



**KEEP
TAHOE
BLUE®**

League to Save Lake Tahoe

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NEWSLETTER 2018

Protecting Lake Tahoe since 1957

What's inside

LEADERSHIP AND INNOVATION TO KEEP TAHOE BLUE

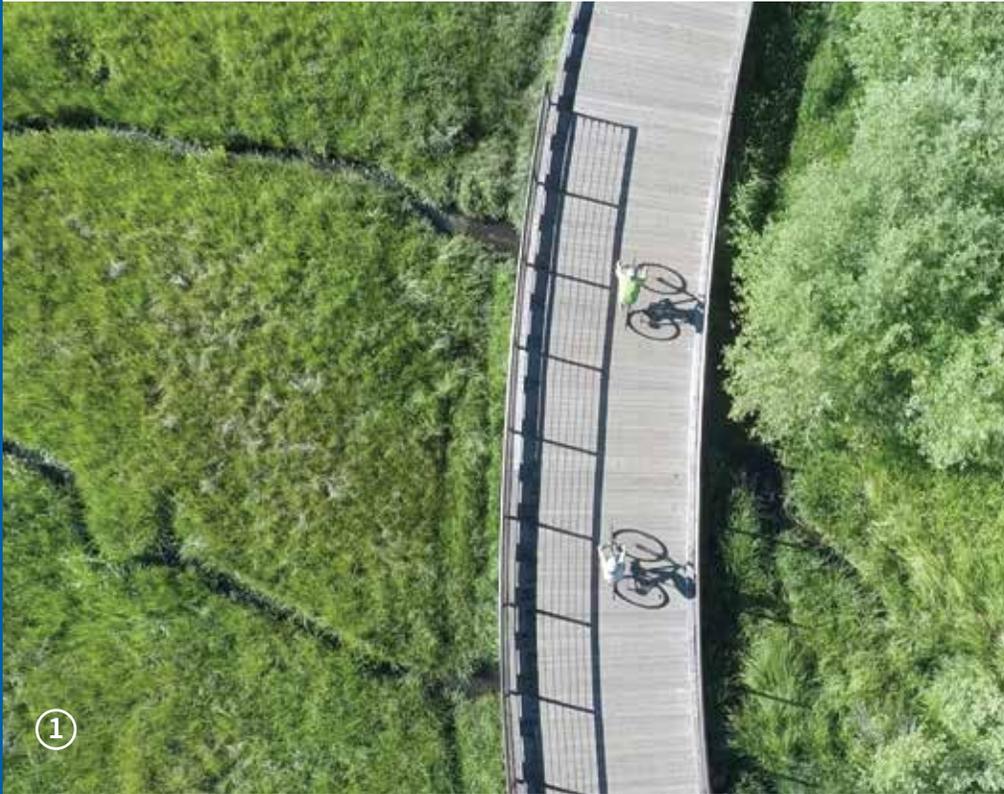
3 There are more convenient and fun ways to get around Lake Tahoe these days using app-based services for bikeshare and microtransit. Find out how GPS data from these programs is informing transportation solutions at Tahoe on page 3.

4 The League's chief executive officer, legal and policy director and Nevada Sen. Catherine Cortez Masto (pictured left to right) meet to discuss building support for Lake Tahoe. Read more about the League's work in California and Nevada on page 4.

5 The power of tiny bubbles may be the key to stopping the spread of aquatic invasive plants throughout Lake Tahoe. Dive deeper into how this innovation is addressing a decades long problem at the Tahoe Keys on page 5.

8 The Tahoe and Chile delegation, including the League's chief strategy officer (far right), gather at the US Embassy in Santiago, Chile to share Tahoe lessons for Chilean lake protection. Find out more about the Chile/Tahoe exchange on page 8.





WE KEEP TAHOE BLUE BY

Combating pollution

① Two-wheeling in Tahoe

Sitting in traffic and searching endlessly for parking is not how anyone wants to spend time at Lake Tahoe. The success of last year's League-led bikeshare program with Lime demonstrated that if given the option, Tahoe visitors and locals will leave the car behind. In 2018 Lime returned to South Lake with an expanded fleet of GPS tracked rides to get people around town. Dockless bikes and electric scooters are getting locals to and from work and visitors to their favorite shops, beaches and restaurants. In just four months, Lime riders have logged 220,270 miles — 8 laps around the earth — removing 172,173 car miles* from Tahoe's packed roads and the associated pollution clouding Tahoe's waters. The League is using travel data gathered from these rides to inform transit-planning efforts with Basin partners and inspire new endeavors in transportation improvements.

