

AHAB Monthly Call – July 14th, 2022

Participants: Thomas Farrugia (AOOS), Karen Pletnikoff (APIA), Gay Sheffield (UAF/AK Sea Grant), Julie Matweyou (AK Sea Grant), Chelsea Kovalcsik (UAF), Caroline van Hemert (USGS), Grace Ellwanger (KANA), Kris Holderied (NCCOS), Michelle Morris (ADFG), Danielle Gerik (USGS), Annette Jarosz (APMI), Charla Hughes (PWS Stewardship Foundation), Naomi Bargmann (USGS), Andie Wall (KANA), Lisa Eisner (NOAA AFSC), Anne Garland (ARIES), Kathleen Easley (ADHSS), Emma Pate (NSHC), Bill Carter (USFWS), Hanna Hellen (Aleut Community of St Paul)

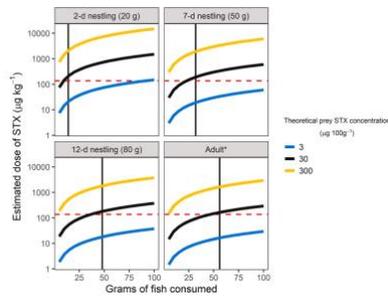
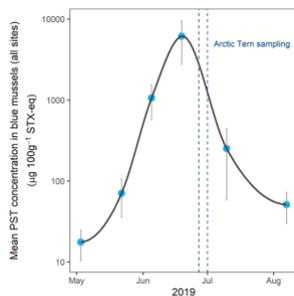
Thomas' updates (more details on AHAB website: ahab.aos.org)

HAB Science

- PSP toxins associated with the 2019 Arctic tern mortality in SEAK

Paralytic shellfish toxins associated with Arctic Tern mortalities in Alaska

Caroline Van Hemert^{1,2*}, John R. Harley³, Gwen Baluss⁴, Matthew M. Smith⁵, Robert J. Dusek⁶, Julia S. Lankton⁷, D. Ransom Hardison⁸, Sarah K. Schoen⁹, Robert S.A. Kaler¹



Vertical black lines: daily fish requirements, Dotted red line: the LD 50 of saxitoxin in mallards. The daily dose curves of different grams of fish consumed. At 30 and 300 micrograms saxitoxin per 100 grams of fish, many of the terns would be getting a dose above LD50 to meet their daily requirements.

Caroline: That was great overview. The piece here that was unusual from the standpoint of linking saxitoxin, or Paralytic Shellfish toxins to a die off is that we were actually able to sample fish that had been delivered to the colony sites, and so make that direct link. Whereas, it tends to be really hard to point to a specific culprit, other than just saying there was toxin in the environment and birds died, and you think there's a link. So that part allowed us to make a little bit of a clear connection, the sample sizes are small, but that's as many of you know, that's often what you're dealing with, with field collections. There's also the captive work with the murrets that was just finished up recently, and Matt's still working on putting all those results together. That'll be a nice, complementary piece to understanding what some of these values in the environment and exposures actually mean to the birds. If anybody has questions, I'm happy to answer them. [Here's the link to the paper](#). And then USGS communications was trying a different approach to sharing information with the public. And so there's actually a comic that isn't Alaska specific. It's this is kind of a national story, but it's kind of an interesting way to share information: <https://www.usgs.gov/news/featured-story/long-suspected-culprit-caught>

Julie: I had a really quick question for Caroline, can you remind me where you guys are doing the captive study?

Caroline: That was at the Sea Life Center in Seward. So we did that work in collaboration with those folks there in the husbandry and so the murrelets were hand reared, collected from eggs. That has essentially wrapped up, although like most of these studies, you end up with more questions. So at some point, we might try to do some follow up.

Kris: Great paper Caroline and thanks for the update on it Thomas! This sentence from the abstract is so sobering ... "At maximum concentrations measured in this study, a single 5 g Pacific Sand Lance (*Ammodytes personatus*) could exceed the median lethal STX dose (LD50) currently estimated for birds, ..."

