Blue Ribbon Committee for the Rehabilitation of Clear Lake

Technical Subcommittee
12:00 – 4:00pm
August 27th, 2019

Meeting Summary #4

Attendees:

Attendees are listed In Attachment A.

Action Items:

1. The facilitation team will update the July 9th Meeting Summary on page 5, changing DWR to CVRWQCB.
2. The subcommittee should send any final edits to the July 9th Meeting Summary to the facilitation team by August 30th and any further comments on the recommendations, as well as information on potential partnerships and funding sources for the recommendations to the facilitation team by September 13th.
3. Tom Suchanek will provide contact information for Susan Ustin at UC Davis to the Facilitation Team.
4. Angela DePalma-Dow will provide cost estimates for water quality sampling and investigate if Lake County can contribute any funds to a bathymetric survey.
5. Sarah Ryan will provide cost estimates for stormwater monitoring, as well as a cost estimate, a list of documents that would need to be reviewed, and revised and detailed language for the recommendation "Review of the implementation and efficacy of existing tribal, local, state, and federal programs, BMPs, and other management requirements in the Clear Lake Basin."
6. Geoff Schladow will provide reports about early TERC watershed modeling.

Welcome and Introductions

Sam Magill (Facilitator) Sacramento State's Consensus and Collaboration Program (CCP) convened the fourth meeting of the Technical Subcommittee (Subcommittee) of the Blue Ribbon Committee for the Rehabilitation of Clear Lake (Committee). A full list of participants is included in Attachment A. An audio recording of the meeting is available online here.

The Facilitator outlined the following meeting objectives:

- Confirm the Technical Subcommittee meeting #3 summary
- Review and refine Subcommittee recommendations to the Committee

- Schedule future Subcommittee meetings

The Committee received the Subcommittee's preliminary list of recommendations at their August 15th Interim Meeting, provided comments, and agreed that the Subcommittee should continue refining the recommendations for the Committee's annual report to the legislature. The bulk of this August 27th Subcommittee meeting was spent reviewing and refining the recommendations.

Confirm Meeting Minutes from July 9th Technical Subcommittee Meeting

The Facilitator asked for any edits to the July 9th Summary. Sarah Ryan, Big Valley Band of Pomo Indians, asked that on page 5 of the meeting minutes, one of the bullets be changed to indicate that Central Valley Regional Water Quality Control Board (CVRWQCB), and not Department of Water Resources (DWR), "uses only state databases available and does not include the federal database or tribal information" and that " the lack of feedback mechanisms … for integrated water reports" is a problem from CVRWQCB, not DWR (see Action Item #1).

The Facilitator thanked the committee and asked that any further edits to the notes be sent to him and the Associate Facilitator Sophie Carrillo-Mandel by August 30th (see Action Item #2). He underscored the importance of the notes as the administrative record for these meetings.

Refining 2019 Recommendations

The Facilitator reminded the Subcommittee that the recommendations they are offering to the Committee will be part of a larger annual report sent to the legislature and the governor's office by January 1st of each calendar year. These recommendations will inform the portion of the report about barriers to improving water quality. The current recommendations are heavily focused on research and further data gathering with the purpose of ultimately establishing baselines and determining if water quality goals are being met. The following seven recommendations were identified by the facilitation team as having high levels of support in the Subcommittee:

- LiDAR flight of entire Clear Lake watershed
- Stream gauges and continuous input monitoring of upper watershed
- Upper watershed modeling
- Unified database/data collection for Clear Lake
- Public assessment of perceptions of Clear Lake water quality issues
- Bathymetric Survey of Clear Lake
- Review of the implementation and efficacy of existing tribal, local, state, and federal programs, BMPs, and other management requirements in the Clear Lake Basin

The Facilitator said that members of the public have commented that these actions are too focused on data collection and not enough on specific actions. He requested that if anyone believes specific actions are warranted at this time, they introduce those ideas so they may be discussed by the Subcommittee. The Facilitator then began the review of the specific Recommendations. During the meeting, "Actions to

accelerate the Middle Creek Restoration Project" were added as a high-priority recommendation of the Subcommittee.

