

**ALASKA STATE LEGISLATURE
HOUSE SPECIAL COMMITTEE ON FISHERIES**

May 3, 2022

10:06 a.m.

MEMBERS PRESENT

Representative Geran Tarr, Chair
Representative Jonathan Kreiss-Tomkins
Representative Andi Story

MEMBERS ABSENT

Representative Louise Stutes, Vice Chair
Representative Dan Ortiz
Representative Sarah Vance
Representative Kevin McCabe

COMMITTEE CALENDAR

PRESENTATION: OCEAN ACIDIFICATION IN ALASKA: REGIONAL
CONDITIONS~ ECOSYSTEM RISK AND MITIGATION OPPORTUNITIES

- HEARD

PREVIOUS COMMITTEE ACTION

No previous action to record

WITNESS REGISTER

DARCY DUGAN

Alaska Ocean Acidification Network
Alaska Ocean Observing System
Anchorage, Alaska

POSITION STATEMENT: Gave a PowerPoint presentation on ocean acidification in Alaska.

DARREN PILCHER, Ph.D.

Cooperative Institute for Climate, Ocean, and Ecosystem Studies
University of Washington
Seattle, Washington

POSITION STATEMENT: Gave a PowerPoint on Bering Sea conditions during the presentation on ocean acidification in Alaska.

CLAUDINE HAURI, Research Associate Professor
International Arctic Research Center

University of Alaska Fairbanks
Fairbanks, Alaska

POSITION STATEMENT: Gave a PowerPoint on Gulf of Alaska conditions during the presentation on ocean acidification in Alaska.

TOM HURST, Ph.D., Program Manager
Alaska Fisheries Science Center;
Newport Lab Director
National Oceanic and Atmospheric Administration
U.S. Department of Commerce
Newport, Oregon

POSITION STATEMENT: Gave a PowerPoint on the biological responses to ocean acidification during the presentation on ocean acidification in Alaska.

JESSICA CROSS, Ph.D., Research Oceanographer
Pacific Marine Environmental Laboratory
National Oceanic and Atmospheric Administration
U.S. Department of Commerce
Seattle, Washington

POSITION STATEMENT: Gave a PowerPoint on carbon dioxide removal during the presentation on ocean acidification in Alaska.

ACTION NARRATIVE

[10:06:38 AM](#)

CHAIR GERAN TARR called the House Special Committee on Fisheries meeting to order at 10:06 a.m. Representatives Tarr and Story were present at the call to order. Representative Kreiss-Tomkins arrived as the meeting was in progress.

Presentation: Ocean acidification in Alaska: regional conditions, ecosystem risk and mitigation opportunities

[10:07:49 AM](#)

CHAIR TARR announced that the only order of business would be presentations on ocean acidification in Alaska.

[10:08:36 AM](#)

DARCY DUGAN, Alaska Ocean Acidification Network, Alaska Ocean Observing System, informed the committee that the Alaska Ocean Acidification Network ("the network") formed in 2016 to expand the processes and consequences of ocean acidification (OA) and

to look for opportunities for adaptation and mitigation. The network is composed of researchers, fishermen, shellfish growers, Tribal members, educators, resource managers, and coastal citizens. She argued the importance of the legislature's involvement because ocean acidification will impact Alaska disproportionately.

[10:10:53 AM](#)

DARREN PILCHER, Ph.D., Cooperative Institute for Climate, Ocean, and Ecosystem Studies, University of Washington, gave a PowerPoint presentation, titled "Bering Sea Conditions" [hard copy included in the committee packet]. He explained that through the combustion of fossil fuels, humans have been emitting more carbon dioxide into the atmosphere, half of which is absorbed by the land biosphere and oceans, and this results in OA. He stated that the chemical changes in the seawater make it more difficult for calcifying organisms to build their shells. He pointed out that it only takes a small amount of carbon to push Alaska waters into a more corrosive state, as these waters are already cold and rich in natural carbon. He described research which shows that habitat suitability for red king crab in Bristol Bay could be fatally impacted by a pH value of 7.5.

[10:27:28 AM](#)

CLAUDINE HAURI, Research Associate Professor, International Arctic Research Center, University of Alaska Fairbanks, gave a PowerPoint presentation, entitled "Ocean Acidification in the Gulf of Alaska" [hard copy included in the committee packet]. She explained that OA is important because some organisms are already being negatively impacted. For example, she said that sea snails' shells are dissolving. Research shows that OA in combination with climate change may lead to unprecedented changes throughout the ecosystem. A high-resolution ocean model for the Gulf of Alaska was developed to supplement field work observations and gain a better understanding of the changing habitat. She said that because of spikes in OA the healthy habitat for sea snails has been shrinking from 1980 to 2013, resulting in severely dissolved sea snails in the region. In addition, OA is leading to low oxygen concentration at certain depths, which makes it difficult for salmon to thrive. She stressed the importance of understanding the variability of ocean chemistry, as this would better predict OA's threat to ecosystems.

[10:43:37 AM](#)

TOM HURST, Ph.D., Program Manager, Alaska Fisheries Science Center, Newport Lab Director, National Oceanic and Atmospheric Administration, U.S. Department of Commerce, gave a PowerPoint presentation, titled "Biological responses to OA among Alaska's fishery resource species" [hard copy included in the committee packet]. He discussed the negative impact of high carbon, or low pH, on the survival and growth rate of red king crab and tanner crab. He explained that because of low pH levels both species have a decreased survival rate. In summary, he provided that red king crab and tanner crab are more sensitive to OA than snow crab and blue king crab; acidification induced a wide range of biological responses which vary among species; and OA interacts with other stressors. He stated that interactive effects between carbon and warmer waters could narrow the range for optimum species conditions. He discussed the negative effects of OA among groundfish and salmon. Overall, the summary of biological responses has found high variation in species sensitivity. For example, crab is the most sensitive at the juvenile stage, and fish appear most sensitive at the larval stage. He concluded that interaction with other stressors is expected to exacerbate OA sensitivity.

[11:09:51 AM](#)

JESSICA CROSS, Ph.D., Research Oceanographer, Pacific Marine Environmental Laboratory, National Oceanic and Atmospheric Administration, summarized a PowerPoint presentation, titled "NOAA's Carbon Dioxide Removal Research Interest" [hard copy included in the committee packet]. She emphasized that, per the International Panel on Climate Change, carbon dioxide removal (CDR) is essential to meeting climate goals. An advantage of CDR is that it can be used as an acidification mitigation technique. She pointed out that there are multiple forms of CDR which may be relevant for Alaska. She stated that NOAA supports tracking of global-carbon budget and large-scale ecosystem assessments. She advised that tracking small local projects will be critical at the beginning of this field. She concluded that NOAA's spatial tools could help identify the right places to deploy coastal CDR projects.

[11:13:15 AM](#)

MS. DUGAN concluded by summarizing the presentation on ocean acidification. She highlighted 20 communities involved in weekend water sampling for OA. She stated that the network is

working on synthesizing data into actionable information. The goal is to work with the legislature on funding to resume monitoring with available instruments.

[11:17:03 AM](#)

ADJOURNMENT

There being no further business before the committee, the House Special Committee on Fisheries meeting was adjourned at 11:17 a.m.