

Blue Ribbon Committee for the Rehabilitation of Clear Lake (Committee)

Meeting # 10
10:00 am-1:00 pm
June 18, 2020

Meeting Summary¹

Attendees:

See Appendix A

Action Items:

1. Committee members who have not yet signed the Middle Creek Restoration Project letter of support will sign the letter and return it to Sam Magill, Sacramento State Consensus and Collaboration Program (CCP) as soon as possible. Mr. Magill will submit the collated letter to Harry Lyons for distribution.
2. Sarah Ryan, Big Valley Band of Pomo Indians, will provide an alternative image of Mt. Konocti for inclusion in the Committee logo to CCP.
3. The UC Davis Center for Regional Change (CRC) will update its map of Clear Lake communities to include all tribal lands.
4. CCP will send an updated list of prospective members for the socioeconomic and cultural/traditional ecological knowledge subcommittees to Committee members for review and approval.
5. CCP will distribute the summary and action items for consideration by the Committee.

Welcome and Introductions

Sam Magill (Facilitator), Sacramento State Consensus and Collaboration Program (CCP) welcomed the Blue Ribbon Committee for the Rehabilitation of Clear Lake (Committee) to the tenth meeting and introduced Erik Sklar, Committee Chairman and President of the California Fish and Game Commission. Eric Sklar welcomed Committee members and opened the meeting.

The Facilitator reviewed Zoom protocols and the attendance list before asking the Committee for additions to the agenda. Sarah Ryan, Big Valley Band of Pomo Indians, asked that an update on current cyanotoxin conditions be added to the agenda. This was incorporated and with no further additions proposed, the agenda was confirmed.

¹ Except as specifically noted, all comments reflected in the summary were derived from Committee Member statements. Where applicable, specific responses are provided to individual comments/questions.

Items for Committee Approval

March 13, 2020 Meeting Summary

The Committee approved the previous meeting's Summary without edits.

Middle Creek Letter of Support

The Facilitator reminded the Committee that the Middle Creek Letter of Support had been circulated on March 31, 2020. Several members of the Committee have already provided e-signatures. Any remaining Committee members who have not signed the letter were encouraged to do so as soon as possible. CCP will collate signatures and send it to Dr. Harry Lyons, Lake County Resource Conservation District, for transmission (**see Action Item #1**).

Committee Logo

The Facilitator shared a draft Committee logo and asked the Committee for feedback. The Committee approved the logo conditionally with the following changes:

- Add colors to the logo
- Refine the outline of Mt. Konocti; Ms. Ryan will provide a more recognizable image (**Action Item #2**)

Fiscal Year (FY) 2020/2021 Recommendation Funding Update and Committee Discussion

Mr. Sklar provided an update on the state of funding for Committee recommendations. The newly passed state budget reduced funding across the board due to the impact of COVID-19. As a result, funding requests for 2020 Committee recommendations were not included in the budget. Mr. Sklar noted; however the Committee still had the overwhelming support and dedication of the California Natural Resources Agency (Resources) and Assemblywoman Aguiar-Curry.

Mr. Sklar noted the 2019 State tax filing deadline has been postponed to July 15th. At that time, the Governor and Legislature will revisit the budget and determine if additional funding may be available for ongoing projects and programs. Due to this uncertainty, several state projects are on hold; Mr. Sklar remained hopeful that funding would become available for Committee activities. In the interim, Mr. Sklar and the Facilitator are identifying and seeking alternative sources of funding. Mr. Sklar thanked the Committee for their flexibility and patience during these unprecedented times, thanked the Technical Subcommittee for developing a detailed monitoring plan, and provided time for questions from the Committee.

The following questions and comments were provided:

- Question: If there is limited funding, will Resources make the final decision on how that funding is used or does the Committee have any say in how funding is allocated?

Response: Mr. Sklar is working closely with Assemblywoman Aguiar-Curry and CCP to try to secure funding; they should have a better idea in July about whether State funds are available. Mr. Sklar will reach out to the Committee when he believes they can help.

- Question: This is unfortunate but not surprising. Is the Committee cut out as a line item? What, if anything, is the residual budget?

