



EXECUTIVE OFFICER'S REPORT • November 2020
Covers September 16, 2020 – October 15, 2020

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State and Regional

1. Personnel Report – *Eric Shay*

New Hires

- Molina Hauv, Scientific Aid, Wastewater & Agricultural Operations Unit, Victorville. This position supports the unit in evaluating submitted self-monitoring reports for compliance with waste discharge requirements. Other duties include supporting staff in conducting project-specific data analysis.

Promotions

- Laurie Scribe, Senior Environmental Scientist (Specialist), Compliance & Planning Division, South Lake Tahoe. This position serves as the Regional Monitoring Coordinator; lead for coordinating implementation of the Region’s Climate Change Adaptation and Mitigation Strategy; and regional specialist for monitoring related special studies, investigations, and projects. The position will provide the lead responsibility for making policy recommendations, providing technical expertise orally and in written documents, evaluating and drafting environmental documents, and performing analysis on technically complex and

politically sensitive assignments related to water quality monitoring and Water Board response to climate change in the Lahontan Region.

Vacancies

- Executive Officer for the Lahontan Region.
- Scientific Aid, Cleanup/Site Investigation & Enforcement Unit, South Lake Tahoe. This position assists staff with administering the site cleanup, underground storage tank, land disposal, and enforcement programs; reviewing reports, and maintaining databases; reviews self-monitoring reports for cases, permits and enforcement actions; reviews project files and water quality data to prepare for field inspections and permit updates; assists with field inspections; and reviews California Environmental Quality Act documents.
- Scientific Aid, Planning & Assessment Unit, South Lake Tahoe. This position helps the SWAMP program collect and process water quality samples and ensure data quality. The position supports the TMDL and Basin Planning programs through mapping and data analysis, outreach, and reporting.

Departures

- Dale Payne, Environmental Scientist, Regulatory & Enforcement Unit, South Lake Tahoe.

North Lahontan Region

2. Update on Regional Tetrachloroethene (PCE) Groundwater Contamination in South “Y” Area of South Lake Tahoe, October 2020 – Abby Cazier

Introduction

The purpose of this Executive Officer’s (EO) Report is to provide you with information about the regional PCE groundwater contamination in the South “Y” area of South Lake Tahoe and describe the investigation activities that are being conducted by the Lahontan Water Board using state-provided funding. Regional PCE contamination in the South “Y” area was first discovered over 30 years ago and the extent of the regional PCE contamination has remained undefined despite numerous general and site-specific investigations. Understanding the contaminant plume geometry and subsurface lithology have been identified as critical needs to adequately evaluate the impacts to threatened and impaired receptors (e.g., municipal, private, and small-community water supply wells), identify transport pathways contributing to contaminant migration, and assess cleanup alternatives. The Lahontan Water Board was awarded a grant for \$4.6 million from the State Water Resources Control Board’s Site Cleanup Subaccount Program (SCAP) to further characterize the regional PCE groundwater contamination and conduct additional actions between 2019 and 2023 with a state-contracted environmental consulting firm. The primary objectives of the SCAP contract tasks are to:

- Define the lateral and vertical extent of the PCE groundwater contamination,
- Review and compile historic records to identify potential contaminant sources,

- Identify transport pathways contributing to plume migration (utility backfill, sewer, storm drainage systems, etc.),
- Identify municipal, private, and small community water supply wells impacted or threatened due to groundwater contamination,
- Evaluate potential human health risks associated with PCE via soil gas,
- Eliminate supply wells and monitoring wells that have been identified as vertical conduits,
- Install sentry groundwater monitoring wells upgradient of priority municipal water supply wells to monitor contaminant migration; and
- Assess groundwater and subsurface lithologic data to support cleanup and receptor protection options and to restore beneficial uses (e.g. use as a public drinking water source) of the groundwater.

History of PCE Contamination

PCE was first detected in the municipal water supply wells in the South “Y” area at concentrations that exceeded the 5 microgram per liter (ug/L) maximum contaminant level (MCL) in 1989 when testing for volatile organic compounds was first required. Multiple municipal, private, and small community water supply wells have been taken off-line, destroyed, or require wellhead treatment to remove PCE from the groundwater prior to distribution. Other water supply wells in the South “Y” area remain threatened by PCE contamination. The regional PCE groundwater contamination has impacted drinking water systems operated by three water purveyors: Lukins Brother Water Company (Lukins), South Tahoe Public Utility District (South Tahoe PUD), and Tahoe Keys Property Owners Association (Tahoe Keys). The contamination has impaired four of five water supply wells operated by Lukins (last operational water supply well is threatened) and one of the three water supply wells operated by Tahoe Keys (one water supply well is threatened and other PCE contamination has been detected but not above the MCL). South Tahoe PUD’s affected wells in the South “Y” area have been taken out of service or have been destroyed; South Tahoe PUD water supply is provided from wells located outside of the contamination area.

SCAP Investigation Tasks Completed

The regional groundwater investigation activities in the South “Y” were initiated in June 2019 and completed in August 2020 by state contractor AECOM and included the advancement of 79 cone-penetration test (CPT) and sonic borings. Borings were advanced to depths of up to approximately 300 feet below ground surface (bgs). Up to eight depth-discrete groundwater samples were collected from each boring to assess the lateral and vertical extent of PCE contamination. The boring locations and the approximate lateral extent of PCE concentrations exceeding the drinking water standard are shown on Figure 2.1. Please note this figure has not been updated to include investigation data collected during the 2020 field season. PCE was detected at a maximum concentration of 570 ug/L from 49 to 51 feet bgs at the boring located near the intersection of 5th Street and Roger Avenue. PCE concentrations exceeding the drinking water standard were also reported at depths up to 185 feet bgs. The estimated area of PCE contamination exceeding the drinking water standard of 5 ug/L is approximately 400 acres.