LiDAR flight of entire Clear Lake watershed

The Facilitator asked what data is still needed to refine the recommendation for a LiDAR flight of the Clear Lake Watershed. The Subcommittee offered the following comments (closed bullets represent comments, while open bullets represent responses to specific comments):

- We need to groundtruth if LiDAR can pick up sheet erosion, which may only take a few inches off of a very large area. It is substantial erosion that can wash into streams, but its impact on the land is less noticeable. It is common on access roads, particularly in agricultural areas and areas that see off-highway vehicle (OHV) use.
    o Agreed. We need to determine where it is happening and to what extent it is adding to sediment loading in the lake.
    o Pyle Road and the Patrus subdivision are good examples for study.
    o In burn areas, sediments mobilize when precipitation exceeds one half inch per hour. This affects drinking water. (Amy Little provided the paper "Impacts of Wildfires on Water Quality and Drinking Water Utilities" to the group via e-mail. It can be found [here](.)
    o Susan Ustin at UC Davis can answer the question about the capabilities of LiDAR and upper watershed modeling. Tom Suchanek, UC Davis, will provide the facilitation team with Dr. Ustin's contact information (see Action Item #3).
    o The source locations of sheet erosion may be hard to identify with LiDAR, but LiDAR would show where the eroded sediment accumulates.
- Any future LiDAR flight should be of equal or higher resolution than the last flight.
- Resolution will determine the cost of the flight. Then we will need to determine cost estimates for analyzing the data and any costs associated with ground truthing the data, as related to the sheet erosion, for example.
- LiDAR can provide information on canopy height and density. That can help determine where there is regrowth after fires and where replanting may be needed to prevent future erosion.
- We need to determine the physical boundaries of the LiDAR flight. The 2016 flight was for the Tubbs fire and surveyed the whole County.
    o The LiDAR will need to encompass Cache Creek since it sometimes flows back into the lake when the dam is closed.
- I hope the LiDAR captures inflows of significant offense, these are what really determine impacts to the lake. If we are ultimately going to manage new filters in streams, we need to have a way to portray before and aftereffects.
    o LiDAR will not show flows, but it will show pathways of erosion into the lake
    o Some sources of erosion might seem insignificant, but we have to look at the cumulative impact of many seemingly insignificant factors
- In the recommendations sentence "A LiDAR scan was done of the Clear Lake basin in 2016 and comparing that to updated data would show where erosion occurs and where pollutants enter

the Middle Creek watershed," replace "Middle Creek watershed" with "Clear Lake watershed" for consistency; this still encompasses Middle Creek.

- o One-third of Lake County drains into Clear Lake. The total basin is about 480 square miles.

Stream gauges and continuous input monitoring of upper watershed

This would determine areas of greatest concern as nutrient loading hotspots to Clear Lake and monitor the efficacy of Best Management Practices (BMPs) and other management actions or regulations.

