CA CyanoHAB Network (CCHAB Network) Meeting
Draft Notes
September 29, 2016
9:00 am – 3:00 pm
Coastal Hearing Room, 2nd Floor CalEPA Building
1001 I Street Sacramento, CA.

Harmful Algal Blooms (HABs) Updates

a) North Coast Region (1) - Upper Klamath Lake:
   i) Oregon has posted part of Upper Klamath Lake due to "high" levels of Microcystin.
   ii) Copco and Iron Gate Reservoirs in California were posted at the Danger level (Copco posted since July 11, and Iron Gate posted since August 8). Blooms in Copco were declining as of mid-September but Iron Gate levels continued to rise.
   iii) The river reaches in between Copco and Iron Gate are not posted.
   iv) The main stem of the Klamath River from below Iron Gate Dam to Orleans has been posted at the Caution level since August 25th.
   v) For full details, see the Klamath Basin Monitoring Program webpage: http://kbmp.net/bga.

b) North Coast Region (1) - Russian and Eel Rivers & Lake Pillsbury
   i) Main stem of the Eel River at Outlet Creek was posted at the Caution level from Sept 20-October 12, 2016.
   ii) Humboldt & Mendocino Counties don't have funding to do regular monitoring so as a precautionary measure they have posted caution signs at the following areas known to have annual HABs: South Fork Eel from Piercy to Myers Flat, Big, Stone, and Freshwater Lagoons.
   iii) Russian River wasposted with Caution signs at 10 public beaches from Cloverdale River Park to Patterson Point from August 1 - October 11, 2016
   iii) iv) Parts of Lake Pillsbury were posted with Caution signs from August 29 - October 31, 2016. A “do not drink” advisory was posted at Lake Pillsbury resort for Anatoxin-A. The “do not drink” advisory has been lifted.

c) San Francisco Bay Region (2)
   i) Lake Temescal and Anza were closed to swimming. Del Valle and Quarry Lakes closed early in the season. Lake Amaden and Cunningham, in San Jose was closed to swimming recently.
   ii) East Bay Parks are closing lakes when Microcystin level reaches 6 parts per billion.

d) Central Coast Region (3)
   i) Nothing to report.

e) Los Angeles Region (4)
   i) Pyramid Lake has a bloom – finished drinking water had some Microcystin in it. The finished water had higher levels of Microcystin than the raw water. A do not drink was

posted but has since been removed. The do not drink only affected the visitor center at the lake and not the community.

f) Central Valley Region (5)

-Discovery Bay

i) There was a significant bloom over the summer in Discovery Bay. Toxin concentrations ranged between ~90 ppb (Danger level) to non-detect. Approximately 22 of the 40 samples taken at monitoring sites had toxin concentrations that were either below the caution level or were non-detect.

ii) Discovery Bay is an area high in recreation including boating, kayaking, water trampolines and dogs.

iii) Water moves constantly through Discovery Bay allowing a bloom in one area to quickly spread throughout the area.

iv) Most of the water access is privately owned making posting signs difficult.

v) Contra Costa County posts results of toxin testing on their website. Here is a link to the Contra Costa County Health Services webpage for cyanotoxins monitoring results. http://cchealth.org/eh/blue-green-algae.php

vi) There has been a lot of push back from local businesses, especially from the real estate business.

-Northern California

i) The bloom in Lake Britton has dissipated and toxin levels were non-detect for Anatoxin-a during the September 22, 2016 sampling, the caution sign was removed.

ii) Shasta Lake – The Pit River Arm of Shasta Lake had a bloom with low concentrations of Anatoxin-a. State Park Service posted "Warning" signage. Sampling throughout the Lake showed low concentrations of anatoxin-a.

iii) No toxins were detected for Mountain Meadow Lake in August 2016 and "Caution" signs were removed.

iv) Kern County- Lake Isabella had a bloom and Kern County Environmental Health posted signage. Kern River has some blooms with possible fish and bird kills, but unconfirmed at this time.

v) Lake Oroville had a bloom with no toxins detected.

vi) Cal Park Lake, in Chico, has similar issues to Discovery Bay with a residential neighborhood on a man-made lake.

vii) Delta has a problem at Big Break Shoreline.

viii) Stockton to Antioch has high levels of Microcystis.

ix) South Delta Fabian Tract has huge Microcystis bloom.

vii) Clifton Court Forebay was posted at the Caution level.

x) San Luis Reservoir and O'Neil Forebay – blooms occurring in State Water Project reservoir; being actively monitored by the Department of Water Resources; currently at warning level; signage being posted by State Park Service

xi) Note: CCHAB members noted that the Abraxis test strips have poor instructions on how to use the strips for Anatoxin-a processing. The instructions do not require a mandatory

lysing step, which means that results may only report the available extracellular toxin in the ambient water and not include the potential release of intracellular toxins.