A private and small-community water well survey and well sampling event was initiated in the South “Y” area during 2019. Lahontan Water Board staff identified properties with wells (or suspected to have wells) and requested the property owners to provide information on the well status (e.g., active, inactive, destroyed, unknown). Water samples were collected from seven private and small community wells where the property owners allowed access. PCE was not detected above the reporting limit of 0.5 ug/L in six of the wells sampled and was detected in one well at a concentration of 0.5 ug/L. The well where PCE was detected is inactive and the property has a municipal water connection with Lukins.

An inactive municipal supply well owned by Lukins was identified as a vertical conduit during the 2019 groundwater investigation activities. This well was destroyed in accordance with state and county standards in June 2020. The vertical conduit evaluation and well destruction methods were described in the August 2020 EO Report.

The Lahontan Water Board issued 213 Investigative Orders requiring potential responsible parties who may have used and/or disposed of PCE in the South “Y” area to complete a Chemical Use and History Questionnaire. In response to the Investigative Orders issued, we received responses from 114 potential responsible parties. The Chemical Use and History Questionnaire responses are being reviewed in conjunction with the SCAP field investigation data to identify potential properties that may be contributing to the regional PCE groundwater contamination.

Anticipated SCAP Tasks for 2021

The anticipated SCAP field tasks that will be completed during the 2021 field season include:

- Continue to develop a private and small-community water supply well inventory to identify additional wells to be sampled to ensure such water supply wells are providing water that is safe for consumption.
- Conduct a soil gas investigation to evaluate the potential human health risks associated with potential soil vapor intrusion resulting from the PCE contamination. Soil gas samples will be collected downgradient from suspected source areas in locations where elevated concentrations of PCE have been detected in shallow groundwater. A Tier I human health risk evaluation will be conducted using the soil gas analytical data.
- Properly destroy priority municipal, private, and small-community water supply wells that have been identified as a vertical conduit(s) (e.g., responsible for the vertical migration of PCE in groundwater impacting deeper water-bearing unit[s]). Inactive wells that have not been properly destroyed pose a potential threat to water quality.
- Install sentry wells for active threatened and impaired municipal supply wells. The sentry wells will be designed to target significant water bearing units that correspond to water supply well intake depths and depths where contamination has been observed. The purpose of sentry well monitoring is to provide water purveyors advanced warning of potential PCE migration upgradient from water supply wells.

Interested in More Information?

Information on the Regional PCE groundwater contamination and investigation activities (by the Lahontan Water Board and other stakeholders) can be found on the State Water Resources Control Board GeoTracker Website, South Y Regional Contamination, GeoTracker Global ID #: T10000007984 at

https://geotracker.waterboards.ca.gov/profile_report?global_id=T10000007984

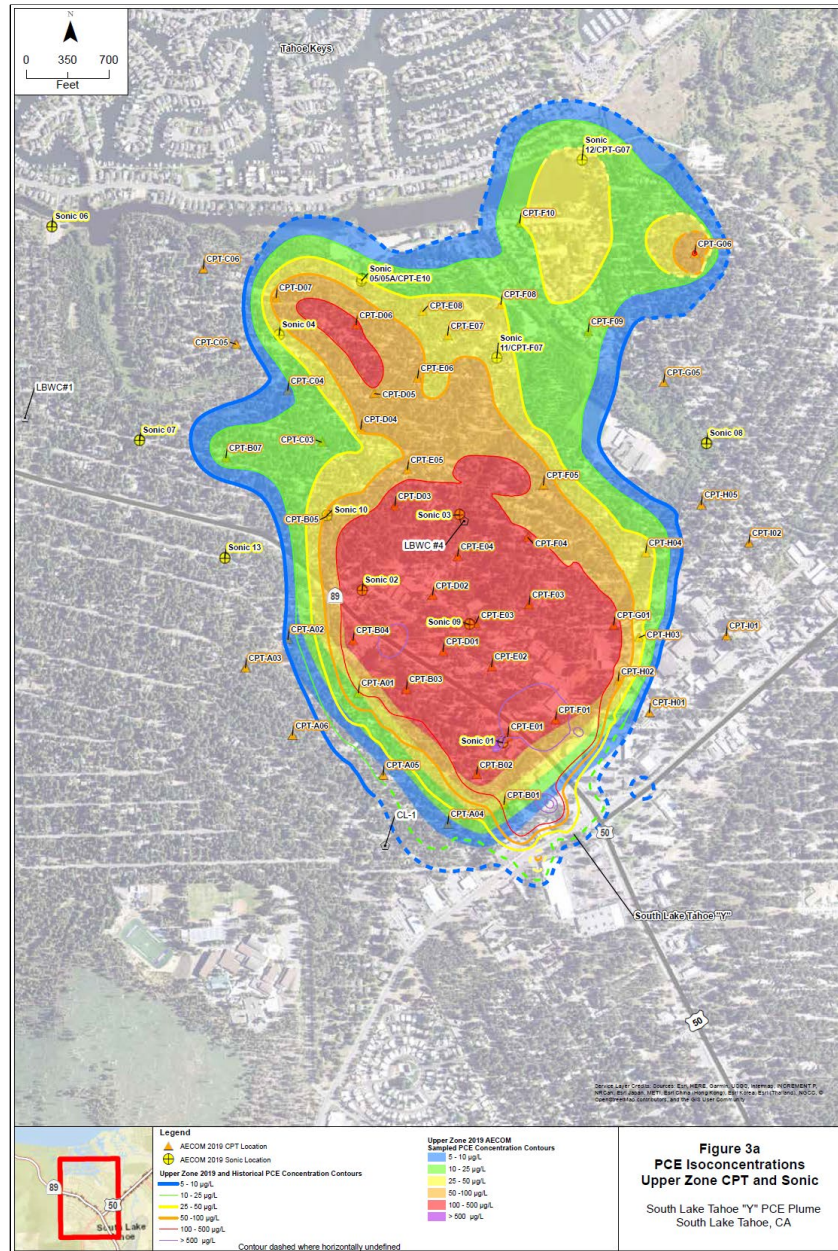


Figure 2.1: PCE Isoconcentrations in Upper Zone, Source: AECOM, 2020

3. Regional Harmful Algal Bloom Program Update - Mary Fiore-Wagner, Alanna Misico, and Sabrina Rice

Milestone HAB Legislation. In September 2019, Governor Newsom approved [Assembly Bill 834](#) (AB 834): Milestone legislation that created the Freshwater and Estuarine Harmful Algal Bloom Program. With the passage of AB 834, the State and Regional Water Boards now have a legislative mandate to protect water quality and public health from harmful algal blooms (HABs) with the creation and implementation of a formal HAB program throughout the Water Boards.