Subcommittee Comments:
- Stream gauges need to have precipitation data with them because precipitation can vary from place to place.
  - o There are rain gauges for flood protection around the lake.
- We need stream gauges at the mouths of the streams entering Clear Lake.
  - o Stream gauges cost about $60,000 to set up and $30,000 a year to maintain. The County splits the cost of the Kelsey Creek gauge with US Geological Survey (USGS), but USGS's contribution will diminish in the future. Additional parameters to study increase the cost for calibration. Data verification is another expense.
  - o TERC just installed seven gauges around the lake, but they don't provide information about the upper watershed.
  - o Middle Creek is underrepresented with gauges, given its size and contribution
  - o Funding for these recommendations will not be available until after June 30, 2020 and the final year of UC Davis monitoring is 2021. After that, the existing gauging stations will not be funded anymore. The subcommittee should recommend continuing the stations already on the lake and adding one or two more.
- More grab samples for nutrients and sediments need to be taken during the wet season. There are currently only three samplings per wet season. That is not enough to quantify loads, even with good flow data. Grab samples are expensive and must be done multiple times per year to provide meaningful data.
  - o Supporting grab samples for nutrients and calibrating that is an essential input to the watershed model developed by UC Davis.
- The County Fruit Frost program can be a partner in monitoring. They already have a weather gauge on top of Cow Mountain and could add another at the top of the Middle Creek drainage.
  - o Coordinated monitoring with multiple entities would be very beneficial, but the coordination could be costly and time-intensive.
- Setting up at least one urban area with a continuous flow sampler would provide important data. It was a surprise to find that 70-80% of flows into Lake Tahoe were urban, when only 20% of the land surrounding the lake was urban.
  - o Looking at the Total Maximum Daily Load (TMDL), the City of Clearlake is 26% and Lakeport is 14% of the MS4 areas in the County.
  - o The County has plans for monitoring for stormwater performance. It would be great if the Committee wants to support that, but the longevity of those programs is unknown.
  - o Perhaps monitoring needs to be done off the shore in urban areas.

- o It would be helpful to see a map of those areas that are draining into the lake. Runoff as opposed to flow.
  - o This could be determined by monitoring culverts where overland flow is concentrated. Urban flow has a first flush effect where 90% of contaminants come in in the first half hour. With data for one or two sites, a Global Information System (GIS) approach could come up with estimates of how much non-stream areas contribute.
  - o Big Valley Rancheria already monitors culverts. They also clean out storm drains monthly.
- Water coming off of the land into the lake is likely minimal, particularly compared to stream flows. Most water ultimately finds its way to streams and we can determine urban area contributions that way. 60% of the phosphorous coming into Clear Lake comes from Middle Creek. Kelsey Creek and Adobe creek also contribute substantially. Monitoring culverts is not a good use of money and I cannot support this as a recommendation.
  - o We won't know for sure how much is coming off of the land and out of storm drains until we monitor it.
  - o Data from storm drains and culverts needs to be captured to get the full sense of what's coming into the lake. Suggest that be added to the recommendations.
  - o The Committee doesn't have to do all of the urban monitoring for the entire lake, but a couple of index stations will evaluate the importance of urban flows.
  - o We can't disregard the importance of culvert monitoring, even if it is not of high enough importance to the Committee to recommend.
- Monitoring needs to be done along the Oaks arm. There are water quality issues and Hazardous Algal Blooms (HABs) there. No streams flow into the lake there, but there are high slope agricultural areas along Highway 20 that may be contributing, and there are culverts that can be monitored.
  - o Very little agricultural land drains into the lake. Only what you can see from Highway 20, otherwise most of it drains into Cache Creek through Spring Valley.
  - o There are some documents put together by CVRWQCB about land use needs to improve water quality in that area.
  - o Agriculture accounts for 5% of land use in Lake County, and the grading ordinances are in place to reduce impacts on water quality. People want to blame phosphorous in Clear Lake on agriculture, but phosphorous comes off the land naturally, and is seldom applied to crops here.

Angela DePalma-Dow, Lake County Water Resources Department (WRD), offered to provide cost estimates for sampling (see Action Item #4) and Sarah Ryan offered to provide cost estimates for stormwater monitoring (see Action Item #5).

Public Comment:
- It would be helpful for the Committee to support the Municipal National Pollutant Discharge Elimination System (NPDES) program. It is an unfunded mandate that cities and counties have struggled to comply with. CalTrans also has an NPDES monitoring program that is not enforced.

Often there is no data because the sampling stations don't have flows. The City of Clear Lake is largely unpaved, and many storm drains flow directly into the lake.

Upper watershed modeling

A model is a lake management tool, a sophisticated software that predicts the effects on a lake based on various inputs. It's a way of quantifying impacts of the watershed in delivering loads and nutrients to the lake and evaluating whether past practices should still be invested in. The Facilitator described a comprehensive upper watershed model as an important tool that brings together the sampling and LiDAR recommendations. The upper watershed model would be used to understand the contribution of land use activities in the upper watershed and identify areas for best management practices (BMPs) to improve effects on the lake.

