Opinion: Work must continue to preserve Lake Tahoe

By Joanne Marchetta

Lake Tahoe is one of the clearest lakes in the world, known around the globe for its spectacular scenery. The lake's water clarity is one of the many attributes that make the Tahoe basin such an amazing natural resource and a mecca for outdoor recreation.

For half a century, TRPA and its many partners have worked to protect Tahoe's famous clarity and to restore the clarity that was lost because of impacts from logging, cattle grazing, and early uncontrolled development in the Tahoe Basin. In that same time, research partners have closely monitored Tahoe's clarity each year as a widely-recognized indicator of the watershed's health and our progress to restore it.

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Clarity is measured by the depth to which a 10-inch white disk remains visible below the lake's surface and it can vary widely from season to season and year to year. Several major factors converged in 2017 to cause the lowest annual average clarity ever recorded—59.7 feet.

Last year, Tahoe saw the end of the most extreme drought in at least 1,200 years followed by one of the wettest winters on

record. The five-year drought is thought to have caused large amounts of sediment to accumulate in Tahoe's tributaries. Record-setting rain and snow from dozens of atmospheric rivers that winter not only flooded streets and neighborhoods, but also flushed those sediments out into the lake, causing reduced clarity.

Interestingly, the record drought and record winter were not enough to cause the record low clarity average for 2017. Winter and summer clarity last year were 10 feet better and 3 feet better than the record lows for those seasons. These seasonal results show that projects to reduce stormwater pollution and restore streams, meadows, and wetlands are working to keep sediment out of the lake. Those projects build resilience to the kind of extreme weather events that we saw in 2017 that could become more frequent in the future because of climate change.

The other major factor in last year's clarity readings was record high summer temperatures and unusually low wind speeds. Together, they caused Lake Tahoe's surface waters to remain warmer than normal into September. Normally, clarity improves as Lake Tahoe cools in the fall. That pattern changed in 2017 because higher water temperatures kept lake sediments near the surface where they reduced clarity—an outcome that was predicted by past research and a phenomenon TRPA and its research partners will work to explore more.

The record-low clarity reading shows Lake Tahoe is not immune to climate change and the extreme weather that touched every part of the globe last year. But it also shows the importance of work to reduce storm water pollution and to restore the streams, meadows, and wetlands that play an integral role in Lake Tahoe's health and water clarity.

Sediment particles that wash into streams and the lake with storm water are the biggest contributor to Lake Tahoe's clarity declines. Over the past 20 years partners at Tahoe

have significantly reduced the amount of polluted storm water reaching the lake. As a result of our collective work, the lake's five-year running average for clarity is 70 feet.

Through the Lake Tahoe Environmental Improvement Program and the Lake Tahoe Total Maximum Daily Load Program, partners around the Tahoe basin have upgraded more than 730 miles of roads to prevent erosion and reduce storm water pollution and built a growing network of area-wide systems to capture and treat storm water before it reaches the lake. We have restored thousands of feet of stream channel damaged by historic logging and cattle grazing to reduce soil erosion and sediment loads and restored large areas of meadows and wetlands that help filter water before it reaches the lake.

These projects are keeping hundreds of thousands of pounds of fine sediment particles out of the lake each year and last year's clarity readings would have been worse without them. TRPA and dozens of partners are working to accelerate this progress. There is much more to do as we work to restore Lake Tahoe's clarity back to its historic level of 97 feet by 2076, and now is not the time to backtrack on that commitment.

While last year's average clarity registered a new low because of the convergence of a record drought, record winter, and record-high summer temperatures, the longstanding annual declines in lake clarity have stabilized.

Lake Tahoe is rightfully cherished as a natural treasure. Its water is among the clearest and cleanest in the world. With local, state, federal, nonprofit, and private sector partners all working together we have made significant progress in protecting and restoring Lake Tahoe's environment and we count on you joining us in doing everything possible to continue that progress in the decades to come.

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