(a) SWAMP is looking for feedback from test strip users so clear instructions can be written for new Abraxas users.

g) Lahontan Region (6)

i) Nothing to report.

h) Colorado River Region (7)

i) Nothing to report

i) Santa Ana Region (8)

i) Lake Elsinore still has high levels of Microcystin seen so far, as well as numerous other toxins, above the danger level and is still posted at Danger.

j) San Diego Region (9)

i) Nothing to report.

Presentations - The PowerPoint presentations will be posted on the CCHAB Network web page.

a) Update on Clear Lake cyanotoxin monitoring program – Sarah Ryan and Karola Kennedy

i) In 2009 HAB problem started to be a major issue in Clear Lake.

ii) In 2013 a dog death triggered the monitoring program, which began in 2014 with 8 sites. Now in 2016, there are 17 monitoring sites, based on public accessibility and representing each arm of the lake.

iii) Water Quality is also performed at monitoring locations and all data are entered into WQX .

iv) In 2015 cell identification to genus level was started to assist tribes in determining what toxins to test for in the lab. Field test strips have been used for cyanotoxin screening since 2015/16 but are getting a 40% false positives or false negatives.

v) 2016 started seeing Dolichospermum and 16 other genera compared to 2009 when Lyngbya sp. was the common genus. Also began collecting collected Chlorophyll-a and phycocyanin measurements. In areas where weed removal and aeration were used as treatments, cyanobacteria levels were lower.

vi) Started collecting data on toxins in fish and shellfish tissue.

vii) Tribes are undertaking projects with data usage. Joint projects to include:

- project with CDPH to review ER and clinic visits and correlate information with spikes in toxin concentrations observed in the lake;
- project with Cal EPA, Environmental Justice and GAP to look at toxins in fish and shellfish;
- project with Cal EPA and CDFW to review wildlife deaths at Clear Lake for cyanotoxin poisoning;
- project to utilize the Chlorophyll-a and Phycocyanin data for the Nutrient TMDL.

viii) Question: Will you be writing/publishing information on cyanotoxin build up in fish tissue data? Yes, it will be added to the public information.

ix) Question: Who do you call about wildlife deaths? The public does not know who to call and when to call.

b) Presentation on PG&E efforts to reduce and mitigate HABs at Lake Britton – Edward Cheslak

i) Blooms identified during 2014 and 2015 seemed to have a correlation between critically dry years and bloom intensity. The monitoring plan for Lake Britton includes visual assessment four times/year and water quality monitoring including DO and temperature.

ii) Low levels of Anabaena are considered natural for the lake although caution signs were posted.

iii) Satellite analysis by Blue Water has been picking up light blooms in coves since 2012.

iv) There is confusion over what criteria for Anatoxin-A is used for posting, is it based on dogs drinking the water or eating scum?

v) Lake Britton users do not respond to signs. There is disconnect between what the public sees/perceives and the toxin analysis. The lake looks clear but still has toxins.

vi) The cost of sampling is high so it's hard to take regular samples throughout a bloom.

Subcommittee Updates

a) Statewide Guidance Subcommittee – Sandy McNeel

i) The Statewide Guidance Subcommittee is looking for volunteers to help draft remaining sections of the guidance.

ii) November 7, 2016 is when the draft section is due.

iii) Consensus gained from network to update the guidance.

iv) Question: Is it possible to consider a name change for the document?

(1) We are open to suggestions.

b) Charter and Governance Subcommittee – Angela Murvine

i) See Charter section below under "Co-Chair Items Seeking Consensus".

c) WEB Portal – Architecture Subcommittee – Jon Marshack

i) Looking for input on the layout, flow and use of the web portal.

ii) Question: When filling out the incident report form for a bloom, does it go anywhere else besides just placing a dot on the map? – The form goes to SWAMP which will eventually expand the use of the form. SWAMP will contact local water managers when a bloom is reported.

iii) It's not easy to find the portal when a person is not familiar with the State Water Boards website.

iv) There is concern that the dot looks like it represents the whole water body when only a small part is actually affected.

v) Question: Can an image of the actual bloom and press release be attached to the dot on the map?