In response to questions from the Subcommittee and members of the public, Geoff Schladow, Tahoe Environmental Research Center (TERC) at UC Davis explained how lake models work, and described the Lake Tahoe Model. The Tahoe Environmental Research Center (TERC) is already creating a 3D hydrodynamic model of the lake that includes some modeling of the upper watershed, but that upper watershed model is currently limited by funding.

TERC developed a model for Lake Tahoe in 2000-2001. The model determined that most of the fine sediment and phosphorous in Tahoe was coming from urban areas, not from the forest that made up 80% of the watershed. That model is currently being used to look at future climate scenarios and what changes those could bring to the watershed. Tahoe is very different from Clear Lake, but the same type of model used in Clear Lake could quickly address the question of what is coming in via streams versus overland flow from culverts and other sources. And there may or may not be the granularity to identify specific land uses as having specific impacts.

Using a model is trying to find the balance of the least amount of monitoring you can do and the degree of confidence you are comfortable with. Tahoe has 63 inflowing streams compared to three primary streams in Clear Lake. TERC modeled about 10 major streams out of the 63, categorized streams by characteristics such as soil type, and attributed data from monitored streams onto unmonitored streams with similar characteristics. It's an extrapolation, but the streams that were monitored represented about 45% of streamflow into the lake. For the entire lake there was satellite data that could determine urban interface, roads, parking lots, and other relevant infrastructure. TERC populated the data with assessments of what runoff was, different soil types, and different slopes.

A model can cost from half a million to 10 million dollars. The Tahoe model cost about $1.5 million. But UC Davis owns the model now and can update it to apply to Clear Lake. It would be a matter of changing runoff coefficients, which takes time and effort but could be done with enough funding. When the Tahoe model showed that most loads came from urban areas, millions of dollars were saved by not implementing projects in the forests. The hope is that a model will help decision-makers and management agencies know ahead of time which projects with specific goals to invest limited funds in. Dr. Schladow offered to send out reports about earlier watershed modeling (see Action Item #6).

Ms. DePalma-Dow learned from the Public Works department at Lake Tahoe that after seeing results from the model, they invested $2 million in asset management over five years. They now have an inventory of all of the drainage ditches and culverts around the lake, and update the inventory daily. They know all of the inputs into the lake and every piece of land or street contributing.

The Facilitator asked for feedback from the participants about what would make this tool the most useful. Subcommittee comments:

- Modeling on the upper watershed needs to be done to complement UC Davis modeling in the lake.
- Big Valley has substantial data, much of which has not been analyzed. The more data is fed into the model, the stronger it will be.
- We already know that 60% of the flow into Clear Lake comes from Middle Creek, which is more than the 45% flow that was accounted for in Tahoe. We don't have to spend a lot of resources on modeling, it's already been modeled to the degree of accuracy of Tahoe.
  - The streams only account for a fraction of the watershed and knowing what is coming from 2-3 dominant streams does not capture all of the inputs into the lake. The whole Oaks arm and a lot of the lower arm have no stream inputs. Keep in mind that in Tahoe, 80% of the land was forest, but 80% of the inputs came from urban areas.
- It would be good to come up with a low-medium-high cost model and provide the Committee with choices about the different levels. We could also identify what programs this model would support.

Public Comment:
- It would be interesting to see how changes in management of Bureau of Land Management (BLM) and US Forest Service (USFS) land has impacted the watershed. We should consider work that has already been done and reference previous reports, so we are not reinventing the wheel.
- Can Dr. Schladow tell us of the amount of money he spent on the study and what was done to improve the situation? A lot of people talk about studies but not about taking the studies and actually doing something with them.
  - The study allowed land managers to identify and implement the more effective BMPs for land management and not spend money on minimally effective projects.