② Getting around Tahoe just got a lot easier

Traditional transit doesn't work in places like Lake Tahoe. Massive seasonal swings in population and weather make Tahoe a hard place to operate year-round buses, but with 24 million annual visitors in 10 million cars, something must be done. Whatever the solution, it must be as adaptable and

responsive as Tahoe is dynamic. The League's chief executive officer, Darcie Goodman Collins, Ph.D., is heading a committee of California and Nevada leaders charged with innovating on-the-ground solutions to address Tahoe's transportation challenges. Microtransit, a sleek mid-size shuttle service that can be booked using a smartphone app, has been gaining traction in other regions where alternatives to the private car are needed. The League rallied local business support and worked with regional planners to bring San Francisco-based Chariot to South Lake to test service for three months in the busiest tourist center of Tahoe. The data gathered from the pilot, ending in mid-October, and the lessons learned will continue to spur momentum for the next step forward.

*California Air Resource Board calculation, October 2017

Stormwater runoff from our roads and urban areas is the leading cause of Lake Tahoe's clarity loss. Transportation improvements can reduce pollution at the source.



Decades of unchecked development have destroyed much of Tahoe's natural filtration systems (meadows and marshes). Climate change adds further stress. Restoration is the best method of bringing back these natural processes.

WE KEEP TAHOE BLUE BY

Promoting restoration

① Restoration redux: volunteers spring into action

On a blustery day in June, 100 volunteers descended on the Upper Truckee River near the South Tahoe airport for the League's Tahoe Forest Stewardship Days, to repair damage from the previous two years' large winter storms. Restoration work on this stretch of river has been ongoing for several years but a river is dynamic, meaning repeat efforts are essential for successful restoration. The volunteers, led by League and City of South Lake Tahoe staff, made quick work of restabilizing over 3,650 feet of damaged streambank with native willow and wood rose. Our work to restore the river's natural processes while still balancing human uses near the river (airports, neighborhoods, roads) will take an extended commitment. Tahoe's community is ready and willing.

Read more about League volunteer efforts this past September in partnership with the US Forest Service's National Public Lands Day at keeptahoeblue.org/tfsd.

② States step up in support of Lake Tahoe

Restoring decades of damage to our meadows, marshes and rivers not only takes many years to complete but also a lot of public and private funding to see it through. With the uncertainty of federal dollars being appropriated by Congress anytime soon, the League is leading the way in both California and Nevada to ensure Tahoe has the support it needs to restore and preserve its famed clarity. The League's Dr. Collins participated on an executive committee for CA Prop 68, which the voters approved in June, bringing a minimum of \$27 million to Lake Tahoe. Currently the League is at the forefront of a campaign for CA's Prop 3, which could bring another \$110 million to Tahoe if approved by voters this November. Nevada has taken notice as well and the League is building relationships with leadership to ensure Tahoe remains a top priority for the Silver State. But it doesn't stop with securing the funding. Dr. Collins sits on a Tahoe advisory committee to guide expenditures towards the most beneficial projects.



①



②

Aquatic invasive species are already established and spreading in Lake Tahoe. They degrade water quality, harm native species and destroy the Lake's fragile ecology.

WE KEEP TAHOE BLUE BY

Tackling invasive species

① Innovating old technology in a new way

Shallow, warm water protected from wind and waves are the perfect conditions for swimming, paddling and making yourself at home while out on the Lake. Aquatic invasive plants and the invasive fish that live amongst them would agree. And while Lake Tahoe is typically known for its deep cold water, things have been warming up recently, opening the door for these invaders to spread out and take hold in new places (see page 7 for more on a changing Lake Tahoe). Now, more than ever, it has become essential to contain the source of the problem, large infestations in the Tahoe Keys lagoons and some marinas being spread by boats, until a long-term solution for treatment at those sites can be implemented. So how do you stop this spread while still allowing boating?