(1) Answer: Possibly in the future.

vi) Question: Can dots be lines for rivers?

(1) Answer: Not at this time, the current version of the map software does not support lines, only dots. Hopefully we will be able to illustrate rivers in the future.

vii) Question: What is defined as bloom condition, what is considered a bloom?

viii) Question: Is it possible to attach a press release to each dot and provide to a local contact?

(1) Answer: Possibly in the future.

d) Education & Factsheets Subcommittee – Reggie Linville

i) A subgroup has drafted two outreach documents for veterinarians to assist them with identifying cyanotoxin illnesses in animals and potential treatments to implement.

ii) Subcommittee is working on a draft vet fact sheet.

iii) Fact sheet currently deals with Microcystin, Anatoxin-a and Cylindrospermopsin

iv) This draft fact sheet focuses on exposure history, clinical signs, diagnosis, treatment and reporting.

v) The factsheet includes a detailed section on clinical specimen collection and analysis of dead and alive animals.

vi) The next step is to send out to specialist for review.

vii) Reporting system will link directly to section on web portal for reporting animal illness.

viii) In the future the subcommittee would like to create a fact sheet for animal owners, physicians and the general public.

ix) Currently establishing contact with the state veterinarian association and providing talks with public health officers.

x) Contact Reggie if interested in helping with this subcommittee.

e) Monitoring & Assessment Subcommittee – Bev Anderson-Abbs

i) Monitoring and Assessment subcommittee is working with SWAMP contracts and will review documents from the contract.

ii) Field Standard Operating Procedure (SOP) – received the final draft document; document will provide information on event based sampling, sampling for lakes vs rivers and include information on sampling considerations.

iii) Event based sampling is set up to follow the CCHAB Guidance steps.

iv) Health & Safety Guidelines – will provide information on hazards including in the field, on the boat and in the lab.

v) Separate SOPs (2 page documents) for planktonic, benthic mat, scum and shellfish samples.

vi) Lab SOP coming soon.

vii) Remote Sensing Project – working with SFEI on status and trends beginning with historical analysis; current data not available but is anticipated for April 2017.

viii) Off Season Workshop – discuss the 2016 bloom season; discuss opportunities to improve our response and on how to collaborate with other agencies and stakeholders for monitoring and any other assistance that may be necessary.

f) *Data Subcommittee – Proposed at June 30, 2016 CCHAB Network meeting – Marisa Van Dyke

i) Data subcommittee works closely with monitoring subcommittee.

ii) Data subcommittee is working on finding ways to increase data collection collaboration.

iii) They are also working on ways to get more data in to CEDEN and have forms on the HAB portal under questions answered and then under monitoring.

iv) SWAMP has created forms that are tailored to HAB monitoring. These forms (CyanoHAB field Workbook forms) feed directly into the SWAMP database which also feeds in to CEDEN.

v) Question: Can there be a place on the portal for tips from users of sampling kits to other users.

vi) Question: Can a tutorial be done on the CyanoHAB field workbook forms in the off-season?

g) Mitigation Subcommittee – Carolyn Rutton

i) Working on removing HABs from waters with technologies including: harvesting, recirculation, chemical treatments to reduce nutrients, alternatives technologies to kill cyanobacteria (e.g., oxidation, ultrasound, and super oxygen)

ii) Looking at alternative uses for algae.

iii) Carolyn gave an overview of the types of technologies that Clear Lake has evaluated and is using to mitigate (reduce) HABs in the lake. These technologies included harvesting, recirculation, chemical treatments to reduce nutrients, alternatives technologies to kill cyanobacteria (e.g., oxidation, ultrasound, and superoxygen); If members have additional information on other technologies, please share with Carolyn and Carrie; a list is available in hard copy and will be made available to the membership.

h) Wildlife Impacts Subcommittee – Reggie Linville

i) Currently little is known about wildlife impacts form cyanoHABs in California.

ii) The goals of the subcommittee are to foster an information network of people and to share information on wildlife impacts form HABs.

iii) The First steps are to gather contacts form government, NGOs, wildlife rescues and research labs

iv) An incident reporting mechanism is also being looked at for reporting wildlife illness or death related to HABs.

v) The subcommittee is still working on gathering data on wildlife impacts and looking for more members.

