



THE STATE
of **ALASKA**
GOVERNOR MIKE DUNLEAVY

Department of Fish and Game

OFFICE OF THE COMMISSIONER
Headquarters Office

1255 West 8th Street
P.O. Box 115526
Juneau, Alaska 99811-5526
Main: 907.465.6136
Fax: 907.465.2332

May 11, 2023

The Honorable Click Bishop
Senate Resources Committee, Co-Chair
Alaska State Legislature
State Capitol, Room 504
Juneau, AK 99801

The Honorable Cathy Giessel
Senate Resources Committee, Co-Chair
Alaska State Legislature
State Capitol, Room 427
Juneau, AK 99801

Re: Overview: Area M Fisheries

Dear Co-Chairs Bishop and Giessel:

This letter from the Alaska Department of Fish and Game (ADF&G) provides supplemental information as requested for the May 1 continuation of the Area M Overview to the Senate Resources Committee. Please find the request and corresponding response below.

1. Provide the ADF&G staff report by Dr. Katie Howard regarding warming waters near the Yukon that was mentioned by Ms. Frances Leach during her testimony.

Attachment 1 is Dr. Howard's presentation mentioned by Ms. Leach. Dr. Howard presented this information at the Board of Fisheries Alaska Peninsula / Aleutian Island / Chignik Finfish meeting back in February. The recording can be found here: [Soniclear Webcast \(alaska.gov\)](https://www.alaska.gov/soniclear/webcast). The AYK Chum Salmon Marine Research Overview presentation begins on February 20, 2023, at 6:08:52 / 05:36:39PM. The presentation focuses on AYK chum salmon. ADF&G is currently preparing a paper with our NOAA colleagues on chum salmon, but it has not been published yet.

I hope you find this information to be useful. Please do not hesitate to contact me if you have further questions.

Re: Overview: Area M Fisheries
May 11, 2023

Page 2 of 2

Respectfully,

A handwritten signature in black ink, appearing to read "D. Lang", with a stylized flourish at the end.