It turns out the solution may not be all that complicated. A wall of tiny bubbles or “bubble curtain” is a method that has been used for decades in other parts of the world to do everything from stopping marine debris from entering marinas

to corralling schools of tuna being farmed in the open ocean. League scientists worked with experts from Canada and the Tahoe Keys Property Owners Association to design, fund and install a custom bubble curtain across the channel between the Tahoe Keys lagoons and Lake Tahoe. The “V-shaped” wall of air dislodges plant fragments from boats passing through and moves them to the edges of the channel where they can easily be collected and removed. Thousands of other plant fragments floating in the lagoons that would normally be carried out into the Lake on surface currents are also trapped and discarded. Effectiveness monitoring has been in place since the project installation in July and will be used to assess if similar efforts can be installed at other infested marinas around the Lake.

Learn more about the League's work in the Tahoe Keys at keptahoebblue.org/tahoe-keys

② *Eurasian watermilfoil, an aquatic invasive plant, creates thick mats which impede recreation and spread to the lake attached to boats.*



Tahoe's shoreline is deteriorating in many areas. Rocks are covered in algae, invasive species are taking over, once pristine areas are marred by trash and the water is getting dirtier.

WE KEEP TAHOE BLUE BY

Protecting Tahoe's shoreline

① Record numbers of volunteers visit Tahoe beaches... to clean them

What could be more fun than celebrating Independence Day with an amazing fireworks show from the shores of Lake Tahoe? Well, according to some, it's joining hundreds of your fellow Tahoe-lovers for the next day's trash cleanup.

"I come to Tahoe just for the cleanup each year," says LaFonda Quiggins from Roseville. "It's the best way to celebrate the Lake."

For the last five years the League has hosted the Keep Tahoe Red White and Blue Beach Cleanup at several locations around the Lake to scour the beaches for litter after 4th of July revelers head home. Over 500 volunteers participated in 2018's event making it the largest single day cleanup effort at Lake Tahoe, and there was plenty to do.

Nearly 1,500 pounds of trash was removed from nine miles of shoreline with single-use plastics once again topping the list of most commonly found trash items at over 18,000 pieces collected. Fortunately there are alternatives for most of these items that are either reusable (the best option) or

at least biodegradable, unlike plastic which remains in the environment forever.

② Data driven advocacy informs environmental policy

The best way to prevent plastic trash from tainting our beaches is to stop it from getting there in the first place by reducing it at the primary source; Tahoe's restaurants and stores. But businesses willing to make the switch on their own are too few and far between. In early 2018, the League's policy and community engagement teams joined forces with staff at the City of South Lake Tahoe to get a polystyrene ban enacted. Polystyrene is a type of plastic often found in single-use items such as straws, utensils, take-out containers and foam coolers. Years of litter data from League cleanups crystallized the problem, providing city decision makers the evidence they needed to take the lead in passing the first ordinance of this kind at Lake Tahoe. The ban goes into effect in October and the League will be here to ensure the success in South Lake Tahoe spurs action around the rest of the Lake.



A lake in constant motion

All water lovers appreciate a calm morning on Lake Tahoe when the still, glassy waters reveal deep granite boulders that seem to be only inches from the surface. But that dormant display is merely a façade, as the Lake is in constant motion. Known as lake mixing, this physical process has for millennia served as the Lake's natural restorative process that can rebalance oxygen, nutrients and water temperatures while allowing pollution from the land to settle to the bottom. And for trivia lovers, lake mixing is the reason why Lake Tahoe never freezes.

On average Lake Tahoe experiences complete deep water mixing every four years where the entire Lake essentially flips upside down as surface waters cool and sink. According to the recent State of the Lake report from UC Davis' Tahoe Environmental Research Center, 2018 is the seventh year in a row without complete mixing as surface waters only made it to about half of the Lake's depth. So what is causing this and more importantly, what does it mean for Tahoe's future?

The culprit is a rapidly warming climate that increased average water temperatures at Lake Tahoe over the last four years 10 times faster than the previous 40 years. Surface

water temperatures in July 2017 were the highest on record and a whopping 6.1 degrees Fahrenheit warmer than 2016. Not only is the Lake getting warmer but it is staying that way much longer as warmer winters are unable to cool the Lake back to "normal." The greater the difference in temperature between the surface waters and the deeper colder waters the more difficult it becomes for lake mixing to reach Tahoe's immense depths. So while the shock to the body from jumping into Lake Tahoe may be subsiding each summer, the shock of seeing murkier waters choked with algae and spreading aquatic invasive species may become more common.

