

# Beginning to Understand the Impacts of Harmful Algal Blooms on California Fisheries

## Conference Call Key Themes Summary

Wednesday, July 27, 2016 — 10:00am-11:00am

[Audio Recording](#)

### Overview

On Wednesday, July 27, 2016, California Ocean Science Trust convened a conference call to open lines of communication with fishing industry leadership and others about harmful algal blooms (HABs) and their impact on California fisheries. Identified meeting goals were as follows:

- Learn about the process underway to build our collective knowledge and understanding about HABs and potential impacts to California fisheries;
- Inform [initial HABs frequently asked questions \(FAQs\)](#), which are being produced by Ocean Science Trust with input from the industry, the academic community, and State and Federal agencies;
- Discuss how industry, academics, and agencies can continue to engage in a constructive dialogue; and
- Gain details about next steps in the process, including future opportunities to help inform and guide the types of questions the State should address in the long-term.

The following document provides an overview of the discussion topics, ideas, and identified next steps that emerged from the call. This summary is intended to capture high-level details and key themes, rather than a transcript of the discussion. A full audio recording of the conference call along with documents discussed during the call are available on the [HAB webpage](#) on the Ocean Science Trust website.

Please contact Errin Ramunujam, Ocean Science Trust, with any additional questions and comments: [errin.ramanujam@oceansciencetrust.org](mailto:errin.ramanujam@oceansciencetrust.org).

## I. Background Information

### *About Ocean Science Trust*

- [Ocean Science Trust](#) is an independent nonprofit based in Oakland, California. Ocean Science Trust is not a government agency, and has no regulatory or management authority. Rather, Ocean Science Trust is legislatively mandated to provide independent science to the State of California.
- With the main objective of providing sound, rigorous science to assist managers, policy makers and community members in decision-making, Ocean Science Trust does not advocate for particular policy or regulations. The organization frequently develops and delivers science in close collaboration with academic, federal, and state scientists, and community members.

### *HABs and Domoic Acid in California*

- In 2015 and 2016, elevated levels of domoic acid led to the closures of Dungeness crab, rock crab, and razor clam fisheries, and also impacted major commercial and recreational fisheries in California, including anchovies, mussels, and urchins.
- To respond to these events, the California Ocean Protection Council (OPC) convened the Interagency Marine Harmful Algal Bloom Task Force (HAB Task Force) to work together to develop a coordinated response to harmful algal bloom events in California.
- The HAB Task Force is composed of staff from OPC, the Fish and Game Commission, the California Department of Fish and Wildlife (CDFW), California Department of Public Health (CDPH), and the Office of Environmental Health Hazard Assessment (OEHHA).

## **II. Frequently Asked Questions Document (Short-term Product)**

### *FAQ Background*

- In Spring 2016, the Interagency HABs Marine Harmful Algal Bloom Task Force requested Ocean Science Trust to develop a Frequently Asked Questions (FAQ) document to be delivered in advance of the [August 10, 2016 Joint Committee on Fisheries and Aquaculture hearing](#).
- **FAQ Goal:** The FAQ aims to address questions submitted by fishing leadership, agencies, managers/regulators, and others to various organizations throughout California. The goal of the FAQs is to provide a common understanding of how harmful algal blooms and toxins are currently monitored in California, the science supporting the State's action levels for domoic acid, and details about how harmful algal blooms have impacted CA fisheries in 2015-16.
- Ocean Science Trust is working with federal and state partners and academic scientists to gather existing information, and looks to the fishing industry and public to ensure the document reflects broader priorities and interests.
  - The factors used to identify questions to be answered in the short term are priority questions from community members and questions that can be answered in a short turnaround time by available, credible science.
- Beginning Spring 2016, lists of questions had been compiled, and informed by a number of conversations outside Ocean Science Trust, including Senator Mike McGuire's office, the Joint Committee on Fisheries and Aquaculture, the California Dungeness Crab Task Force Executive Committee, the Commercial Fishermen of Santa Barbara, and the Interagency Task Force.
- The primary goal of the July 27 conference call is to confirm Ocean Science Trust appropriately [prioritizing short term questions](#), and identify any additional questions that should be added to the [full list](#).

### *FAQ Discussion*

Call participants asked questions and discussed the draft [list of FAQs](#). The following key themes emerged from the conversation:

- Consideration of the human health and safety aspects of HABs is important, but the impacts of HABs on markets is also an important consideration. The conversation

around HABs should also include discussion on how California can do a better job of communicating the risks and safety of seafood products to retailers and customers.