Gay: In the mammal world, we certainly would say that the northern Bering Sea and the Gulf of Alaska and even the southern Bering Sea are completely distinct ecosystems, completely distinct regions. Are seabirds just seen as it's one group of seabirds statewide, or when we look at these die offs are people looking at them as a sort of an ecosystem thing? Because when we talk about starvation, I just wonder it sounds like starvation in the Gulf of Alaska would be starvation, but maybe the drivers aren't the same. Or are seabird people looking at it as different ecosystems problems, potentially different problems?

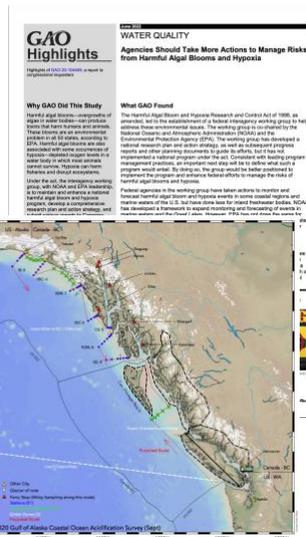
Caroline: In the [Wildlife Professional journal](#), which is the wildlife society's publication that's publicly available, the last issue discussed seabird die offs in Alaska and generally. But I would say we look at populations in discrete ways, but that there are a lot of links, when you see these huge warm water events that they tend not to just affect, you know, Arctic terns in southeast Alaska, that you're going to see it across a much bigger area. In this case, we certainly aren't making claims about all of the Gulf of Alaska. We know, specifically around this region, that there were a pretty pronounced bloom that went on for a long time. And so the terns we know were directly affected, just based on their foraging areas and what they would have had access to. But that's an important point that because we found HABs as a likely culprit in one specific die off event that does not implicate HABs in every other die off event, but starvation or emaciation, you know, birds appearing very, very hungry upon examination, is something that's been somewhat consistent in some of these other die offs. And so you're familiar with the Chukchi and Bering, that larger region where there was a lot of starved birds, but then there was a surprising number of birds that had what we think of as relatively high levels of saxitoxin in some of their tissues, which compared to these results suggest that, in fact, they probably were exposed to potentially harmful levels if they're similarly sensitive. But we don't really know if it's the chicken or the egg kind of thing if the HAB exposure contributed to starvation or vice versa? So yes, absolutely, sea birds are not all uniform. And they're not even within a given region, they're going to be feeding on different parts of the food web. And so all those pieces really matter. So this is one particular example of how toxin can impact seabirds. And we know that it did in this case.

Karen: How expensive and/or time consuming was using this great visual media?

Caroline: I don't honestly know, we have a very small communications team at USGS and nobody specifically from the Alaska Science Center. But there was some interest from the regional team or the national team. And we happen to have a visual artist who's quite good. And so he put together all the graphics, and then worked with a communications person and myself to try to come up with the text so that it was short and sweet, but also, hopefully accurate to what actually happened. So yeah, that's a good question. I think if you have somebody who's clever with that, it's probably not a huge investment of time. But really, the visuals are the hard thing to come by.

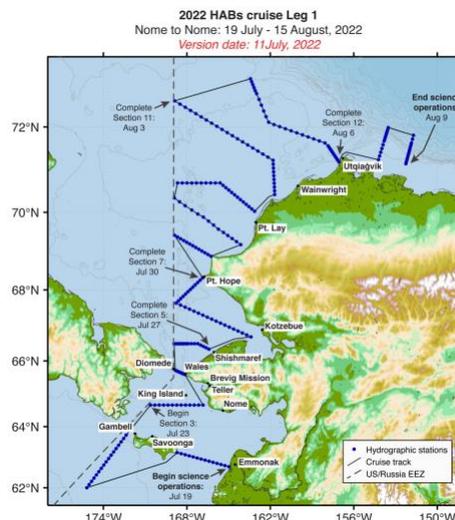
HAB News

- New report to congress calls for agencies to do more on HABs
- 11th US HAB Symposium Updates
 - Early bird registration extended to 22 July
 - Standard registration closes September 16
 - Planned special sessions: NHABON Partnerships; Impacts of HABs on shellfish
- Dr. Jessica Cross OA cruise (August 3-23 in SE) has room for a HABs researcher. She has also offered to collect samples.
jessica.cross@noaa.gov