Unified database/data collection for Clear Lake

There is a massive amount of information available on the lake that is stored in various locations and diverse formats, and much of the data has not been analyzed. This proposal is to have one location to store all of the collected data and a full-time staff person to function as a librarian managing the data and having it analyzed, as needed.

- Big Valley Rancheria has amassed the largest collection of queriable Clear Lake data from 1951-2015 available on their website. Much of it is their own, and much of it is gathered from other sources.
- Big Valley and USGS's data is also stored on Water Quality Exchange. Irrigated Agriculture and Department of Water Resources data goes to the National Water Quality Portal. University of Southern California and UC Davis house their own data.
- The recommendation was to have all of the data together and have a staff person verifying it, maybe even citizen monitoring data and quality control.
- EPA will digitize dozens of reports about the Mercury Mine in PDF format to be publicly accessible, but it will not be queriable.
- It would be helpful to have the record of how the lake system used to be perceived to work and how that may have informed current BMPs.
- The current TERC data is high resolution, taken every few seconds as opposed to once a month. We need a place to save this new data, so it's not lost.
- The CVRWQCB periodically assesses collected data in its integrated reports. A mechanism to conduct this assessment in real time would significantly benefit lake management activities.
- There are many large-scale central data hubs like this to reference. A lake data project in the northeast called LAGOS (https://lagoslakes.org/) could be an example.
- USGS in the San Francisco Bay puts their water quality data into a queriable database in both easy and expert formats, that could be done in the Clear Lake database, too.
- TERC is grappling with a large database on Lake Tahoe and can advise on challenges they have faced.
- Do not underestimate the difficulty of collecting and compiling old data, it is extremely difficult capturing the appropriate metadata. Moving forward the metadata should all be standardized.

The subcommittee generally supported this recommendation, though they agree many of the details will need to be worked out.

Public assessment of perceptions of Clear Lake water quality issues

Ms. DePalma-Dow had previously proposed an assessment of the public perception of Clear Lake water quality issues and submitted a budget estimate to the Committee. At this August 27th subcommittee meeting, Ms. DePalma-Dow acknowledged that she may have been narrow in the scope of her project and had based the estimates on budgets for similar projects in the early 2000s.

Subcommittee Comments:
- It is very difficult to get people to willingly fill out surveys and they can be very expensive
- We could do an educational campaign now and a survey in five years to identify its efficacy. Or pair the survey with an educational campaign.
  - Without doing a survey now, we would not have a baseline.
- We need to survey what the public does know and how they are gathering their information.
- I believe the enthusiasm for this from the Committee was that Lake County WRD would take this on and the Committee would not have to do it.

- We need to ensure this survey can be leveraged in the future. It can be educational and inform funding later.
- A survey of the perceptions of key Clear Lake water quality experts over the years might be more beneficial.
- Big Valley EPA has done surveys of tribal members and of non-tribal high school students. Surveys are a great tool, they tell you what people know and don't know and provide an opportunity to move them in the right direction. We will have a more educated community if we do educational outreach, and perception surveys are an important part of that.

Public Comment:
- You will need to offer incentives for people to participate in the survey.
- Hire a consultant to develop and execute the survey.
- The Committee shouldn't spend time seeking peoples' opinions, but should put all of their money into finding solutions.
    - A study done in a small county in Washington found that 60% of residents didn't know that their stormwater flowed into their local lake untreated. This assessment would not seek opinions, but rather identify opportunities for public education to improve water quality.
- As a resident, my assessment is that no one wants to be on the lake. We hear reports of flesh eating bacteria and things that crawl into your ear and eat your brain. We have too much data and not enough solutions. Can we sell algae from HABs as a commodity to bring revenue to the area?
- The Tourism District implemented a Cubic Creative Survey that wasn't about water quality, but might be a good resource for methodology.

Bathymetric Survey of Clear Lake

Dr. Schladow said that the bathymetry of the lake is the boundary commission for the lake model, and not having a survey of the shape of the lake bottom compromises the model output. Monitoring for nutrients and oxygen at locations throughout the lake can be off by 10-20% because of out of date bathymetric data. USGS is doing a volcanic hazard survey of Clear Lake, for which they also need Bathymetric data, and US EPA is interested in bathymetric data near the Sulphur Bank mine, so there may be an opportunity to share costs.