Response: Yes, the Committee was not included in the state budget. However, facilitation services are funded through the end of FY 20/21. The Committee will continue its discussions even absent funding for specific recommendations at this time.

Committee members supported identifying additional funding sources and requested any additional funding information be shared with the Committee as it becomes available.

Local/Committee Member Updates

Clear Lake Cyanobacteria Update: Lake Monitoring

Ms. Ryan provided a cyanotoxin update for the Committee. Cyanobacteria testing is being conducted Clear Lake every two weeks. A test on June 8th indicated cyanotoxin levels were almost triple the acceptable rate. There was also one report of adverse human health effects and one report of animal illness attributed to cyanobacteria exposure. Ms. Ryan noted that at the county level reporting and response has been rapid and efficient.

California Resilience Challenge Grant

Ms. Ryan announced that Big Valley recently received funding from the California Resilience Challenge Grant. A virtual Zoom launch of the grant would take place on Friday June 19th. All Committee members are invited to attend. The grant funding will be used to track algal blooms by engaging the public in collecting lake temperature data using the iNaturalist app. Big Valley Rancheria hopes to better link lake temperature changes, algal blooms, and fish kills in real time using app data. Ms. Ryan welcomed further collaboration from the Committee in seeking funding for the project and encouraged anyone interested in collaborating to reach out to her.

Cyanobacteria Update: Drinking Water Monitoring

Karola Kennedy, Koi Nation, added that cyanobacteria monitoring of drinking water had also taken place, and explained that drinking water is being sampled every two weeks. Ms. Kennedy noted that the lower arm of Clear Lake had concerning levels of microcystin, but there were no concerns with drinking water, as the Highland Water Company water treatment center has not reported elevated cyanotoxin levels.

Ms. Ryan shared that there is cyanobacteria signage located at the 23 cyanobacteria monitoring sites. These signs include a scannable bar code that links users to the Big Valley Rancheria website, where information on cyanobacteria levels is available. Angela DePalma-Dow, Lake County Water Resources Department (WRD), asked the Committee if cyanobacteria signage should be more complete (i.e. include direct information about current cyanobacteria levels) and if it should be in more central locations (i.e. in the Clear Lake Oaks fishing area, which is popular with the public). She noted that there are some limitations on how and where signage is allowed (i.e. private vs public property). Currently, signage is only located right next to the monitoring site which is not the most visible location to resource users like people engaged in fishing. Should signage be located?

The Facilitator noted that this topic is related to the Public Perceptions Survey, to be addressed later in the meeting and requested this issue be discussed at that time.

Research Updates: UC Davis Center for Regional Change (CRC) & Tahoe Environmental Research Center (TERC)

TERC Presentation

Alicia Cortes, TERC, thanked the Committee for their time and efforts, notably Mr. Sklar, Ms. Ryan, and Ms. Kennedy for their continued support and collaboration. She then provided water quality and ecological updates noting that Clear Lake water sampling had been paused for three months (March, April & May) due to shelter in place (SIP) restrictions associated with COVID-19. Field crews continued sampling in June.

Ms. Cortes explained TERC collected year-long temperature data by monitoring the Clear Lake water column. Data indicated there were several instances of vertical temperature stratification in the water column; these periods were associated with low levels of dissolved oxygen (DO), creating anoxic conditions. When anoxic conditions occur the vertical distribution of fish changes in the water column. This is generally associated with unusually high concentrations of fish in colder sections of the water column (where DO is higher), adverse fish health effects and, in more prolonged cases, fish die-offs. Anoxic conditions can also have adverse effects on the release of nutrients at lower levels of the water column.

The TERC team hopes to use data on temperature stratification to develop a predictive tool. This will aid in forecasting when DO levels will dip below key thresholds and determine how long these anoxic conditions are likely to last. The development of this warning tool can be directly applied to manage resources and be utilized by stakeholders.

The TERC team is also developing a new algorithm to better predict when cyanobacteria blooms will take place in Clear Lake. This algorithm was developed by utilizing data collected from the San Francisco Estuary Institute (SFEI) and the National Oceanic and Atmospheric Administration (NOAA) datasets; this data is then field-tested to provide more place-specific predictive tools. This is done by using remote sensing tools to refine and more accurately calibrate the resolution, distribution, and viability of cyanobacteria.