The bill mandates that the Water Boards coordinate immediate and long-term HAB incident response including efforts to conduct and support HAB site investigations; and ambient monitoring at the state, regional, watershed, and site-specific waterbody scales. Prior to the passage of this legislation, the Lahontan Water Board had been engaging actively with regional partners to build a collaborative and efficient process to respond to HABs. Additionally, staff had prepared and been awarded state funding to help investigate non-chemical control measures to abate HABs and to monitor suspected HABs at recreational waters throughout the region.

State Board's Freshwater Harmful Algal Bloom Monitoring Strategy. To help satisfy its mandate, the State Water Board collaborated with the Southern California Coastal Water Research Project Authority (SCCWRP) to develop a Draft Freshwater Harmful Algal Bloom (FHAB) Monitoring Strategy (Strategy). The Water Board's Regional Monitoring Coordinator participated on the project's Technical Advisory Committee, which played an important role in developing the content and crafting the recommendations in the Strategy. Water Board staff are participating in the technical review of the document, which upon completion will undergo State Board executive management review in the coming months.

The Strategy articulates the vision and programmatic elements and recommends the priority options for how FHAB monitoring and assessment can be used to inform management decisions to protect public health and the environment and improve water quality. The Strategy provides a roadmap and guidance to support agencies and organizations, so they can address FHABs in an efficient and coordinated way.

New HAB Position Dedicated to the Lahontan Region. To support implementation of AB 834, the State Board prepared and received approval for a Budget Change Proposal (BCP) that funds five staff positions statewide to handle HAB related program, planning, and response needs. Recently, the Water Board learned the Lahontan Region was awarded one of the five HAB positions. Management is actively working on the vacancy announcement and application package for the new HAB position, which will fall within the Non-Point Source Unit. The BCP also provides \$750K in contracting funds, which though managed by the State Board's Office of Information Management and Analysis, will benefit all Regional Water Boards through various programs and projects.

Linkages between Wildfire Impact and HAB Incidents. Regional climate science indicates the Lahontan Region will experience climate related changes including warming temperatures and extended periods of drought that increase wildfire risk. As wildfires erupt, ash and smoke deposition can contribute nutrients to surface waters. Additionally, excessive sediment and nutrient delivery to watercourses can result when

soil erodes from bare, fire-impacted landscapes. Since increases in water temperature (associated with loss of riparian canopy cover) and nutrients are drivers of harmful algal blooms, it is possible that fire-impacted watersheds may experience an increase in HAB events during and following wildfires. As such, staff see value in an outreach effort (general correspondence, news advisory) to alert county health officers and waterbody operators about the potential of HAB events in the coming year. To better prepare for the 2021 growing season, staff are considering a mapping exercise to help identify which watersheds may experience an increase in HAB events due to post-fire water quality impacts (initial peak flow increases in runoff, increased delivery of sediment and nutrients.) Proximity of wildfires to waterbodies, beneficial use designations (water contact recreation, commercial and sport fishing, cold freshwater habitat), and intensity of burn could be used during the mapping exercise to help prioritize outreach efforts. *Vulnerable watersheds in the Lahontan Region may include the areas surrounding the (1) Susan River (above the confluence of Willard Creek) which may have been impacted by the Hog Fire and (2) Mill Creek (above the town of Walker) which may have been affected by the Slink Fire.*

Participation in Statewide Pre-Holiday (Labor Day) HAB Assessment. Staff collaborated with the State Board's FHAB Co-leads and regional partners to investigate the conditions at select recreational water bodies throughout CA. The sampling involved testing for harmful algal blooms at popular lakes and streams throughout CA in time for the latest data to be posted ahead of the busy Labor Day weekend. The State Board issued a News Advisory regarding the Pre-Holiday Assessment results on September 3, 2020, in time to inform many Californians and recreators about which waterways offer safe and healthy recreation options, and which ones required caution.

Lahontan Region Specifics. Water Board staff collaborated with the following regional partners for sampling and/or posting health advisories at affected surface waters: U.S. Forest Service, Bishop Paiute Tribe, Mono & Inyo County Environmental Health Departments, Los Angeles Department of Water and Power, San Bernardino County Parks Department, the Tahoe Keys Property Owners Association, Alpine Watershed Group, and the South Tahoe Public Utility District. The outcome of the pre-holiday HAB assessment, including any recommended health advisories, is included in Tables 1 and 2 presented below.

2020 HAB Response to Date. Figure 3.1 and Tables 3.1 and 3.2 below summarize the Water Board's HAB response efforts thus far during 2020. The information shared includes our involvement with three separate efforts that comprise the elements of our regional HAB response program which includes: 1) response to new bloom reports, 2) coordination with the Statewide pre-holiday HAB assessment, and 3) collaboration with partner agencies for on-going HAB related special investigations. All efforts rely on synergies with regional partners (county health departments, the U.S. Forest Service, utility districts, watershed groups, Tribes, and homeowners associations) to support, develop, and refine their own HAB surveillance programs.

