

24th Annual - 1st Virtual Summit

LAKE TAHOE SUMMIT

AUGUST 25, 2020



HOSTED VIRTUALLY BY
U.S. SENATOR CATHERINE CORTEZ MASTO

2020 Lake Tahoe Summit Registration Kit

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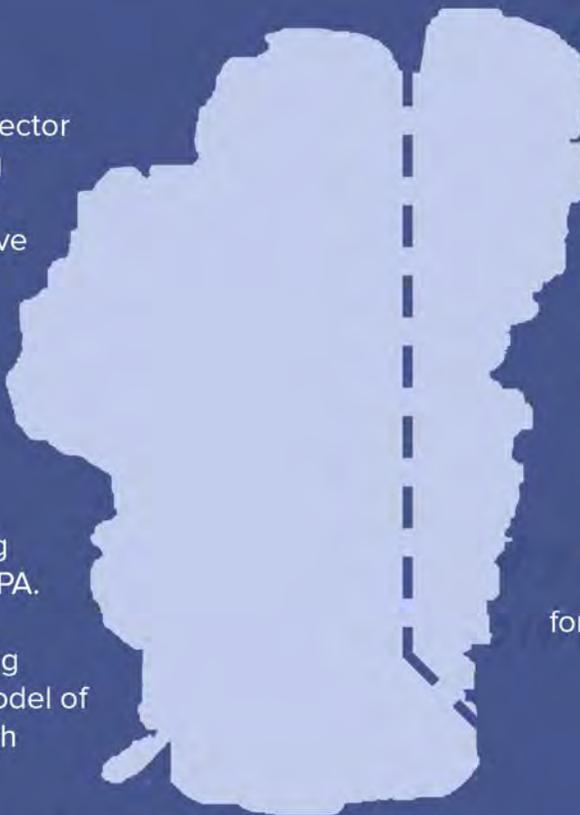
Resilient

LAKE TAHOE

Senator Catherine Cortez Masto is dedicated to working with her colleagues at the federal, state, and local levels to protect this incredible lake and the economic security and vital natural life that depend on it. Lake Tahoe is so special and unique that it draws visitors from all over, and the Senator understands the importance of preserving its rich history and enduring beauty for future generations.

EVENTS

- At a hearing in March of this year, Senator Cortez Masto invited Julie Regan, Deputy Director of the Tahoe Regional Planning Agency (TRPA), to speak about the importance of a collaborative and science-based approach to protecting Lake Tahoe from the threat of climate change and invasive species.
- Senators Cortez Masto, Feinstein, Harris and Rosen issued a proclamation honoring the 50th Anniversary of the TRPA. The TRPA is the first bi-state, regional environmental planning agency in the country and a model of conservation protection through collaboration.



SECURED FUNDING

- The 2016 *Lake Tahoe Restoration Act* (LTRA) has appropriated a total of \$37 million. In addition, Senator Cortez Masto has supported the Lake Tahoe Region in securing more than \$16 million this fiscal year in grant funding from the federal government, including LWCF funding for trails and visitor infrastructure at Spooner Lake.
- She also secured the release of \$350,000 in grant funding for the University of Nevada, Reno's ALERTWildfire program.

LEGISLATION

Senator Cortez Masto introduced the *Douglas County Economic Development and Conservation Act* to convey 67 acres of Forest Service land in the Lake Tahoe area for conservation. She also secured funding within the *2016 Lake Tahoe Restoration Act's* environmental protection programs and continues to advocate for resources to protect and improve the region.

OTHER LEGISLATIVE ACTIONS

In July, Senator Cortez Masto sent a letter in support of the Tahoe Prosperity Center's application for a *CARES Act* grant. She sent a letter in March urging the FY21 Interior appropriations bill to provide funding for the 4th year of implementation of the LTRA.

In over 20 years of Tahoe Summits, much has been done to protect the lake

By Senator Dianne Feinstein | August 21, 2020

Growing up in Northern California, I spent my summers visiting the Tahoe Basin, learning to appreciate the natural environment. Those summers were filled with trips into the remarkable backcountry, biking around the lake's 72-mile perimeter and swimming in its clear, blue water.

It's those memories that I would carry with me each year into the Lake Tahoe Summit – California and Nevada's annual meeting to discuss the challenges facing our shared lake. Unfortunately, because of the coronavirus pandemic, we are unable to gather in person on the shores of the lake this year, but instead will gather virtually to celebrate Lake Tahoe and the progress we've made protecting it.

The push to protect the lake began more than 20 years ago, during the first Lake Tahoe Summit. Senator Harry Reid of Nevada invited President Bill Clinton, Vice President Al Gore, and the California and Nevada congressional delegations to the lake that year to kick off what has become a decades-long mission.

Since that first summit, we've worked across state borders and in coordination with private industry to form a public-private partnership I call "Team Tahoe." Lake Tahoe is a great example of how aggressive conservation measures, strict planning and strong cooperation between all levels of government and the private sector can successfully protect our natural treasures for future generations.

In 1968, when measurements were first taken, water clarity was 102 feet, far better than we've seen in recent decades. Human-caused pollution and sedimentation has led to record lows of visibility. Now, climate change exacerbates various factors to further degrade water clarity.

While clarity continues to decline, the rate has slowed in recent years thanks to the work of Team Tahoe. In fact, recent data shows that Tahoe's clarity is much better than the long-term trend would have predicted. However, clarity levels in the summer still hover around the 67-foot mark, a sign of how much work we still have to do.

In 2000, Congress passed the first Lake Tahoe Restoration Act, which allocated \$900 million to begin a 10-year clean-up effort. Then in 2016 we passed a new bill authorizing an additional \$415 million.

These funding streams, along with additional money from state and local governments and the private sector, have showed some concrete results.

We've also gone a long way toward preventing invasive species from damaging the lake's ecosystem and surrounding economies. Lake Tahoe serves as a wonderful home for recreational activities, but that's all threatened when boats from other parts of the country bring non-native species into Lake Tahoe.

Quagga mussels, zebra mussels and Asian clams are among the most destructive invasive species in Tahoe, damaging infrastructure such as water pipes, canals, aqueducts and dams. As part of the Lake Tahoe Restoration Act, we secured \$45 million for lake-wide invasive species control and watercraft inspection programs to help stem the spread of these mussels and clams.

It's because of these efforts that no new invasive species have been found in Tahoe's water since 2008.

Of course, the Tahoe Basin is about much more than just the lake. The surrounding Sierra Nevada forests provide recreational activities year round and are home to many native species and plants.

But these forests are also at risk to wildfire, particular as the climate warms. We all remember the 2007 Angora Fire, which burned more than 3,000 acres and destroyed 280 structures. That's why I've dedicated much of my time to improving the region's firefighting capabilities. In 2019 we secured the transfer of seven C-130 firefighting airplanes from the federal government to CalFire, creating the largest aerial firefighting fleet in the world.

Over the last 20 years, we've had tremendous success in bringing Tahoe back from the brink of environmental collapse and retain its unique character. But there's still much more work to be done. Lake clarity has dropped around 30 feet over the last 40 years. Invasive species are still not fully eradicated. And climate change poses existential threats to the basin, causing the water and air temperature to warm at alarming rates.

We need to continue our investment in the Tahoe Basin and support the wonderful partnership we've developed. I want the beauty of this wonderful lake to be around for many generations to come, and I know Team Tahoe will play a big part in that effort.

Dianne Feinstein is a U.S. Senator from California.



JACKY ROSEN

U.S. SENATOR FOR NEVADA

TAKING ACTION TO PROTECT LAKE TAHOE

- HELPED SECURE OVER \$16 MILLION IN FUNDING FOR THE LAKE TAHOE RESTORATION ACT IN FY20.
 - INTRODUCED AND PASSED AN AMENDMENT TO THE FY20 OMNIBUS TO SECURE OVER \$4 MILLION FOR LAKE TAHOE INVASIVE SPECIES MITIGATION THROUGH THE U.S. FISH AND WILDLIFE SERVICE RESOURCE MANAGEMENT ACCOUNT.
 - CO-SPONSOR OF THE *STOP THE SPREAD OF INVASIVE MUSSELS ACT* (S. 2975), WHICH WOULD HELP ADDRESS AND PREVENT THE SPREAD OF AQUATIC INVASIVE SPECIES IN WESTERN WATERS, INCLUDING LAKE TAHOE. THIS BILL INCLUDES FUNDING FOR AQUATIC INVASIVE SPECIES INSPECTION AND DECONTAMINATION STATIONS.
 - CO-SPONSOR OF THE *WILDFIRE DEFENSE ACT* (S. 2882), WHICH WOULD DIRECT FEMA TO ESTABLISH A GRANT PROGRAM FOR LOCAL COMMUNITIES TO DEVELOP A COMMUNITY WILDFIRE DEFENSE PLAN. WILDFIRES ARE A COSTLY AND DEADLY NATURAL DISASTER THAT SEVERELY IMPACT THE TAHOE BASIN.
-

TAHOE FUND STRATEGIC PLAN

IN ANTICIPATION OF OUR 10 YEAR ANNIVERSARY, the Tahoe Fund Board spent the better part of last year reflecting on the work of the organization, what we do well, what we think we can do better, and what we want to accomplish for the next five years. The result is our new five year Tahoe Fund Strategic Plan.

Thanks to the wonderful support of our donors, and great partnerships with the public agencies, we accomplished more than we ever expected to in our first 10 years. We have now supported more than 40 projects and helped to secure more than \$50M in public funding. With an eye toward the next 10 years, we have developed a plan that we feel will allow us to expand our impact and help us live out our new mission to use the power of philanthropy to improve the Lake Tahoe environment for all to enjoy.

While this plan was created before COVID-19, the increased demand on our natural resources by a public that is eager to enjoy the beauty of Tahoe during a pandemic makes the plan and our work even more relevant.

VISION

The Tahoe Fund envisions a Lake Tahoe where the natural and human environments are in balance and a growing community of passionate supporters enjoy and cherish this mountain treasure.

MISSION STATEMENT

To use the power of philanthropy to improve the Lake Tahoe environment for all to enjoy.

VALUES

Innovation
Collaboration
Stewardship
Sustainability
Leadership
Inspiration

WHAT WE DO

The Tahoe Fund plays many roles in the Tahoe Basin, in collaboration with local, State, Federal partners and others: convener, catalyst, funder, advocate and spokesperson.

We fund environmental enhancement projects through private donations.

We convene key stakeholders to facilitate dialogue and problem solving. We add value by being neutral, inclusive and innovative.

We are a catalyst for Basin-wide projects and early efforts when there is a need to assist and build momentum. We are sometimes in a visible leadership position, but more often than not, we provide the support needed to bring projects to fruition.

We advocate for public funding and strategic policy changes which advance our mission and the goals in this plan.

We build awareness for the stewardship and care of the Tahoe Basin with residents and visitors.



The Tahoe Fund is a 501(c)3 incorporated in California and registered in Nevada. Tax ID 01-0974628. All donations are tax deductible to the fullest extent of the law.