The League is paying attention and has a plan to help restore the Lake's resiliency in the face of a changing climate. We will continue to combat pollution, tackle invasive species and protect Tahoe's shoreline to stop pollution before it can reach the Lake while we double down on promoting restoration of Tahoe's natural filters; streams, meadows, marshes and forests. Lake Tahoe has proven it can restore itself with some help from those of us who appreciate and enjoy it the most. Together we Keep Tahoe Blue.



SHORELINE PLAN NEARS COMPLETION

The latest attempt at a plan to guide boating access to Lake Tahoe has rounded the corner to adoption. The number, type and design of buoys, piers, boat ramps and marinas has long been a contentious issue at Tahoe. The League advocated for this current effort to account for fluctuating lake levels and the spread of aquatic invasive species by boats, both fueled by climate change. Read more about the Shoreline Plan at keeptahoeblue.org/shoreline.



Tahoe: a case study for international lake conservation

Lake Tahoe is a national treasure visited by tens of millions of people every year. Ensuring that Tahoe remains as awe inspiring as it is today with that much tourism pressure takes a coordinated and sustained effort from the diverse Tahoe community of outdoor recreationists, government agencies, local businesses, private developers and environmental advocates. For 61 years the League to Save Lake Tahoe has depended on the science from research groups like UC Davis' Tahoe Environmental Research Center to advocate for regional environmental protections and engage the public on ways that they can Keep Tahoe Blue. Tahoe's successes, challenges and lessons learned over the decades provide a blueprint for lakes experiencing similar pressures all over the world.

The Lakes Region of southern Chile, in South America, is one of those very places. Its rugged mountain ranges dotted with blue lakes and towering volcanoes has ignited a thriving tourist economy fueled by those hoping to experience these natural wonders firsthand. However, the impacts from tourism in Chile are just beginning to come to a head while in Tahoe we have been addressing these issues since the 1950s. A group of forward thinking Chileans are attempting to get ahead of the problem by sharing the Tahoe story with decision makers and influencers throughout the region and country.

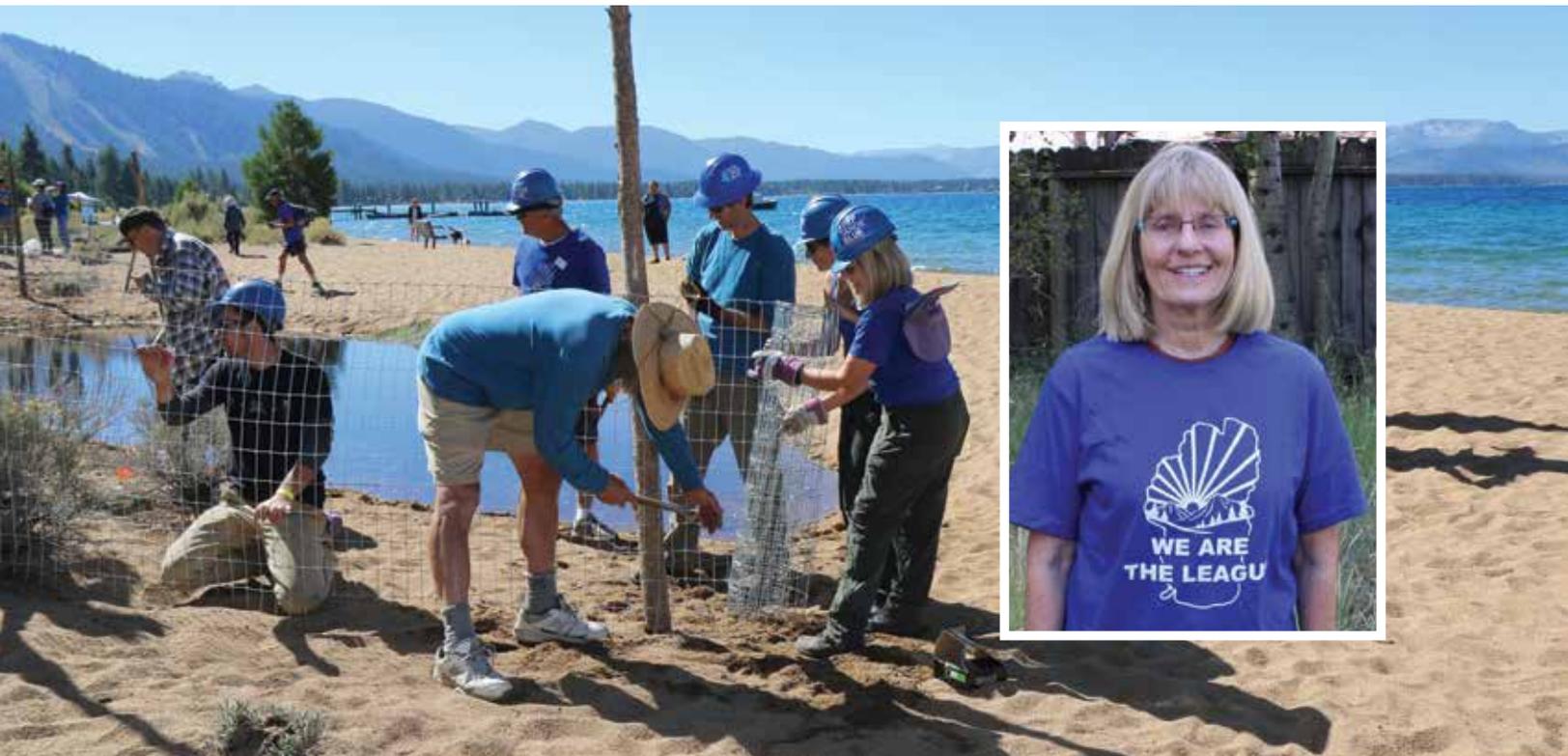
In May the US Embassy funded a trio of Tahoe experts in science (UC Davis), government and environmental advocacy (Tahoe Regional Planning Agency), including the League's chief strategy officer, Jesse Patterson, to travel to Chile and