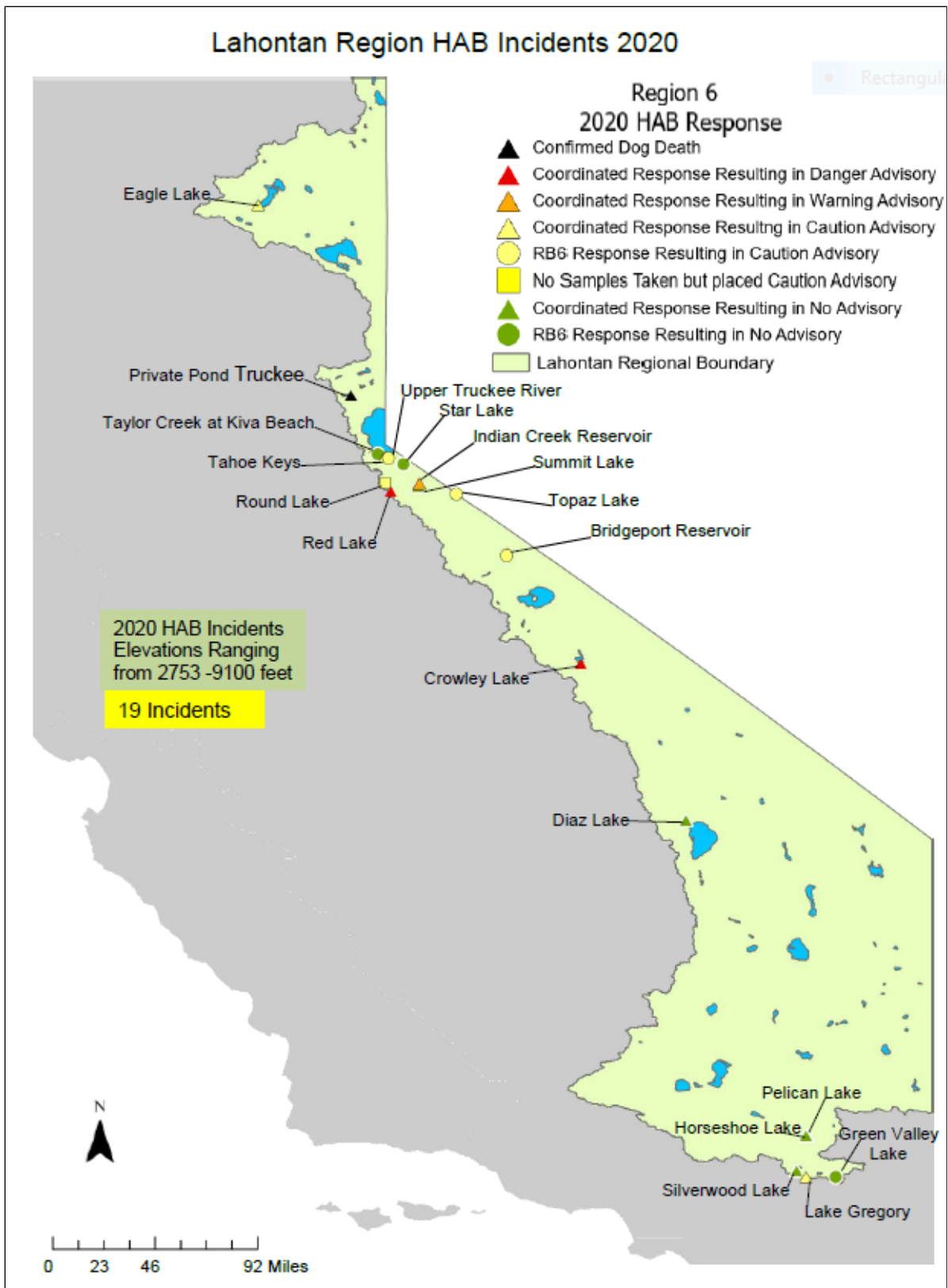


Figure 3.1: Map of Harmful Algal Bloom Incident Response throughout the Lahontan Region during 2020


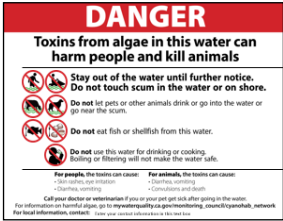



Table 3.1: 2020 HAB Affected Waters in our Southern Region

Waterbody (samples collected by RB6 staff unless otherwise noted)	Month of HAB Incident	County	Advisory Level Recommended
Lake Gregory (San Bernardino County Parks)	Jul - Aug	San Bernardino	Caution
Horseshoe Lake (San Bernardino County Parks)	Jul - Aug	San Bernardino	No Advisory
Pelican Lake (San Bernardino County Parks)	Jul - Aug	San Bernardino	No Advisory
Silverwood Lake (DWR)	Ongoing	San Bernardino	No Advisory
Green Valley Lake	Jul	San Bernardino	No Advisory
Diaz Lake (Inyo County EHD)	Aug	Inyo	No Advisory

Table 3.2: 2020 HAB Affected Waters in our Northern Region

Waterbody (samples collected by RB6 staff unless otherwise noted)	Month of HAB Incident	County	Advisory Level Recommended
Eagle Lake (Lassen National Forest Service)	Aug	Lassen	Caution
Tahoe Keys Lagoons (Tahoe Keys POA)	Jul - Sept	El Dorado	Caution
Red Lake (Alpine Watershed Group)	Sept	Alpine	Danger
Indian Creek Reservoir (South Tahoe Public Utility District)	Aug - Sept	Alpine	Warning
Bridgeport Reservoir	Aug	Mono	Caution
Crowley Lake (Bishop Paiute Tribe/Mono Co EHD)	Aug	Mono	Danger
Star Lake	Jul	El Dorado	No Advisory
Topaz Lake	Aug	Mono	Caution / No Advisory
Taylor Creek, Pond at Kiva Beach	Oct	El Dorado	No Advisory
Round Lake	Sept	El Dorado	Caution since samples were not collected due to National Forest closures during wildfires
Summit Lake (Alpine Watershed Group)	Jul	Alpine	No Advisory
Upper Truckee River	Oct	El Dorado	No Advisory