Additional TERC updates included:

- TERC is collaborating with US Geological Survey (USGS) and the US Environmental Protection Agency (EPA) on mercury monitoring
- TERC is continuing with 3-D modeling of Clear Lake
- TERC is interested in increasing technical engagement with Clear Lake stakeholders, and ensuring their research is shared with the public so that recommendations are useful and appropriate
- TERC is collaborating with the UC Davis CRC to develop public and Tribal engagement strategies; both groups are committed to increasing their efforts in listening and engagement. The TERC team deemed these especially important given current events related to racial justice
- Long term TERC project goals include:
 - Opening conversations with the public
 - Modeling DO enhancements
 - Exploring further funding sources

The following comments were recorded:

- The Committee thanked TERC for their work and demonstrated enthusiasm and approval for refining the tool further and exploring management applications.
- The TERC team thanked several members of the Committee, namely Mrs. Ryan and Ms. Kennedy for their continued collaboration and help in accessing Clear Lake data. Both Committee members expressed their dedication to continued collaboration and communication with TERC.

CRC Presentation

Bernadette Austin, CRC, presented on the overall goals, activities and timelines of the three branches of the CRC team: socioeconomic analysis, Tribal engagement and community development. She explained that Dr. Noli Brazil would be presenting on socioeconomic analysis momentarily. The CRC is finalizing their Socioeconomic Analysis Draft Report, which compiles data on five topics: industry, workforce, economy, housing and demographic data. The CRC hopes to incorporate feedback from key members of the Clear Lake community to increase the report's relevance and accuracy before handing it to the Committee for review.

CRC noted there have been some changes and updates to Tribal engagement research. Initially the CRC intended to conduct in-person meetings, however, due to COVID-19 restrictions the CRC has shifted their engagement strategies and has begun to conduct surveys with key stakeholders instead. The CRC is also developing a Tribal resource webpage that they hope to launch in the fall. All future in-person meetings are contingent upon SIP restrictions.

In the area of community development, the CRC's goals include to share information on promising practices with emphasis on disaster relief and community development.

Dr. Brazil presented the Socioeconomic Analysis of the Clear Lake community. He began by explaining that he defined the Clear Lake community by selecting 15 specific locations (illustrated on a map) within Lake County. This was done to represent the Clear Lake at a more granular level (rather than on the county level) and was limited to only include census tracts with reliable census data. CRC aggregated census tract data from the Clear Lake community to analyze and compare it to the surrounding southern and northern counties (these counties were grouped by north and south due to their socioeconomic similarities). Dr. Brazil then presented on the five different areas: industry, workforce, economy, housing and demographic data; he explained trends within the Clear Lake Community and compared these with those of surrounding counties, over the last 20 years.

A Committee member commented that Tribal lands are not included on the map or illustrated in the 15 locations that make up Dr. Brazil's definition of the Clear Lake Community and asked that Tribal lands be added to the map and to the socioeconomic analysis (**Action Item #3**).

Dr. Brazil explained that such an oversight was certainly not intentional; however, it was difficult to incorporate Tribal lands into the analysis because the census tract data on those geographic areas was not viable. Ms. Austin noted the CRC team would like to incorporate Tribal voices in their research. She reminded the Committee that the CRC research has three branches: socioeconomic analysis, community development and Tribal engagement; these three branches are intended to fit together holistically. The CRC intends on incorporating other members of the community, including Tribal members, to create a more comprehensive narrative of the Clear Lake Community. Ms. Austin shared that CRC intends to include qualitative data (gathered through Tribal engagement) to complete, complement, and add fine-scale information to unreliable census data.

The Facilitator noted that the Cultural Resources/Traditional Ecological Knowledge (TEK) Subcommittee would also be looking into some of the topics mentioned, and provide recommendations to the CRC, guiding research and reviewing recommendations.

Discussion of Committee Recommendations and Next Steps

Sophie Carrillo-Mandel, CCP, reviewed the timeline and responsibilities of the Socioeconomic (SE) and Cultural Resources/TEK subcommittees. She noted that in the development for the subcommittees it is important to keep in mind that the main goal of the Committee and its subcommittees must be tied back to environmental improvements highlighted in AB 707. Those invited to participate in both subcommittees were selected keeping in mind they would have insights and experience relevant to water quality.