exchange ideas. A week of meetings and workshops with the Ministry of Environment, local government officials, research universities, environmental non-profits and private sector interests culminated in a day long seminar at Lake Panguipulli. A standing room only audience heard presentations from Patterson and his colleagues on their work in Tahoe followed by a robust working group session to apply Tahoe's lessons to Panguipulli. Tahoe's combination of science-driven policy applied on a watershed scale, coupled with extensive community engagement, may allow Panguipulli to strike the desired balance between tourism and environmental preservation before their lakes are lost.

The ideas and enthusiasm generated out of this seminar resulted in the signing of a resolution between Chile and Tahoe to continue working together and exchanging ideas. The League will remain at the forefront of this effort as Chile develops their own "Keep Tahoe Blue" environmental advocacy organization and rallying cry, known as Chile Lagos Limpios (Chile Clean Lakes).

Read more about the League's leadership in Chile at keeptahoeblue.org/chile.

Shoshuenco Volcano as seen from Lake Panguipulli in southern Chile's Lake Region. Many lakes in Chile are being threatened by the same tourism impacts as Lake Tahoe and an information exchange is underway to protect these special places.



CORE VOLUNTEER HIGHLIGHT

Janet Wesse: passion in action

The evolution of a Tahoe-lover from first time visitor to annual ski tripper and eventual resident has been a path taken by many outdoor enthusiasts. For Janet Wesse that path paralleled her commitment to Keep Tahoe Blue. In the early 2000s Janet and her now husband, Steve, visited Tahoe for the scenic vistas and to “pizza” ski down the snowy slopes. While here they picked up one of the ever-present Keep Tahoe Blue stickers, slapped it on their car and headed back home to Illinois. After another decade of Tahoe adventures, the draw of the Lake was powerful enough to make the western migration permanent.

In 2017 Lake Tahoe became Janet and Steve’s full-time backyard, settling in neighboring Minden, NV. They now take the weekly jaunt up and over the hill to see the magnificent blueness of Tahoe and to give back. In just one year Janet has logged over 60 hours volunteering with the League in almost every capacity imaginable. She can be seen around town promoting volunteer events by passing out flyers to local businesses, removing litter from our beaches, chopping down encroaching bushes to help native trees thrive and even monitoring a stormwater pipe as a citizen scientist in the Pipe Keeper program. As if that were not enough, Janet is also a proud donor and member of the League. We caught up with Janet to see what inspires her to do so much for Lake Tahoe.

You are both a member and a volunteer. Why did you want to get involved with Keep Tahoe Blue?

There is only one Earth and one Lake Tahoe so we better take care of it. If we kill the planet then nothing else really matters. If you have money to give that is great, but if you don’t you can still help and the League has so many fun and meaningful ways to get involved. The staff is also so supportive that it makes it easy.

What has been your favorite part of volunteering?