Table 3.3: Comparison of Harmful Algal Bloom Frequency, Intensity, and Geographic Range throughout the Lahontan Region for the Period of 2017-2020

	2017	2018	2019	2020
<p>Number of HAB Incidents</p> 	10	13	19	19
<p>Advisory Intensity</p> 	2 Danger	1 Danger	2 Danger 2 Warning	2 Danger 1 Warning
<p>Animal Impact</p> 	0 Reported	0 Reported	3 suspected HAB-related dog deaths reported	1 suspected HAB-related dog death reported 1 suspected HAB-related dog illness
<p>Outcome of Animal Investigation</p>  <p>(Outcome determined through toxin analysis of water samples and necropsy and/or analysis of stomach contents if performed)</p>	Not applicable	Not applicable	0 confirmed HAB-related dog death	1 confirmed dog death 0 confirmed HAB-related dog illness
<p>Elevation Affected</p> 	3200 – 7200 feet	2700 – 8000 feet	2753 – 9100 feet	2753 – 9100 feet

4. Climate Change Adaptation Strategy Update – Ben Letton and Mary Fiore-Wagner

The Lahontan Water Board's role in protecting water quality and beneficial uses within the context of California's climate change efforts was formalized with the development of the Climate Change Mitigation and Adaptation Strategy (Strategy) and adoption of [Resolution No. R6T-2019-0277](#) (Resolution).

As resources allow, the Resolution directs staff to focus its efforts to address the impacts of climate change on the following key resource areas, where water quality and beneficial use protection strategies and actions will be most effective in the face of climate change: (1) Protection of Wetlands, Floodplains and Headwaters, (2) Protection of Infrastructure, (3) Protection of Groundwater Quality & Supply, and (4) Protection of Headwater Forests and Promoting Fire Resiliency.

The Resolution also requires the Water Board to develop an Action Plan to provide a detailed list of expected timelines and tasks to be implemented to protect the key resource areas. The Action Plan is intended to define the specific work priorities, efforts, and actions that will be integrated into our regulatory and planning efforts to facilitate climate mitigation and adaptation outcomes.

Status of the Action Plan. Though several staff contributed to development of the Strategy, the Regional Monitoring Coordinator played the lead role in coordinating efforts to develop and present the Strategy to the Board. Developing and finalizing the Action Plan is also a responsibility that falls largely on the Regional Monitoring Coordinator.

The Action Plan was scheduled for presentation at the Water Board's March 2020 meeting but was postponed to May 2020 when the Covid-19 pandemic emerged. Further delay resulted when the State Water Board issued a hiring freeze that hindered the ability to backfill the Regional Monitoring Coordinator position, which had become vacant in March 2020 due to an internal promotion. Given these unique circumstances, development of the Action Plan has not advanced beyond what was being considered by the Regional Monitoring Coordinator and management for the March 2020 Board meeting. This EO article represents the first effort by staff since March 2020 to further develop the Action Plan through a brief conceptual framework that is described below.

Proposed Framework. The framework lays out the basic elements that could be part of the Action Plan and how those elements are intended to interact with other efforts such as Priorities & Accomplishments, core program reviews, and other work planning. This framework will serve as a road map for the new Regional Monitoring Coordinator for further preparation and development of a detailed Action Plan that we anticipate bringing before the Water Board in March 2020.

Static and Dynamic Elements- The framework may include elements that are both *static and dynamic*. *Static* elements are those actions that are integrated into routine procedures such as preparation of material for Board agenda items, and updates/renewals or development of new permits. *Dynamic* elements are those that will be revisited on an annual basis as part of the Annual Priorities & Accomplishments Report, generally in March of each year.

Development of a section in the Green Sheet and permit requirements or conditions related to Climate Change Adaptation are *static* elements that may serve as a way for

staff, stakeholders, partner agency, and the Board to measure progress toward achieving the goals of our Strategy and ensure that the Policy Statements identified in the Strategy are being considered in development of all new permits, updates, renewals, and policies. Staff has already developed a Green Sheet procedure, which was recently utilized for the agenda packets prepared for the March 2020 General Waste Discharge Requirements for both the Limited Domestic, and the Small Industrial, Wastewater Treatment Systems.

Another element for the framework that may be considered *static*, involves a process for incorporating a climate change component into each core regulatory program review that is prepared. This element will also suggest a schedule to complete core program reviews by prioritizing reviews for programs where associated permits and policies have greater overall potential to enhance the condition and resiliency of wetlands and floodplains, infrastructure, groundwater, and forested landscapes. The climate change component that is incorporated in a program review should identify the following activities (1) Water Board, interagency, and external partnerships that are underway or planned, and (2) long-term resource intensive actions.

The Action Plan will be re-examined annually and recommended updates to the Action Plan will be reported through the preparation and presentation of an update to the Water Board at a public meeting. During these annual updates, the Water Board will have an opportunity to comment and provide direction in setting priorities and direction.

The annual updates will present progress on the *dynamic* portions of the core *static* elements of the Action Plan including a catalogue of all adopted permits and policies that incorporated climate change mitigation and adaptation strategies.

The climate change components that are built into core regulatory program reviews include interagency, stakeholder, and Water Board lead activities and long-term actions are *dynamic* in nature based on changing priorities or shifting of resources. As such, the Water Board will hear annual updates on the progress of these activities. These annual updates to the Water Board will provide an opportunity to re-examine and re-prioritize which select actions within the Water Board's authority and those supported by existing partnerships can be effectively implemented with limited resources.