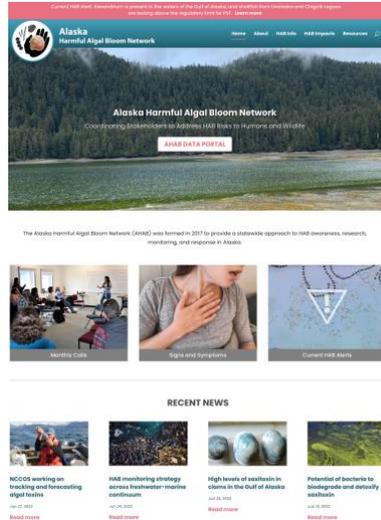
Upcoming HAB Cruise

- July 19 – Sep 6; Northern Bering, Chukchi and Beaufort Seas
- Sample for HAB species (focusing on Alexandrium and Pseuds), sample water and sediments for species quantification, as well as collect invertebrates and concentrated water samples for toxin quantification.
- An IFCB will be on board collecting imagery of the entire phytoplankton community.



HAB work

- The AHAB Website has a new look and address!
 - ahab.aos.org
- Helping getting the word out about the HAB cruise
- HAB sampling training for the community pilot project started
- Messaging about field tests – their benefits and disadvantages
- Putting together the map of sampling locations – will share for feedback



Gay: Do we know if this beautiful website works in lower bandwidth? And I say that, again, I've mentioned this before, but maybe somebody on the call maybe when you go live may want to check this out in a poor bandwidth context, because I think that would be something to take into consideration. Maybe that's why they had it be so clunky before, I don't know.

Thomas: That's a great point. Yeah. It should be fairly low bandwidth. I mean, there are pictures, but they're not super high resolution. And there's not a ton of them. And so it should be it should be okay. But please if you are somewhere and you're having a hard time loading the website, definitely let me know, that's definitely part of the things we'd like to kind of figure out. This one should also work a little bit better on mobile devices than then the old one, which made things really small.

Karen: What are the thoughts on the messaging about the field testing?

Thomas: Essentially, it came out of request from somebody in Unalaska, to Chandra Poe who heard about this field test and wanted to use them to test their shellfish. But it's a subtle and not straightforward message. These field tests are not really adequate for food safety decisions. And so the idea is to try to get something that can be handed out or used to describe why these field tests, especially for PSP, are really not adequate for using in the field for determining whether or not something is safe to eat. So that's the reason for that. That's where that came from.

Karen: Thanks so much for that. And we APIA, as a health Corporation are happy to chime in on what's good food safety testing versus what's good science and what's important about those as a potential indicator, but not a safety measure?

Julie: I had more thoughts, and I haven't had time to spend a lot of time with the draft that you put together. But I guess my question I had for you is whether this was supposed to be an internal piece, or is this the public piece that's going out, like, as an outreach document? Because if it is an outreach document, I think there needs to be a lot more there if it's going to

be a standalone. And like when we talked last spring, it was kind of we were talking about adding just to internal docs so people working could easily respond to people's questions, but I know we're still working on it.

Thomas: I think it'll depend if we can craft a message that we feel comfortable giving out to the general public in like a short, concise way that provides enough information. It's kind of the details versus readability issue. And so I think it'll kind of depend on what's the product that we're able to produce. But definitely internally, it'll be used, and we'll share it around this group. And for the networks that everybody understands and can describe the situation with field tests. Whether or not this is something we put out to the general public and just hand out, I think will kind of depend on whether or not we get to a place where we feel like that product is it good for that.

Julie: It's gonna be a good product regardless, because I still get questions like that. And I got a question from Washington State harvester asking the same thing. And I had to go through the details of why tests would or wouldn't work for their purpose. So something that's a product that's concise and shareable.

Karen: I just want to chime in. I think something like a two pager isn't too long to share something that's important. I think in the long term, if the harmful algal bloom website had a resource like this, that would be a real, valuable, searchable headline, and at this point I wouldn't distinguish between those who are more versed in Harmful Algal Bloom information versus the general public. I would have one document that's for everyone, just so that nobody gets their hands on the wrong thing, or we don't assume people have a greater understanding than then they might.