STRATEGIC GOALS

To fulfill this vision, the Tahoe Fund has identified the following organization goals to be implemented with Basin Agencies and Partners:

- 1. FOREST HEALTH** Drive innovative solutions to increase the pace and scale of forest restoration.
- 2. LAKE CLARITY / WATER QUALITY / LAKE HEALTH** Utilize our unique strengths to complement and support key stakeholders' efforts to improve lake clarity, water quality, and lake health.
- 3. SUSTAINABLE RECREATION** Be a catalyst for sustainable outdoor recreation that will improve quality of experience and equity of access, while minimizing impacts on natural resources in Tahoe.
- 4. STEWARDSHIP** Inspire more people to take care of Tahoe.
- 5. TRANSPORTATION** Contribute innovative solutions to current and future transportation efforts.
- 6. SUCCESSFUL ORGANIZATION** Build the human and financial resources to make our vision a reality.



TAHOEFUND.ORG

CALIFORNIA SPOTTED OWL PROJECT SURVEY PROTOCOL

Lake Tahoe Leading the Way in Smart Forests: Automated Recording Units to Gain Efficiency in Forest Project Planning

2020 Update



Background

Advances in technology and statistics present an opportunity to enhance our ability to detect wildlife, increase the efficiency of conducting required surveys for sensitive species, such as the California spotted owl. The use of autonomous recording units (ARUs) in monitoring wildlife has been growing in its application and effectiveness over the past 10-15 years. ARUs are recording units that can be put out into the forest and they can be programmed to automatically record sounds at various times of day for weeks at a time. These recordings are then analyzed by people or using artificial intelligence-based analytics.

The objective of a new project survey protocol is to determine the status of occupancy by the CSO for proposed treatment areas within 1 year and to reduce field staff effort without sacrificing the quality of the detection data. The standard protocol calls for conducting three vocal survey visits for two consecutive years or six vocal survey visits in one-year.

The Lake Tahoe Basin Management Unit (LTBMU) and Pacific Southwest Research Station (PSW) developed and tested the first draft ARU-based California Spotted Owl Monitoring protocol in 2019.

Principal Supporters

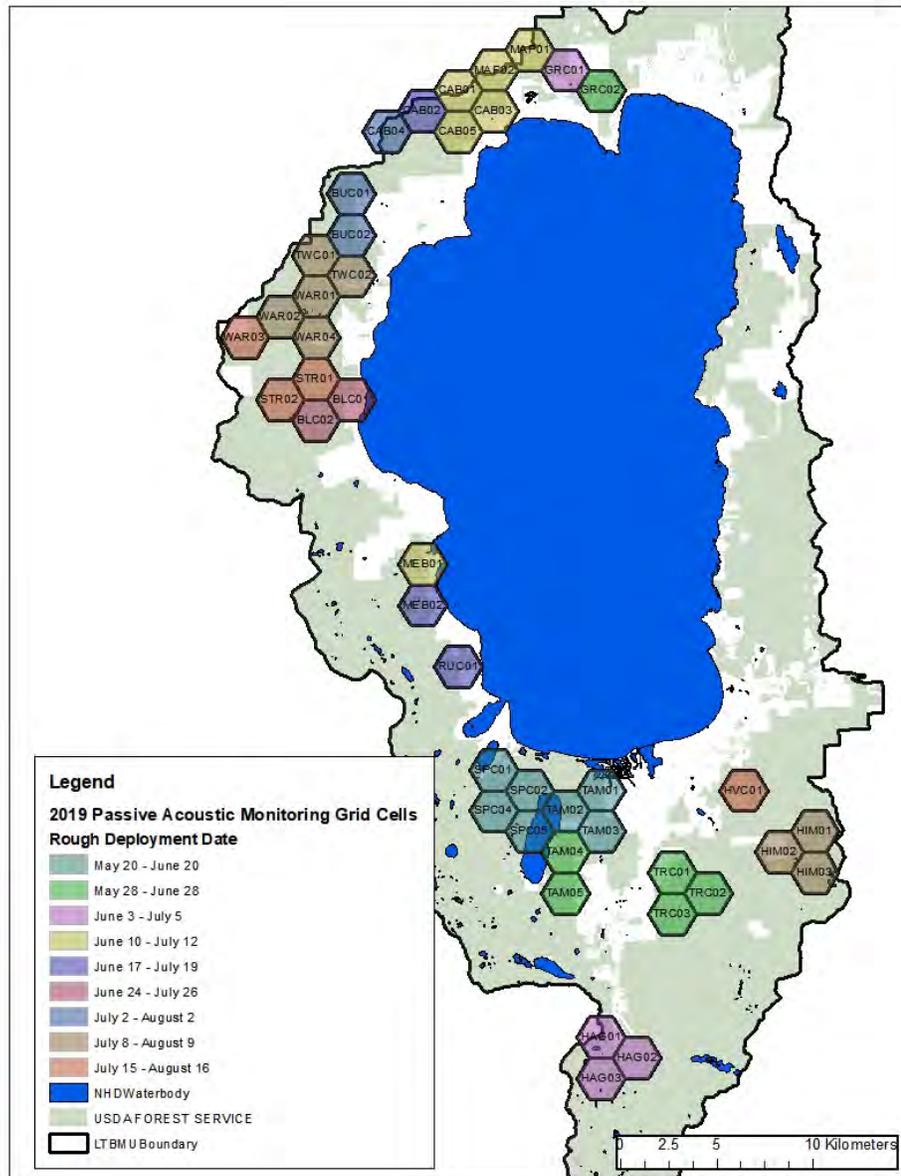
Investigators:

Pat Manley, USFS PSW
Shay Zanetti, LTBMU
Zach Peery, U Wisconsin

Funders:

Tahoe Fund
USFS Lake Tahoe Basin MU
USFS PSW
USFS Region 5





Results to Date

A total of 43, 1000 ac hexagon sampling units were surveyed in 2019. Spotted owls were detected in nearly 40% (n=16) of the 43 sample units. The effort required to survey the 43 units using the new ARU-based protocol was calculated to be a 50% savings compared to the standard survey protocol.

Detection objectives were not only met but exceeded. The ARUs were in place at each unit for 4 weeks, but analysis of the data revealed that target detection probabilities (>95%) were achieved in less than 20 days, and in 30 days detection probabilities reached 98.5%.

Next Steps

In 2020, researchers at the University of Wisconsin are exploring the ability to use habitat conditions and occupancy history to inform the need for surveys as an additional cost and time savings measure.

In 2021, additional field testing will be conducted to develop a more robust evaluation of the field protocol and refine detection and reproductive status determinations.

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Resilient Tahoe

2020 Lake Tahoe Summit Updates



Upper Truckee Marsh Restoration

Work continues full speed on the largest wetland restoration in Tahoe's history at the Upper Truckee Marsh. The California Tahoe Conservancy is reinvigorating 250 acres of floodplain, which will enrich fish and wildlife habitat and improve lake clarity.

The marsh will be more resilient to climate change impacts. It will also store carbon, combatting climate change. Public access improvements will make it easier for everyone to enjoy this special place.

tahoe.ca.gov/upper-truckee-marsh

Improving Forest Health, Protecting Communities

The Conservancy collaborates with partners to improve forest health while reducing wildfire threat.

Tahoe Douglas Fire Protection District crew members are thinning the forest at Van Sickle Bi-State Park, which the Conservancy co-manages with Nevada State Parks.

tahoe.ca.gov/july-2020



Restoring West Shore Forests and Watersheds

The Lake Tahoe West Restoration Partnership aims to restore the resilience of west shore forests and watersheds to climate change and other disturbances. Taking an all-lands, landscape-scale approach, land managers are relying on cutting-edge science to inform management in a changing climate.

laketahoewest.org



Advancing Affordable Housing on State Land

The State of California has selected developers to build modular multi-family housing on 11 acres of developable Conservancy land in South Lake Tahoe. This project will help address the community's affordable housing challenges. *Left: artist's rendering.*

sugarpinevillageslt.com

Funding Transformational Projects

Recent grants that are helping to restore and enhance the Basin's extraordinary natural and recreational resources:

- \$100,000 to improve a trail and protect sensitive resources at Emerald Bay.
- \$130,000 for outreach to paddlers using the Lake Tahoe Water Trail.
- \$425,000 to plan improvements at South Lake Tahoe's 56-Acre Site, a civic and recreation hub.
- \$250,000 to assess the vulnerability of Basin water infrastructure to climate change impacts.



The California Tahoe Conservancy is a state agency, established in 1985, with a mission to lead California's efforts to restore and enhance the extraordinary natural and recreational resources of the Lake Tahoe Basin.

Learn more at tahoe.ca.gov.

THE LAKE IS CHANGING
OUR COMMITMENT TO KEEP TAHOE BLUE IS NOT



CLICK TO LEARN MORE



Photo by Dylan Silver, tahoeclearity.com



DO MORE WITH YOUR TAHOE ADVENTURE

Be a **#TahoeBlueGooder** & protect the Lake you love.

See trash, pick up trash.
Make Tahoe litter-free.

Pack it in, pack it out.
Leave nothing but footsteps.

Keep the car parked.
Ride your bike or walk instead.

Become a citizen scientist.
Join one of our volunteer programs.

Spread the word.
Post photos with #TahoeBlueGooder.

keeptahoeblue.org

@keeptahoeblue



**KEEP
TAHOE
BLUE**

League to Save Lake Tahoe

Protecting Lake Tahoe

since 1957

advocate | engage | create

SIERRA STATE PARKS FOUNDATION

2019

ACCOMPLISHMENTS

Partnering with 8 iconic California State Parks

D.L. Bliss State Park Donner Memorial State Park
Emerald Bay State Park Kings Beach Recreation Area
Sugar Pine Point State Park Washoe Meadows State Park
Tahoe State Recreation Area Burton Creek State Park

26,623
people took tours of
Vikingsholm and
Hellman-Ehrman
Estate



9,115
students were
provided no cost
educational
experiences



160,000
Visitors came through
the doors of 4 SSPF
supported Visitor
Centers



22
seasonal employees
funded to assist State
Parks in meeting their
mission



\$125,000+
towards The Donner
Project and the
restoration of The
Pioneer Mounment



Investment to
Vikingsholm
restoration
exceeded
\$200,000



1,510
SSPF volunteer
hours were logged
this year



20+
events hosted
in our State
Parks



Only 60%
of operational
need is covered
through State
resources



\$867,952
SSPF contributed to
our Lake Tahoe-
Donner California
State Parks



954,747
people visited lake
Tahoe-Donner state
parks
in 2018, Compared to
486,834 in 2009

August 2020



Dear Friend,

A visit to our Lake Tahoe and Donner State Parks is an integral part of who we are. They are the setting for connections we make with our families and friends. Our parks have been described as magical places and an oasis for the spirit. Thankfully, the gates to the parks are still open, but we miss the ability to connect and share important moments with you. Along with everyone else, this year finds us pivoting and reacting to the challenge of coping with the COVID-19 pandemic. As of today, we likely will not be able to open exhibit spaces in our visitor centers, welcome you to the interiors of our treasured historic house museums, or host any of our famous in-person events. Under guidelines established by our health officials, we can operate our in-park stores and host small (6-person maximum) volunteer activities, and some interpretive programming and special outside tours.

Even as we experience a projected 74% income decrease, the parks are filled to capacity and the need to fund positions to support this increased visitation and maintenance impact continues. We are doing our best to meet this demand with our limited staff and capital resources.