5. Meeks Bay Restoration Project – Brian Judge

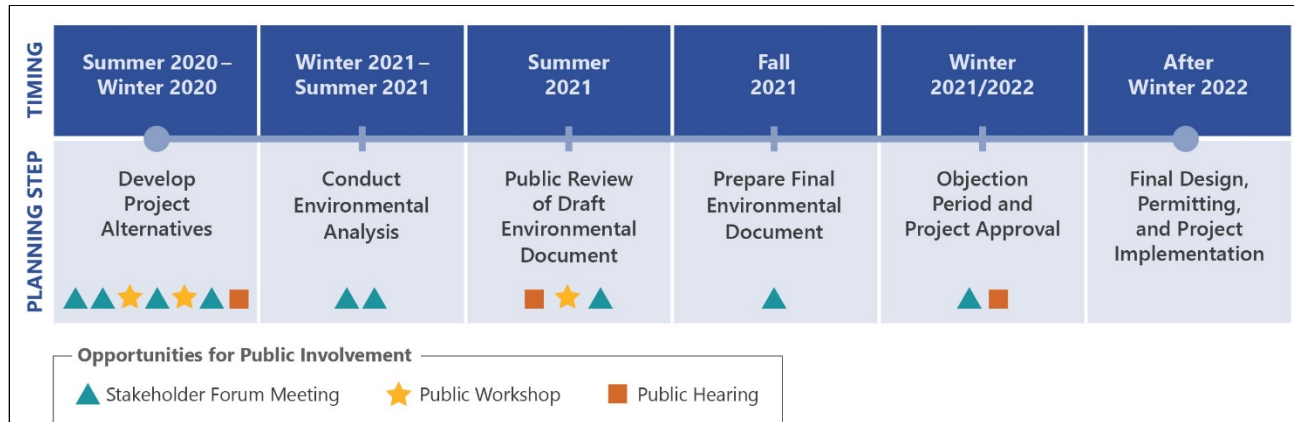
The United States Forest Service (USFS), Lake Tahoe Basin Management Unit is planning to restore Meeks Bay and Meeks Creek on the west shore of Lake Tahoe to a more natural condition. The Water Board is the California Environmental Quality Act (CEQA) lead and an integral member of the project development team and is participating in a multi-year planning process that will result in a triple environmental document. The triple document will include an Environmental Impact Statement (EIS) analysis for the USFS, an Environmental Impact Report (EIR) for the Water Board, and an EIS for the Tahoe Regional Planning Agency (TRPA).

Background

The purpose of this project is to move the Meeks Creek stream channel and wetland/lagoon below State Route 89 (SR89) to a more natural condition where geomorphic and hydrologic processes support a functioning ecosystem while continuing

to support sustainable recreation opportunities. The deteriorating condition of the existing marina infrastructure, concerns over aquatic invasive species, and degraded habitat for native species, have prompted the need for action in Meeks Bay. Additional benefits of the project will be improving educational and interpretive opportunities, enhancing species of value to the Washoe Tribe of Nevada and California, and promoting the federally protected species Tahoe yellowcress (*Rorippa subumbellata*) and Lahontan cutthroat trout (*Oncorhynchus clarki henshawi*).

Schedule



Stakeholder Forums and Project Alternative Development

The USFS is using Ascent Environmental and the Consensus Building Institute to facilitate project alternatives formulation through a series of stakeholder forums and public workshops. As part of the project development team, Water Board staff helps to plan and participates in every stakeholder forum and public workshop. The 13 forum members represent a wide variety of diverse interests including several local homeowners associations, the Lake Tahoe Marina Association, Meeks Bay Fire District, conservation interests, local home owners, motorized and non-motorized recreational interests, and the Washoe Tribe. These representatives are providing valuable input for the project alternatives. At this point in the planning process, three conceptual project alternatives are under development.



Conceptual Theme 1 is a modified version of the proposed action released during scoping in 2018 and includes full restoration of the marina area into a functioning creek, lagoon and barrier beach system, a central pier with motorized watercraft access, no boat ramp, relocate cabins to extend and restore beach area, additional campsites, additional parking, and reconfigured day use on south side.

Conceptual Theme 1



Conceptual Theme 2 is a hybrid alternative that retains part of the marina and includes a reduced restoration area shifted south, a boat ramp and/or small marina separated from the creek, lagoon, barrier beach system, a day use area slightly reduced to accommodate the lagoon, marina, and boat parking, additional campsites, and additional parking at the resort.

Conceptual Theme 2



Conceptual Theme 3 emphasizes non-motorized recreation and includes full restoration of the creek, lagoon, barrier beach system, accessible nonmotorized launch ramp at south end, campgrounds reconfigured and expanded, day use areas expanded, and day use parking expanded and relocated.

Conceptual Theme 3

The project alternative will continue to be developed through upcoming stakeholder forums, public workshops, input from the general public, and governing bodies.

More information on the project and upcoming workshops can be found at www.meeksbayproject.org

South Lahontan Region

6. Boron Area Dischargers – Mark Lemus

Water Board staff have recommended that three domestic wastewater dischargers, all within a mile of each other in the Boron area, consider consolidation of wastewater treatment services for each of their communities served. Each of these entities discharge raw sewage to unlined groundwater percolation ponds. None of these facilities have groundwater monitoring wells to evaluate the impact of wastewater discharges. (see figure 6.1)

Water Board staff recently inspected the wastewater treatment facilities for Boron Community Services District, Desert Lake Community Services District and Park Knolls Homeowners Subdivision. The Boron area is considered an economically disadvantaged community because the median household income is less than 80% of the statewide median household income.

Following the *Water Quality Control Plan for the Lahontan Region* (Basin Plan's) recommended control actions to address unlined sewage ponds, Water Board staff sent letters to each of these three dischargers indicating that revised waste discharge requirements would require installation of a minimum of three groundwater monitoring wells around each percolation disposal ponds. Water Board staff's experience is that these

types of facilities impact groundwater requiring eventual wastewater treatment plant upgrades.