- Concerns were expressed about whether 30 ppm domoic acid in crab viscera was an appropriate safety level to close/delay fisheries since people generally experience symptoms from much higher levels of consumption. Datasets are available from CDPH that should be used to better inform the action levels.
  - *The FAQ will address, from a scientific perspective, why that level was set, how impacts to human health were determined, how the calculations were made, and how that was translated to currently levels. The FAQ will be informed by available research (e.g. the 1987 Prince Edward Island event) and conversations with CDPH and OEHHA. However, the document will not provide recommendations on what level of risk is appropriate. It will be up to State managers and health professionals to respond to action levels accordingly.*
  - *One participant suggested that the group seek out examples of times where agencies did not close fisheries despite higher levels than current thresholds. Those instances should be looked at to better understand what levels of risk are appropriate*
- A suggestion was made for Ocean Science Trust to look at data from CDPH that identifies the level of exposure humans during past domoic acid events, what kind of action was taken, and whether or not incidents of illness resulted based on the measured domoic acid levels. Such information would show examples of when people were exposed to specific levels of domoic acid what health impacts were experienced by the the public. Another participant agreed and requested examples of times when California did not close fisheries despite higher levels than current thresholds since those events should be investigated to better understand the issue of level of risk.
  - *Although the FAQ does not currently address this question, Ocean Science Trust can work with CDPH to address questions/feasibility of research like this in future HABs Working Group products.*
  - *The FAQ document will address questions around why the safety thresholds vary between crab viscera versus meat.*
- Questions regarding whether crab (and other seafood) could be marketed after the seafood is processed and viscera is removed will not be reflected in these FAQs since these questions are more regulatory in nature and will be decided by CDPH and CDFW.
- A participant requested adding a question clarifying the relationship between domoic acid levels in Dungeness and rock crab and other species (e.g. other crabs, mussels etc.).
  - *There will be information in the FAQs that points to ongoing research in Oregon and California that explores how domoic acid toxin accumulation may vary by species. Generally, accumulation is higher in species lower on food chain, especially those consumed by Dungeness and rock crab.*
  - *The Oregon Department of Fish and Wildlife's (ODFW) Shellfish Program is conducting research to address questions related to the relationship between domoic acid levels in Dungeness and rock crab and other species. ODFW will share information with Ocean Science Trust and the HAB Working Group as it is available to potentially inform future products.*

- The fishing community and public would appreciate more more information on whether HABs are a long-term concern.
  - *It is difficult to forecast domoic acid and HAB events that may occur in the future and potentially associated with ocean patterns (e.g. El Niño and La Niña cycles), but scientists are expecting to see unusual events in the future. The frequency and intensity of those future events is unclear and more data should be collected to help predict future HAB events. There are existing models that can give probabilities of observing a HABs. How these models are used to inform management will be a topic explored by the longer-term science working group.*
- Questions regarding what other species may be affected by HAB events are likely a longer-term question.
  - *The FAQs will address those questions that can be answered with currently available information and the science working group will address the longer-term questions and dive deeper into this topic to provide additional scientific guidance over the next year.*
- Although CDFW and CDPH are involved in collecting samples of rock crab in Santa Barbara and monitoring domoic acid levels, the academic community may also be monitoring toxins in the water that may relate to the rock crab samples.
- The California fishing industry would appreciate season opening information and information regarding the presence of HABs/domoic acid, potential advisories, etc. by October so the fleet can make a business plan for the season.
- A couple participants expressed appreciation to the Ocean Science Trust for opening lines of communications with fishermen and community members and look forward to seeing future products.

**FAQ Release Date: August 5, 2016**

Considering the feedback received during the call, the completed FAQ document with associated responses will be publicly available August 5, 2016 on the [Ocean science Trust website](#). Longer-term questions, those requiring additional research and resources, will be developed by the HABs Working Group over the next year.

### **III. OPC Science Advisory Team HAB Working Group (Short- and Longer-term Work)**

***About the Science Advisory Team Working Group***

- In addition to the FAQ, Ocean Science Trust was asked to convene a science working group of the California Ocean Protection Council Science Advisory Team (SAT) in order to explore the science supporting California's existing HAB and biotoxin monitoring in the marine environment in California.
  - This group will develop a scientific guidance document and options for understanding HAB events in California and their impact on fisheries. Additionally, the working group will identify ways they could add capacity to the State's existing HAB monitoring and sampling efforts to better respond to HAB events in the future.

- The working group’s scope of work, which includes information about their charge and membership, is available on [online](#).

#### SAT Working Group Outputs

- Work will take place in two phases:
  - **Short-term (September 2016):** In the near-term, the working group is framing and scoping scientific issues related to HABs, with a focus on how the academic community can build capacity into the State programs. A short term scientific guidance document will be developed to capture this information, which will be delivered to the Interagency HABs Task Force on September 30, 2016.
  - **Longer-term (through 2017):** After the guidance document is released, Ocean Science Trust will work with an expanded working group on questions that will take longer to scope and answer. These longer-term questions will be determined after the release of the short-term guidance document.

#### IV. Next Steps

- Ocean Science Trust appreciates the feedback received from the call and will, as appropriate, incorporate the ideas reflected during the conversation into both the FAQ document and science working group discussion.
  - Ocean Science Trust will be presenting at the [August 10, 2016 Joint Committee on Fisheries and Aquaculture hearing](#). They are available to answer additional questions from the fishing community and the public.
  - Feedback is welcomed on the best ways to share updates and products with the fishing community and public, as well as if a future conference call would be of value.
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#### Resources

- Ocean Science Trust HAB webpage ([here](#))
- “Harmful Algal Blooms and California Fisheries” Scope of Work ([PDF](#))
- Full list of submitted questions ([PDF](#))
- List of FAQ questions ([PDF](#))
- Info on the [Joint Committee on Fisheries and Aquaculture Dungeness Crab Hearing](#)  
1:00 PM - 4:00 PM, August 10, 2016, Capitol Bldg., Room 3191, Sacramento, CA

#### Ocean Science Trust Contact

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