

California Cyanobacteria Harmful Algal Bloom (CCHAB) Network Meeting

Friday, April 12, 2019, 9:00 am – 12:10 pm

Cal EPA Building, 1001 I Street Sacramento, CA 95814

Agenda

9:00 am Welcome, Introductions and Announcements (10)

Introductions

Sarah Ryan, Big Valley Band of Palm Indians; Karola Kennedy, Kai Nation; Beckye Stanton, OEHHA; Steven Louie, CDFW; Anna Holder, OIMA; Katherine Carter, R1; Alice Lopes, R5; Jennifer LaBay, R5; Christine Joab, R5; Joseph Westhouse, SWRCB; Rich Fadness, R1; Erick Burres, CWT; Angela Dow; Keith Bouma-Gregson, SWAMP; Karrie Negota, R9; Betty, R9; Melissa, R3; Dylan Stern, Delta Stewardship Council; Susan Fricke; Amy Little; Zack Fry, Contra Costa; Sue Keydel, U.S. EPA; Jackie McCloud, City of Watsonville; Amy Liebert; Erica, Fresno County; Randy Turner, SFEI; Marisa Van Dyke OIMA

Announcements

- International Benthic Harmful Algal Bloom Group – There is a desire to have this group be under CCHAB to aid in its development and workability. There was concern regarding it being international so how can it be under CCHAB? Further discussion is necessary, however, the group doesn't seem to mind being under CCHAB, as they believe there is a need to be under CCHAB or an established group alike. This wouldn't alter the functioning of the group. Christine will talk with the International Benthic HAB Group and let us know what they think.
- No plans for pre-Memorial Holiday Assessment due to weather and funding limitations. 4th of July and Labor Day pre-assessments are still planned.
- July 12 meeting will be an all-day meeting in Sacramento
- Possible Future Agenda Item: Rich Fadness New Zealand presentation on benthic HABs

9:10 am Charter Update Discussion (10)

Goal: Wanted a mechanism in the charter to create or terminate subcommittees. Responsibility is with the cochairs. New language was considered for the charter, will be disseminated to the Network before the July meeting, and will be voted on during the July meeting:

“Prior to the spring quarterly meeting, the co-Chairs will receive an annual summary from subcommittee leads about the activity level and actions of subcommittee relative to goals. Co-Chairs will review summary and make recommendations of inactive status or termination for subcommittees that have met their goals or have limited/no activity. These recommendations will be voted on during the spring quarterly meeting by CCHAB membership”

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“The co-Chairs will also take recommendations for formation of new subcommittees from any CCHAB member at any time and will ask for a subcommittee lead, goals and frequency of meetings to be established. These recommendations will be voted on during any meeting by the CCHAB membership”

Review of subcommittees will be done on an annual basis

Other recommendations for charter revisions are:

- Allow for public participation in meetings
- Allow for different meeting date schedule (not always 4th Friday) to address co-chair, invited speakers, and room availability.
- Less procedural requirements for agendas and meeting notes
- Add additional language to the charter differentiating “inactive” vs. “termination”
- Add language to the charter requiring a minimum number of members for the subcommittee to be established.
- Add “Subcommittee membership shall have a procedural review” to the charter to accommodate the need for expertise

Comments from the Group:

- Christine:
 - o What do you mean by termination? There are instances where subcommittees are valuable but needs to be put on parking lot. Keep information but have paused until the needs of the committee or availability is present
 - This was considered by the “inactive” status in addition to “termination.” Sometimes pausing the subcommittee will be necessary, which is why that status is available.
 - Sometimes other entities take on the work of the subcommittees, which may lead to the need to terminate. E.g. international benthic HAB group
 - o When voting and creating subcommittees there is issue with how many volunteers are available. Recommend adding language to the charter requiring a minimum number of members for the subcommittee to be established.
 - Katherine believes a level expertise is often necessary so there should be a vetting process. Charter should include “Subcommittee membership shall have a procedural review” to accommodate the need for expertise.
- Marissa: Additional language should be added to the charter noting that termination may be caused by another entity taking on the work of the subcommittee. She also recommends including language on the subcommittee list for the terminated committees indicating where/what/who took on the work of the terminated subcommittee.
- Improve Network participation by providing agenda with sufficient time for feedback. Maybe add language like that to the charter as well.