Naturally occurring groundwater in the Boron area contains elevated arsenic above the drinking water standard of 0.01 mg/L. The primary drinking water supply for the Boron area is State Water Project water delivered through the Antelope Valley – East Kern Water Agency pipeline that parallels State Highway 58. The backup drinking water supply is groundwater. One standby (inactive) drinking water well close to a wastewater percolation pond now contains nitrate at one-half the nitrate drinking water standard of 10 mg/L. Because naturally occurring groundwater typically contains less than 1 to 2 mg/L, this well may be subject to nitrate pollution should it be placed into production further drawing pollutants into the well. The addition of organic constituents, nitrates, and other pollutants in discharged wastewater exacerbates groundwater degradation and/or pollution.

Water Board staff believe the best path forward is encouraging the entities to consider forming a Joint Powers Authority to cooperatively address long-term sewerage needs and reducing the financial hardship in the larger community. Conceptually, such an entity would first install and sample groundwater monitoring wells to determine the regional impact of discharger sources, rather than each entity independently installing three sets of three monitoring wells. Engineering feasibility studies could then be pursued to consider consolidating wastewater delivery for treatment to a single location. This would be followed by considering future treatment plant upgrades. A result would be eliminating the discharge of untreated wastewater and obtaining regional groundwater monitoring to satisfy the Basin Plan. These actions would help to protect the receiving groundwater for future beneficial uses.

Water Board staff have recommended that each of the dischargers contact the Division of Financial Assistance to pursue available grant funding and participate in the Antelope Valley Integrated Regional Water Management group to seek funding opportunities for eligible projects. Water Board staff have also contacted Kern County staff seeking their support for this effort.

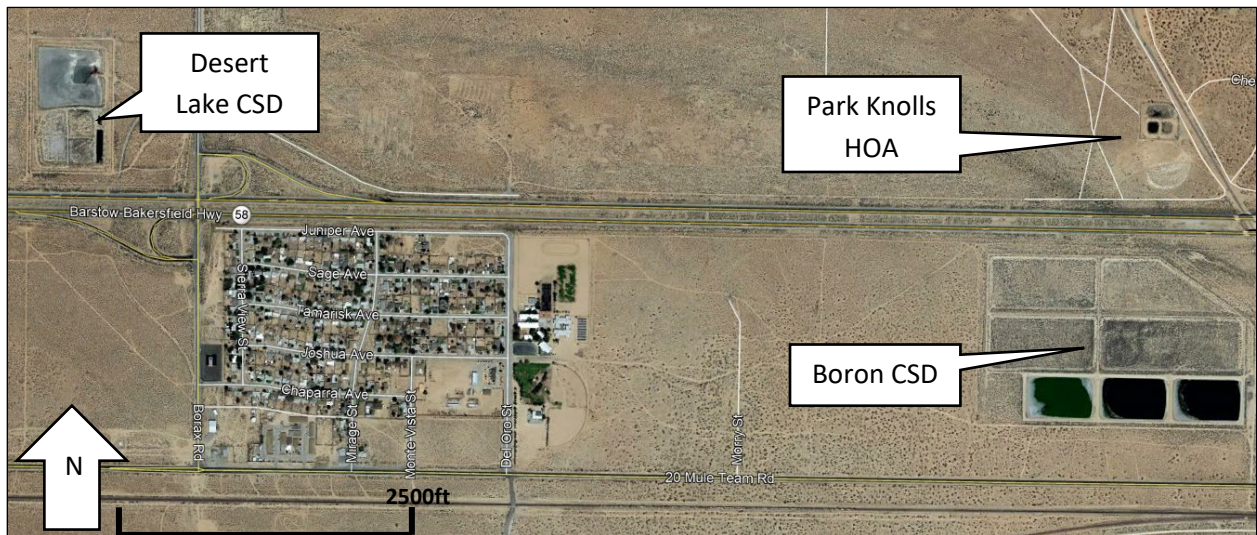


Figure 6.1 – Map of Boron Area with Dischargers identified

7. Floating Islands Installed at Spring Valley Lake – Jehiel Cass

The Spring Valley Lake Homeowners Association has recently launched a series of “floating islands” that they hope will help reduce nutrients to control algae growth and improve water quality (clarity) in the community’s 200-acre manmade lake. The community of about 7,700 residents was opened in 1973. (see figure 7.1)



Figure 7.1 – Spring Valley Lake, west of the Mojave River is filled with groundwater pumped from 13 wells around the lake using about 2,200 acre-feet of water per year. In addition, the effluent from the CA DFW Mojave Fish Hatchery, containing elevated nutrients, irrigates the golf course before entering the southern end of the lake. At the northern end of the lake, an overflow weir discharges to the San Bernardino County Mojave Narrows Regional Park before returning to the Mojave River.

Maintaining lake water quality has been a major concern to control algae blooms. The association has a volunteer Lake Committee that helps guide projects to improve water quality. The lake supports recreational contact, sport fishing and boating opportunities.

In August 2020, the floating islands were laid out onshore and planted with six species of water tolerant plants suitable for the environment. While some plants will go dormant during the winter, this lake does not freeze over. During spring 2021, the floating islands will be deployed to various locations around the lake to remove nutrients and support fish habitat. It will take at least one growing season before the plants become established extending their roots into water (see figures 7.2 – 5).



Figure 7.2 – Photographs of floating islands installation in August 2020.



Figure 7.3 – An electric fence keeps birds away until plants are established.

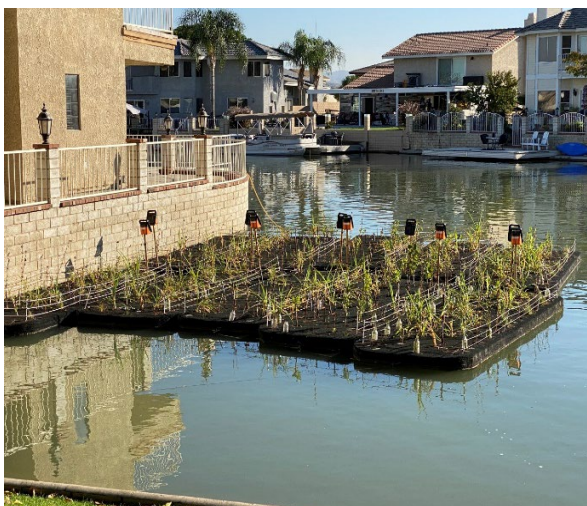


Figure 7.4 – A total of 22, 5- by 15-foot mats were installed to be distributed around the lake in spring 2021.