Julie: I mean, we've got some very sophisticated harvesters, we've got some very sophisticated public as well as our researchers and monitors. So I think one document makes sense.

Round Robin Updates (going by region of work)

ARCTIC

Anne Garland

I'm coordinating with Bob Pickart on the HAB cruise about them taking samples close to shore near where our transects are for community monitoring. So I sent him a map to let him know where we've been, where we typically take samples on the near shore. And we are pursuing the recruiting for samplers, Laura's getting our publicity ready to see what kind of splash we'd make in the community with some publicity about HABs and recruiting for more monitors. So we both looked at a risk education opportunity. So we'll see what happens. For the cruise, if they are finding Alexandrium in the water, I told Bob I could alert the emergency management folks and public health. But I can do that after they've analyzed the samples if that's better.

Thomas: That might be a question for Lloyd Pikok at UIC who is the remote community observer. And then we've got Raphaela Stimlmayer as well to be notified they see something.

So hopefully with that if it's something that's determined to be something that should be shared Raphaela can let people know. We'll also get DEC on there too.

Bill Carter

So Ajit and Alex and I got the mooring out with the sonde in it at the end of June, beginning of July. So that's up and recording and then we'll be doing monthly samples. The next ones coming up here hopefully next week, the weather has been kind of bad here. Foggy in the morning and then crystal clear but windy in the evening. So it's been difficult to get out to do a spot sample.

NORTHERN BERING SEA

Gay Sheffield

I missed the last HABS meeting because we were out sampling with Emma Pate. I don't know if Emma's on, she can speak for Norton Sound Health Corporation. But I'm working with the ECOHAB and Norton Sound Health Corporation is also doing HABS monitoring and getting a program going down here. As of Friday, anyway, the sea surface temperature was about 12.3C here in Nome. It's warmer to the east. I think that Rick Thoman had gotten like 15 C, in sort of that eastern central Norton Sound. So it's warm. Hopefully not getting too much warmer, but we don't know. We expect to see the Norseman II here and deal with that. Two things have come up: one we have HABS and what to look for in wildlife for the communities here, but we also have avian influenza. And so again, I'll provide the response number for the US Fish and Wildlife Service avian hotline number (866-527-9958) because the animals behave in similar ways, they have these neurological problems. They're stumbling and can't fly and spinning, drooling. It's ugly. And we have animals with those symptoms in seabirds all the way into the strait, here throughout the region. And we also have had a red fox confirmed in Unalakleet in Eastern Norton Sound with avian influenza. Since it's taking a long time for the birds to get analyzed, a red fox getting avian influenza lets you know that a red fox in the Bering Strait region has been eaten somebody with avian influenza. I had a very interesting conversation with some of the Anderson lead there for that Norseman cruise recently and Thomas was there and a lot of things came up regarding communications in western Alaska, communications in different regions. That's why Anne thank you so much for giving your thoughts too. Know that I think we'll be visiting with those guys when they come in. And also, hopefully, for everybody, including everybody in this region, I think that maybe the PI now sees the benefit of doing public outreach regarding the cruise, both for an educational moment, for a conflict mitigation moment, for more awareness in general and for questions, and also for some outreach on the good work that their project is trying to do. So hopefully, we'll have maybe a Strait Science regarding this cruise, which the link will go to all of you. And that'll be maybe mid August, it sounds like potentially. And also some good thoughts maybe for the funding world regarding laying out better regionally, for researchers who are busy doing their research, not communications, but laying out maybe some of the regional differences and some appropriate pre, during and post communications because it sounds like there's always a learning curve there. That's it. Thank you so much.

Caroline: Quick question, where did you say that fox was confirmed?

Gay: That was a fox that was harvested in Unalakleet, and it concurrently had rabies. So if that wasn't telling you that we have some multiple problems we now seem to have in our ecosystem, kind of chronic health issues with our both marine and land wildlife. It should be up on the DEC website, if that helps.

Anne: I just wanted to make sure that Gay and others know that we are working with Raphaela and our team as well. And that, Laura Thomas, those who are monitoring live there, and are the ones in charge of the publicity, not me. So they are deciding what should be put out there.

