

AHAB Monthly Call – December 8th, 2022

Participants: Thomas Farrugia (AOOS), Kris Holderied (NCCOS), Andrea James (Knik Tribe), Jasmine Maurer (KBNERR), Juliana Cornett (NOAA Fisheries), Kathy Burek Huntington (AVPS), Patrick Charapata (NOAA), Gay Sheffield (ASG/UAF), Carol Brady (ADEC), Josiana Haag (UAF), Matt Smith (USGS), Lori Verbrugge (DHHS/CDC), Dean Stockwell (UAF), Hanna Hellen (Aleut Community of St Paul), Lisa Eisner (NOAA), Jeff Hetrick (APMI), Maile Branson (APMI), Annette Jarosz (APMI), Sarah Schoen (USGS), Danielle Gerik (USGS), Kimberly Stryker (ADEC), Grace Ellwanger (KANA), Naomi Bargmann (USGS), Karen Pletnikoff (APIA), Caroline van Hemert (USGS), Patryce McKinney (ADEC), Anne Garland (ARIES), Dom Hondolero (NCCOS), Ajit Subramaniam (Columbia University), Shannon Cellan (STA)

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

HAB Science

- Metabolomics investigation of the effect of PST on mussels

¹H NMR-based metabolomics investigation on the biological effects of paralytic shellfish toxin in mussel *Mytilus trossulus*

Solomia M. Buhell^{1*}, Bruce A. Wright^{2*}, Jacqueline Knise³, Patrick L. Tomco⁴

- Upwelling on the Beaufort shelf may control *Alexandrium* proliferation

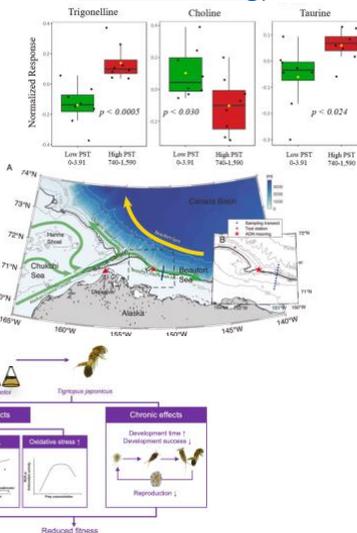
Alexandrium on the Alaskan Beaufort Sea shelf: impact of upwelling in a warming Arctic

Svetina V. Einarsson^{1,2}, Kate E. Lowry^{3,4}, Peigen Lin⁵, Robert S. Pickart⁶, Carin J. Ashjian⁷, P. Deane Chappell⁸

- Reduced fitness and elevated stress in copepods exposed to *Karenia*

Reduced Fitness and Elevated Oxidative Stress in the Marine Copepod *Tigriopus japonicus* Exposed to the Toxic Dinoflagellate *Karenia mikimotoi*

Hongxi Chen^{1,2*}, Jing Wang³, Yunyun Zhang^{1,2,4*}, Wenhan Yu¹ and Guangting Liu^{1,2}



Proposals and job opening

- MERHAB/PCMHAB – responses to the letters of intent received
 - Invited full proposals due Jan 31, 2023
- Small Business Innovation Research (SBIR) Program NOFO
 - Funding opportunity for small business research and development program
 - Relevant categories include: Extreme Events and Cascading Hazards; Coastal Resilience; The Changing Ocean; Water Availability, Quality, and Risk; Monitoring and Modeling for Climate Change Mitigation
 - \$175k for research phase I, \$650k if moved to phase 2
 - Informational webinar Dec 13th, Letters of intent due Jan 13th
- Job opening
 - NOAA Kasitsna Bay Lab – Research Marine Biologist/Research Physical Scientist
 - Homer/Seldovia
 - Apply through USAjobs (closes on 12/20/22)

Kris: If anyone has any questions, please feel free to reach out to me directly. We're really excited about this. One message to put out is the 14 days is not short for us. Standard is 10 days, and we asked for 14 days.

Alaska HAB Updates

- Alaska Marine Science Symposium 2023
 - HAB research workshop – Fri Jan 27, 9am-12pm
 - In person in Anchorage (Dena'ina Center), video call-in (hopefully) available
- Spring AHAB workshop – community monitoring needs
 - In person in Anchorage (travel support available) + video call-in option
 - Fill in the google form to provide feedback on the timing and topics!
- Other conferences/meetings:
 - Alaska Forum on the Environment (Feb 6-10)
 - One Future One Health (Feb 28 – 3 Mar)
 - Alaska Tribal Conference on Environmental Management (Mar 21-24)

HAB research discussion at AMSS:

<https://docs.google.com/forms/d/1dSiXIKgbpfG6vsLj0n44IjeUkYig8r68s38r3rjBdGk/edit#responses>

HAB Spring workshop:

https://docs.google.com/forms/d/1nrwVQQyWAQ5euGxANco_ttfLbbJeuDbov0VdXNsVbUY/edit

Round Robin Updates (going by region of work)

SOUTHEAST

Shannon Cellan

Hi, no big updates. We're still kind of slow on RBA testing. Partners just haven't been sending samples in frequently which is unfortunate because we love getting those results out. We're continuing capacity building for domoic acid and okadaic acid. Yes, so we're just we're trying to work on some of those other projects that have been a little bit less forefront over the years now that we have more time with less PSP testing.