Ms. Carrillo-Mandel clarified that both subcommittees are ad hoc and are not formal decision-making bodies. Subcommittees will likely be most active between June and September when they are charged with reviewing recommendations. Ms. Carrillo-Mandel then presented the names and affiliations of the list of proposed invitees to the SE and Cultural Resources/TEK subcommittees. The Committee was asked for feedback on the proposed list.

Ms. Carrillo-Mandel asked for comments from Ms. Logsdon and Ms. Shock, who asked the Committee if they had any recommendations of people or subject areas that should be added to the proposed list of subcommittee members.

The following questions and comments were recorded:

- Question: Are the people listed available to serve on the subcommittee?
Response: Prior to sharing the list with the Committee, Ms. Logsdon and Ms. Shock reached out to potential subcommittee members with some preliminary information about the role and the Committee. All but two of the people listed had responded and informally agreed to serve on the subcommittee if formally invited by the Committee.
- Comment: Disney Water Sports, who have not responded to the subcommittee invitation yet, would be an important representative for the subcommittee because it is part of an industry that interacts heavily with the public directly on the lake. Representatives from marinas, bait and tackle, recreation, casinos, and fishing should be added to the subcommittee invitation list.
- Comment: Another representative should be added to represent Recovery, (ideally a representative from the north shore area).
- Comment: If TeMashio Anderson, the new Committee representative for Robinson Rancheria, were to be included in the subcommittee, he could serve as a representative for both Robinson Rancheria and Mendocino College
- Question: How will the subcommittee interface with the UC Davis researchers? Will the Subcommittee give guidance and direction?
Response: CRC has been very involved in the creation of the subcommittee and the relationship between the subcommittee and the CRC will be similar to that of TERC and the Technical Subcommittee. The subcommittee will likely be very involved in giving guidance and direction to the CRC.

The Facilitator asked, given recommended additions to be incorporated, if the general approach for convening the SE Subcommittee and Cultural Resources/TEK Subcommittee in July was to the approval of the Committee. The Committee approved the approach for both subcommittees. CCP will update and send a finalized list of subcommittee members to the Committee (**see Action Item #4**).

Discussion of Committee Recommendations and Next Steps

The Facilitator provided an update on Technical Subcommittee activities. Implementation of the two primary recommendations to develop a watershed model of the lake and implement watershed modeling are delayed due to the funding shortfall. Additionally, the Technical Subcommittee had received a presentation from the Commonwealth Scientific and Industrial Research Organization (CSIRO) on remote sensing technologies. The Technical Subcommittee was continuing this conversation on potential areas of collaboration with CSIRO.

Modeling and Monitoring Discussion

The Facilitator discussed the multi-model approach developed by the Technical Subcommittee to study the larger Clear Lake watershed (including upstream tributaries) and provide recommendations for rehabilitation. Three models were recommended:

LSPC / HSPF:

This model can provide climate analysis and includes climate change scenarios (this has four General Circulation Models, as in the California Climate Assessment), this model can also compute loads of nitrogen, phosphorous, sediment, and mercury. To calibrate the model, it is necessary input (monthly, daily) for SPARROW and Clear Lake models.

SPARROW:

The SpATIally Referenced Regression On Watershed attributes (SPARROW) model represents a Geographic Information Systems (GIS) based approach using stream gages and other monitoring/sampling stations to calibrate and determine nutrient (with a focus on nitrogen and phosphorous) and sediment loads as a function of land use and watershed characteristics. SPARROW also provides monthly time steps and a decision support system to evaluate management scenarios.

Sediment Fingerprinting:

This model uses sampling of soils, streambed sediments, and streambank deposits to facilitate chemical and isotopic analyses. This allows for the independent determination of nitrogen and phosphorous sediment sources that are introduced into Clear Lake by examining land use categories as well as soil types.

Joseph Domagalski, USGS, mentioned that one of the benefits of using SPARROW is that it can identify where in the landscape nutrients are likely being introduced into the Clear Lake watershed. This model has been successful in identifying the sources of erosion and has aided in making management decisions on land-use (for example, whether to target livestock management or erosion control).

