



Blue Ribbon Committee for the Rehabilitation of Clear Lake

Technical Subcommittee Meeting

1:00 – 3:00 pm

July 23 , 2022

Meeting Summary

Attendees:

Attendees are listed In Attachment A.

Action Items:

1. In advance of the next Blue Ribbon Committee meeting, Sam Magill, Sacramento State Consensus and Collaboration Program, will send out a master list of the projects that have been approved that will include the budgets, the organizations involved, and the timeline.
2. Technical Subcommittee members will submit any feedback/edits to the June 23rd Summary by July 30,2022.

Welcome and Introductions

Sam Magill, Sacramento State Consensus and Collaboration Program (CCP), opened the meeting of the Technical Subcommittee (Subcommittee) of the Blue Ribbon Committee for the Rehabilitation of Clear Lake (Committee). Erik Sklar, Committee Chair, thanked participants for attending and their continued work. He also mentioned he is excited to see the projects moving forward. Geneva Thompson, California Natural Resources Agency (CNRA) noted she is excited for the next steps and looks forward to the visioning exercise. After opening comments, Committee members introduced themselves. A full list of participants is included in Attachment A. Mr. Magill then reviewed the agenda and noted that this meeting is a continuation of the priorities discussion at the June 23rd meeting. The purpose of today's meeting is to refine those priorities into a working Vision to help guide Committee activities moving forward.

Items for Committee Approval

Mr. Magill asked members to provide any final comments or edits to the June 23rd Summary by July 30 , 2022 (see Action Item #1).

Update on 2022 Proposals

Mr. Magill requested updates on approved/funded projects for the Subcommittee's consideration.

Distributed Watershed Modeling Project Update

Joe Domagalski ,US Geological Survey (USGS) provided updates on the Watershed Modeling Project. USGS continues working on its Hydrological Simulation Program - FORTRAN (HSPF) model of the upper Clear Lake watershed. This model will incorporate climate and streamflow data to simulate nutrient loading throughout the basin. Additionally, USGS will also use its SPATIally Referenced Regression On Watershed attributes (SPARROW) mode to provide information on source attribution of total nitrogen and total phosphorus. Combined, HSPF and SPARROW will be used to simulate where and by what quantities nutrient-laden sediment enters Clear Lake. This information will ultimately be used to create land management decisions in upstream areas.

Participants made the following comments:

- No discussion was recorded.

Basin-wide monitoring Project Update

Charlie Alpers ,USGS, provided updates on the Basin-Wide Monitoring project. He stated that sediment fingerprinting is a part of the Committee-approved modeling budget and noted that it involves a lot of data collection. Throughout June and July,, his team has collected samples of stream sediment in soils, stream banks in roadside ditches to indicate where nutrient sources are located. They will also receive funding from the US Bureau of Land Management (BLM) for a portion of monitoring work on Scotts Creek. USGS plans to collect about 800 samples which include samples from "integrator sites" at the bottom of each watershed and sub-watershed.. Additionally, core samples have been taken as part of ongoing work for the US Environmental Protection Agency (EPA); these samples will be matched using sediment fingerprinting to figure out where specific sediments, nutrients, and trace elements already in the lake are coming from.

He noted that he expects the gauging station on Scotts Creek for additional monitoring will be operational by October; a broader presentation on modeling, monitoring, and sediment fingerprinting results will be provided at the September Committee or Subcommittee meetings. The funding for all of this work has been approved for additional years for monitoring but the finalization of the contract is still in progress.

Participants made the following comments:

No comments were recorded.

Bathymetric Survey Project Update

Alicia Cortes, UC Davis, provided updates on the Bathymetric Survey project. Ms. Cortes noted that recent damage to key equipment, combined with low lake levels, has delayed bathymetric survey work. Survey work will restart in the Fall, with results expected by the end of the calendar year.

She noted that the website with the TERC data is being finalized and will be available to the public soon.

Participants made the following comments:

No comments were recorded.

Mercury Modeling Project Update

Charlie Alpers, USGS, provided updates on the mercury modeling. He expressed his appreciation for the funding that they received and looks forward to working with everyone on the project. He noted that this contract will be separate from the amendment for the additional 2-3 years of upper watershed monitoring/modeling. They are currently waiting on updates from CNRANatural Resources Agency regarding the amendment.

Participants made the following comments:

- Broc Zoller, Lake County Farm Bureau, asked if they were able to locate sampling sites above and below Tule Lake (near the confluence of Middle Creek and above Tule Lake on Scotts Creek). Mr. Alpers responded they are currently working on site access issues now have a letter to send to the landowners. He noted they are working on three potential sites with bridge crossings that he would like to pursue in winter 2022/23. He noted that they are interested in getting sediment samples from the stream in that same location for their sediment fingerprinting study.
- Mr. Magill asked if Lake County was able to provide information to USGS on the existing bridge on Scotts/Middle Creek. Mr. Alpers confirmed he spoke to Lake County; there is a public right of way within 15 feet of the bridge on both sides and at every stream crossing. They have reviewed the studies from the Big Valley Tribe regarding cyanotoxins in the streams and found it to be useful information for the sediment fingerprinting study.

