

California Cyanobacteria Harmful Algal Bloom (CCHAB) Network Meeting

Friday, July 12, 2019, 9:00 am – 4:00 pm

Cal EPA Building, Rm 510 (5th floor)

1001 I Street Sacramento, CA 95814

Attendees: Co-Chairs: Dave Caron (USC), Beckye Stanton (OEHHA), Sarah Ryan (Big Valley Band of Pomo Indians)

Members: Rich Fadness (North Coast Regional Water Board), Eva Bush (Delta Stewardship Council – Delta Science Program), Karola Kennedy (Koi Nation), Angela DePalma-Dow (Lake County), Barbara Barry (Santa Ana Regional Water Board), Sue Keydel (Region 9 EPA), Zachary Frey (Contra Costa Water District), Amy Little (Division of Drinking Water – Mendocino District), Jayme Smith (SCCWRP), Stefan Cajina (Division of Drinking Water), John Shurin (UCSD), Susan Fricke (Karuk Tribe), Carrie Austin (SF Bay Regional Water Board), Bill Taylor (Retired), Heather Boyd (Santa Ana Regional Water Board), Eric Burres (Clean Water Team), Regina Linville (OEHHA), Janis Cooke (CVRWQCB), Melissa Daugherty (CCRWQCB), Mary Fiore-Wagner (Lahontan Regional Water Board), Joe Westhouse (State Board), Kellie Fortner (State Board)

Meeting Notes

Welcome, Introductions, Announcements

- Approval of April meeting notes - Approved
- CCHAB web accessibility update
 - CCHAB Webpage must meet accessibility requirements
 - Authors of posted documents/presentations may be asked to provide an accessible version
- Webpage membership & logos update
 - **Please still send membership requests to Joe Westhouse**
 - Requirements for membership are loose – choose Active, Interested, or Other
 - **REQUEST FOR ARTISTIC TALENT! Please send original ideas for CCHAB Network logo to Joe Westhouse**
 - We would like to keep CCHAB Webpage more updated. Please send updates, interesting HAB-related things to [Joe Westhouse](#)

Update on AB 834 (Beckye Stanton, presenting for Marisa Van Dyke)

- AB 834 has passed to the Senate Appropriations Committee
- AB 835 is combined into 834
- Actions anticipated for September/October 2019

Update on EPA's Standards and Recommendations for cyanotoxins, and State's plan of action (Becky Stanton and Reggie Linville, presenting for Marisa Van Dyke)

- Guidance Update Subcommittee
 - US EPA Swimming Advisory
 - Similar to CCHAB warning level trigger
 - GUS will review in Fall 2019 to make recommendation to CCHAB
 - Water Quality Standards
 - DWQ develops standards – is there someone from DWQ willing to represent in GUS?
 - DWQ is aware of new criteria, but no timeline for cyanotoxin standards development
 - Direct further questions to [Joe Westhouse](#)
 - June webinar about EPA update added to be added
 - Interactive Map update
 - Map is a *tool* – trust on the ground cover as satellite data is weather dependent
- Questions
 - Sarah: Is SB expecting to develop standards for recreation now that EPA has come out with recommendations?
 - Joe: DWQ is staff dependent and bill dependent for future projects
 - Dave: There is a disconnect between GUS and DWQ – Should GUS reach out to DWQ?
 - **Joe – Follow up with Rebecca Fitzgerald for DWQ staff availability**
 - Sarah: Co-chairs should have been involved in GUS membership decisions
 - Susan: Put in official request to Karen for development in concurrence with Biostimulatory policy
 - Further questions should be directed to Lori Webber

FHAB Program Update (Jayme Smith)

- Current status: need to figure out timescale to then address FHAB drivers
- Questions
 - Sue: Is the waterbody affected by HABs a drinking water source?
 - In discussions, but can't make specific recommendations for reservoirs
 - Source water protection will be integrated
 - Sue: EPA region 10 wanted to know about development of CA programs for watershed management and monitoring for citizen science from HAB point of view.
 - Jayme and Sue to speak offline about monitoring options
 - Programs such as Bloomwatch, Cyanoscope, USC Sea grant

- Carrie: How can we access data about what is IN the lake, rather than source

Invited guest speaker: Rich Fadness (Benthic HABs in California)