SOUTHCENTRAL

Carol Brady

No major updates for FSS. There have been no closures to due biotoxins in commercial shellfish. I was able to connect Bruce and the operator, and have reached out for an update on the potential okadaic poisoning we discussed last month.

Sarah Schoen

Hey, I'll just give a brief update. Naomi has been plugging through a bunch of our backlog of samples for the past couple of years for foodweb and biogeography studies, looking at toxins from plankton up through seabirds. And just the real general overview, we can give a more specific one at one of those workshops, but the general overview is just that we've seen very low levels of toxins throughout the foodweb. The higher levels, of course, they're in mussels,

but not many high levels in most of the samples, except in some specific events where we know that there's a bloom happening, like in Dutch Harbor in 2020.

Matt Smith

I'm still working on getting some of the final data for the murre project. And I add all that together. There's a bunch of pieces there. And otherwise, we're pretty much caught up on any die-off samples. I did pick up some recently from Bob Gerlach that he collected over the summer. So we have a few to work through. Otherwise we didn't have a lot sent to us this year.

Andrea James

Hi, I'm Andrea James. I know Bruce probably mentioned me last time, but I just got hired as the project coordinator for HABs with Knik tribe. I haven't actually started yet. I don't start for another couple of weeks because I'm about to go to Florida. I did a lot of HAB work in Florida. I was there for like eight years and did a lot of *Karenia* work and I did a lot of work and ciguatera fish poisoning so I'm excited to do this work though. I did get a really quick little update from Bruce. He can't be here because he's attending a different conference. But he said that we have hundreds of samples at DEC that haven't been analyzed yet. Or we're awaiting the decision to analyze. And also, we just analyzed a butter clam sample that was collected on November 7 2022, from Chignik Bay, and it had a PSP level of 111 using a mouse bio assay. And I think that's all I have. Thank you.

Jasmine Maurer

Just some program updates. As we've mentioned, in the past, with the pandemic, we had a lot of loss of community monitors. And given our staffing and resources at the reserve, we're not planning on trying to build that capacity back up. So going into next summer, the phytoplankton samples collected will probably be fewer than in the past, with the remaining monitors we have and staff time. So we'll keep monitoring phytoplankton in Kachemak bay, and partnering with APMI to send them samples and some other environmental conditions that they're interested in keeping track of. So that's sort of programmatic changes and shifts adapting to resources that we have currently. And we'll see what the future brings.

Kris Holderied

We don't have a lot of updates. I will say we had a meeting for all NCCOS supervisors in early November in person back in our Oxford lab, and one of the things that we talked about, kind of across some of the different groups. So there's several different interest groups that work with most folks here in one way or the other, including our HAB forecasting group with Steve Kibler, our competitive research program, which the MERHAB program and ECOHAB program are part of that, our folks down in Charleston that are working with a lot of different things. So anyway, we had a conversation about how do we how do we coordinate perhaps a little bit better? Or is there a desire or a need to do that? So that may be something that comes up as part of the meetings in January? I could see that being part of it. And then Dom and I have been talking to Steve Kibler about some of the HAB forecasting and what's needed for that. And one of them being similar to the work that's been done in south central and in South East and a bit in Kodiak, I'm kind of looking at, you know, the temperature thresholds for Alexandrium. And how

do you do that? And do we do more of the qPCR quantitative sampling to do that? And would that make sense for those guys to be involved up in western Alaska and up north? Just having some conversations about that. So I think that will also come up more in discussions in January, I suspect. Thank you.

Dom Hondolero

Yeah, we got out earlier this week right before the storms rolled in. But no I don't have any updates there isn't much in the water right now. So I'm looking forward to seeing everybody next month.

KODIAK

Grace Ellwanger

I guess the only big update I can think of is the MERHAB grant that we're working on with Steve Kibler and Julie Matweyou. I, unfortunately, can't give much more of an update, other than we're working on it, because I've been out on leave for the last couple of weeks. But I know Andie's working on that with them. So hopefully, you know, next meeting, we can provide a more thorough update, but that's all I have. Thanks.

ALEUTIAN AND PRIBILOF ISLANDS

Karen Pletnikoff

Good morning. We are on holiday along with everyone else. And we'd look forward to working on the MERHAB application with our partners at the ADEC and AHAB and others and Norton Sound Health Corporation. Thanks for any feedback anyone might have. We are really open to it on how we could improve this. And we really are excited that Emma and Alex are interested. Thanks.