Comments:
- The County would benefit from a bathymetric survey and highly prioritizes this as a recommendation. Ms. DePalma-Dow will see if the County could contribute funds (see Action Item #4).
- This survey needs to be done to support the work that UC Davis is doing. It's higher priority than the LiDAR, except that the LiDAR will help with modeling for sediment runoff.
- New bathymetric data will show the impacts of the Mendocino Complex Fire
- This data will help find solutions to water quality problems in Clear Lake.

<u>Review of the implementation and efficacy of existing tribal, local, state, and federal programs, BMPs, and other management requirements in the Clear Lake Basin</u>

The purpose for this recommendation is to verify which current programs are being implemented before determining if current actions are achieving their intended purposes, and to see where resources might be needed to enforce or implement these intended protections. The CVRWQCB is already trying to gather this information, but it is a large undertaking.

Subcommittee comments:
- This is an enormous task because there are so many entities and agencies involved. Because it is such a huge effort, it should not be allowed to inhibit other important recommendations.
  - This is a smaller undertaking than the data analyzing recommendation.
- This review is important. There are many rules on the books that are not enforced. Post project monitoring of stormwater is one example not happening at the county level because of lack of staff to do it and lack of prioritization. EPA and CVRWQCB also do not review the efficacy of BMPs. Many requirements may be out of date and there are likely BMPs for certain land uses that need to be updated.
- This review is inevitable as baselines need to be established for effective monitoring.
- The Model may help answer some questions about the efficacy of BMPs. Data from monitoring these BMPs will also inform the model.
- WRD is attempting to review efficacy of BMPs for stormwater and it is very difficult. This is a very broad suggestion and needs to be refined.
- One of the problem areas we have is lack of compliance and enforcement. We have requirements that are intended to fix our problems, but we can't know if they are working if we don't even know if the requirements are being implemented, or implemented correctly. After we have some data, a survey of the land use management ordinances that are out there is something that can happen relatively quickly.
- WRD is supposed to have a spreadsheet on their TMDL website that lists the different BMPs, their location, and estimate their potential impact. When you get to the ordinance level it's hard to see if something has been successful or not.
- Sarah Ryan will provide a cost estimate, a list of documents that would need to be reviewed, and a revised and detailed recommendation (see Action Item 5).

Public Comment:
- Business process improvement is important, but this will be a challenge to implement and while departments should be doing this review, I'm not sure of its efficacy. Creating a blame-free environment is critical to the success of this Committee.

<u>Accelerate the Middle Creek Restoration Project</u>

The Middle Creek Restoration project is expected to reduce the largest inflow of nutrients into Clear Lake. The project is 20 years old, is still not ready for implementation, and is projected to cost $100 million. The project is waiting on two final landowners to sell their land to the County. The County Board of Supervisors just voted to implement a new Middle Creek Restoration Committee. To

implement the project the County needs funds to buy the remaining land and ideally to hire a full-time coordinator for the project who is familiar with the Army Corps of Engineers, as well as the ecology of Middle Creek and Clear Lake. Ms. DePalma-Dow is researching how long it takes for large-scale wetland restoration projects to show results, so public expectations can be metered.

Public Comment:
- Without doing anything in the upper watershed, the Middle Creek project would only be a sediment detention basin. It is still important to fully understand the contributions of the upper watershed as a source-control matter, so we don't have a management problem and have to dredge the future Middle Creek Marsh. I'm skeptical of modeling, but it is a very effective tool in this case to start understanding what we need to do in the upper watershed.
- Can you prove beyond a doubt that implementation of the Middle Creek Project will solve the HAB problem with the lake?
    o The proposed upper watershed model would help to show this, and the lake model that UC Davis is currently developing will hopefully show how much phosphorous is loading internally and how much is coming into the lake. The TMDL says that there is 100 years of phosphorous loading in the Lake.
    o We can't prove anything now, but around the world wetland creation has been shown to be the number one way to reduce sediment loading.
- The public doesn't expect the Committee to have a solution overnight, but they will be patient for solutions that are well-thought-out and credible.
    o The public opinion survey will help to address and understand their expectations and respond appropriately.