The Sierra State Parks Foundation has a remarkable 55-year history and has weathered many challenges over the years. We are firm in our resolve to survive this pandemic financially and welcome you back to our open park facilities in the spring of 2021 – continuing the legacy for 50 more years. Though our team is strong and adaptable, sadly we have been forced to furlough staff, and cut wages and operating expenses where we can. We are aggressively reducing costs while continuing to serve our foundation members and the public. To date we have reduced our operational expenses by 50%. Luckily, SSPF's Board of Directors carefully created a reserve fund. Additionally, we have received grants from the Small Business Administration, Tahoe Truckee Community Foundation, the California State Parks Foundation, and Parks California to help sustain us at a basic level of operation. ***Even with these measures, we predict a \$250,000 shortfall until we can reboot our mission next May 2021.***

We realize these are unprecedented times for all of us. We are writing this letter to seek your financial support to sustain our Foundation's mission. Any financial support is appreciated so we can keep our core employees on payroll, continue to care for our precious cultural resources, provide innovative school programming for this coming year, and maintain the unique park experiences you have come to expect from the Sierra State Parks Foundation.

We ask that you to donate to the **Sierra State Parks Foundation Resilience Fund** on our website. Every little bit will help to cover our shortfall. These moneys will go directly to maintain our payroll and the operating expenses of the Foundation. All donations are tax deductible. Thank you in advance for all you do to support the noble mission of our Foundation. We appreciate you all very much!

Yours in parks,

Heidi Doyle
Executive Director



Donate:
www.SierraStateParks.org/doante





THE DESERT RESEARCH INSTITUTE

WWW.DRI.EDU

THE DESERT RESEARCH INSTITUTE (DRI) is a recognized world leader in basic and applied interdisciplinary research. Committed to scientific excellence and integrity, DRI faculty, students, and staff have developed scientific knowledge and innovative technologies in research projects around the globe. Since 1959, DRI's research has advanced scientific knowledge, supported Nevada's diversifying economy, provided science-based educational opportunities, and informed policy makers, business leaders, and community members. With campuses in Reno and Las Vegas, DRI serves as one of eight institutions in the Nevada System of Higher Education.

Faculty members at DRI are nontenured and responsible for their own salaries through external grants and contracts. Through this blend of academic rigor and private-sector pragmatism, DRI has earned a reputation for delivering high-quality scientific information in an efficient, transparent, and accountable fashion.



DRI AT A GLANCE

- \$31 MILLION in sponsored research
- Over 300 projects on all 7 continents
- Over 400 scientists, engineers, students, & staff
- 100 Ph.D. faculty
- Research in over 40 scientific disciplines
- 40 specialized labs
- Over \$9 in total economic benefit to Nevada for every \$1 in state appropriations
- 2 research campuses

SCIENTIFIC RESEARCH AND SOLUTIONS FOR A CHANGING PLANET.

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Reno, NV 89512
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Las Vegas, NV 89119
702-862-5400

www.dri.edu | Follow us @DRIscience |    





MICROPLASTIC POLLUTION RESEARCH IN THE SIERRA NEVADA

WWW.DRI.EDU/MICROPLASTICS/

In 2019, DRI researchers detected microplastic pollution in the waters of Lake Tahoe for the first time.

WHAT ARE MICROPLASTICS?

- Microplastics are plastic pieces ranging in size from 5mm to microscopic particles (the size of a pencil's eraser or smaller).
- They come from a variety of sources, including the breakdown of larger products like single-use plastic bottles and synthetic clothing.
- The extent of microplastic pollution is only just beginning to be understood, with researchers discovering the tiny plastic pieces everywhere from the Arctic to the deep ocean.

MICROPLASTICS RESEARCH PROJECTS AT DRI:

The Microplastics Research Group at the Desert Research Institute is working to understand microplastic contamination and develop novel methodologies that will enhance our understanding of microplastics in freshwater environments.

- **Assessing Microplastic Pollution in the Lake Tahoe Basin.** Lake Tahoe is a naturally formed, alpine lake that is protected by numerous state and local laws with the intent to preserve lake clarity, ecosystem health, and drinking water quality. DRI is conducting the first assessment of microplastic pollution in Lake Tahoe and the surrounding basin. Results include the presence of microplastics, especially microfibers, in lake water and regional snow samples, and will provide pilot data for a larger regional microplastic study. Funding is provided through the DRI Research Foundation Innovative Research Project funds.
- **Developing Citizen Science Programs that Engage the Public in Microplastic Research and Mitigation Efforts.** Citizen Science programs developed in conjunction with the League to Save Lake Tahoe, are engaging the community in microplastic research, education, and mitigation. These programs include citizen collected water samples to support microplastic monitoring efforts; and engaging the community to test the efficacy of microplastic fiber collection devices. Funding is provided through the REI Foundation and DRI Research Foundation Innovative Research Project funds.

PAST MEDIA COVERAGE:

- *LA Times:* "Microplastics are found in Lake Tahoe's waters for first time ever"
- *Reno Gazette Journal:* "Researchers find microplastics in Lake Tahoe"

RESEARCH CONTACT:

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Environmental Engineering

- Specializes in air quality, traffic noise, hazardous materials and waste, and naturally occurring asbestos and erionite.
- All these disciplines support the department's goals ensuring that NDOT projects and maintenance activities comply with federal and state regulations.



Welcome to our team!

The Environmental Division houses a diverse group of environmental specialists who research, analyze, and monitor the effects transportation projects have on the environment and the effects of the environment on the projects.

The division includes personnel specializing in air quality, traffic noise, hazardous materials, geology, biology, archaeology, engineering, stormwater management, social analysis, the National Environmental Policy Act (NEPA), and the National Historical Preservation Act (NHPA).



Environmental Division

Nevada Department of Transportation



"We build roads that traverse the natural environment. We have a responsibility to mitigate those impacts."

CULTURAL RESOURCES

- Specializes in archaeology, architectural history, and Native American consultation.
- Strives to balance the transportation needs of Nevada's growing communities with protecting and preserving the rich cultural heritage of the state.
- Duties include: conducting archaeological surveys to identify sites of prehistoric and historic importance; examining architectural features such as buildings, bridges, and cemeteries; researching historical records such as old maps, historic photos, and government reports; and consulting with Native American tribes and organizations. Cultural resources can include prehistoric archaeological sites, historic archaeological sites, ghost towns, rock art, historic buildings, spiritual places, historic landscapes, and even historic roads such as the Lincoln Highway.



NATURAL AND SOCIAL SCIENCES

- Specializes in biology and NEPA requirements
- Responsible for ensuring NDOT projects and maintenance activities comply with federal and state requirements related to natural environment and human environment.
- Duties include: conducting plant surveys, conducting animal surveys, conducting noxious weed surveys, responding to tortoise issues, obtaining take permits, communicating with federal land managing agencies regarding biological issues, overseeing protected and sensitive plant and animal species, and coordinating mitigation measures related to these subjects.

”

I have learned that the Environmental Division may have an impact on every facet of the planning, design, and construction of a project.

“

STORMWATER PROGRAM

- Our Stormwater Program is responsible for meeting the requirements of the Clean Water Act through EPA's National Pollutant Discharge Elimination System (NPDES) and Municipal Separate Storm Sewer System (MS4) Permit.
- Specializes in Planning & Design, Compliance, Training, Education, and Outreach.
- Preserve Nevada's waters for future generations.



WILDFIRE MITIGATION PROJECTS

Catastrophic wildfires have become all too common in California. To mitigate the risk of wildfires in the communities we serve, Liberty Utilities (Liberty) is taking aggressive steps to keep you and your family safe.

Here are a few safety measures Liberty is taking to protect our community:

COVERED CONDUCTOR

Covered conductor is wire that has a cover that protects against sparking, shorts from wire slaps, and reduces or eliminates exposed bare wire. Liberty is actively replacing bare wire with covered conductor in some of the highest fire risk areas, including the Topaz and West Lake Tahoe. Crews will have installed 7.3 miles of covered conductor by the end of 2020.

Conductor prep includes moving live wires to temporary arms so crews can string in new covered wire, a process that limits power disruption for customers. Power outages are then required to switch the power source from bare to covered wire.

In some areas, the covered conductor work is combined with the Aerial Conductor System (ACS). The ACS is the bracket that holds all three phases of covered wire together on one side of the pole, preventing phases from slapping together and potentially causing a fault, spark and/or power outage. The ACS brackets are spaced every 30 feet and all wires are on one side of the pole as opposed to one phase on one side and two phases on the other, or one on each side and one up higher in the middle.



Aerial Conductor System



Topaz Covered Conductor

TREE ATTACHMENTS



Tree Attachment Removal

Crews continue to remove assets and infrastructure that were previously mounted on trees, adding poles where needed and relocating the assets to a proper, fire retardant treated pole. Tree mounts were a common practice many years ago, but are now known to pose a fire risk. Additionally, tree mounting can also cause issues if the tree grows and takes the mounts with it, or if the tree dies and falls. As part of the Wildfire Mitigation plan, Liberty is systematically removing all tree mounted infrastructure.

BROCKWAY/KINGS BEACH SUBSTATION

The Brockway substation, a wooden station built in the 1960s, has been deemed a fire hazard by the local fire department. Construction is underway on a brand new substation just up the street and once complete, Liberty will decommission the old wooden substation. The new substation will also provide more reliable electric service to the north shore of Lake Tahoe.



New Kings Beach Substation Construction



Old Brockway Substation

FUSE REPLACEMENT

Liberty continues to work through the system to replace traditional expulsion fuses with non-expulsion fuses. Crews have replaced approximately 484 fuses thus far, prioritizing the highest fire risk areas. The traditional fuses expel hot gas and particles and can ignite a fire should that hot material land on dry fuel. The new non-expulsion fuses do not expel any material making them much safer from a fire ignition perspective.



Expulsion Fuse on the left (open tube) and Non Expulsion Fuse on the right (closed tube)

SYSTEM AUDIT

Liberty has selected a contractor to thoroughly inspect and document the entire overhead electrical distribution system. This project is underway and will provide detailed insight and allow cross referencing to be sure all expulsion fuses, tree attachments and other hazardous infrastructure are replaced. This entire system audit is expected to be done by November 2020.

VEGETATION MANAGEMENT

An ongoing, year-round effort to reduce fire hazards around high voltage infrastructure, Liberty and our contractor have treated and/or removed approximately 6,500 trees/vegetation thus far in 2020.

WEATHER AND SYSTEM MONITORING

Liberty continues to build out a network of local weather stations to provide real-time weather data throughout the service territory. In addition to the weather stations, Liberty is also utilizing the AlertWildfire camera network in partnership with the University of Nevada, Reno, as well as piloting a new technology called distribution fault anticipation, which helps to detect minor faults before they become catastrophic.



Weather Station



United States Department of Agriculture

Science Team Contributes to Forest Resilience for Lake Tahoe West

Photo by Jace Gouillard

Co-producing Science to Promote Forest Resilience

Land managers worked with a team of researchers, led by the USDA Forest Service Pacific Southwest Research Station, to develop a strategy to restore 60,000 acres of forest across the west side of the iconic Lake Tahoe basin.

An interdisciplinary science team of over 20 scientists from 8 research institutions was formed to evaluate how several different management scenarios and climate change would affect forest ecosystems and local communities over time, including fire characteristics across the landscape, forest structure and composition, abundance of old trees, wildlife habitat, water quality, water quantity, economics, cultural resource quality, carbon sequestration, and air quality. The scenarios included wildfire-suppression only, fuels reduction near communities, extensive restorative thinning, and extensive restorative prescribed burning, as the climate changes.