Doug Vincent-Lang
Commissioner

Cc: Laura Stidolph, Legislative Director, Office of the Governor

AYK Chum Salmon Marine Research Overview

A Report to the Alaska Board of Fisheries

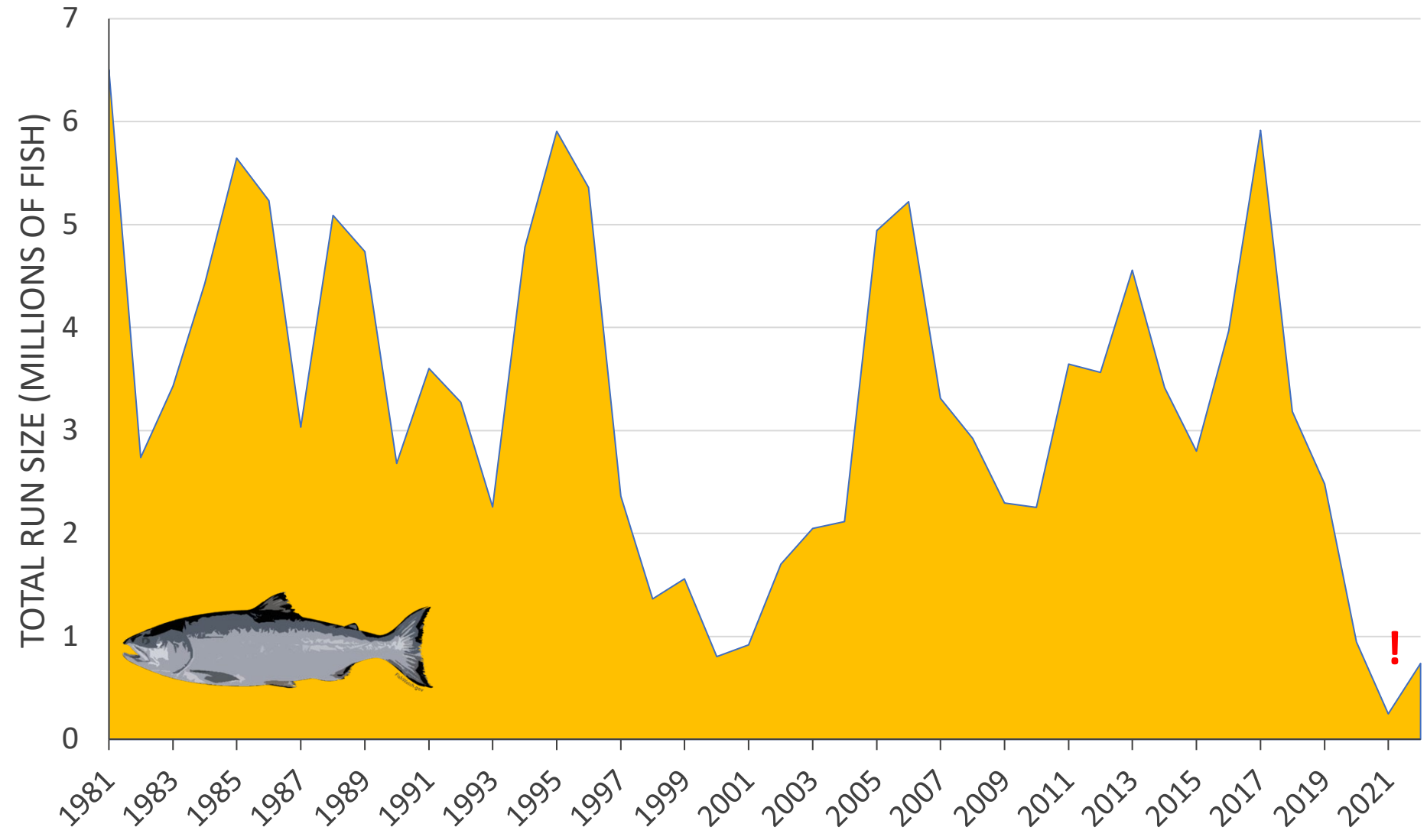


Dr. Kathrine Howard
February 2023

- What do we know about marine life of AYK Chum?
- How might that help us understand harvest of these stocks in marine fisheries?



