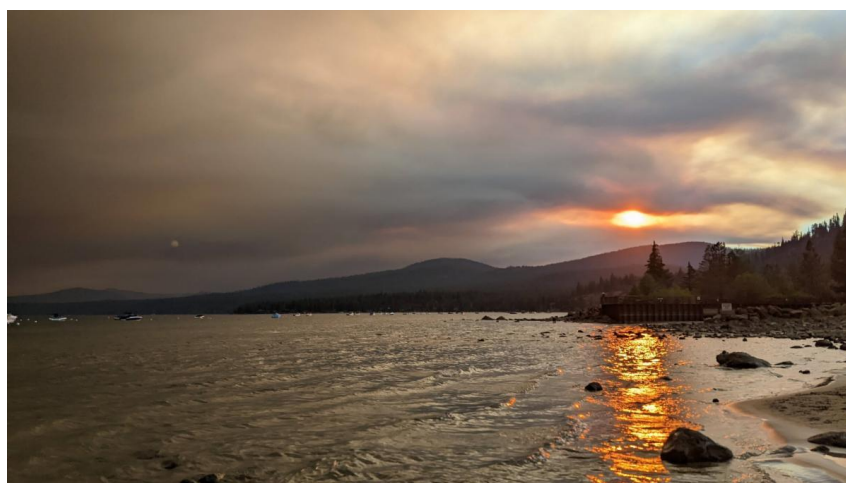


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[Smoke Gets in Your Eyes...](#) and in your lungs, your clothes, your house and, of course, Lake Tahoe. With the unfortunate outbreak of the [Mosquito Fire](#) in Placer County on Tuesday September 6 and its subsequent spread into El Dorado County, dense smoke has, once again, engulfed the Tahoe basin. During the 2021 Caldor Fire, TERC and researchers from five other research institutions collaboratively studied various aspects of wildfire smoke impacts on the lake and its surrounding watershed.



Dark clouds of thick smoke descend over Tahoe

TERC's focus was on the smoke particles (and the nutrients) falling directly onto the lake, as well as their impact on clarity and ecosystem changes. This relied on our network of sampling stations, the precision of our labs to analyze minute changes in lake chemistry, and the expertise of our

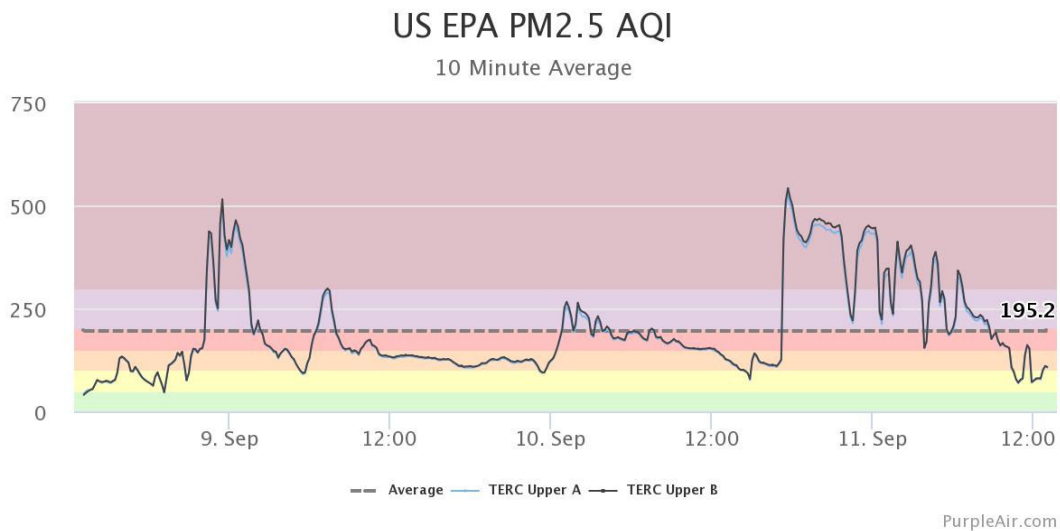
phycologist Lidia Tanaka, who spent countless hours looking into a microscope identifying the changes in the algal community.



TERC professor Alex Forrest and graduate student Kenny Larrieu executed one of the more novel approaches by deploying one of our underwater robotic gliders to spend three weeks going back and forth across the lake continuously measuring water quality changes. We learned many things from that glider deployment including that ultra-small particles that were introduced by the smoke were removed far quicker than we had expected. Unfortunately, because that project started towards the end of the Caldor fire, we missed measuring the initial impacts of the smoke.

The glider on its initial descent under smoky skies on Saturday, September 10

This time we were ready. Once the potential of the Mosquito Fire was realized, Larrieu sprang into action. Getting a glider ready for a one-month deployment is a complex procedure; it includes finely tuning its ballast in the lab, charging up its batteries, testing the satellite communication system, and, of course, ensuring a vessel is available for the launch. The first opportunity to launch came on Saturday, September 10. After two short test missions, the glider was launched on a one-month deployment at 11:30 am. That was not a moment too soon as the air quality index (AQI) was 200 at the time of launch and within two hours, had jumped to over 500.



PM2.5 air quality data from TERC's Purple Air sensor at Incline Village

Over the next month, the glider will run north-south and east-west transects across the lake, oscillating between a depth of 10 feet to 500 feet. It will measure water temperature, algal concentration, and the size and concentrations of particles in the lake. Once or twice every day it will come to the surface to communicate, at which time Kenny can provide it with new instructions if mission plans change. During this interval it is on the surface for about 3–4 minutes. In the unlikely event that you happen to be on the lake at the same time and location when this banana yellow “rocket” is at the surface, please don't touch it or try to help it. If it does need help, Kenny already knows and is on his way!

To learn more, update your [UC Davis TERC mailing lists options](#), visit the UC Davis [Tahoe Science Center](#) in person, check out the [UC Davis Tahoe YouTube channel](#), and stay social with us on [Facebook](#), [Instagram](#), and [Twitter](#).

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