Charles Alpers, USGS, noted that Sediment Fingerprinting could further incorporate information on fire data and erosion, to aid in land management decisions and erosion control. Dr. Alpers also noted that the Bureau of Land Management (BLM) expressed interest in funding research that examined in detail the introduction of sediment in Scott's Creek watershed and looked at the effect of off-road vehicles as well as other sources. Dr. Alpers noted that it is possible that funding from BLM might come through prior to funding appropriation for Committee activities; if that is the case efforts will be made to share information with the Committee and contribute where appropriate.

Deferred Recommendations: Remote Sensing, Database Compilation, and Data Analysis

The Facilitator reviewed the 2019 deferred recommendations and next steps these included:

- Conduction Remote Sensing Analysis:

This recommendation included using LiDAR to better study the presence of nutrients and algal blooms throughout the Clear Lake Watershed; one potential way to accomplish this research would be through partnership with CSIRO and UC Davis. The Facilitator reminded the Committee that much of this research is contingent upon funding, so it remains to be seen what will be possible in the upcoming months. Furthermore, LiDAR funding, which informs these areas of research, has been halted within California for the remainder of 2020, so it remains to be seen how feasible these projects will be.

- Compile Clear Lake Data in an Accessible, Unified Database:

The Facilitator noted that the hope was to build off the substantial local and Tribal databases to create one unified and accessible data base, with a dedicated staff to compile and maintain it. One of the questions that will be given to the Technical Subcommittee will be how to reconcile and compile data, as it has been collected and imputed into two types of databases (state and national databases) and a decision will have to be made on which of these is to be utilized.

- Analyze Existing Clear Lake Data:

Yet another area of interest is in analyzing existing data to draw connection and gain insights into Clear Lake and the surrounding watershed, CCP will be posing questions to the Technical Subcommittee on how best to do this.

The Facilitator asked for Committee confirmation of remaining 2020 activities, including a discussion of potential 2021 recommendations. The following comments were recorded:

- It was recommended that CSIRO and UC Davis collaborate as much as possible, using remote means. While travel between Australia (where CSIRO is based out of) and California is limited, there are still opportunities to conduct this research remotely and sources of funding are impacted but remain active. There might also be opportunities to match funding between the two organizations, thus doubling their efforts.

Public Comment

Ms. DePalma-Dow explained that in preceding years Lake County has partnered with the Department of Water Resources (DWR) and other agencies to collect baseline water data; however, DWR is not going to fund these samplings moving forward. This data collection is vital and represents an essential knowledge base that informs a variety of studies and programs within the county. Furthermore, in the absence of agency funding, Lake County does not have the capacity to collect water data on its own. Ms. DePalma-Dow has negotiated to have DWR conduct four more sampling trips in the upcoming months, before funding ends. She is planning a meeting on July 6th on this topic that will include water quality stakeholders like those on the Committee. The Committee is invited to attend to brainstorm how to prioritize and continue to fund water monitoring.

No additional comments were recorded.

Closing Comments

Mr. Sklar thanked the Committee and members of the public for their engagement and participation and reiterated his continued commitment to developing alternative funding sources for Committee activities.

The Facilitator committed to sending the Committee an updated version of the action items, as well as the TERC presentation (**Action Item #5**). He thanked the committee and members of the public and adjourned the meeting.

ADJOURN

Committee Members Present	
Name	Organization
Alix Tyler	Elem Indian Colony
Brenna Sullivan	Lake County Farm Bureau
Eddie Crandell	Lake County Board of Supervisors
Eric Sklar	Committee Chair
Harry Lyons	Lake County Environmental Representative
Irenia Quitiquit	Robinson Rancheria
Jan Coppinger	Lake County Special Districts
Jennifer LaBay	Central Valley Regional Water Quality Control Board
Karola Kennedy	Koi Nation
Mike Shaver	Middletown Rancheria
Paul Dodd	UC Davis
Sarah Ryan	Big Valley Band of Pomo Indians
Terre Logsdon	Scotts Valley Band of Pomo Indians
Wilda Shock	Lake County Economic Development Corporation
Committee Members Absent	
Linda Rosas-Bill	Habematolel Pomo of Upper Lake