Scheduling Discussion

The Facilitator asked the Subcommittee members to provide any further comments, as well as information on potential partnerships and funding sources for the recommendations to the facilitation team by September 13th (see Action Item #2). This will give the facilitation team time to prepare information for the next Committee meeting on September 26th, when the Committee will provide conditional approval of the recommendations. Between that meeting and Thanksgiving, a final draft report will be developed based on the Committee's further requests. One to two more subcommittee meetings can be expected to revise the recommendations before the Recommendations Report must be finalized by December 11th. Scheduling of future Subcommittee meetings will be done online after the meeting.

A participant asked at what point all of the minor details of the recommendations will be worked out and by whom. The Resources Agency can provide many of the details, but Committee members will be asked to fill in as much as possible. This question will be raised at the September 26th Committee meeting.

Previous Meeting Action Items and Current Events

Since the last Subcommittee meeting, Ms. DePalma-Dow shared a Dropbox link containing several aerial photos of Lake County examining post-fire aquatic-terrestrial interface. She received confirmation from the California Department of Food and Agriculture (CDFA) that they would be willing to present to the Subcommittee on the status of hydrilla in Clear Lake as well as on herbicide use for plant management in the Lake. Also, Yolo County Flood Protection and Water Conservation would be willing to host a future tour of the Cache Creek Dam for the Committee or Subcommittee.

Ms. DePalma-Dow shared that the plant coontail releases certain chemicals that inhibit growth of cyanobacteria, but do not impact other plants or algae. Next year she may limit treatment of coontail on the lake to see what impacts it has on cyanobacteria. She also shared the 2019 Annual Newsletter of the California Lake Management Society (CALM), which contained articles about UC Davis graduate students and their work on Clear Lake. The Newsletter can be found here.

Ms. Ryan said that Big Valley EPA is looking into the recently reported dog deaths on Putah Creek in Middletown and Kopell Creek in Berryessa by taking water samples and following up with the County and the State. The deaths were from cyanobacteria in rivers, which is different from the cyanobacteria in lakes.

Public Comment

Public comment was taken at regular times throughout the meeting and is reflected in the summary. Terre Logsdon, the Committee representative for the Scotts Valley Band of Pomo Indians, attended the meeting. As a formal member of the Committee process, her comments are recorded with those of the Subcommittee, and not as a member of the public.

Adjourn

ATTACHMENT A: Roster of Participants

Subcommittee Members Present		
First	Last	Organization
Amy	Little (by phone)	State Water Resources Control Board
Brock	Zoller	Lake County Farm Bureau
Geoffrey	Schladow (by phone)	University of California Davis, Tahoe Environmental Research Center
Karola	Kennedy (by phone)	Koi Nation of Northern California
Jim	Steele	Local Resident
Sarah	Ryan (by phone)	Big Valley Band of Pomo Indians
Angela	DePalma-Dow	Lake County Water Resources Department
Tom	Suchanek (by phone)	UC Davis
Jacob	Fleck (by phone, for Charlie Alpers)	United States Geological Survey

Members Absent	
Name	Organization
Greg Giusti	University of California Agriculture and Natural Resources
Charlie Alpers	United States Geological Survey

Public Attendants, Committee Members, and Staff	
Name	Organization
Alicia Cortes (by phone)	UC Davis
Bill Duca	Local Resident
Peggie King	Clear Lake Environmental Research Center
Rick Orwig	Lake County Bloom
Terre Logsdon	Scotts Valley Band of Pomo Indians
Sam Magill	California State University, Sacramento
Sophie Carrillo-Mandel	California State University, Sacramento