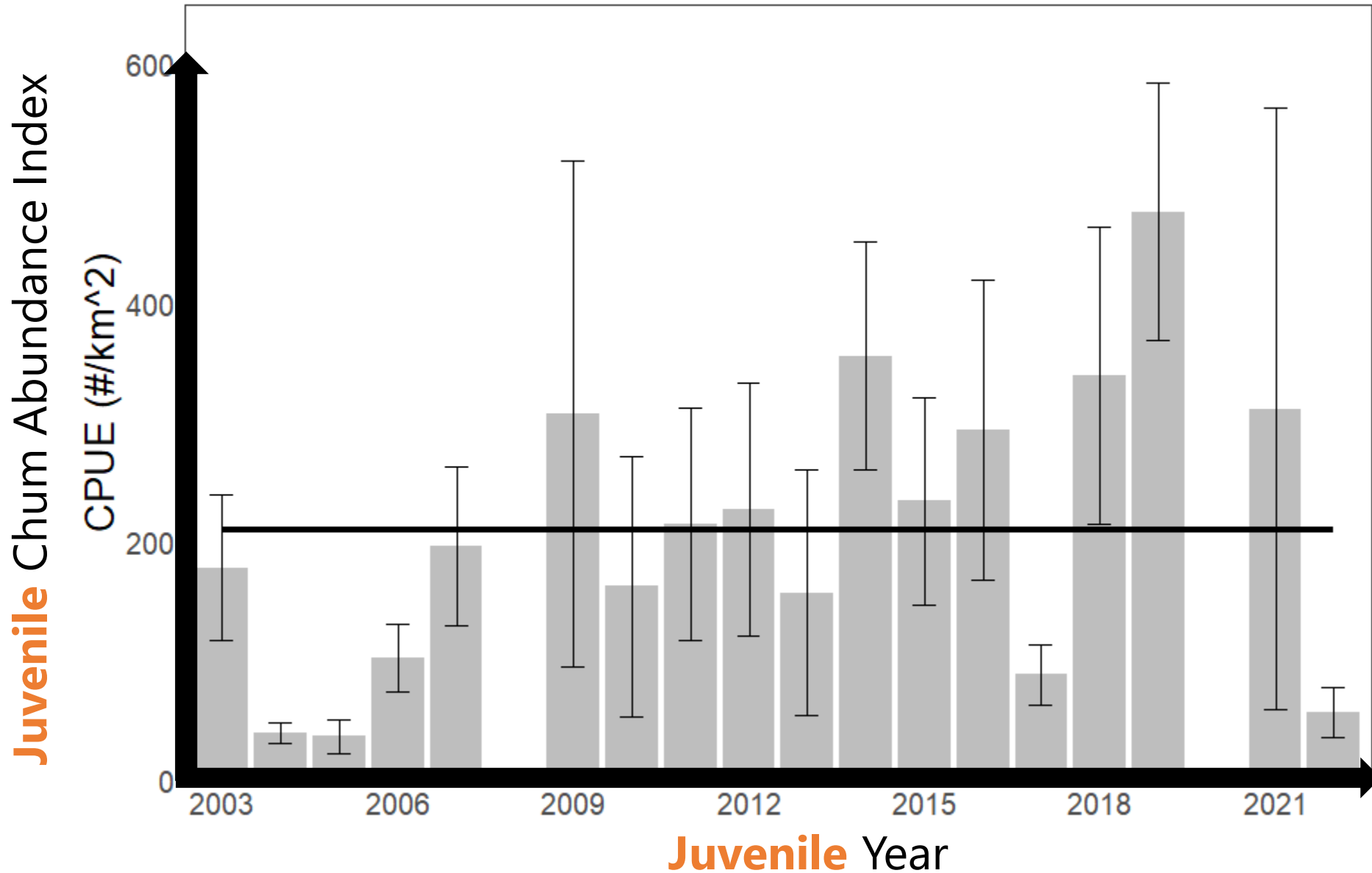
Total run size of Yukon River chum salmon stocks