The team used a series of integrated computer modeling tools to estimate changes in forest conditions, fire dynamics, and associated resource conditions over the next 100 years in light of projected climate change to evaluate how treatments affect important ecological and social values.



Fig. 1. Scientists and managers working for the Lake Tahoe West collaborative discuss use of fire to restore meadows in Lake Tahoe.

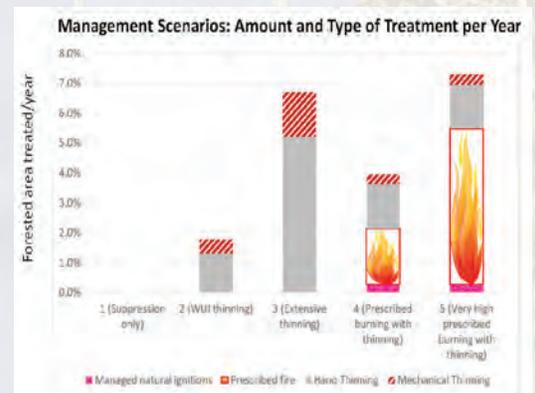


Fig. 2. Management Scenarios Graph



Forest Service

Pacific Southwest Research Station

August 2020

Science Products

Findings have been detailed in several reports and journal articles already available below, along with many more publications still in development. The team also presented results at a 2 day web-based science symposium:

Science Symposium Webinar

- Day 1 (Overview, Landscape Dynamics, Wildlife Habitat, Economics): <https://vimeo.com/425519352>
- Day 2 (Aspen treatment, Effect of Forest Thinning, Hydrology, Water Quality, Air Quality, Integrated Integrated Values) : <https://vimeo.com/425202807>

Research Articles

- A landscape model of variable social-ecological fire regimes: *Ecological Modeling* (2019): <https://doi.org/10.1016/j.ecolmodel.2019.03.022>
- Using Process Based Snow Modelling and Lidar to Predict the Effects of Forest Thinning on the Northern Sierra Nevada Snowpack, *Frontiers in Forests and Global Change* (2020): <https://doi.org/10.3389/ffgc.2020.00021>
- Increasing the efficacy of forest thinning for snow using high-resolution modeling: A proof of concept in the Lake Tahoe Basin, California, USA, *Ecohydrology* (2020). DOI: 10.1002/eco.2203

Reports

- [Erosion analysis of the road network in Lake Tahoe West](#),
- [Modeling the effect of reopening abandoned roads on hydrology and soil loss](#),
- [Estimates of surface and mass erosion following the 2016 Emerald Wildfire](#)

Overview of Lake Tahoe West Science:
www.fs.fed.us/psw/ltwscience

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Key Findings: Broad-scale Treatments Enhance Resilient Conditions

The team found that expanded thinning and burning treatments across the landscape promoted desired conditions better than no treatment or the continuation of targeting treatments in areas adjacent to communities (in the wildland-urban interface). In particular, they found that expanding treatments across the landscape reduced the threat of wildfire to communities by nearly 50%, reduced the risk of unnaturally large patches of severe burns, and reduced the days of very high emission of smoke into downwind communities. Increasing treatment extent was also projected to increase water availability, benefiting remaining trees, meadows, streams, and groundwater. Increased prescribed burning was particularly effective in restoring more open and diverse forest conditions, and was expected to cost less per acre than thinning. These restorative treatments were projected to promote aspen stands and other cultural values important to the Washoe Tribe, for whom Lake Tahoe is their ancestral home.



Fig. 3. Forest stand following restoration treatments.

The positive contributions of enhanced use of fire on the landscape also poses some challenges, specifically the increased number of days required for fire to serve as a primary management tool, the difficulty and expense of controlling fire in some parts of the landscape, and the temporary impacts on air quality.

In December 2019, the Lake Tahoe West Restoration Collaborative issued its Landscape Restoration Strategy, which combines increased thinning with a gradual increase in the use of fire, consistent with effective approaches identified through analysis and modeling by the science team.

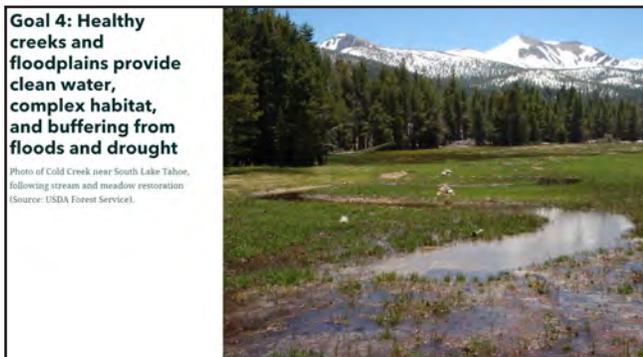


LAKE TAHOE WEST STORY MAP

Through the Lake Tahoe West Restoration Partnership, land management agencies, local partners, and other stakeholders are working together to increase resilience to high-severity wildfire, drought, climate change, and insect and disease outbreaks across 59,000 acres of the west shore.

Lake Tahoe West partners have released an interactive “story map” (link) to explain ongoing and proposed actions to restore forests and watersheds across this landscape. Community members and visitors can use the story map to learn more about the threats to the west shore landscape, and how science is informing a landscape-scale restoration approach to addressing those threats.

The story map highlights current projects on the west shore to reduce fire hazards near communities, restore meadows, and create healthier, more resilient forests.



ArcGIS StoryMaps is a story authoring web-based application on the ArcGIS platform that enables you to share your maps in the context of narrative text and other multimedia content.

Lake Tahoe West partners are also moving through the environmental review process for a proposed project to restore even more of the west shore. The Lake Tahoe West Restoration Project will reduce wildfire risks to communities, improve forest health, protect and enhance habitat for native plants and animals, and protect Lake Tahoe’s famed clarity.

Together, these actions will help restore the resilience of west shore forests, watersheds, and communities.



The Lake Tahoe West Restoration Partnership is a collaborative, multiple-stakeholder effort led by:

- USDA Forest Service Lake Tahoe Basin Management Unit
- California Tahoe Conservancy,
- Tahoe Regional Planning Agency
- California State Parks
- Tahoe Fire and Fuels Team
- National Forest Foundation

Stakeholders and partners represent tribes, conservation groups, fire protection agencies, the recreation community, homeowners and businesses, scientists, local government, and others who care about Lake Tahoe’s west shore.

Visit LakeTahoeWest.org to explore the story map and learn more.





The Nevada Tahoe Conservation District (NTCD) is one of approximately 3,000 Conservation Districts functioning in all 50 States and U.S. Territories. Conservation Districts are subdivisions of State government and are unique locally-led conservation agencies. Districts provide resource management and technical assistance to land occupiers (owners, renters, and producers) as well as work cooperatively with Federal, State, and Local governments in the delivery of conservation programs. As described in our mission statement, NTCD seeks to provide its constituents with superior technical assistance, educational resources, and conservation leadership with the goal of protecting Lake Tahoe’s natural resources.

Since the mid-1990s, NTCD has been managing large-scale restoration and water quality improvement projects in the Lake Tahoe Basin. Their team of scientists, hydrologists, and engineers successfully advised and managed millions of dollars’ worth of projects. In 2009, NTCD added a licensed civil engineer which enabled them to create design documents in house at a considerable savings to the funding agencies. With the success of these projects additional engineering staff has been added and today NTCD is considered a technical expert in conservation-related implementation projects. NTCD is well positioned to handle projects with multiple landowners including public and private owners.



Environmental Planning

- Lake Clarity Crediting Program expertise
- BMP RAM and Road RAM field crew
- Hydrologic analysis
- Water quality monitoring
- Geographic mapping
- Permitting (NEPA, TRPA, FEMA, County) and associated studies
- Vegetation and noxious weed management plans
- Public outreach
- Native plant landscaping and restoration

Engineering

- Stormwater drainage and erosion control planning and design
- Hydrologic modeling (HEC-RAS and HMS, PLRM)
- Stream restoration and culvert design
- Engineering plan, specification, and estimate development
- Expertise in green infrastructure and LID techniques
- Trail design

Project Management

- Management of multi-funder and multi-disciplinary projects
- Management of public/private partnerships
- Management of budgets between \$5,000 and \$4 million
- Construction management and inspection
- Coordination with multiple utilities during construction
- Construction bid packages and administration of contracts

NTCD has used their expertise and unique position to get complex projects completed that cross jurisdictional boundaries. With a small staff of four, each member is valuable and contributes to all projects. Current staff includes Meghan Kelly, District Manager/Senior Project Engineer; Domi Fellers, Environmental Scientist; Dana Olson, Assistant District Manager; and Patrick Johnson, Staff Engineer. In the past five years, NTCD has acted as the project proponent and completed many successful stormwater treatment, stream restoration, research and monitoring projects. A few of the highlights include:

Burke Creek Highway 50 Crossing and Realignment Project

This project was completed in October 2016 and restored nearly 300 linear feet of stream channel, daylighting the creek from its previous location in a pipe under a parking lot and the shoulder of US Hwy 50. The project resulted in new floodplain where a parking lot previously existed and improved drainage along US Highway 50. Funders included the US Forest Service, Nevada Division of State Lands, Douglas County, and Nevada Department of Transportation (NDOT). NTCD managed the project, prepared the engineering plans and documents, completed all necessary permitting, performed construction inspection, and is currently performing monitoring at the site.



Kahle Water Quality Basin Implementation Project

This project, completed in October 2018, resulted in the construction a 1 acre-foot wet basin on a US Forest Service parcel in Rabe Meadow and the replacement of 1,500 linear feet of undersized storm drain with appropriately sized conveyance. The \$1.5 million project underwent NEPA (categorical exemption), USFS Special Use permitting, TRPA permitting, and state agency permitting and was still completed in 11 months from initial funding receipt. Funders included the US Forest Service, Nevada Division of State Lands, Douglas County, and Nevada Department of Transportation (NDOT). NTCD managed the project, prepared the engineering plans and documents, completed all necessary permitting, and performed construction inspection.



Lake Clarity Crediting Program Support for Implementers

NTCD assists Douglas and Washoe County and NDOT with the modeling required for the Lake Tahoe TMDL. NTCD has a team of expert modelers and previous projects, such as the stormwater asset inventory and outfall inventory, have given NTCD staff the institutional knowledge to excel at stormwater tracking.

Rosewood Creek Area A SEZ Restoration Project

This 2016 Tahoe Regional Planning Agency (TRPA) Best in Basin award winning project restored over 2,000 linear feet of highly incised creek channel reconnecting the creek with the surrounding floodplain. The Project was funded by the Bureau of Reclamation, Nevada Division of State Lands, and Washoe County. Project partners included Cardno, Wood Rodgers, and Burdick Excavating. NTCD provided oversight of the design, project management, construction inspection, and water quality monitoring.



Nevada Department of Transportation and Douglas County Drainage Assistance

NTCD assists Douglas and NDOT with implementing smaller scale drainage improvements into NDOT and County right-of-ways to improve drainage and water quality on County and NDOT roads. NTCD prepares design-build documents, completes permitting, manages construction contractors to implement up to \$500,000 of drainage projects annually in these jurisdictions.

Nevada Tahoe Resource Team Program Highlights 2019-2020

Nevada's Commitment to the Lake

The Nevada Tahoe Resource Team (NTRT) is an interagency team coordinated by the Nevada Division of State Lands (NDSL) and dedicated to preserving and enhancing the natural environment in the Lake Tahoe Basin. The team consists of eight members: five from NDSL; one from the Nevada Division of Forestry; one from the Nevada Department of Wildlife; and one from the Nevada Division of State Parks.