There has just been so much hands-on work and getting outside near the Lake is so uplifting. At Tahoe Forest Stewardship Days last year I learned how to do something totally new and felt like I was doing something real to help a place I love.

Anything unexpected in your time as a Core Volunteer?

It’s cool ‘cause sometimes I’ve seen someone about to flick a cigarette butt on the beach and I’m picking them up and I just give them a look and they go “we’ll just be putting this in my pocket.” It makes other people think about what they’re doing.

Janet Wesse, one of the League’s newest Core Volunteers, helps build a fence to protect the threatened Tahoe Yellow Cress plant.



Bay Area young professionals Keep Tahoe Blue

Why Lake Tahoe? “Why not!” exclaimed Nora Hennings, who is both a member of the San Francisco chapter of Young Professionals in Energy (YPE) as well as the League’s Associate Board which helps to connect the Bay Area’s younger generations with the League’s mission and work. Lake Tahoe is an incredible haven for anyone who loves the outdoors and is a favorite weekend getaway for young professionals like Nora and her Bay Area cohorts. But transportation challenges in and around the Lake are increasingly on their minds and a lack of options is a growing frustration. “We consider it every time we make the trek out from the Bay Area,” she said. The League’s many environmental and sustainability initiatives and a similar membership base are why YPE and the Associate Board combined efforts to host a Keep Tahoe Blue fundraiser this past Spring, raising over \$800.

The YPE San Francisco chapter is part of a global organization with over 4,000 members in the Bay Area alone and a mission to facilitate the advancement of young professionals in the energy industry. The networking group emphasizes educational and civic service opportunities with a large part of their membership focused on renewable energy. Hosting an event in partnership with the League’s Associate Board, geared toward the environmental health and sustainability of Lake Tahoe, was a natural fit.



The fundraiser, held at the Press Club in San Francisco, brought together over 50 YPE members to learn more about the League and its programs. A recurring theme during conversations was frustration with traffic and transportation options around the Lake. Those in attendance were particularly interested in the innovative work the League is doing to address these issues, such as Lime bikeshare and Chariot microtransit (see page 3). Not only do these solutions address the quality and convenience of travel to and around the Lake they also help address pollution clouding Tahoe’s waters.

In the immediate future, Nora and the Associate Board are planning for more opportunities like this that not only promote awareness about threats to the Lake and the League’s work to resolve them but also raises funds to make it happen. The League will continue to strengthen its outreach to young professional organizations like YPE whose members represent the next generation of Lake Tahoe stewards. “We are just scratching the surface,” Nora concluded.

Young professionals in the Bay Area gather for a fun evening of sharing their favorite Tahoe stories, discussing threats to the Lake and raising funds to address these challenges.

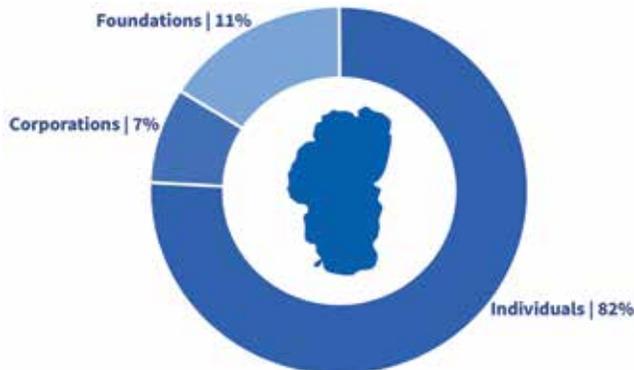


STRONGER TOGETHER

With over 6,500 members representing every state, and an online following of over 124,000, the League to Save Lake Tahoe is a powerful and influential voice for environmental protections at the local, state and national level. As an advocacy organization, membership is what keeps us thriving and allows our collective voices to be heard. Our effectiveness and impact over the years comes not only from our innovative and science-based approach to protecting the Lake, but also from the power of our membership. When League leadership meets with elected officials in Sacramento, Carson City and Washington, D.C. they know that we are speaking on behalf of thousands of Tahoe advocates. Together we collaborate with other organizations to put in place the protections and strategies that will Keep Tahoe Blue for generations to come.

Please join us today – and be one of the first to get our new membership sticker! Protecting the Lake requires us all.

League membership breakdown



OUR MISSION

The League to Save Lake Tahoe is dedicated to protecting and restoring the environmental health, sustainability and scenic beauty of the Lake Tahoe Basin. We focus on water quality and its clarity for the preservation of a pristine Lake for future generations.