NORTHERN BERING SEA

Gay Sheffield and Emma Pate

We recently spent one week with (30) 10th grade biology students for HAB education, sampling field trip, and lab experience. RAINY weather recently (>0.5") followed by several inches of snow. Sea ice is sparse - much open water currently - especially in the Strait. Another storm system is to roll in from the south this weekend. We are still sampling seafoods + seawater here (coastal sea ice + weather-permitting).

ARCTIC

Ajit Subramaniam

I've been chatting with Alex, clearly, we're not doing any sampling right now. But I seriously hope that we'll be able to get something going early spring like before the ice disappears, to get some samples before the herring run that I guess happens in spring, late spring sometime. Trying to get out and get some samples under ice before when we still we can. But I will have offline conversations with you about January and March.

It might be useful for folks that haven't done so yet to use this opportunity to provide comments back to the waterfront plan that comes out of Senator Murkowski's office, I basically provided feedback to Sarah Pease, basically pointing out the different ways in which harmful

algal blooms are affecting communities. And even though they had a reference to harmful algal blooms in the outline they put out there, it might be useful for it to come from all different directions to emphasize how important this is to different communities. So just encouraging folks to use that particular venue to make their needs known.

Thomas: Yep, that is, that is a great point. Thank you for the reminder. I think technically, the due date for those comments was December 2, but I talked to Sarah and she said that they were going to keep getting feedback rolling in. I sent a feedback on behalf of the AHAB steering committee, it's not specific, it's just general about language and kind of emphasizing HABs a little bit more, but I know that they can definitely use specific examples of where HABs should be included in the working waterfront framework. And they're gonna keep working on this for a little while. I think they're looking right now for a more general document about the framework, and then they're gonna go into specific legislation to meet the goals of the framework. So it'll be kind of an ongoing process. And, and I think Sarah said, to feel free to keep sending feedback in so if you haven't had a chance to do that, that's definitely a good thing to do.

Senator Murkowski's Working Waterfront Framework:

(<https://www.murkowski.senate.gov/press/release/murkowski-unveils-working-waterfronts-framework>). Feedback can be sent to: Working_Waterfronts@Murkowski.Senate.Gov

Anne Garland

Waiting to find out when Don Anderson and Scott Barr who is the emergency manager of NSB can get a dialogue started. And I hope it goes somewhere, because we're having trouble trying to figure out how to broach all of this up there, as you guys know, and I'm hoping through emergency management, we can find a foothold, that might actually impact policy. Scott is in the midst of doing his hazard mitigation plan, and he's thinking about including HABs in it. So just FYI, that's kind of where I'm coming from, with this discussion. If it gets into the hazard mitigation plan, it would be a huge step. And the trouble with that is he realizes the touchiness of this topic, and he's reached out to the Wildlife Dept and talk to them. And also, he thinks he'd have to go higher up in administration to be able to put it into their plan. So anyway, I'm just looking forward to discussion with you. And whenever that might happen. Thank you. That's the only update I have.

Patrick Charapata

Just last week, I believe on the last month's update, Evie Fachon was updating about the fall cruise that happened during November, collecting invertebrate samples to compare with the samples that we collected over the summer, during those cruises with the Norseman II. So we just got those samples organized. And we're currently working through the summer 2022 samples, the inverts, as well as walrus fecal samples sent in from subsistence hunters and Gay. And then I think the next steps after we run through the summer samples may be to run those November samples. So we'll have a time series of summer fall of the same station, so it'll be really interesting. I'm working on the trophic transfer models, as well. And with those 2022 data, I'm starting to kind of build that, and I'll present that at AMSS in a poster. Thank you.

OUTSIDE ALASKA

Lisa Eisner

I just wanted to report that when we did our southeast Bering Sea survey this summer, we had our IFCB on board. And we did see Alexandrium in the water in the middle domain shelf. And so we'll have a map of that once we process the data. It was mid-August through mid-September when we mostly that, and I saw it at several stations, and I had somebody on board who actually really knew how to ID them. So even looked at the water sample under the microscope so they were for sure Alexandrium. Oh, and we were also in a big coccolithophore bloom, too. So it'll be interesting to see if they co-occur or not. And we also collected samples for Kathi Lefebvre's ECOHAB project.

Thomas: Thanks, Lisa. I really appreciate that. I was just on the Pacific Arctic Group meeting yesterday and Marine Biology Association out of the UK that puts out those continuous plankton recorders or CPRs. And they were saying as well that they've been seeing Alexandrium in that South Eastern Bering Sea. And then of course, there's the cruise that Bob Picard and Don did, that started kind of just at St. Lawrence island. So actually getting those two kinds of datasets together of IFCBs might give us like a complete picture of what's going on in the Bering Sea.

**NEXT AHAB MONTHLY CALL WILL BE: THURSDAY January 12TH, 2023 AT 9:30AM AK
(The meeting schedule for 2023 will remain the 2nd Thursday of every month)**