The NTRT implements Nevada's share of the Environmental Improvement Program and coordinates a wide range of projects designed to improve water quality, restore natural watercourses, improve forest health and wildlife habitat, and provide recreational opportunities.



Water Quality Improvements

The NTRT works closely with local jurisdictions and the Nevada Division of Environmental Protection on stream restoration and stormwater infrastructure projects to improve water quality, reduce erosion potential, and enhance stream environment zones. In collaboration with Basin partners, a stream restoration project along Incline and Third Creek was completed in 2019 which installed an open channel bridge, step pools, and structural improvements. This project is designed to enhance fish habitat and migration as well as reduce erosion.

Recreation Enhancements

In 2019, the NTRT completed conceptual design on new day-use facilities including a visitor center and amphitheater at Spooner Lake in Lake Tahoe Nevada State Park. Construction is scheduled for fall 2020 and summer 2021 and is just part of a much larger effort to update and improve trails and recreation facilities on the East Shore of Lake Tahoe.



Wildlife Preservation

Lake Tahoe is home to a diversity of wildlife. One of the ways NTRT protects wildlife is by conducting surveys and designing studies on priority species. For example, American pika is a cold-weather adapted species related to the rabbit. NTRT visited 38 previously known pika sites to examine life history and presence. Through this recent research and analysis, there appears to be a threshold of approximately 9,000 feet in the Carson Range, below which pika are much less likely to persist. Historical data indicates their range has decreased and may be the result of a changing climate.



Nevada Tahoe Resource Team Program Highlights 2019-2020

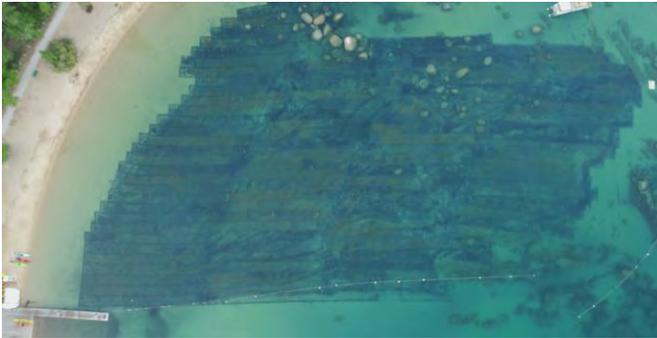


Forest Health Protection

Designed in collaboration with Basin partners and management agencies, NTRT implements forest health projects to improve resilience in fire adapted Tahoe ecosystems. In 2019, NTRT began implementing an 85-acre fuel break on Tahoe's East Shore which will enhance wildlife habitat and stream environment zones, as well as protect local resources from potentially catastrophic fire events.

Urban Lots Management

The NTRT manages 232 forested acres on undeveloped parcels in the urban environment for resilience to insect infestations, disease, drought, and wildfire. In 2019 and 2020, the NTRT continued to conduct fuels reduction treatments including tree thinning, limbing, and woody debris removal on State urban lots with funding assistance through the Southern Nevada Public Lands Management Act.



Aquatic Invasive Species Removal

Benthic barriers which deplete the lake bottom and invasive Asian clams of dissolved oxygen were relocated at Sand Harbor in 2019 and removed in 2020. Effectiveness monitoring indicated a 99% mortality of Asian clams under the barriers. In all, the project treated over 14 acres of the lake bottom since barriers were first installed in 2017.

Acquisition and Restoration of Sensitive Land

The Nevada Land Bank, operated by the NTRT, mitigates the impact of development in the Lake Tahoe Basin by acquiring and permanently retiring land coverage. The NTRT is actively restoring a large parcel to natural forested conditions in Stateline, NV. Thus far, treatments have included capping and removing utilities, filling utility trenches, removing invasive species, and transplanting native pine seedlings.



Plastic is forever



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drinktahoetap.org #breakupwithplastic

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world's best
water**



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**Take
care.**

TAHOE: STATE OF THE LAKE REPORT 2020



UC DAVIS

Tahoe Environmental
Research Center

The long-term data set collected on the Lake Tahoe ecosystem by the University of California, Davis and its research collaborators provides a unique tool for understanding ecosystem function and change. It has become essential for decision-making by elected officials and public agencies tasked with restoring and managing the Tahoe ecosystem. This is in large part because it provides an independent basis for assessing the progress toward attainment of Tahoe's restoration goals and desired

conditions, while at the same time building our understanding of the natural processes that drive the ecosystem.

The annual *Tahoe: State of the Lake Report* presents data from 2019 in the context of the long-term record. While we report on the data collected as part of our ongoing, decades-long measurement programs, we also include sections summarizing some of the current research that is being driven by the important questions of the day and concerns for the future.

These include: the progress being made toward the clarity and ecosystem restoration through the harvesting of *Mysis* shrimp and their use as high-grade dog treats; the metaphyton and periphyton growth that impact the lake's nearshore; efforts toward the understanding and the replanting of genetically resilient trees to replace the thousands of sugar pines lost in recent years; underwater robotic instruments to study harmful algal blooms; microplastic pollution; the under-

(continued on back)

**FULL REPORT AVAILABLE AT
[HTTPS://TAHOE.UCDAVIS.EDU/STATEOFTHELAKE/](https://TAHOE.UCDAVIS.EDU/STATEOFTHELAKE/)**

TAHOE: STATE OF THE LAKE REPORT 2020

(continued from front)

recognized dangers that can be avoided when recreating on Lake Tahoe; and the reciprocal lessons that are being learned by studying deep lakes in Patagonia.

Highlights of the report include:

WEATHER AND CLIMATE CHANGE

Climate change at Lake Tahoe is evident in long-term trends, which show rising air temperatures and less precipitation falling as snow. But weather-wise, 2019 was a cold year. The average air temperature in February was 4.4 degrees F lower than the long-term average, making it the coldest February since 1956. In July, the average surface water temperature of 68 degrees F was about 4 degrees cooler in 2019 than in 2017.

In 2019, precipitation was a foot higher than the average for the past 110 years, with February also being the wettest month of the year.

Despite the cooler year, the long-term climate trends are increasing the length of the warmer months and impacting clarity.

CLARITY

Clarity at Lake Tahoe, as reported earlier this summer, was mixed in 2019. Lake clarity decreased nearly 8 feet from the previous year's dramatic 10-foot improvement. The average annual value in 2019 was 62.7 feet. The lowest value was recorded in 2017, when clarity was 60 feet.

MYSIS SHRIMP AND DOG TREATS

A clearer picture of the impact of invasive Mysis shrimp on lake health and clarity is emerging, the report says. While research is underway, the available data suggest that tiny shrimp introduced to the lake in the 1960s were responsible for the removal of Daphnia, native zooplankton that helped clean the lake. Without Daphnia, tiny algae called Cyclotella grew unchecked, and fine sediments accumulated. Climate change exacerbates the problem, as a warmer lake surface encourages tiny particles to stay afloat and reduce Tahoe's famed clarity.

The report emphasizes that past and current restoration activities to prevent additional nitrogen, phosphorus and fine particles from entering the lake are also critically important for preserving Lake Tahoe.

"We have learned that we now have two very powerful, science-based approaches for clarity and ecosystem restoration," said Geoffrey Schladow, TERC director and a professor in the UC Davis Department of Civil and Environmental Engineering.

TERC is working with the UC Davis Graduate School of Management and UC Davis School of Veterinary Medicine to launch a venture that harvests Mysis shrimp, which are rich in Omega-3 fatty acids, to make dog treats. This is part of exploratory efforts to remove Mysis in a cost- sustainable manner, restore native zooplankton and enhance lake clarity.

TAHOE FORESTS

Wildfire and drought will continue to impact the health of Tahoe's forests. Through our efforts to establish a common garden and understand the plant traits of the most resilient trees in the basin, we are part of a broader effort to preserve and enhance our forests. Working with the California Conservation Corps we have already replanted thousands of trees in the most impacted areas.

MICROPLASTICS

Microplastics are of concern everywhere. While others are focused on the sources of the plastic, our researchers are looking for where they are showing up in the lake and in the water we may one day drink. Multi-depth surveys, analysis of biota, and sediment analysis are all being conducted. In parallel with this, an extensive public education effort was launched in partnership with the Tahoe Water Suppliers Association and Raley's supermarkets.

The report's production was funded by the California Environmental Protection Agency, Lahontan Regional Water Quality Control Board, California Tahoe Conservancy, Tahoe Fund, Tahoe Regional Planning Agency, Tahoe Lakefront Owners' Association, Lake Tahoe Marina Association, Parasol Tahoe Community Foundation, League to Save Lake Tahoe, Tahoe Water Suppliers Association, TruePoint Solutions and Incline Village Waste Not program.

READ THE FULL REPORT:

<http://tahoe.ucdavis.edu/stateofthelake/>



TAHOE PROSPERITY CENTER

Tahoe Prosperity Center is
Transforming Tahoe

#transformingtahoe

tahoeprospersity.org



ALERT TAHOE

Improving public safety with the AlertTahoe
Fire Camera Early Detection System.



CONNECTED TAHOE

Increasing cell service and broadband speeds
in the Lake Tahoe basin.



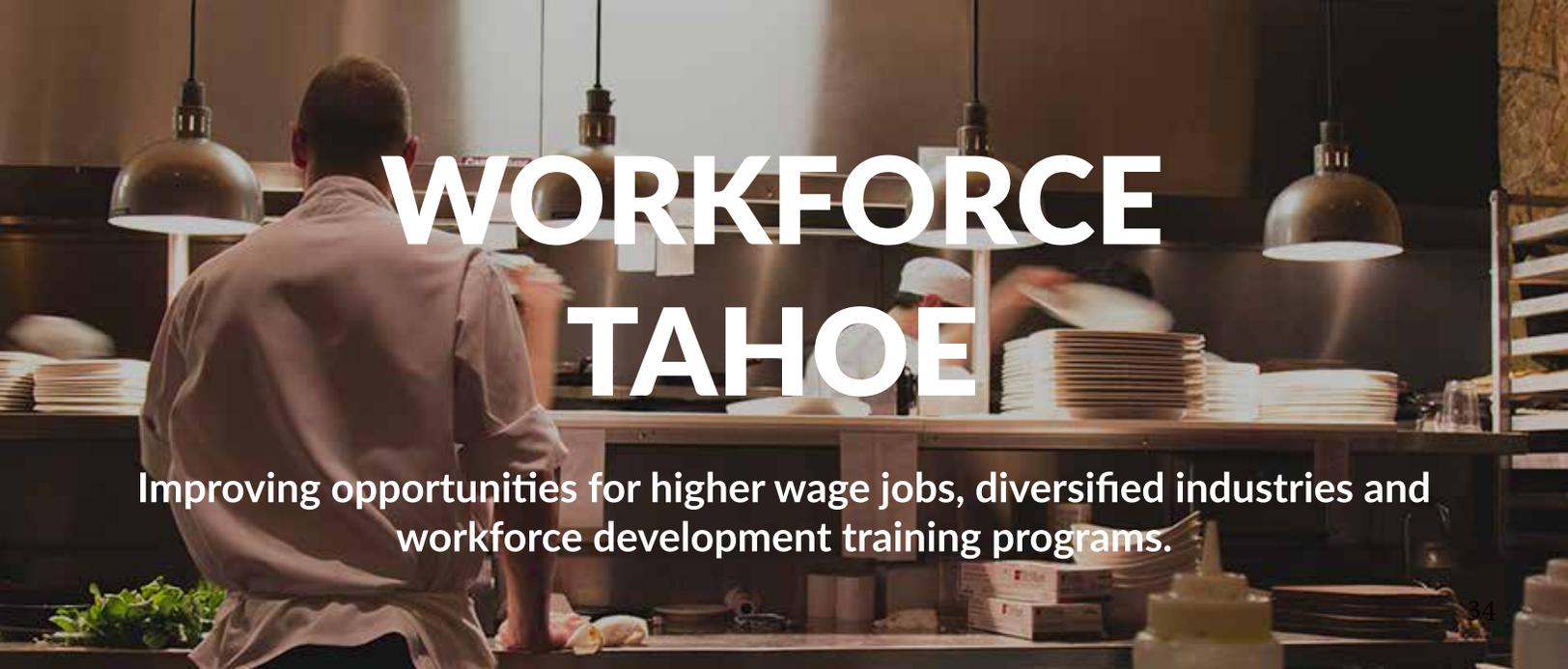
HOUSING TAHOE

Transforming Tahoe, because if you work here,
you should be able to live here.



