

# Ocean Acidification & Alaska Fisheries

## Views and Voices of Alaska's Fishermen and Coastal Residents

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# Project Overview

- In 2011-2012 AMCC organized community roundtables in the fishing communities of Dillingham, Kodiak and Homer.
- Designed to engage coastal Alaskans and members of the Alaska seafood industry whose lives and local economies will be affected by changes linked to OA.



# Project Partners

- Alaska Sea Grant MAP agents: Izetta Chambers (Dillingham) & Julie Matweyou (Kodiak)
- Alan Parks
- Dr. Jeremy Mathis
- Dr. Bob Foy
- Brad Warren



# Project Aims

- Promote a better understanding of the current and potential impacts of ocean acidification (OA) on Alaska fisheries and livelihoods.
- Identify and raise the level of awareness and sense of importance coastal Alaskans and members of the Alaska fishing industry attach to the issue of OA.
- Advance discussion on OA and ensure that the perspectives and experiences of Alaska fishermen, and fishing communities are understood and accounted for in public policy related to OA.

# Roundtable Objectives

- 1) Bring together the efforts and expertise of scientists, subsistence harvesters, commercial fishermen, natural resources managers and coastal residents to better assess and address the impacts of OA on local fisheries and livelihoods;
- 2) Develop ideas and advance dialogue concerning the needs and potential contributions of fishermen and fishing communities in responding to the threat posed by OA, and engaging in policy action related to OA in the future.

# Roundtable Organization and Structure

## 1. Scientific presentation

- Dr. Bob Foy (Kodiak)
- Dr. Jeremy Mathis (Dillingham, Homer)

## 2. Q&A

## 3. Discussion

- \* lasted 2 to 3 hours in length
- \* 55 participants in total



Dr. Foy shows off a red king crab at the AFSC Kodiak Laboratory. *Photo by Alan Parks*

# Roundtable Discussion Topics

- Research priorities
- Current and next generation ecological and economic concerns
- Energy efficiency and reducing energy costs/emissions within seafood sector and localities
- Contributions to OA science and policy from fishing industry and coastal AK.



Dr. Mathis discusses his research with roundtable participants in Dillingham. *Photo by Alan Parks*

**Broader questions:** What do you know about OA? What do you want to know? What about the scientific presentation surprises you, concerns you, scares you?

- Is there a connection between OA and the recent decline in king salmon returning to the Nushagak?
- Could OA help to explain the smaller size of sockeye returning to Bristol Bay in recent years?
- What is the correlation between OA and the decline in seabirds around Homer?
- Could ocean acidification play a role in the shrinking halibut biomass in the Gulf of Alaska?
- How is OA changing halibut habitat in the Gulf of Alaska?

# Gauging Awareness

- I don't know a lot about [OA]... Perhaps that's because you don't really see any discussion until it's well advanced and then it's hard to reverse it.
- I run into people all the time who haven't heard of ocean acidification. Both in the fishing industry and around town in support services.
- There's an awful lot of uncertainty surrounding ocean acidification.
- I'm struck by how little we actually know [about the impacts of OA].
- I don't know much about [OA]. I don't know what fisheries it's impacting on the west coast. I mean it's hard to tell which ones are getting hit or not.

# Unknown Consequences

- Because of uncertainty about what the exact impacts of ocean acidification on fisheries will be, concerns about the future tend to be eclipsed by more immediate and tangible issues facing fishermen and fishing communities.
- One exception was the shellfish growers in Homer who are already experiencing the loss of oyster spat due to corrosive waters in the Pacific Northwest.



Homer Spit. *Photo by Matthew Sill*



Kodiak Harbor. Photo by Kelly Harrell

- *“I think the threat is real... But I just don’t know enough about it in terms of how it’s truly going to affect fishing. I want to know more. But it has me concerned.”*
- *“I know it’s here, I just don’t know what it is... What is really going to happen to Bristol Bay? That is just a huge unknown to me.”*

# Priorities amidst Uncertainties

Need to situate people's perceptions of OA within a broader suite of perceived threats currently shaping life and work along Alaska's coastline.



Salmon gillnetters in Dillingham.

- The **socio-economic impacts of fisheries policy**, especially absentee ownership and the out-migration of fishing privileges from coastal Alaska. One participant identified this as the “biggest problem” facing local fisheries.
- **Pebble Mine**: “Pebble Mine is easy to latch on to because it’s a big hole in the ground that they’re proposing. It’s such an in your face deal.”

# Inevitable Oceans

- “I get the sense that we can’t do anything about [OA].”
- “Is there an alternative [to OA]? Not that we’re going to let [the ocean] go, but what can we do?”
- “We’re talking about mitigation of a problem that could be labeled as inevitable.”
- “ I keep coming back to how knowing more about acidification will help us? Because the problem is ongoing, and we’re not in control. We’re not the one’s putting the majority of the carbon into the ocean. We can’t stop it.”

# Sustainable Transitions

- “When do people become involved? When it hits the pocketbook.”
- “We’re at a place now where a shift is necessary. And our generation can either be the clutch or that shift is going to happen without a clutch. It’s our job to find ways to enhance that transition. I don’t know if you drive a vehicle with a standard transmission but if you try to make a shift without a clutch you’re going to have some problems.”

# Cultures and Economies

*“There used to be a village there. We have one elder who is 88 years old here in Dillingham who grew up in Kalukuk. She lives for the spring time, when she gets clams from her grandson who goes over there.”*



NOAA



Camrin Denzel

# Addressing OA in AK Waters

- Investing and expanding OA monitoring and research in Alaska waters.
- Industry-Science Partnerships
- Dual track systems: personal and political-level change



*“What I’d like to see is an investment in monitoring around Kodiak Island. The research is being done in the lab, yet no monitoring.”*

*“You can’t manage what you don’t monitor.”*

# Cotter Pins and Copepods

“So when you have these little animals that we can barely see with the naked eye that the fish need to eat, to survive... that’s when I get really concerned about this. We can’t see it, but it’s there... [I]t’s like a helicopter that you can see the fuselage, you can see the rotor, but it’s the little tiny cotter pins that are holding that all together. If you take that cotter pin[out] , if some of them shake loose, it will shake the whole thing apart. And I think that’s what OA is doing....”