The following projects did not have updates due to the absence of representatives.

- Review Existing BMPs Project Update
- Public Assessment Project Update
- Limnological Sampling Project Update
- Ongoing TERC Research Project Update
- Lake County Storm Water Infrastructure and Program Improvement Project Update
- Dilapidated Structure Abatement Project Update

- Kelsey Creek Fish Ladder Restoration Project Update
- Tule Replanting/Invasive Project Update
- UC Davis Environmental Education Project Update
- Cobb Mountain Watershed Education Program Update
- Lake County AEM Survey Project Update
- Scotts Valley Aquifer Evaluation Project Update
- Hypolimnetic Oxygenation Pilot Project Update

Visioning Exercise: With research activities underway, what should be the focus of the Committee as it awaits research results?

Mr. Magill explained that the vision exercise is intended to help guide the committee's work moving forward, but it is not intended to revisit projects already approved by the committee to date. He reviewed AB 707 as a starting point for committee activities to cultivate some ideas. Ms. Thompson noted that this vision statement will help set high-level goals for the Committee: once the goals in place, the Committee can design specific projects to meet those goals. . Mr. Magill then shared a recap on the general ideas/visions mentioned in the June 23rd subcommittee meeting.

Participants made the following comments:

- Jim Steele, Lake County resident, mentioned that there needs to be a benchmark for improvement. He noted that there should be a definition of what it means to achieve success and how they identify what a successful BRC committee effort looks like regarding improving Lake health.
- Mr. Zoller mentioned that there are various ways to measure every point and develop benchmarks. He stated that there should be a bigger focus on the largest tributaries, in particular the Middle Creek drainage. Mr. Steele agreed with Mr. Zoller and noted that there are no benchmarks for the other inputs around the lake which can be shown via satellite work that was previously conducted.
- Mr. Magill asked Ms. Cortes if a main objective of UC Davis's work is to focus on the amount of nutrient loading happening in the lake. Ms. Cortes confirmed this is a primary focus of their work, and noted that over the past 2 years there has been little input from streams, but some of the worst algal blooms. An additional focus of her work is to see how the Lake is changing due to extreme weather events and drought. Mr. Steele responded that the lake acted the same way during the drought of 1975-1976. It is believe large algal blooms stemmed from the legacy nutrients and high temperatures. Ms. Cortes responded that the lake did not have the same conditions and gave an example as to why she disagreed:
 - In 1975-6 the lake had a mean dissolved oxygen concentration ~8 mg/L and orthophosphate ~0.03 mg/L;

- In 2020-21 the lake mean dissolved oxygen concentration ~7 mg/L and orthophosphate ~0.15 mg/L.
- She noted that the conditions are driven both by the cumulative input from the stream loading plus the lake suffering from extreme events over the years.
- Karola Kennedy, Koi Nation, mentioned that the California Environmental Quality Act (CEQA) process is a crucial topic to focus on in Lake County and noted that she agrees with Mr. Steele regarding the need for a benchmark.
- Mr. Alpers mentioned that they hope to understand the complexity of mercury and nutrient cycles.
- Ms. Kennedy mentioned that Temashio Anderson has concerns about the inclusion of Tribal entities in regard to research and data management. Additionally, he is concerned about the Lake County Planning Department on projects and how it influences Tribal /cultural resources.
- Mr. Alpers mentioned that his vision is to improve the understanding of the interaction between mercury cycling and nutrient cycling in that is one of the reasons for adding mercury to the lake. He noted that if nutrients are changing the lake then it may affect the mercury cycles and bioaccumulation.
- Ms. Kennedy mentioned there is a huge bloom in the Lower Arm of the lake and covers 100 feet off the shoreline. There has been a fish kill due to high ammonia within the water systems. High levels of ammonia and cyanotoxin could have serious negative consequences on public water systems and public health systems such as dialysis clinics.

An Achievable Vision Statement

Mr. Magill explained the vision statement is meant to clarify the projects purpose, eliminate confusion, and unify the committee. He noted that the statement should be simple, engaging, collaborative, forward-thinking, and specific.

- Ms. Kennedy expressed the need for an actionable Clear Lake watershed management plan with the data that is currently available.
- Mr. Sklar noted that after the strategies are developed , a management plan will essentially be the product BRC is tasked to develop.
- Ms. Kennedy expressed that success would include projects like the Middle Creek restoration project moving forward at a faster pace. She noted that the biggest issue is the lack of urgency to fast track the projects. Carter Jessop, United States Environmental Protection Agency (EPA) agreed and noted that there needs to be efficient implementation and an expedient timeline.
- Ms. Cortes mentioned that they should encourage the communities to develop/cultivate a sense of pride for the lake from the community.
- Mr. Steele noted that the political goal is to have lake conditions where it is safe and usable for recreation and visitor use. And the technical goals are to have a management plan with measurable metrics that define progress.
- Mr. Alpers mentioned that the recovery of hitch populations is an important goal.