TAHOE DATA

Gathering and analyzing local economic and community data in order for governments, businesses and investors to make well-informed decisions.



WORKFORCE TAHOE

Improving opportunities for higher wage jobs, diversified industries and workforce development training programs.

ENVIRONMENTAL IMPROVEMENT PROGRAM

A BLUEPRINT FOR CLIMATE RESILIENCE



Photo: Drone Promotions

The Washoe Tribe of Nevada and California demonstrated a deep respect for Lake Tahoe's fragile environment for thousands of years. America's second deepest lake has evolved over time to become a precious shared resource. The Lake Tahoe Environmental Improvement Program (EIP) is an unparalleled partnership to protect this resource and achieve the environmental goals of the region. Led by the Tahoe Regional Planning Agency (TRPA) in partnership with more than 80 organizations, the EIP was launched at the first Tahoe Summit and Team Tahoe was born. Local, state, and federal government agencies, private entities, scientists, and the Washoe Tribe of Nevada and California

have collaborated for more than 20 years to restore the environmental health of Lake Tahoe.

The partnership is hitting a significant milestone in its proud history. Fifty years ago, California and Nevada established TRPA with the consent of Congress. TRPA is the nation's first environmental organization with land use authority crossing state lines and continues to be unique in the United States. The bi-state compact charges TRPA with establishing a regional plan for the Tahoe Basin with the mandate to achieve environmental standards. Team Tahoe is committed to achieving these goals through epic collaboration in order to protect Lake Tahoe for future generations.

LAKE TAHOE ENVIRONMENTAL IMPROVEMENT PROGRAM

A Blueprint For Climate Resilience



LAKE TAHOE
ENVIRONMENTAL
IMPROVEMENT
PROGRAM

WATERSHEDS AND WATER QUALITY

GOALS

1. Maintain and improve lake clarity and water quality.
2. Restore ecosystem health and resilience.
3. Improve and enhance fish and wildlife habitat.

ACTION PRIORITIES

Stormwater Management Program

- Reduce Stormwater Pollution from: Roads and Highways, Forest Roads, Public and Private Parcels

Watershed Restoration Program

- Acquire Environmentally Sensitive Lands for Restoration and Protection
- Restore Priority Meadows, Wetlands, and Lake Tahoe Tributaries
- Prevent, Control, or Eradicate Terrestrial Invasive Species

Aquatic Invasive Species Program

- Prevent, Control, or Eradicate Aquatic Invasive Species

SUSTAINABLE RECREATION AND TRANSPORTATION

GOALS

1. Maintain and improve air quality.
2. Improve outdoor experiences for visitors and residents while protecting natural resources.
3. Increase the use of alternative modes of transportation and decrease reliance on the private automobile.

ACTION PRIORITIES

- Improve Public Access
- Build and Enhance Trail Networks
- Build and Enhance Transit Systems
- Improve Public Recreation Facilities

FOREST HEALTH

GOALS

1. Protect communities from damaging wildfire.
2. Restore ecosystem health and resilience.
3. Improve and enhance wildlife habitat.

ACTION PRIORITIES

Community Wildfire and Protection Program

- Implement Defensible Space on Public and Private Parcels and Utility Corridors
- Upgrade Priority Water Infrastructure to Fight Catastrophic Wildfire

Forest Restoration Program

- Reduce Hazardous Fuels
- Restore Native Forest Communities
- Implement Prescribed Fire
- Restore and Protect Native Wildlife

SCIENCE, STEWARDSHIP, AND ACCOUNTABILITY

GOALS

1. Implement leading-edge science to continuously improve projects and promote adaptive management.
2. Protect EIP investments and benefits.
3. Maintain transparency and accountability.
4. Cultivate environmental stewardship.

ACTION PRIORITIES

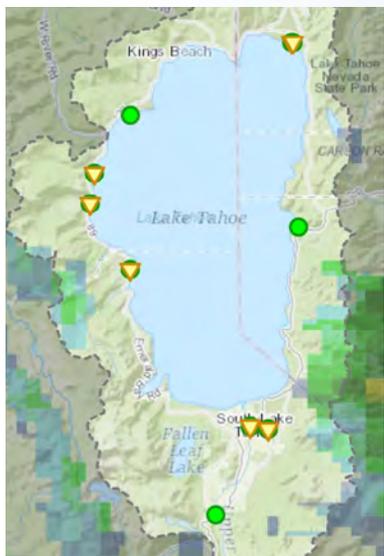
- Conduct Applied Scientific Research
- Implement Programmatic Monitoring and Reporting
- Engage Communities in Environmental Stewardship
- Utilize Innovative Technology
- Operate and Maintain Capital Projects

Lake Tahoe Water Monitoring and Research Activities

For decades, the USGS has been a leader in a wide range of scientific research and monitoring activities in the Lake Tahoe Basin. The USGS's monitoring and research programs help Lake Tahoe thrive, now and into the future.

Monitoring

Several decades ago, deteriorating water quality and clarity in Lake Tahoe prompted the initiation of environmental programs in the Lake Tahoe basin. Data on seasonal sediment loads from tributary streams, and nutrient loads from surrounding streams and groundwater aquifers, were needed to document the causes of this deterioration, the local and regional effectiveness of environmental programs, and to assure compliance with California and Nevada water-quality management programs.



[The Lake Tahoe Interagency Monitoring Program \(LTIMP\) >>](#)

USGS scientists are collecting streamflow and water-quality data at Lake Tahoe tributaries as part of LTIMP's commitment to providing long-term, consistent, reliable, and accessible streamflow and water-quality data. Together with the University of California, Davis, USGS has collected critical tributary nutrient and sediment data since 1988. Funding support: Tahoe Regional Planning Agency, Lahontan Regional Water Quality Control Board and California Tahoe Conservancy.

USGS streamgages (green circles) and water-quality stations (yellow triangles) at Lake Tahoe.

[Lake Tahoe Basin Data Visualization >>](#)

An intuitive and easy to use web application, the Lake Tahoe Hydro Mapper synthesizes, visualizes, and delivers USGS and interagency hydrologic data for the Tahoe Basin in real time. Funding support: US Forest Service.

[Volatile Organic Compounds and Fecal Coliform Sampling >>](#)

Sampling is conducted in the lake nearshore environment during high boat activity in the summer for gasoline-related compounds (BTEX, PAH) and fecal coliform (FIB). Funding support: Tahoe Regional Planning Agency.

Research

During the past twenty years, much of USGS research has focused on the clarity of Lake Tahoe. The USGS has made significant advances in understanding the sediment and nutrient sources contributing to water-quality problems. This has provided regulators with information needed to mitigate water-quality issues and with decision tools to manage aquifers in the Lake Tahoe Basin.



Water-quality sample with suspended sediment from Incline Creek, NV during a storm event.

Real-time Fine Sediment Tributary Loads

Fine sediment particles between 0.5 and 16 micrometers in size have been found to be a leading contributor to the decline in lake clarity. What are the annual tributary loadings of fine sediment to Lake Tahoe? Soon you'll be able to examine tributary fine sediment loads in real time via USGS online resources. Funding support: Tahoe Regional Planning Agency.

Data mining and machine learning to investigate fine sediment and nutrient loads

New methods are being applied by the USGS to better understand how watershed process such as snowmelt and runoff affect seasonal timing and loads of fine sediment and nutrients to Lake Tahoe. Funding support: US Forest Service.

Tahoe Science Advisory Council (TSAC) >>

The USGS is actively participating in the multi-agency, bi-state TSAC to address science questions such as:

- What are the causes of changing trends in summer and winter lake clarity?
- What changes need to be made to reduce uncertainty in the current Lake Tahoe clarity model?
- Do existing water-quality standards for Lake Tahoe overlap, and how can these standards be streamlined?

Aerial view of periphyton sampling along the nearshore of Lake Tahoe.



Assessment of Nutrient Sources using Stable Isotopes >>

High concentrations of phosphorus and nitrogen are responsible for excessive, or nuisance algal blooms in many ecosystems world-wide, and climate change is predicted to exacerbate the problem. Recent changes in periphyton biomass in the nearshore zone of Lake Tahoe may indicate changes in nutrient supply from human sources. Therefore, management actions that serve to limit external contributions of nutrients to the watershed will become even more important to Lake Tahoe in the future. The USGS is researching the sources of nitrogen and phosphorus nutrients in groundwater and in lake periphyton. Funding support: Lahontan Regional Water Quality Control Board.

Trends in Nitrogen, Phosphorus, and Sediment Concentrations and Loads In Streams

Lake Tahoe has 63 tributaries that are sources of nutrients and sediment to the lake. The lake's clarity has been diminishing due to algae and fine sediment, prompting development of management plans. To understand the relative importance of land use, climate, forest management, and other factors affecting trends in nutrient stream concentrations and loads, the USGS developed a Weighted Regression on Time Discharge and Season model to simulate trends over time.

Help Protect Lake Tahoe with Citizen Science

Share your observations of Lake Tahoe—whether at the beach, out on the water, or up on the mountain—to help researchers better understand conditions around the lake.

What you can report:

- Water Quality
- Algae Watch
- Litter-Trash Report
- Eyes on the Lake
- Pipe Keepers
- Tahoe. Rain or Snow?
- Stories in the Snow

See it. Share it.

Your willingness to take a few minutes to help us collect important information is greatly appreciated. Please share your Lake Tahoe observations with the Citizen Science Tahoe mobile app.

Citizen Science Tahoe was developed by the UC Davis Tahoe Environmental Research Center (TERC) in collaboration with the Desert Research Institute (DRI) and League to Save Lake Tahoe (Keep Tahoe Blue).



CitizenScienceTahoe.com



About BLM California

California is one of the most diverse states in the nation with public lands extending across rangelands, forests, high mountains, deserts and coast.

The abundance of natural resources on public lands managed by the Bureau of Land Management throughout California supports a multiple-use mission, while providing important economic benefits to California and the nation.

BLM California has a strong history of meeting the nation's growing energy needs, including oil and gas, renewable energy production and mining, and often sets the standard for sustainable development, while ensuring our natural, recreational, historical and cultural resources will be available for future generations.