YOUR KEEP TAHOE BLUE TEAM*

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*As of September 30, 2018

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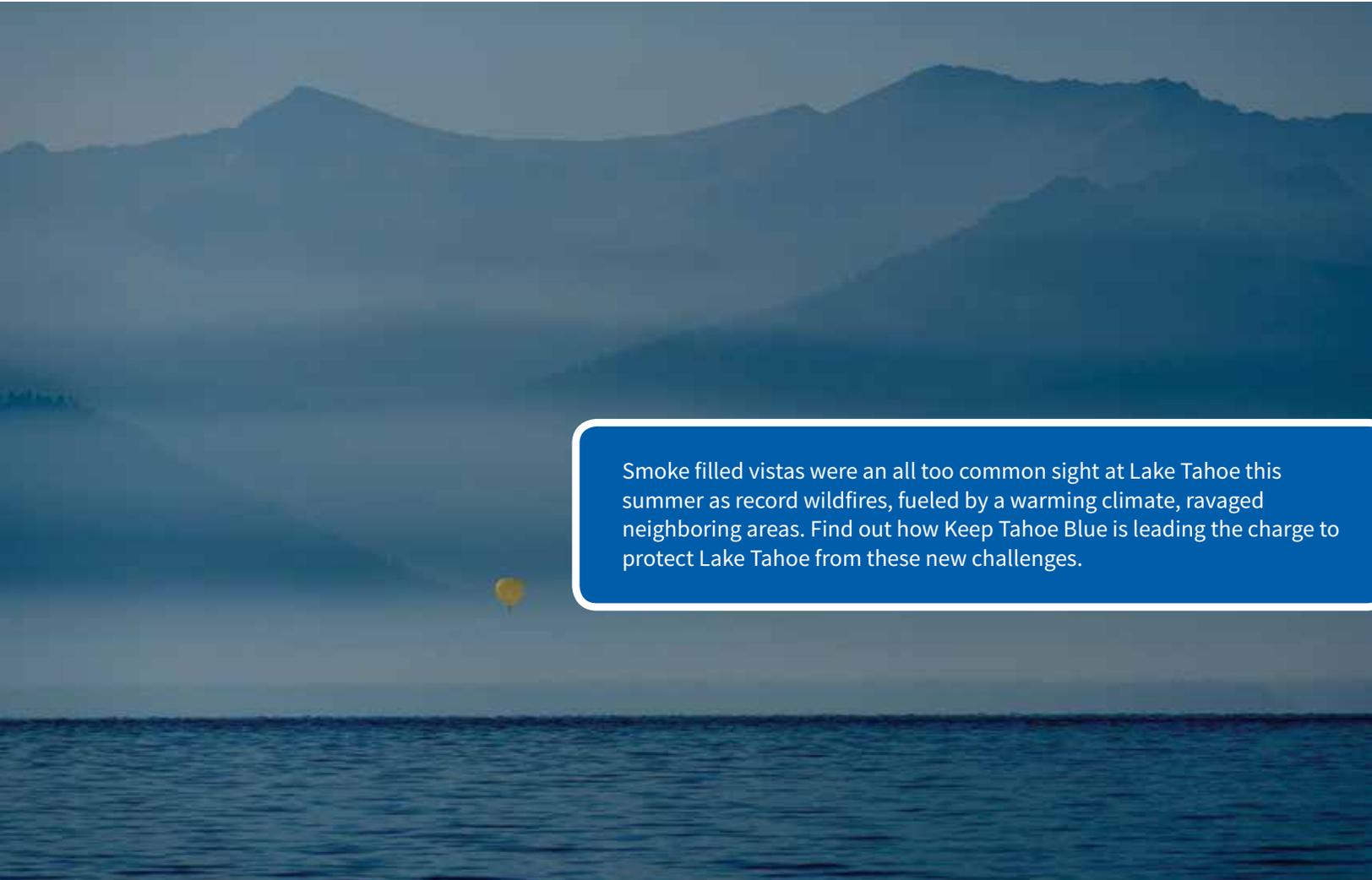
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Smoke filled vistas were an all too common sight at Lake Tahoe this summer as record wildfires, fueled by a warming climate, ravaged neighboring areas. Find out how Keep Tahoe Blue is leading the charge to protect Lake Tahoe from these new challenges.