Emma Pate

Hi, I just got back Shaktoolik last night. And I'm getting ready for a training next week for water and soil sampling. But Gay and I started going out and collecting our samples. Mine for phytoplankton monitoring through microscopy, and also ocean acidification. And she's doing her ECOHAB samples. So we go out together at the same site and collect our samples. The hard part has been getting out onto the ocean. To charter boat is pretty expensive. But right now all the commercial fisheries people are focused on crabbing since we haven't had crabbing in Nome for two years. And they're not paying any attention to our requests at this time, but eventually they will run crabbing over, so we're utilizing the Harbor Master with the city of Nome to go out into the ocean to collect samples further out. When we can get that in between the weather and their availability. They have a very busy season. And I also reached out to Norton Sound Economic Development Corporation. They have vessels traveling to Unalakleet, Shaktoolik, Koyuk, Elim, Golovin and Nome. They're constantly on the move. They have fishing vessels, they have a transport vessel. My youngest son is currently a master mariner for a 77 foot vessel. He's the captain on that vessel. I asked him to collect samples for me in between Cape Nome and the port of Nome. They're trying to fulfill that request once they're done with crabbing. If possible, I may ask them to collect samples from outside Unalakleet, Shaktoolik, Elim, Koyuk and Golovin as well. I will see how the Cape Nome to Nome portion goes first. Usually NSEDC is very supportive of the work we do here in our region. And I hope they'll be able to fulfill that request. Until then Gay and I will keep sampling at Cape Nome and outside of the port when we can, but we'll have to select alternate sites within the next two years. From what I understand the Cape Nome port will be very busy with construction activity as they make improvements possibly, or they will be doing blasting a rock around the Cape to prepare for port improvements right outside the city. I have travel to Savoonga and Gambell coming up in a week and the rest of the region I think I got about 10 more villages to go after that.

Gay: And just for people on the phone line. I know there's always confusion about the port. But where Emma and I are sampling is called Cape Nome. And there is a little jetty. But there's also a quarry there. It's about 12 miles east of Nome. And that quarry is where the rock is coming for the port. So you can understand why we may be in a tough location if they finalize the port funding, we're going to be sitting right in the middle of where they're blowing up the rock and moving it.

Emma: All my data will be input into the database managed by Ocean and Earth.

ALEUTIAN AND PRIBILOF ISLANDS

Karen Pletnikoff

I'm the environmental safety program administrator at the Aleutian Pribilof islands Association and we've had a PSP and harmful algal bloom project for a number of years. We don't currently have one but we work closely with our communities, our tribes of Qawalangin tribe of Unalaska, and the Aleut community of St. Paul Island, both of whom have done a number of their own projects. Qawalangin's NOAA funding just wrapped up, they were working with three other communities throughout the region. So right now, I don't think there's any active community-based sampling going on in our region. And we think it's a good data set to continue. So I would like to ask you as professionals and colleagues to help us note any grant opportunities that you might see come by, or consider any opportunities for partnerships that we could do. We can coordinate collection and that kind of stuff and work with you to keep the data sets in our region going. In long term, we have the ongoing concerns about the impacts of harmful algal blooms to what has been traditionally a really important food source. And we're very interested in the science that helps us understand it better in the long term, potentially even find ways to re-introduce these important food sources back to our diets. But for us, our number one thing is safety. There's too few Aleuts to risk people eating unsafe shellfish, or potentially other species that may have harmful algal bloom issues that we are still learning about. So we want to continue to work with our professional colleagues on understanding the science and making sure we're keeping our folks safe and ask any of you to reach out to me. And I'll put my information here in the chat. If you have any thoughts on how we could continue collecting data in our region. Thanks. We also will continue to look out for other funding opportunities.

karenp@apiai.org

Thomas: Great, thanks, Karen. I think there isn't any toxin testing happening right now. But both Qawalangin and St. Paul are doing HAB sampling phytoplankton tows and looking for the for the species, which it's not the same, but it is some sampling. And hopefully, I'll be able to provide a little bit of funding for testing samples, if they see anything in the water that's alarming. So it's not the same but there is a little bit.