In California, the BLM oversees:

- 15 million acres of public land (about 15% of the Golden State's total land mass)
- 47 million acres of subsurface mineral estate
- 1.6 million acres of public land in northwestern Nevada



For more information about your public lands, subscribe to *News.Bytes*, BLM California's weekly email newsletter and follow us on social media.

Enhancing the quality of life for all through the balanced stewardship of America's public lands and resources.

The BLM's mission is to sustain the health, diversity and productivity of public lands for the use and enjoyment of present and future generations.

To achieve these goals, we cultivate community based conservation, citizen centered stewardship and partnership through consultation, cooperation and communication.



2.3 Million

Visitors participate in educational and interpretive programming



1,735

Miles of nationally designated trails on public lands



6.1 Million

Acres of permitted livestock grazing on public lands



7.741 Million

Barrels of oil and 10.13 billion cubic feet of natural gas produced on public lands



25,192

Miles of off-highway vehicle routes on public lands



159,495

Acres affected by wildfire on BLM public lands in California



120

Miles of wild and scenic rivers



3.5 Million

Visits by campers and hikers on public lands



\$75.4 Million

Rent & royalties reinvested from energy production on public lands



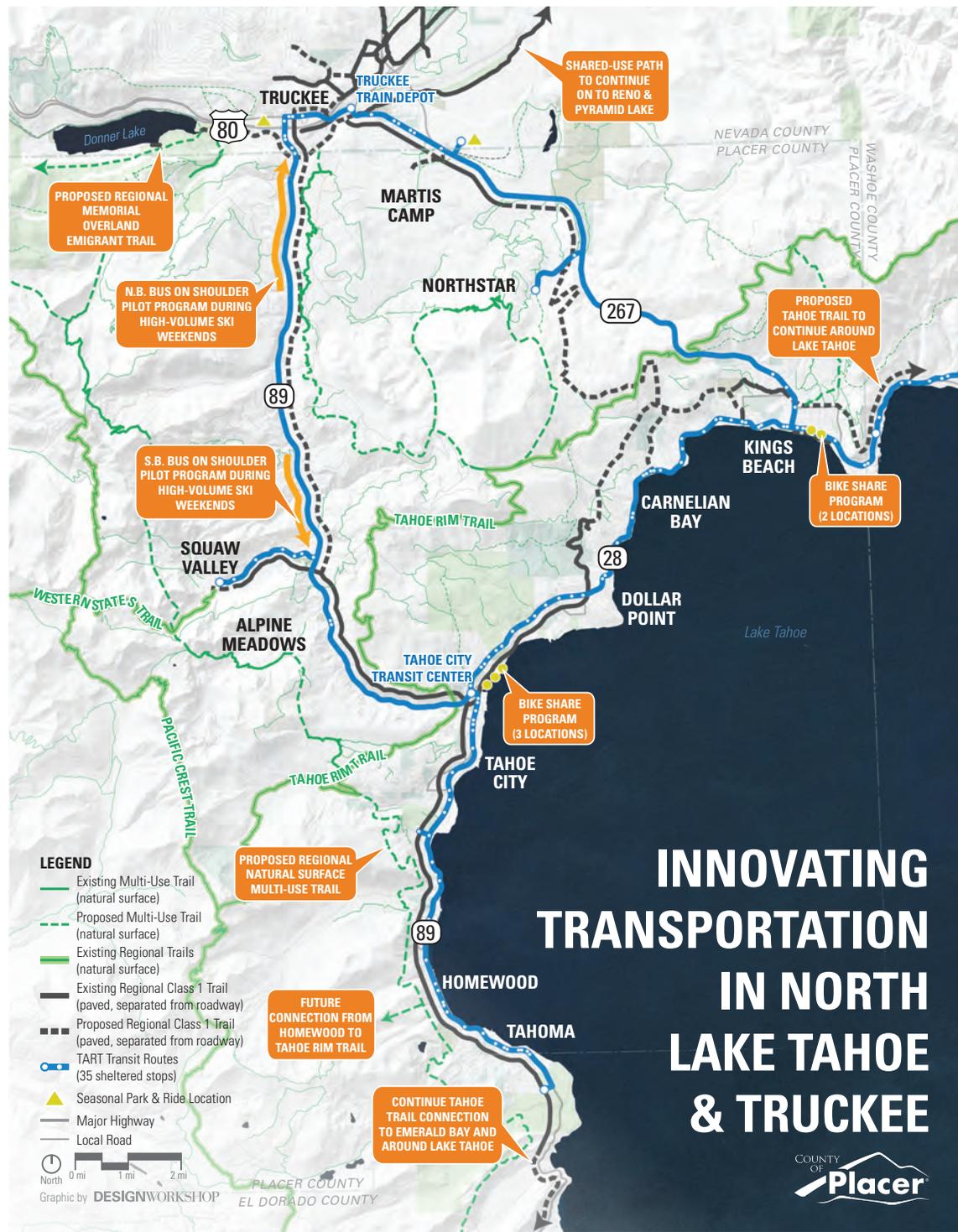
\$7.65 Million

Revenue from solar, wind & geothermal sites on public lands



Innovating North Lake Tahoe-Truckee's Environmental Footprint through a Pandemic

Responsible Recreation. Safe Mobility. Access to Trails. Increased Services.



INNOVATING TRANSPORTATION IN NORTH LAKE TAHOE & TRUCKEE



Mobility during the time of COVID-19

While the world looks a little different this year, safe and responsible mobility is more important than ever before. Placer County has increased services, partnered in educational campaigns and continued to institute new programs that offset environmental impacts. While we weather this time together, the importance of being good stewards of the land through innovative programs continues.



Trails

Placer County is working with regional partners to create a trail network connecting communities, businesses and recreation destinations along the north shore of Lake Tahoe with the I-80 corridor and the larger regional trail networks around Lake Tahoe so that people can walk or bike between them.

The primary trails (existing and planned) are part of the Resort Triangle Network. Once completed, this multi-use trail network will consist of a continuous 62 miles of trails running from the Town of Truckee through Martis Valley to Kings Beach, over to Tahoe City above Lake Tahoe's north shore, and circling back to the Town of Truckee along the Truckee River.

Moving Forward Responsibly

Partnership has been imperative during the pandemic. As county operations (safely) continue, Placer County has worked with partners to ensure responsible recreation.

- **Partnering on the Take Care campaign**—Placer County has partnered with the Tahoe Fund, the North Lake Tahoe Resort Association, and more to pass out PPE, educate and ensure responsible recreation.
- **Increased trash service**—The county has added trash bins and increased service to address the current increase in land usage.
- **North Tahoe Ambassador Program**—Placer is also working with local stakeholders and business associations to implement a North Tahoe Ambassador Program, which will work with local volunteers to help preserve local resources

Alternative Transportation

Placer County is committed to developing innovative transportation strategies in the North Lake Tahoe region by investing in programs focused on encouraging people to drive less and use alternative transportation.

Programs include:

- **Park & Ride**—A program connecting designated parking areas with popular destinations in the North Lake Tahoe area. *(Partners: Truckee North Tahoe Transportation Management Association and Northstar and Squaw Valley-Alpine Meadows resorts)*
- **Squaw-Alpine Mountaineer**—A free curb-to-curb shuttle service for residents and guests in Squaw Valley and Alpine Meadows funded by an assessment approved by commercial and lodging property owners.
- **Free TART service**—Tahoe Truckee Area Regional Transit is now free to the rider and has extended its mainline service and night service hours.



Mobility Projects

In cooperation with community partners, Placer continues to invest in projects aimed at reducing traffic congestion and improving mobility for pedestrians, bicyclists and public transit.

The projects include:

- **Kings Beach Commercial Core Project**—The recently completed project created a vibrant commercial center in the heart of Kings Beach through mobility-related improvements such as roundabouts, sidewalks, bicycle lanes, transit bus shelters and public parking facilities.
- **Kings Beach Western Approach**—A project currently being designed to enhance safety and mobility for all roadway users around the intersection of state Route 267 and state Route 28 by connecting the west side amenities, such as businesses and recreations sites, to the downtown with improved access for pedestrians. *(Partner: Caltrans)*
- **State Route 89 Bus-On-Shoulder**—Placer County is planning to convert parts of the road shoulder on state Route 89 into a third lane only accessible by buses to encourage more transit ridership.
- **State Route 89 / Fanny Bridge Revitalization**—The project, led by the Tahoe Transportation District, builds a new section of state Route 89 and a new bridge as a second crossing of the Truckee River in order to provide two safety evacuation routes and make pedestrian and bicycle routes safer, while encouraging tourism to the area. *(Partners: Tahoe Transportation District, Central Federal Lands Highway Division)*
- **Town Center Crossing Guard Program**—In order to address congestion concerns in Tahoe City and Kings Beach, Placer County is conducting a town center crossing guard pilot program during several days of high traffic to help inform improved ways to manage high pedestrian volumes crossing the highway.
- **Resort Triangle Planning Study**—A recently launched effort to develop a comprehensive implementation plan for improved public transit and non-auto infrastructure throughout the Resort Triangle area (state Routes 89, 28 and 267) with the overarching goal of reducing vehicle trips between the I-80 corridor and the north shore area of Lake Tahoe. The analysis will look at how to reduce congestion on state route 89 and 267, consider paid parking programs, developing a metric for vehicle miles traveled for eastern Placer County and developing an implementation plan for transportation demand management strategies.

Pilot Projects/Programs

Placer County continues to invest in innovative programs that provide public access and connectivity for today's users and future generations, while protecting Lake Tahoe's unique, sensitive and irreplaceable ecosystem.

TAHOE SCIENCE ADVISORY COUNCIL

Upland Ecosystem Science to Action

2021-2023



Photo by Christopher Knopp

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www.tahoesciencecouncil.org

Foundation

Scientific research has an increasingly important role in achieving land management objectives. New research consistently continues to expand our knowledge of natural systems, and it helps us predict future conditions and guide planning to respond to climate change and related challenges. No place is this more apparent than Lake Tahoe.



There are 63 watersheds that include a diverse array of terrestrial and aquatic ecosystems and feed directly into Lake Tahoe. As a result, the health of the Lake is highly dependent on the health of these upland ecosystems. As part of the 2019/2020 work plan, the Tahoe Science Advisory Council (Council) committed to developing an Upland Ecosystem Science to Action Plan that guides research and monitoring needs to promote the resilience of upland ecosystems, particularly focused on the threat of climate change and the persistence of valued benefits and services.



Objective

The objective of Upland Ecosystem Science to Action is to establish and implement a forward-looking vision for near- and long-term research that improves future outcomes, promotes resilience, protects resources, adapts to change, and enhances ecological and community sustainability. The members of the Upland Science Team are conducting a synthesis of Lake Tahoe upland ecosystem research investments to inform and shape the plan components outlined below.



Co-Development Process

Upland Ecosystem Science to Action is based on the premise that an effective research-management partnership is the key to developing and implementing an effective research agenda that delivers applicable and impactful science products.



Priority Focal Areas

1) FORESTS AND FIRE

Forest health and fire dynamics are a primary concern in the Lake Tahoe basin. They have a significant influence on nearly every aspect of environmental quality. An improved understanding of forest health and fire dynamics is needed to enable managers to successfully respond to the challenge of future forest resilience and sustainability.

2) TERRESTRIAL AND AQUATIC LINKAGES

Terrestrial and aquatic ecosystems are highly intertwined. Forest management activities affect forest hydrology, water availability, and downslope aquatic ecosystems. An improved understanding of these linkages is needed to successfully co-manage terrestrial and aquatic ecosystems across the basin.