- Currently no regulated advisories for benthic cyanobacteria
 - Posting guidelines are only for planktonic cyano
- Russian River has detected 5 different cyano toxins
 - Highest detection from SPATT bag samples
 - Lowest detection from water column samples
- Assessment tools for benthic HAB
 - Visual assessment
 - Not applicable to any health advisory threshold
 - Mat grab sample
 - Can measure toxin production
 - Water column sample
 - Only measure directly applicable to health advisory thresholds
 - May miss episodic release of toxin
 - SPATT sample
 - Not applicable to health advisory thresholds
 - Measures dissolved toxins
- Toxicity
 - 3 Benthic genera possibly responsible for dog deaths
 - Phormidium/Microcoleus
 - Anabaena
 - Oscillatoria
 - Working with OEHHA to develop criteria for algal mats
 - Presence of cyanotoxins may account for toxicity not attributed to traditional chemicals
- Questions
 - Sue: Is the take home message that you recommend dry weight to assess toxicity?
 - It's just a way to evaluate the relative toxicity
 - Carrie: Follow up topic – variability of sample representation
 - Dave: What will it take to make benthic applicable to human health?
 - Not enough data to move forward
 - The concern is with the mats themselves – mats can become liberated in low flow and become more easily ingested
 - Reggie: Will work to discuss. We need a better understanding of exposure
 - Ways to model potential ingestion/quantify amount of material in water
 - Not realistic to determine how high of concentration of toxin can be contained in the mat if an animal eats its full nutrient requirement

Break

Mitigation Subcommittee's Preliminary Lake Evaluation (Bill Taylor)

- Lake Evaluation is meant to serve lake/waterbody managers to develop effective mitigation strategies for HABs
- Not intended to initiate new data collection or monitoring, but to help inform manager of existing data to provide recommendation based on lake specific characteristics
- Summary report to confirm bloom, existing conditions, possible root causes, recommended monitoring plan
- Test case – Red Lake in Alpine County
- Questions
 - Carrie: For an update, we have sought approval from Water Monitoring Council to move forward.
 - How can we advertise this concept?
 - What lakes can this serve?
 - Sarah: To what extent do the beneficial uses of the lake factor into mitigation planning?
 - Situation/lake dependent
 - Maintain existing uses of lake
 - Best solution is to identify root source – may cause short term effect to beneficial uses
 - Sarah: How does this differ from regular monitoring?
 - Product will be a summary and evaluation for potential solutions to HAB
 - This is first step to developing a monitoring and mitigation strategy
 - Beckye: If it leads to a mitigation strategy with algaecide, it will have a public process
 - Sue: Decision tree to reduce need for actual evaluation?
 - Source water assessments
 - Drinking water response plans
 - SWAMP – framework on land use to identify where problem originate
 - Carrie: Make sure appropriate tribes get notified
 - Bill: Who/what agency can I go to with questions?
 - There are now tribal liaisons for each regional board
 - **Sarah - Send list of tribal coordinators**
 - Heather: We have been getting calls from county parks to test for HABs. They have no data and this would be helpful for those lake managers to start planning process.

Statewide HABs Status Updates

- Northern
 - R1 – Two caution signs posted on Stone and Big lagoons
 - R2 – Several caution signs, one swim beach closed

- R5 – Clear Lake summer monitoring has started twice a month. No detections.
 - UCD samples from interior, DWR samples in middle arms
 - Two fluorimeters that characterize green algae, cyanobacteria, etc.
- R6 – Tested Lake Arrowhead, Gregory Lake, Eagle Lake, Silver Lake. No detections
 - Tahoe Keys Lagoon, some under microscope
 - Hosted workshop in May to reach out to stakeholder groups with access to microscopes, Environmental health, USFS, HOA, advocacy groups
 - Working with Alpine Watershed Group that includes Red Lake
- Central
 - R3 – None
- Southern
 - R4 – Caution at Pyramid and Castaic Lakes
 - R7 – None
 - R8 – Low level detected in Lake Elsinore, no fish kills lately
 - Low golden algae
 - Lake Perris was closed Memorial Day, now has low levels
 - Analyzing for golden algae – should it be incorporated?
 - Some lakes suffer in winter, consider for future
 - Cross contamination not likely from instrumentation
 - R9 - None
- Illness work group
 - Bloom report: 2018 had 44 reported incidences, 11 dog illnesses
 - 2019 outreach letters posted to HAB portal
 - Where is terrestrial vet community at in recognizing cyano toxins in animals?
 - Goal is to get resources out there
 - Slowly moving forward, but don't assume vets are up to date

