extend authorization of the Lake Tahoe Restoration Act.
- Secure sustainable funding commitments to EIP program areas not identified in LTRA such as transportation, sustainable recreation and tourism, and science.
- Secure the federal share of the Regional Transportation Plan investments.
- Maintain federal appropriations for forest health, aquatic invasive species, and watershed restoration to complete key projects.

### EIP Economic Impacts

The EIP supports an average of 1,700 jobs a year. Every \$1 million in EIP spending generates \$1.6 million in economic output.

LAKE TAHOE INFO is the online information hub for the region.

Go to the EIP tracker for all EIP project information, spending, and accomplishments.

[LAKETAHOEINFO.ORG](https://laketahoeginfo.org)



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[restoretahoe.org](https://restoretahoe.org)