INTRODUCTION

The University of California, Davis has conducted continuous monitoring of Lake Tahoe since 1968, amassing a unique record of change for one of the world's most beautiful and vulnerable lakes.

In the UC Davis Tahoe: State of the Lake Report, we summarize how natural variability, long-term change, and human activity have affected the lake's clarity, physics, chemistry, and biology. We also present the data collected in 2017. While Lake Tahoe is unique, the forces and processes that shape it are the same as those acting in most natural ecosystems. As such, Lake Tahoe is an indicator for other systems both in the western United States and worldwide.

Our goal is to explore this complexity and to use the knowledge gained to provide the scientific underpinnings for ecosystem restoration and management actions. Choosing between management options and implementing them is the role of management agencies that need to take into account a host of other considerations. This annual report is intended to inform non-scientists about variables that affect lake health. Previously, only one indicator of Lake Tahoe's health status was widely reported: the annual clarity (often called the Secchi depth, after the instrument used to collect the clarity data). In this report we publish many other environmental and water quality factors that provide a more complete assessment of the lake's condition.

This report sets the context for understanding the changes that are seen from year to year and those that are observed over longer time scales. Is Lake Tahoe continuing to warm? Are the inputs of algal nutrients to the lake declining? How do extreme events play into the long-term trends? And, of course, how do all these changes affect the lake's famous clarity? We also present updates on some of our current research. New research results highlight some of the most exciting findings of work that is still in progress, and will be reported on fully in the months and years to come.

The data we present are the result of efforts by a great many scientists, engineers, students, and technicians who have worked at Lake Tahoe throughout the decades since sampling commenced. I would, however, like to acknowledge (in alphabetical order) the contributions of Brant Allen, Nancy Alvarez, Karen Atkins, Brandon Berry, Liz Bronson, Mike Bruno, Tom Burt, Luciana Cardoso, Sudeep Chandra, Bob Coats, Zack Coats, Richard Cobb, Kenneth Easter, Alex Forrest, Charles Goldman, Cordie Goodrich, Scott Hackley, Breanne Harris, Tina Hammell, Bruce Hargreaves, Alan Heyvaert, Simon Hook, Camille Jensen, Yufang Jin, Amelia Jones, Kyungwoo Lee, Jack Lewis, Christine Limon, Anne Liston, Patricia Maloney, Elisa Marini, Jasmin McInerney, John Reuter, Bob Richards, Gerardo Rivera, Derek Roberts, Steve Sadro, Goloka Sahoo, Heather Segale, Katie Senft, Steven Sesma, Sheri Smith, Lidia Tanaka, Raph Townsend, Alison Toy, Aaron Vanderpool, Shohei Watanabe, Sara Wilson, and Andy Wong to this year's report. In particular, Shohei Watanabe was responsible for the majority of the data analysis and Alison Toy led the compilation of the final report.

Funding for the actual data collection and analysis has come from many sources over the decades. While many additional water quality variables could be tracked, funding ultimately limits what we measure and report on. Current funding for the long-term monitoring and analysis is provided by the the California Tahoe Conservancy, Lahontan Regional Water Quality Control Board, Tahoe Regional Planning Agency, U.S. Geological Survey, and UC Davis.

Funders for current projects include the following: California Tahoe Conservancy, Institute for Museum and Library Services, Nevada Department of Tourism and Cultural Affairs, Nevada Division of Environmental Protection, Nevada Division of State Lands, Tahoe Fund, and Tahoe Truckee Community Foundation.

Our monitoring is frequently done in collaboration with other research institutions and agencies. In particular, we would like to acknowledge the Desert Research Institute (DRI), the National Aeronautics and Space Administration (NASA), the Tahoe Resource Conservation District (TRCD), the U.S. Forest Service (USFS), the U.S. Geological Survey (USGS), and the University of Nevada, Reno (UNR).

We are very proud to recognize the funding support for the actual production of this annual report from the following organizations: California Tahoe Conservancy, Incline Village Waste Not Program, Lahontan Regional Water Quality Control Board, Lake Tahoe Marina Association, League to Save Lake Tahoe, Nevada Division of Environmental Protection, Parasol, Tahoe Fund, Tahoe Lakefront Owners Association, Tahoe Regional Planning Agency, and Tahoe Water Suppliers Association. We sincerely thank these organizations for their dedication in supporting science to save the lake.

Sincerely,

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