Karen: Thanks for clarifying that for me, Thomas. I knew they were doing the tows. But at my board level, I get the question about the food. And actually, I can translate that very well, I think to my board that the tows are the initial indicator for if additional sampling is warranted, if it's actually getting into the shellfish at levels. And I also acknowledge that that might be a thing for the discussion about field kits as a potential indicator for those harvesters interested in hopefully not wasting three buckets of clams when they want to do a big harvest hold test and feast.

Julie: Hi, Karen. Can you remind me is Sandpoint and King Cove part of your, your group? APIA? And are they still monitoring?

Karen: Yes, and they were collecting and sending in samples in partnership with Qawalanin for shellfish sampling, I don't believe either of them are doing any plankton tows. They were doing shellfish too, they did have such a long data set and that's what I'm kind of talking about. And maybe plankton tows are a way to keep some of that data coming in. The biggest concern I have with the use of plankton information is that the translation into food safety. People so badly want to eat shellfish and feel like they did something to know it's safe. And so it's really easy for us to in our own minds be like well, the plankton are saying maybe it's okay and it's not okay right especially in King Cove and Sand point where they have lots of butter clams, we know, the two year toxicity issue is huge and, and we know with mussels, it could be the next tide or even just some good seas, blowing up some cysts in the water because they do such a great job of increasing their toxicity so quickly. So I have, I guess, mixed feelings about moving towards the plankton approach. Although I recognize that these datasets, keeping some level of data going on is a big priority.

Julie: I was gonna say the same thing. I've been out of this network for a while because I was on sabbatical. And I know that people are doing plankton tows, but I didn't know that we were using this plankton tow as indicator as to whether to do the testing.

Thomas: We're not really. This is all very new and I didn't mean it to make it sound that way. It's just because the funding that I just got is very recent for toxin testing. And we don't have a plan in place for testing yet. It's not so much that we can do long term monitoring at specific locations, it'll be more ad hoc.

Julie: I'm just not sure that we can catch it all the time with the phytoplankton. And I don't know about that. Yeah. Where to put the efforts? I mean, for food safety reasons, phytoplankton is not the number one indicator. So thanks for the clarification. I know that different groups are doing the phytoplankton monitoring, and you know, it's great. But the toxin testing and the shellfish seems to be the difficult part to sustain all of this and the most important part, right.

Karen: And the long term data sets that we did have coming out of King Cove and Sand Point would be great to extend. So I'd hate to leave them out because they don't have that current activity. But I'm so glad that Qawalangin and the community of St. Paul Island are continuing the science on this, it's really important for the understanding ecosystem.

Thomas: These funds that I have are from the National HAB Observing Network, and they're not enough to set up a lot of monitoring locations in a way that will really meet the real demand for food safety decisions across the state. That would be great to have. But so like I said, it's fairly recent, that we got it. And it's as a recognition toxin testing is important. And so I'm still trying to figure out how best to use that limited amount of funding. And we can have discussions about how best to use that limited amount of funding. But really, my original point was just that we've got some HAB sampling in place. And that's one way to indicate potentially, where we might use that toxin testing funding, since we can't really kind of offer anybody who wants to harvest hold and test to pay for that, because that's not gonna go very far. But anyway, so

that's just a clarification. It would require, I think, a larger, longer term funding to really get to where we want to go. And so right now, we're kind of working on my bits and pieces. But yeah, so thank you both for your comments on that.

Julie: So I think as you know, we had some higher up NOAA folks in Kodiak including Dave Kidwell. I know they spoke with you, as well as partners in my region. But Dave kept saying that AOOS has this funding. And my question was, what is the process you're using to determine priority and distribution of the funding and is transparent and is available and visible to all of us?

Thomas: So for the testing funding, there's no application process for the use of that funding. However, I do want to want to place it where it's most useful. And like I said, the toxin testing pot of money is about \$30,000, and it costs \$125 per sample. So it doesn't go super far if you try to spread out across the state. I definitely need to brainstorm what's the best way of going about to distributing that funding and using it in a judicious way. So I'm very happy to have discussions about that, if anybody has any thoughts. The other issue is funding is not the only hurdle, obviously, there's also logistics. And so sometimes even if you have funding for a specific location, you don't necessarily always are able to get samples, at least definitely on a timely fashion, to get results for food safety decision. So there's a lot of a lot of different hurdles that we kind of need to address.