3) BIOLOGICAL INTEGRITY

Basic data on the occurrence, abundance, and distribution of plants and animals are fundamental to understanding and predicting biodiversity risks and vulnerabilities. An improved understanding of current distributions and anticipated future climate responses is needed to enable managers to design effective persistence and adaptation strategies in response to climate change.

Next Steps - 2021-2023

1 - NEAR-TERM RESEARCH INVESTMENTS

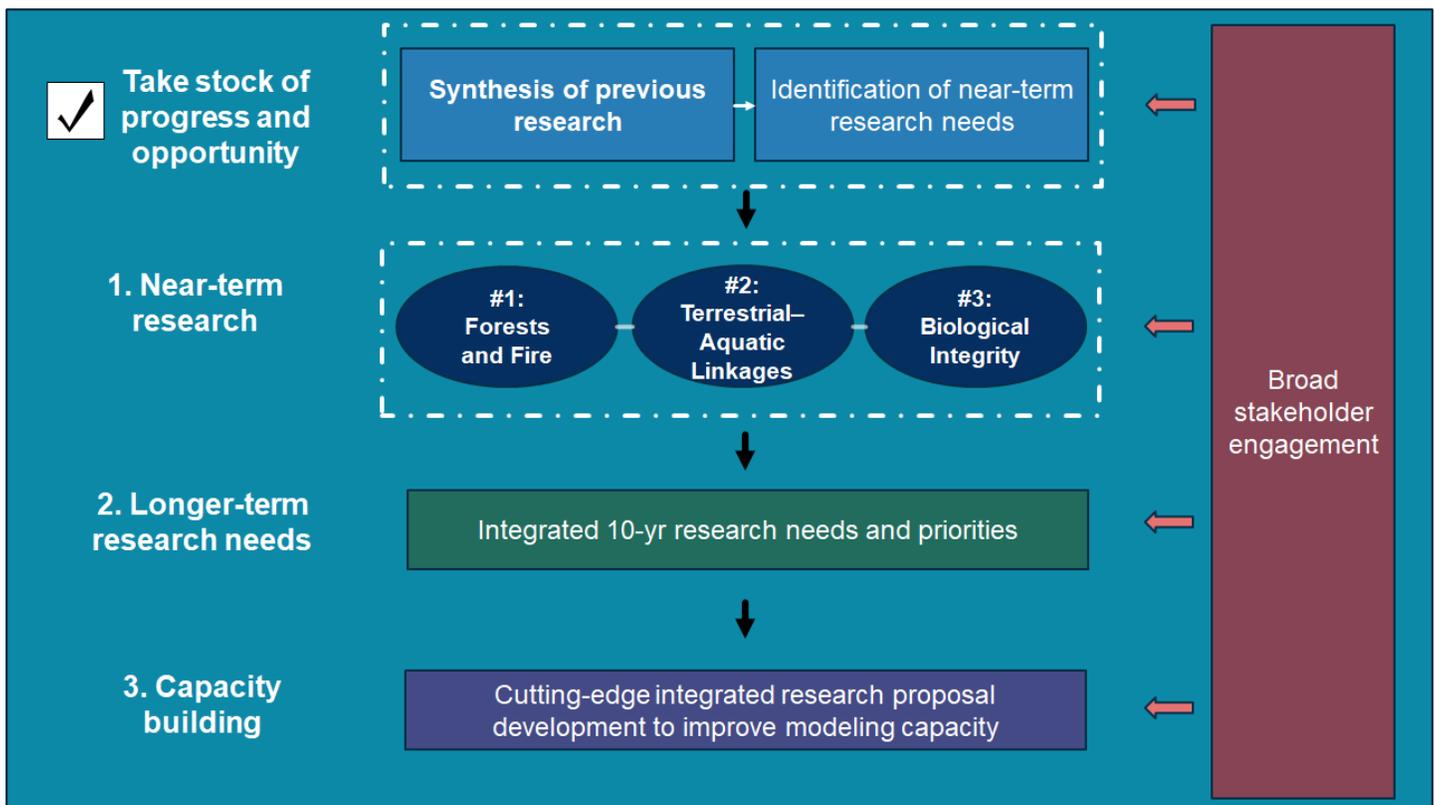
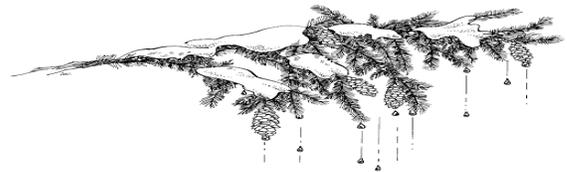
The Council identified key questions and specific information needs for each priority focal area. The activities include gathering, analyzing, and evaluating existing information and tools, and improving tools based largely on available data.

2 - LONGER-TERM RESEARCH NEEDS

The Council will develop a robust set of longer-term (10-year) research needs and priorities integrating across Upland and Lake Tahoe Science to Action Plans. Projects will be co-developed with stakeholders and informed by the synthesis of research progress to-date and near-term research investments.

3 - CAPACITY BUILDING

The Council will develop research proposals targeting funding sources inside and outside the basin to advance cutting-edge modeling and analytical capacity that supports and informs management across the basin and into the future.



Southern Nevada Public Land Management Act (SNPLMA)



FAQ

How does the land sale process work?

For a parcel of land within the disposal boundary to be sold, the interested person/company must first identify the parcel(s) to the local government where the land is located. If the local jurisdiction agrees to the parcel sale, it submits a nomination to sell the land to the BLM. Once parcels are nominated for sale by the local government, the BLM completes the necessary processes to ensure the parcel may be disposed of. This includes review of the parcel(s) for threatened and species habitats, hazardous material issues, prior existing rights, etc. The BLM makes the final determination on which lands may be offered for sale.

How does the funding decision process work?

The Secretary of the Interior and the Secretary of Agriculture make final funding decisions. The SNPLMA Implementation Agreement established the Executive Committee made up of the four primary federal agencies to oversee the implementation of SNPLMA, the Partners Working Group to provide recommendations to the Executive Committee, and a subgroup for each program category that recommends ranking criteria and ranks and scores each round of projects.

How many projects have been funded by SNPLMA?

SNPLMA has funded over 1,500 projects that have enhanced a myriad of recreation opportunities, improved access and significantly modernized infrastructure important to all public land users, promoted species and habitat conservation, protected environmentally sensitive land, restored landscapes and reduced the risks to communities from wildfire.

How many acres remain within the current disposal boundary?

At the start of FY 2019, over 30,000 acres of federal lands remain available for disposal within the SNPLMA disposal boundary. Almost 38,000 acres have been disposed with the boundary through land sales and Recreation & Public Purpose Act leases and patents.

What are some examples of projects that have been funded with SNPLMA?

It's tough to pick favorites out of over 1,500 projects. Please visit <https://snplma.blm.gov/snplma/home.do> to learn more.

What happens with the funds that are not allocated?

The SNPLMA account is managed by the BLM and the agency ensures there is sufficient liquidity in the account to cover cash disbursements for approved projects. Surplus monies are invested in Treasury Bonds and interest returned to the Special Account. The SNPLMA legislation lists what funding can and cannot be used for without amending the legislation.

How are lands disposed outside of disposal boundary?

Public lands outside of the SNPLMA boundary must be identified for disposal in the Resource Management Plan (RMP.) In the current RMP, Approximately 123,293 acres of public lands are available for disposal outside the SNPLMA boundary. Lands disposed outside the SNPLMA boundary do not follow the same rules for nomination nor is funding distributed in the same way.

Who manages the funding?

The SNPLMA account is managed by the BLM. Most federal agencies receive funding through quarterly transfers also known as Interagency Agreements or transfer authorization letter (BLM receives funding through an internal task order.) Most non-federal entities receive funding through Assistance Agreements. Entities have 12 months from funding approval to begin work on approved projects. Each quarter, entities report project progress and inspections occur to ensure funding is used for the approved purpose.

How has affordable housing been impacted by SNPLMA?

At the start of FY 2019, a total of 25 acres have been sold for four different affordable housing developments with a total of 653 units, many of which are designated for low income senior citizens. 900 acres are currently reserved for affordable housing development.

How do local, state and Federal agencies work collaborate on SNPLMA?

The SNPLMA engages 48 different entities across the Federal, State, local and other non-federal spectrum of entities. Agencies collaborate from parcels nominated for sale to recommend funding for projects. This collaboration has achieved significant improvements to Nevada's landscape, public lands and recreation facilities.



Southern Nevada Public Land Management Act (SNPLMA)



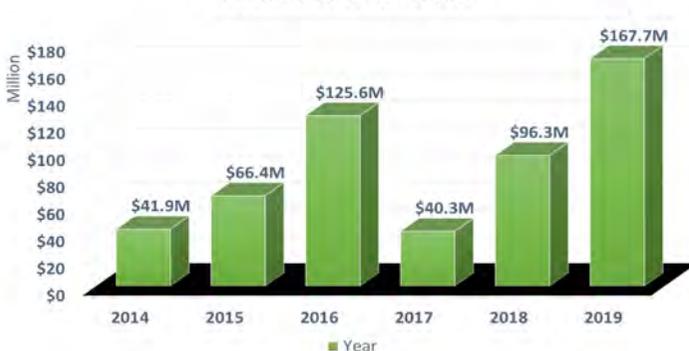
Fact Sheet

- SNPLMA allowed for the sale of BLM-administered federal lands within a congressionally designated boundary in the Las Vegas Valley.
- Proceeds from the SNPLMA related land sales are divided between the State of Nevada general education program (5%), the Southern Nevada Water Authority (10%) and the SNPLMA Special Account (85%).
- Currently, 17 rounds of SNPLMA funding have been approved and 17 rounds of nominations have been accepted.
- After Round 17 was approved in FY 2019, almost \$3.6 billion from land sale proceeds has been provided to approved projects.
- SNPLMA has funded over 1,500 projects that have enhanced a myriad of recreation opportunities, improved access and significantly modernized infrastructure important to all public land users, promoted species and habitat conservation, protected environmentally sensitive land, restored landscapes and reduced the risks to communities from wildfire.
- Funding categories are: parks, trails, and natural areas to benefit certain counties in Nevada; conservation initiatives on federal land in certain counties in Nevada; Clark County multi-species habitat conservation plan; implementation of the Eastern Nevada Landscape Restoration Project; Lake Tahoe Restoration Act of 2000 projects; hazardous fuels reduction and wildfire prevention projects; capital improvements to certain federally managed areas; and environmentally sensitive land acquisitions.
- The SNPLMA engages 48 different entities across the Federal, State, local and other non-federal spectrum of entities. Agencies collaborate from parcels nominated for sale to recommend funding for projects. This collaboration has achieved significant improvements to Nevada's landscape, public lands and recreation facilities.
- SNPLMA also provides for disposal of land for affordable housing at less than fair market value. At the start of FY 2019, 25 acres have been sold for four different affordable housing developments with 653 units, many of which are designated for low income senior citizens.

Amendments to the Act by Year

1999 → 2000 → 2002 → 2003 → 2004 → 2006 → 2009 → 2015

FY Land Sales 2013 to 2018*



Round Funding 12 to 17**



* Figures are from the Public Land Statistics
 ** Graph figures include Special Account Reserve funding