9:20 am **[FHAB Monitoring Strategy – Keith Buoma-Gregson, State Water Resources Control Board \(20\)](#)**

Monitoring strategy for FHABs. In 2016 a FHAB Assessment and Support Strategy was created which classified a strategy for HAB response, ambient monitoring, and risk assessment. The first phase has been to create an assessment infrastructure The HAB portal was created to provide guidance documents, signage, decision trees, etc regarding blooms. In addition to the strategy, satellite monitoring is being developed. A beta version is currently underway, contracted via SFEI. The satellite project tracks FHABs on 250 waterbodies.

Another part of the portal is tracking FHAB events. Reporting has increased due to more participation in the program and availability of the tools and programmatic outreach.

Christine would like to know if the number of waterbodies have increased, and Katherine would like to investigate impacts from drought years vs non-drought years.

The available data show that there is a lot of diversity between FHABs in CA. Different waterbodies (rivers, lakes, reservoirs, estuaries), environmental conditions, taxa, and cyanotoxins. With these data in mind, the question was raised as to how can we best monitor these events?

Goal of monitoring strategy is—in consideration of a robust infrastructure— what is FHAB monitoring?

Timeline

2016 – strategy was developed

2017 – conservation begins for a follow up strategy focused on research and monitoring

2018 – contract finalized

2019 – January work begins

2019 – April TAC kickoff Webinar

2020 – March through June final products will be delivered.

Strategy Objectives

Phase 1 – Monitoring Strategy

Phase 2 – Management and Mitigation

Phase 3 – Determine priority areas for research on all aspects of FHAB science.

Outputs

A Monitoring Framework: Roadmap for how we could/should monitor FHABs. Goal is to write up a document to show that a plan is established and we can advocate and allocate funding for the planning and monitoring.

Coming from the framework will be Special Research Studies: targeted studies to provide information to fill data gaps necessary to implement the FHAB strategy.

Then Implementation Guidance: Pragmatic guidance and recommendations to implement the methods described in the Framework. Audience is waterbody managers, regional staff, citizen science groups, tribes.

How is this project going to be developed and completed?

The State Water Board is contracting with The Southern California Coastal Water Research Project (SCCWRP). A Technical Advisory Committee (TAC) is being formed to weigh in and provide technical advice and recommendations, then there is also a Stakeholder Advisory Group (SAG) to provide feedback on the proposed program. The SAG consists of partners that can leverage existing monitoring or support new monitoring. SCCWRP is going to be doing the heavy lifting to develop the strategy and will then provide to the TAC and SAG for review and consultation.

Technical Advisory Committee (TAC) Team will consider:

1. In Situ Survey Across Waterbodies (probabilistic sampling, ambient surveys, risk assessments)
2. Waterbody Focused Monitoring (Citizen science, private/public waterbody manager, Regional agency staff)
3. Remote sensing approach (Satellites, Drones, GIS).

The SAG is still being created.

There are five **watershed** management questions to start with:

1. What is the overall extent and magnitude of FHABs in the Regions and the State?
2. To what extent are FHABs changing over time?
3. Which waterbodies are at risk to experience FHABs?
4. What are the drivers of FHABs?
5. How effective are water quality maintenance and improvement projects or programs for maintaining or restoring beneficial uses impacted from FHABs?

Then there are five **waterbody** management questions

1. Are FHABs degrading water quality in the waterbody?
2. What is the timing of FHABs in the waterbody?
3. Should active human use or domestic animal use be restricted in the waterbody?
4. When is it safe to resume active use?
5. What are the drivers of FHABs in the waterbody?

Christine: Recommends operations of a waterbody be considered in management questions as well.