- Mr. Alpers expressed the need to increase recreational opportunities.
- Mr. Steele and Ms. Kennedy expressed the need for Tribal/cultural beneficial usage.
- Mr. Magill encouraged members to send over examples from other efforts to include in the Technical Subcommittees vision statement.
- Ms. Cortes expressed the need for an online product that gives a summary of the state of the lake. She shared an example: Chrome-extension://efaidnbmnnnibpcajpcgiclfndmkaj/https://www.lcbp.org/wp-content/uploads/2016/03/SOL2021_full-document_for-web.pdf. Ms. Kennedy agreed with Ms. Cortes and mentioned that this would be a great addition to tourism and giving the public the truth about the current state of the lake and recreate safely.
- Mr. Domalgaski mentioned that he has previously gone through a vision exercise with the Delta Regional Monitoring Program. He noted that it took about a year to identify the issues and then developed the criteria on what types of studies are required to be developed. Subsequently, subcommittees were developed and tasked to identify suitable studies to conduct. He noted that this was held as the standard and any entity with proposals would have to address the issues they presented regarding water quality issues and management plans.
- Mr. Alpers suggested there be terminology regarding recreational use in the action statement.
- Mr. Zoller mentioned that there is an opportunity to explore what has been discovered about the lake in previous years and compare those methods used to what scientists are using currently. Mr. Magill agreed and responded that there has been discussion regarding ordinances and the kinds of policy and regulatory issues that impact the health of the lake.
- Mr. Steele shared a link to Pulse of the Bay as a potential model for Clear Lake: https://www.sfei.org/sites/default/files/biblio_files/RMP%20Update%202021%20101421%20highres.pdf
- Mr. Steele mentioned that the committee can give direction regarding "developing solutions" or identifying solutions and benchmarks.
- Mr. Alpers mentioned that there have been attempts to evaluate past data and noted that it is rich data that can be useful and can help inform many of the current issues. Mr. Domagalski noted there are a lot of data but also a lot of data gaps to cover.
- Mr. Alpers noted the need to develop solutions to reduce invasive species. Mr. Zoller responded and noted that the research being done on cyanobacteria is predicting when the cyanobacteria will appear and may or may not involve much reduction of the species. Mr. Alpers responded that the research could help identify when to utilize the oxygen and could potentially be used as a management solution. Additionally, he mentioned the use of sensory tools to monitor and protect habitats.

Criteria for Future Projects: Questions to be considered.

- Mr. Alpers suggested asking how well a project addresses the issues of the lake.
- Ms. Kennedy suggested asking how well it aligns with the legislation. Additionally suggested asking how much will the project protect Tribal resources.
- Mr. Domalgalski suggested some management questions for nutrient research. The questions are listed below:
 - Is there a water quality problem?
 - Are nutrients contributing to the water quality problem?
 - Can nutrient management help address or ameliorate the problem?
 - Are particular hydrologic, biological, meteorological, or biogeochemical conditions needed for nutrient management to be effective?
 - How may anticipated future Delta conditions affect the nutrient-related problem?
 - What nutrient management measures are needed to protect beneficial uses now and in the future?
- Ms. Thompson noted that it is important to identify local partners in the region.
- Mr. Sklar mentioned that the projects must directly improve the water quality and the condition and health of the lake.
- Mr. Steele stated that at a higher level, are we talking about a healthy and sustainable, resilient lake capable of withstanding extreme climate events?

Public Comment

None.

Action Item Review and Next Steps

- CCP will clean up the vision statement and distribute it for review before the next Technical Subcommittee meeting on August 25, 2022 at 1pm.
- Subcommittee members will submit any additional comments or edits to the June 23rd meeting Summary by July 30, 2022 .

Adjourn

ATTACHMENT A: Roster of Participants

Meeting Participants & Staff		
First	Last	Organization
Charlie	Alpers	United States Geological Survey (USGS)
Alicia	Cortes	UC Davis, Tahoe Environmental Research Center
Joe	Domagalski	United States Geological Survey (USGS)
Christina	Harrison	Pomo of Upper Lake
Carter	Jessop	United States Environmental Protection Agency

Karola	Kennedy	Koi Nation of Northern California
Erik	Sklar	Blue Ribbon Committee for the Rehabilitation of Clear Lake
Jim	Steele	Lake County resident
Geneva	Thompson	California Natural Resources Agency
Broc	Zoller	Lake County Farm Bureau
Terre	Logsdon	Scotts Valley Band of Pomo Indians
William	Fox	Lake County Water Resources Department
Sam	Magill	California State University, Sacramento
Jessica	Walker	California State University, Sacramento

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