Figure 7.5 – The floating islands material is a synthetic, ultraviolet light resistant, mesh supporting plants.

8. Discontent Still Reigns at the Indian Wells Valley Groundwater Authority Meetings, Kern County (October 15, 2020) – Tom Browne

Since the last meeting of the Indian Wells Valley (IWV) Groundwater Sustainability Authority (GSA) (June 2020), attorney Derek Hoffman who represents the pistachio farmers (Eddie Imsand and JoshuaF Nugent) has indicated that litigation may be pursued against the IWV-GSA under the California Environmental Quality Act. In addition, the price per acre-foot (AF) for all pumpers in IWV has risen from \$235 to \$2,130 to implement the groundwater sustainability plan (GSP). The IWV-GSA is leaning toward importing water from the Antelope Valley East Kern Water Bank (AVEKWB) to recharge it into the IWV groundwater basin. The cost for the infrastructure is estimated to be over \$3.1 million.

Searles Valley Minerals (SVM), a user of IWV water since 1920, has an attorney to represent SVM's interests in the IWV-GSA, and they too have indicated that litigation may be in the offing. SVM believe it's unfair that the Navy at China Lake do not have to pay to support GSP implementation, and SVM is also opposed to a land-fallowing program (more information below). SVM is the third largest user in the IWV at 2,300 acre-feet per year (AF/year) and the Navy is the fourth largest user at 1,600 AF/year. Pistachio farmers collectively use about 14,500 AF/year and the IWV Water District pumps about 6,800 AF/year. All other small pumpers add up to about 1,000 AF/year, for a total of 26,200 AF/year being pumped from the IWV groundwater basin (2015 pumping rates). The IWV-GSA's technical experts say that the basin's sustainable yield is only 7,650 AF/year. The goal of the IWV-GSA is to reduce total pumping from the entire basin to just 12,000 AF/year. That means 4,350 AF/year must come from other sources – reclamation of wastewater or purchase from AVEKWB – to balance the long-term water budget by 2035.

In addition, all *non-deminimus* pumpers (greater than 2 AF/year) also must pay \$2,130 per acre-foot. Andy Zdon, certified engineering geologist and hydrogeologist, and IWV-GSA member, said there are 36 pumpers just barely over that threshold, many of whom are over age 70 living in rural areas, or are small water purveyors. These small pumpers are pleading with the IWV-GSA to lighten their bill and to give them a variance.

Mike Neill, a retired China Lake engineer, gathered over 2,900 signatures from IWV residents asking for the disbandment of the GSA on the grounds that they are "unelected officials." These signatures were mailed to the IWV-GSA in early September. The counsel for the IWV-GSA says a referendum of signatures is not legally binding and the California Water Code gives the IWV-GSA the authority to collect fees from all pumpers.

The IWV-GSA debated the details of the land-fallowing program. The basic concept is that farmers will get paid to fallow their fields, and they will get financial support for re-vegetation back to native desert plants. That hypothetical water no-longer-pumped would be put up for sale. The IWV-GSA proposed to limit the fallowing volume to 1,000 AF per purchaser. Both SVM and the pistachio farmers want no limit to be placed on purchases from the land-fallowing program.

The next IWV-GA meeting is scheduled for November 19, 2020. Those interested in viewing previous meetings and agendas can visit the IWV-GA web site at <https://iwvga.org/iwvga-meetings>.

9. U.S. Air Force Request for Revision of Waste Discharge Requirements (WDR) No. R6V-2013-0058, City of Adelanto Wastewater Treatment Facility Discharges
– Linda Stone

In a September 21, 2020 letter, Water Board staff informed the U.S. Air Force (Air Force) that staff will not propose a revision of WDR No. R6V-2013-0058 as requested in the Air Force's July 21, 2020 letter. The WDR pertains to the City of Adelanto (City) Wastewater Treatment Facility's (WWTF) discharges to its percolation ponds, which are adjacent to the former George Air Force Base (AFB). The Air Force requested that the Water Board revise the WDR to restrict the WWTF discharges to 1 million gallons per day (mgd). The WWTF's current discharge rate is approximately 2.6 mgd and the WDR permits a maximum discharge rate of 4 mgd. The Air Force's request was based on its claim that it was an affected person under California Water Code section 13263(e) because the WWTF discharges "have damaged, and are continuing to damage, the remedies for three restoration sites" at the former George AFB, specifically, that the City's "discharge is submerging and spreading contamination to previously uncontaminated areas."

Staff is not proposing revision of waste discharge requirements. Specifically:

1. The Air Force has not implemented regulatory approved remedies at two of the sites (jet fuel release sites SS030 and ST067b) or implemented active remediation at the third site (OT069e), where monitored natural attenuation (MNA) has repeatedly failed to meet remedial objectives for a trichloroethene groundwater plume since MNA was selected in a 1998 Record of Decision.
2. The Air Force did not provide adequate technical support of its claim that the City's WWTF discharges have caused adverse impacts to the three sites. The Air Force's claim was based solely on a computer simulated modeling effort using data from an inadequate groundwater monitoring network. The groundwater system underlying George AFB is complex and poorly understood. A computer model alone is inadequate to demonstrate that any observed affects can be attributed to a single source, i.e., the City's WWTF discharges.

On October 20, 2020, the Air Force sent a petition to the State Water Resources Control Board for review of the Regional Board's response to the Air Force's request for revision of the waste discharge requirements and to request that the matter be held in abeyance, pursuant to Water Code Section 13320 and California Code of Regulations, title 23, section 2050.5 *et. seq.*