9:40 am **Invited guest speaker:** [Green to Clean: Restoring Lake Pinto – Jackie McCloud, City of Watsonville, CA \(35\)](#)

Pinto Lake is part of the Pajarro River TMDL, and there is also a Pinto Lake TMDL under development for CyanoHABS. The Pinto Lake TMDL is under review currently. Focused on CyanoHABS but there are nutrients and other constituents being considered. Pinto lake experienced massive Cyano blooms. Was dominantly Aphanizomenon, Dolichospermum and Microcystis. There is a public health goal of 0.8 ppb. There was a multiagency coordination to identify what the species are. Significant pollutant sources were internal, with 20% nutrients being in the watershed, not just the lake. The city went through a 319(h) planning and assessment grant that allowed for them to identify dominant contaminants as well as species. Management measures were also implemented: Carp removal, outreach and stakeholder involvement, sediment cores to determine amount of internal nutrient loading. Outreach question was “*What was the final goal for this lake?*” which would guide activities. The original management goals were not reaching the goals set by outreach, so another 319(h) grant was used for additional management activities. There was a TAC formed to ask if aluminum sulphate is the correct avenue to take, which the TAC recommended on a watershed level as well. Sediment management measures were also implemented. There were many partners involved in this project (Waterboards, Resource Conservation Districts, Watsonville Wetlands Watch, USC, Santa Cruz County). They are officially 2 years out from Alum treatment (April 2017). Lots of consideration was given to a range of mitigation approaches: regarding floating wetlands, aeration, alum, and other chem/bio treatment: alum was the best option for Pinto. In April 2017 a mobile lab was set up to treat the lake, which required much water testing for pH, turbidity, and alkalinity because Alum can lower the buffer capacity of the lake, so alkalinity monitoring was crucial. Onsite analysis of appropriate alum treatment in consideration of the physiochemical variables. There are 4 sampling points in the lake post alum treatment, differing between lake depth. Alum coverage was mapped, most of the lake at 60% dose. Didn’t go into fingers of the lake because they are shallow and there are special status species concerns.

Data shows that 91% of phosphorus is bound. Post alum treatment data exactly one year later shows significant reduction in nutrients. There have not been any toxic blooms since treatment, and it is the same species of cyanobacteria with seasonal non-toxic bloom, which means that the treatment is not changing the community composition substantively. This is great benefit to the community because it kept REC available.

Watershed activities:

Targeted approach to improve water quality in Amesti Creek and California Conservation Corps Creek, and Todos Santos Creek (Todos contributes 60% of the nutrients to Pinto) used rolling dips and biofiltration. Significant reduction (100% sediment load to Pinto) was achieved due to rolling dips. Watershed treatment was done prior to alum treatment.

Phosphorus in Amesti Creek is tightly bound to the clay sediment so the dips significantly reduced phosphorus concentrations.

Overall the rolling dips were extremely successful.

There was a little leftover money so they worked to create a biofiltration strip in wetlands and plant native plants so it would capture outflow from dips and treat it.

Other activities were outreach and education – “Slow it, spread it, sink it” on farm practices, residential and septic. Also hosted an “I spy science day”

Next steps for Pinto Lake: Sediment is still coming in, slowly. Continued work is necessary to ID where/how to do these watershed activities. Santa Cruz has operations and maintenance agreement for BMPs in the watershed (319 grant requirement. Ideally another depth sampling will take place to see how effective Alum is working. Going to get back out

Dave Question for Jackie: Which of the alum treatment or rolling dips in the watershed was more successful? Not sure yet, further monitoring needs to take place.

Key point: Partnerships were crucial, as City of Watsonville jurisdiction does not cover the whole lake.

Alum treatment, how long does it last? 1 year per 10% treatment (60% = 6 years, 100% = 10 years – This is based on modeling). Due to this temporary component, what’s the next step? Not sure, stakeholder engagement is necessary at this point. The lake was treated though so any next steps need to be watershed based. Having the TMDL established really helps engage others outside Watsonville’s jurisdiction.

Dave is emphasizing that a mindset of continued management is necessary. You can’t “fix” a waterbody and be done. Very important to always think “what’s next? because problems will come again.” Continued monitoring is the only way to evaluate the long-term trajectory of water quality.

10:15 am Break

10:25 am Statewide HABs Status Updates (60)
Region 1

- no monitoring yet due to high flows
- Started meeting with Russian River managers re: monitoring
- Eel River – Monitoring. SPATTs may be set up for sample collection
- Klamath – No signs of blooms. Increase in nutrient inputs with rainfall. Monitoring will begin in May. Algae Speciation started in Feb.