Lunch

CCHAB logo contest status

- Submit ideas for CCHAB Network Logo
- Must have CCHAB included

Invited guest speaker: Jon Shurin: Climate and Control of Mountain Lake Food Webs

- Questions
 - Sue: Is there a difference in lakes with only native fish populations vs stocked fish?
 - Two kinds of lakes: many small fish, or less big fish

- Beckye: What is the influence of nutrients from fish vs external loading? How do you balance this? Did lake without fish have other nutrient sources?
 - Stocking fish does not increase nutrient load in lake
 - Fish in a box experiment measured nutrient excretion – tiny fraction of nutrient (P, N) in tank
 - Fish nutrients have big effect when fish aggregate from somewhere else like salmon migrations
 - Recycling nutrients by fish is a small nutrient budget in lake
- Dave: With climate change, what lakes are more susceptible? Alpine vs lower elevation lakes?
 - Alpine lake temperature is determined by snowmelt. During years with less snowpack, temps will be warmer during the summer vs years with high snowpack (like 2019, 2017) lakes remain colder throughout the summer
- Carrie: As technical lead for mercury control, is it likely to potentially bring down levels in fish by growing them more quickly?
 - There is a link between more cyanobacteria and growth of fish that bioaccumulate more mercury?
 - Morphology of lake may have large effect
- Dave: Was cyanobacteria not a contribution in most alpine lakes?
 - Not in top 8, but in top 10
 - Lucan Lake has cyanobacteria – low elevation lake in Yosemite

Mitigation Subcommittee's 'HAB Strike Force' proposal (Bill Taylor)

- Strike force is a non-urgent response of water quality professionals that can help identify and analyze HAB events for water bodies that lack resources and data
- Questions
 - Carrie: Is there any level of further exploration needed?
 - Sue: HAB teams at Water Board are trying similar concept. Where are the gaps? State has authority to require reporting and resources for assessment.
 - Next step? Work with FHAB in what they are hoping to implement
 - Beckye: Citizen science can sample then have centralized analyses at the labs. Washington has program similar.
 - How can we use lake characteristics toward HAB mitigation?
 - Pinto Lake mitigation was a multi-agency joint effort
 - Dave: Strike force will identify lakes that may potentially have a problem,
 - Lakes with no previous history of HABs
 - Sarah: Will a single visit actually be helpful? Such as a lake like Clear Lake.
 - Could be useful if another toxin needs to be identified

- Southern California has small lakes with no recreation – could give baseline for future monitoring
- Angela: This is similar to the aquatic invasive species incident command
 - May be helpful to look at how to model logistics
 - Field crew funded seasonally in other states
 - Grant funded
 - **Angela - Send agency info to Carrie Austin**
- Karola: Resource may be limiting factor. Will this apply to other systems besides lakes?
- Rich: Worthwhile to work in cooperation with FHAB
- Beckye: Strike force is example of gaps in existing programs

Review of current subcommittees

- Are new subcommittees needed?
 - *Algal Mat Triggers* is not “inactive” but rather on hold due to lack of data to move forward
 - Amy: Integrate information by watershed in portal
 - Monitoring Council may have rough list
 - Invite representative from Council to next meeting?
 - *Wildlife Impact Subcommittee* – is there more that could be done?
 - Evaluates illness reports, but now done through illness work group
 - Maybe should be focused on specific thing
 - Should any be dismantled?
 - Only open if there is an achievable goal
 - CCHAB can determine goal then delegate to group that has resources to work on it
- Create summary of where current subcommittees are at (Goals met, on hold, estimated time frame for deliverables)
 - Follow up with Leads and discuss in October

Final discussion and vote on Charter changes

- Discussion to change sentence on “threaten drinking water systems” to “challenges drinking water systems”
 - Approved
- No further changes
- Charter to be sent for approval

Wrap up

- EPA will be asking for public comments soon on HABs of national significance.
 - Which ones do we consider significant?

Next meeting (Friday, October 4th) – suggested agenda items?

Adjourn