General Updates

a) Quarterly meeting of California Water Quality Monitoring Council (WQMC) (held on August 23, 2016) - Jon Marshack

i) The meeting was dedicated to HABs.

ii) The meeting had several presentations discussing:

(1) Lack of monitoring of estuary or freshwater/saltwater interface of HABs

(2) Fishery impacts and economic loss

(3) Potential funding for HAB projects. However, most funding is for generating monitoring programs and on the ground projects.

(4) Drinking water issues such as a lack of a standard for drinking water so there is no authority to step in and say XYZ needs done.

iii) The council asked Jon Marshack to write an issue paper to the secretaries of the Natural Resource agency and Cal/EPA as well as cc the head of CDPH. This paper outlines the need for more immediate action in dealing with HABs.

iv) All information presented at the WQMC is on the WQMC web page. http://www.mywaterquality.ca.gov/monitoring_council/meetings/index.html

v) December 13 the CWQMC will hold an information item on the HAB Portal in order to receive their comments and inputs on the site.

vi) Question: Is the WQMC was going to have trigger thresholds and signage requirements?

vii) Question: Is the CCHAB guidance document being distributed to other agencies?

b) One Health Harmful Algal Bloom System (OHHABS) – Sandy McNeel

i) Visit CDC CyanoHAB website to find OHHABS. CDC CyanoHAB: http://www.cdc.gov/habs/index.html. CDC OHHABS: http://www.cdc.gov/habs/ohhabs.html

ii) CDC launched OHHAB website in 2016 as a voluntary program to gain more information on health effects to people and animals; This is an event based reporting system and not a real time reporting system; it is more of a data gathering exercise; reporting forms are static or dynamic and can be filled in online only by authorized staff; in California only one person authorized.

iii) Question: How does OHHABS benefit CA?

iv) Question: Is there a chance for the state to learn more about exposure to HABs on a long-term scale?

v) Question: This is a place for them to submit information to a third party without a conflict of interest.

vi) Question: Can we make the CDC's OHHABS and the SWAMP forms interchangeable/compatible with each other. Will data be lost if people only use OHHABS.

vii) Questions: How hard is the CDC pushing for States to participate?

c) Freshwater bloom incident response and interagency coordination– Greg Gearheart
i) In the off season there will be a review of what did and did not work.
ii) Question: Is it possible to involve the Office of Environmental Health Hazard Assessment in the response structure?
iii) Question: How would you incorporate the state level duty officer with the regions who already have a chain of command?

Co-Chair Items seeking Consensus

a) The Co-Chairs brought two items to the Network for consensus. Consensus was obtained from the Network on both items.
i) CCHAB name change from California Cyanobacteria Harmful Algal Bloom Network (CCHAB) to California Cyanobacteria and Harmful Algal Bloom Network (still CCHAB). This is part of encompassing all freshwater HABs (i.e. golden algae) in California, and

acknowledging coordination with the ocean CalHABMAP efforts. Consensus was obtained and the name change will be reflected on the web pages and on all future documents.
(1) Approved 9/29/16

ii) CCHAB Draft Charter. Some changes were recommended and accepted to the Draft Charter. The charter was then accepted by the CCHAB Network through consensus. The adopted Charter has been posted on the web page.
(1) Adopted 9/29/16

Other

a) Next CCHAB Meeting January 26, 2017.

Action Items:

1. Jennifer Timmons: Post Draft Notes from CCHAB Network meeting on CCHAB webpage.
2. CCHAB Co-chairs: Next agenda extend time for Bloom Updates.
3. Everyone: Send images of HABs to Jon Marshack for web portal.
4. Katharine Carter: will contact Angela Murvine with availability of North Coast Regional Board (Region 1) to host a CCHAB Network meeting.
5. Everyone: Send Angela Murvine or Sandy McNeel your contact information by October 7, 2016 if you are interested in joining the Guidance Update Subcommittee.
6. Everyone who signed up to update the Guidance document: Rough drafts of the guidance update are due to Sandy McNeel by November 7, 2016.
7. Those using the Anatoxin-A field test strips: send information about your test methods and results to SWAMP (Bev Anderson-Abbs), if possible include photos of test strips. This will help us in determining the effectiveness of these field methods and in providing future guidance.
8. The Water Board's Office of Information Management and Analysis (OIMA) staff: will develop a survey of "Lessons Learned" in bloom reporting and communication for people to complete in the off-season.
9. In winter 2016, add a "Lessons Learned" page to HABs Portal to discuss HAB monitoring from the past bloom seasons. The test strips need to be the major item for this bloom season.
10. Develop list of possible mitigation measures to HABs to post on HABs Portal.