Region 2

- Contra Costa Water District, Zach Frey: No blooms
- Sue Keydel – East bay regional parks noted scattered colonies near the boat launch and there is a beach posted Caution
- Query lake was closed for positive cyanoHAB results in strip tests

Region 5

- Not much activity in Redding area
- In Jan-Feb there was some activity near Clearlake
- Sacramento area: Discovery bay has very low level microcystin
- Los Vaqueros Reservoir with non-cyano bloom
- Salt Springs Valley Reservoir – cyano bloom in Feb/March
- New Hogan Reservoir – cyano bloom; sample next week
- HV Eastman and Hensley – episodic bloom based on satellite and visual observations
- DWR state water project – routine monitoring begins in May with monthly grab; recreational areas weekly Memorial Day to October

Region 3 – No blooms; CCAMP monitoring

Clear Lake

- Doing winter monitoring
- Low detects
- Bi weekly monitoring will begin late May
- Task force meeting is scheduled mid-May

Region 8 – No Staff

Region 6 – Mary's not on

Region 7

- Lake Elsinore has golden algae and CyanoHABs
- Recent Salton Sea HAB press

Region 8 – No Staff

Region 9 – No bloom reports

11:25 am Information Request for Subcommittees/Subcommittee Updates (30)

Mitigation Subcommittee

- Algae mitigation selection technique process flow chart under development and should be posted to the website soon

- Much of the discussion has been focused on short term bloom reduction.
- Develop guidelines for vetting case studies. Interest here is that a lot of groups would like to present mitigation strategies to the committees, however, committee needs to be careful to not promote the technologies, thus need to be vetted. For anyone who wants to present to the committees they must provide a case study of the effectiveness of the strategy they are presenting on
- Another topic: If we had some money, what do we want to do with it?
 - o Strike force to respond to blooms as they arise
 - o Evaluate mitigation failures – assess why attempts failed. This is useful because information is lacking. The ITRC (Interstate Technology & Regulatory Council) is also expending considerable energy on summarizing and evaluating mitigation approaches, and CCHAB will benefit from this effort over the next few years.
 - o Monitoring pre and post treatment to really see how effective mitigation efforts are.

Miscellaneous

- Co-chairs are reviewing current subcommittees
- Questionnaire to be disseminated to subcommittee leads prior to July meeting.

11:55 pm Wrap up (15)

Next meeting (July 12th) – suggested agenda items?

- Subcommittee discussion
- Charter language changes vote
- Presentations including Benthic HABs
- FHAB update standing item

Additional Presentation, [Legislative Update, Assembly Bills 834 & 835 – Marisa VanDyke, State Water Resources Control Board](#)

- AB 834 Freshwater and Estuarine Harm Algal Bloom
- AB 835 Safe Recreational Water Use Standards
- [HTTPS://Leginfo.legislature.ca.gov](https://leginfo.legislature.ca.gov)
- Both bills hit a big milestone passing the science (water, parks, and wildlife) committee
 - o One has been recommended to committee of appropriations, next one will follow
- Letters of support are still being accepted if anyone in CCHAB would like to submit
- Bills would fund 5 new staff and \$800k for monitoring
- AB 834: There are many components
 - o Would be lead by State Water Board in consultation with California Department of Public Health tribes, Cal EPA and Resource Agencies
 - o Event response
 - o Statewide monitoring
 - o Research and tool development
 - o Report to legislature by summer 2020 on actions taken and recommendations that should be taken to protect water quality and public health
- AB 835

- Establish and maintain as necessary, minimum standards for safety, of freshwater recreational bodies as related to HABs for protection of public health and safety
- Can send letters of support to:

Dr. Bill Quirk
Assembly Member
State Capitol
PO Box 942849
Sacramento, CA 94249-0020

12:10 pm Adjourn

ACTION ITEMS:

- Send out track change version of the Charter to the network for its review. Vote at next meeting.
- By June 15, subcommittee Leads must provide to the cochairs:
 - Goals of subcommittee
 - Overall level of activity
 - List of active members
 - 2018 actions/summary
 - Short term plan for activity, relative to goals
 - Longer term direction for subcommittee