Kris: Thomas, let me just say, I think that's a smart way to look at it, because the way AOOS has used some of the HAB money previously is when there's been an event, there's been some toxin testing that's been done in an event. And we have had discussions, both in this group and on the steering committee around do you fill a gap? Like, Karen what you were talking about in those time series in Sand Point, recognizing the importance of the toxin testing and the tissue testing for understanding what's out there. If there's a situation where you're kind of in between a couple potential sources of funding, and maybe this helps us get some samples through this year. I think that's an excellent, in my personal opinion, that's an excellent use of these funds. Understanding what Thomas said, is that there's nowhere near enough money to step in and be like, okay, for food safety, we have money to supplement what the state is doing, but definitely for the kind of things around time series and things like that. I think it would be a really worthwhile piece to do. I would suggest, Thomas, like you said, that maybe set up a meeting around us for folks who are interested in from this group or others and maybe sort of hash out some what the recommendations are from folks to give you some guidance going forward.

Chelsea Kovalcsik

My update is just that I've started my sampling on northern fur seals. We've had a few harvests. And that's where I've been doing my sampling from collecting small intestine, colon, feces, stomach, blubber, muscle, liver and kidney. And so I haven't run any tests on those samples yet. But I will be traveling down to the NOAA lab in Seattle and learning how to do those ELISA assays with Kathi Lefebvre.

Hanna Hellen

We faced some travel delays, and I got COVID. So unfortunately, didn't make it out here to St. Paul until July. So we lost most of the month of June for sampling. But we've gotten the project up and going. So I went out and did a phytoplankton tow yesterday and then took a look at it with the microscope. So finally getting things moving, which is nice.

KODIAK**Julie Matweyou**

Yeah, first of all, it's great to be back. I've been away for a bit, and it's nice to be settled back home. But one of the first things I did when I came home was walk my dog on our local beach that is one of KANA's sites. And I always look at the HAB boards right, and it was disappointing to see that they were not able to keep up the testing. And I appreciate that for the lack of funding and all that, but it just really drove home to me the value in that data and the value that the community finds and people like me looking for that information. So it drove home the need again to bring back these efforts, keep them strong in my community. And I have had a chance to catch up with Andie personally and on the phone and Grace a little bit too. So that's been nice. And just quickly, I don't see anybody on from the Beaufort lab but I had an opportunity to host the Beaufort team up here for about 10 days and I supported their efforts here. They were doing a lot of collection for Steve's food web study. Lots of good communications. Katie Boyd, who's the branch chief for the NOAA HAB forecasting was here. So I think that was a really great experience for them to be here. Dave Kidwell was here. We did phytoplankton, zooplankton, forage fish critters, everything to the extent possible. And I let them do most of the work. But I supported their efforts with the truck and the skiff and had a lots of opportunities to talk with them and a lot of good work and conversations. So that was really great.

Grace Ellwanger

So as Julie mentioned, still not able to do any shellfish testing this summer, which is definitely unfortunate. But we have been lucky enough to obtain a little bit of funding that we'll receive in September, to hopefully pick testing back up again, for a little bit. We got to speak with Dave Kidwell. And his team from NOAA as well, while they were in Kodiak, and they offered some great insight to some funding opportunities, hopefully in the future for HAB work, which is really great. In the meantime, we are doing some HAB sampling, also, just at one location, right now. So that's kind of where we're at. But definitely hopeful and seeing some potential opportunities coming to light, which is really great. Because like Julie mentioned, testing is definitely a big part of the community and having those results available. And you know, having people reach out to us who have harvested and tested in the past with us and not being able to provide those same services has been really tough conversations to have with people, but we're doing our best. And I know a lot of you guys have been very supportive and helpful in sharing this opportunity. So we really appreciate that. And that's, that's where we're at right now.

