



Tungwenuk Family Qupak Design, used with permission

KAWERAK, INC.

REPRESENTING
Brevig Mission

December 2, 2022

Sitaisaq

Council

Sen. Lisa Murkowski

Akauchak

Alaska U.S. Senator

Diomedea

Submitted via email at: Working_Waterfronts@Murkowski.Senate.Gov

Injalik

Elim

Neviarcuarluq

Re: Working Waterfronts Framework

Gambell

Sivuqaq

Dear Sen. Murkowski:

Golovin

Chinik

King Island

Ugiuvak

Koyuk

Kuuyuk

Mary's Igloo

Iglaaruk

Nome Eskimo

Sitnasuami Inuit

Savoonga

Sivungaq

Shaktoolik

Saktuliq

Shishmaref

Kigiqtatq

Solomon

Anuutaq

St. Michael

Taciq

Stebbins

Tapraq

Teller

Tupqaqruk

Unalakleet

Uqalaqtiq

Wales

Kinjigin

White Mountain

Natchigvik

Please accept these comments on behalf of Kawerak Incorporated, the Alaska Native non-profit Tribal consortium for the 20 federally recognized tribes of the Bering Strait region. These comments are in response to the Shellfish Mariculture subsection of the Working Waterfronts Framework.

The expanded testing capacity for paralytic shellfish poisoning should encompass shellfish testing in walrus and ice feeding grounds and testing of walrus and ice seal carcasses. Recent harmful algal blooms in the Bering Sea have heightened the urgency for this testing for subsistence-based communities. This testing should occur in August and September, when waters are warmest, and algal blooms are largest.¹

A large portion of the walrus diet consists of shellfish,² and when walrus are harvested for subsistence, the walrus itself is eaten, including the intestines, along with the shellfish gathered from the animal's stomach. In some Bering Strait communities, walrus hunting provides the majority of the subsistence food eaten by residents.³ In these communities, the foundation of food security rests on healthy shellfish more than anywhere else in Alaska. To a less, but still significant extent, the ice seal diet is also comprised of shellfish. If walrus and ice seal become unsafe to eat due to ingesting shellfish toxins, it would threaten the food security of Bering Strait communities.

Alexandrium catenella is a biotoxin-producing algae that causes PSP worldwide.⁴ The Russian coast of the Northern Bering Sea holds the highest concentration of A. catenella cyst globally. The second highest concentration is in the Alaskan Arctic Ocean, and since 2018 surface blooms have been documented in the Bering Sea.

¹<https://www.pnas.org/doi/10.1073/pnas.2107387118>

²https://www.adfg.alaska.gov/static/home/library/pdfs/wildlife/research_pdfs/walrus_feeding_re_examination.pdf

³https://meridian.allenpress.com/jfwm/article-supplement/204262/pdf/fwma-08-01-10_s01/

⁴<https://www.pnas.org/doi/10.1073/pnas.2107387118>

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Warming ocean temperatures and reduced sea ice has likely increased the reproduction and spread of *A. catenella* in these waters,⁵ and the trend is likely to continue. In 2018 and 2019, a group of researchers studied *A. catenella* along Alaska’s northern and western coast. In a paper presenting their findings, Anderson et al. wrote: “The region is poised to support annually recurrent *A. catenella* blooms that are massive in scale, posing a significant and worrisome threat to public and ecosystem health in Alaskan Arctic communities where economies are subsistence based.”

Subsistence food sources could already be in jeopardy.

In 2017, 39 walrus carcasses in good body condition were found on Bering Strait beaches.⁶ Four of the walrus were sampled for algae-produced biotoxins, and all four tested positive, including for saxitoxin, one of the toxins that causes PSP.

In 2022, a similar event occurred with about 30 dead walruses washing upon beaches following a documented toxic algal bloom.⁷

The amount of biotoxins walrus would need to consume to sicken them or people who eat them is not yet known. Scientists are currently conducting a comprehensive study to determine which walrus organs and tissues accumulate levels of PSP unsafe for human consumption.

If walrus become unsafe to harvest, the loss would trigger economic devastation for the communities that rely on them. In 2013, Alaska Gov. Sean Parnell issued an economic disaster declaration for Savoonga and Gambell after unusually thick shore ice prevented hunters from accessing walrus, reducing harvest to 36 percent of the annual average.⁸ Parnell issued the declaration because of sudden food insecurity, the high cost of commercial foods, and the loss of income generated by handicrafts produced from walrus parts, including ivory, whiskers, bones, stomachs, and intestines.

For all these reasons, PSP testing of walrus feeding grounds is essential to protect the health of subsistence communities that harvest walrus. The testing must establish baseline data and then monitor changes over time. The information must be readily and easily accessible to subsistence users. Because ice seals also feed on shellfish and serve as a cornerstone of the subsistence diet, this testing should also include ice seal feeding grounds as well.

⁵ <https://www.pnas.org/doi/10.1073/pnas.2107387118>

⁶ [file:///C:/Users/mmacarthur/Downloads/MAB-74PDF-Bering%20Strait %20Walruses%20a.pdf](file:///C:/Users/mmacarthur/Downloads/MAB-74PDF-Bering%20Strait%20Walruses%20a.pdf)

⁷ <https://www.youtube.com/watch?v=mUejlyjdaTE>

⁸ <https://www.adn.com/rural-alaska/article/disaster-declared-subsistence-walrus-hunt-st-lawrence-island/2013/09/03/>

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Even though walrus and ice seals are an immediate concern for PSP testing due to their subsistence value, it must be noted that they are not the only subsistence animals that could be poisoned by an increase in toxic algae. Whales and seabirds also feed on organisms that consume and concentrate biotoxins. Since 2017, the Northern Bering Sea has witnessed massive seabird die-offs across multiple species. Nearly all the documented birds are emaciated, indicating starvation. One possible theory for starvation shared among scientists is that algal blooms could be poisoning the birds and/or disrupting their food sources.⁹ This situation too should be tested and monitored.

Thank you for the opportunity to provide comments on this framework.

Sincerely,

Melanie Bahnke

Melanie Bahnke
President
Kawerak, Inc.

⁹ <http://www.nomenugget.com/news/research-has-no-answers-continued-seabird-die>

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