SOUTHCENTRAL**Annette Jarosz**

Not too much to update other than we've been working hard to get more sites online. So this week, we went to Tatitlek, and we trained a couple of their committee members on how to sample. Next week, I think we're going to try and get to more sites online. So we're really trying to ramp up, get out travel, get to our communities in different locations around the region, train more samplers and get everything up and running.

Kris Holderied

I'll just say here on the sampling side. We haven't seen things pop yet. But, you know, temperatures are up to as high as 13. So you know, it's been sunny then we finally got some rain. So you know, that's kind of an expectation. I know the reserve has seen some Alexandrium but not at not at high levels. And I guess we all have an expectation where that's going but haven't seen it really pop yet. I'll just comment the folks from our NCCOS offices really appreciate everyone that hosted them, Thomas, including you and the discussions. So folks know Steve Kibler and Dave Kidwell, he's head of our competitive research program for NCCOS. So programs like MERHAB and ECOHAB, and all those fall under Dave, he's a director for those programs. So it's really great for him to get an on the ground sense of what's happening up here and the needs. And then Katie Boyd, who is Steve Kibler's supervisor, and she for us is the harmful algal bloom forecasting Branch Chief. So they both really left with a desire to be doing more up here, which is exactly what we wanted them to get. So thank you, everybody, for helping with that, because hopefully it helps us with funding down the road. The other thing I'll add is we also had the meet with folks at North Pacific Research Board, and with a hope that there would be opportunities for some collaborative funding there. And both Dave and Lynn are kind of interested in exploring that. That would be something to keep an eye out for, if that goes forward. I'll certainly update this group but that was just all just to say good all around and appreciate everybody's help on giving them a really great sense of what's going on and to the Kodiak weather God for they had ridiculously beautiful weather.

Charla Hughes

We've started collecting mussels from PWS to send to Alutiiq Pride for testing with the help of volunteer boaters and the Chugach National Forest. And we are getting sorted for phytoplankton testing, which we're planning to start doing in Whittier by the end of the month. Thanks to Alutiiq Pride for the training with Jen Maucher and Chris Whitehead!

Caroline van Hemert

I think Matt's gonna be going to the Wildlife Disease Association meeting here shortly and presenting some results and hoping a couple of us might be able to go to the HAB symposium.

Kathleen Easley

No update, but thanks for letting me join in, it's great to hear all this information.

SOUTHEAST

Michelle Morris

We've had lots of rain. And you know, that's kind of nice for change, actually. And then, I'm getting a lot of last minute requests for aquatic resource permits. Keep in mind Friday

afternoons are really hard to do any amendments. So if you are anticipating any additional collections or new ideas, pop up new projects, things like that try and give us a little lead time, if you can. But otherwise, most of the time, it's usually pretty quick. And I'm able to turn it around in a few days.

OUTSIDE ALASKA

Lisa Eisner

I'm at Alaska Fisheries Science Center, and I sit in Seattle, but most of my work I do is in the Bering Sea. So there are two pelagic ecosystem surveys that are going starting August 12 through September 11. We are doing the southeast Bering Sea all the way up to 62 north from the 50 meter to the 100 meter isobath. And we do benthic trawls, I think we may be collecting some sediment perhaps or Kathi Lefebvre. And then we'll have a CTD. And we'll collect some phytoplankton samples. And we'll also have an IFCB on board to look at all the community structures, so that'll extend Don's track all the way further south too, if you wanted to ever combine them. And then there's the North Bering Sea survey that starts August 27 through September 20. And that'll go all the way up to Bering Strait. And that will sample mostly from 60 North in shore of the 50 meter isobath. And again, more sediment samples for Kathi, and a few phytoplankton species. And then we do CTDs and fishing. So anyway, those surveys are occurring in the next couple of months.

Thomas: if there's anything online, with the description of where those are, or a map or anything that you'd like people to know about, just let me know we can we can send it around.

Lisa: I'll talk with the Chief Scientist and see they're still doing the drafts right now.

Gay: And also bivalves are being collected for testing

**NEXT AHAB MONTHLY CALL WILL BE: THURSDAY August 11TH, 2022 AT 9:30AM AK
(The meeting schedule for 2022 will remain the 2nd Thursday of every month)**