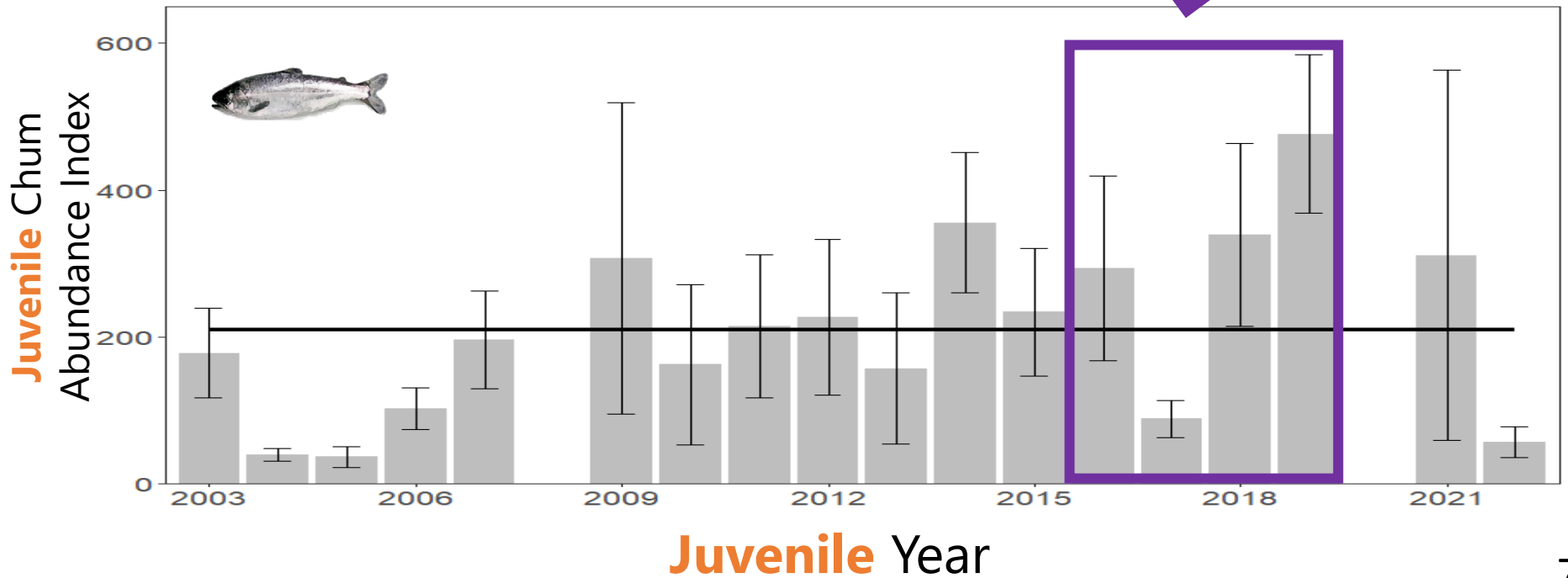
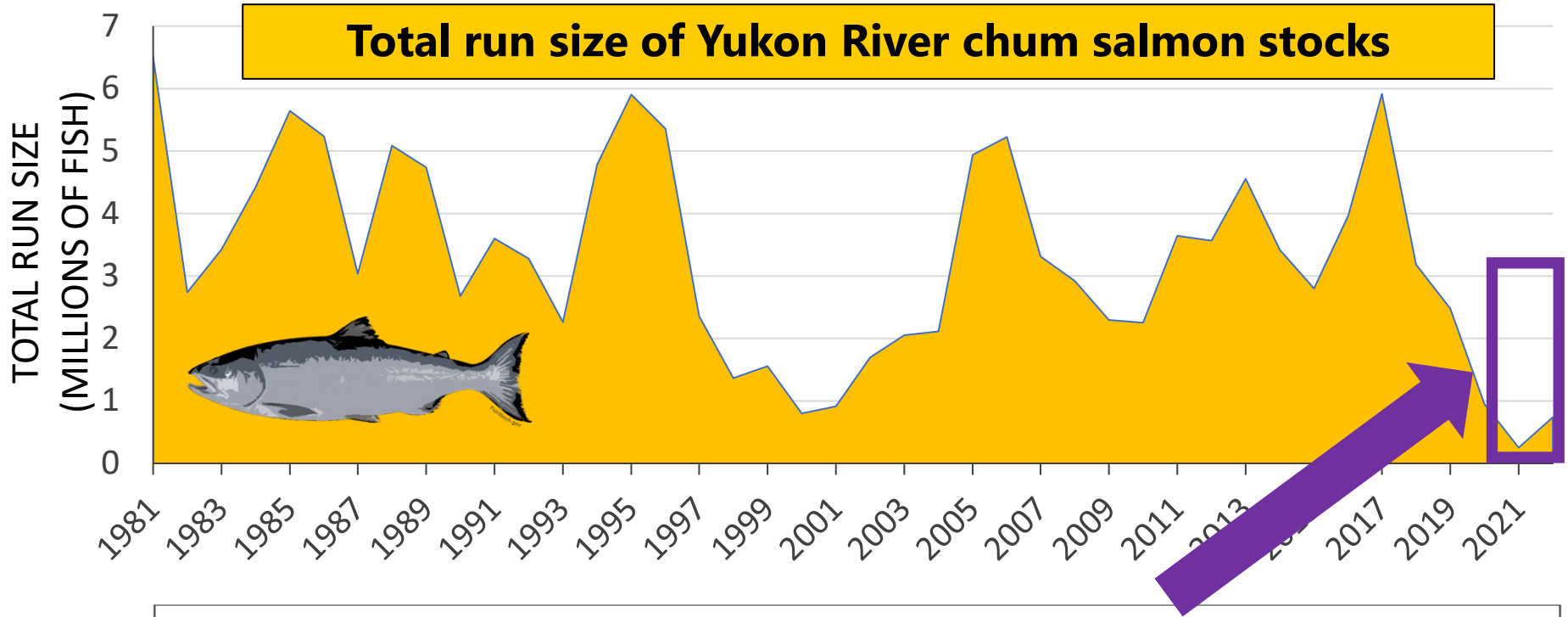




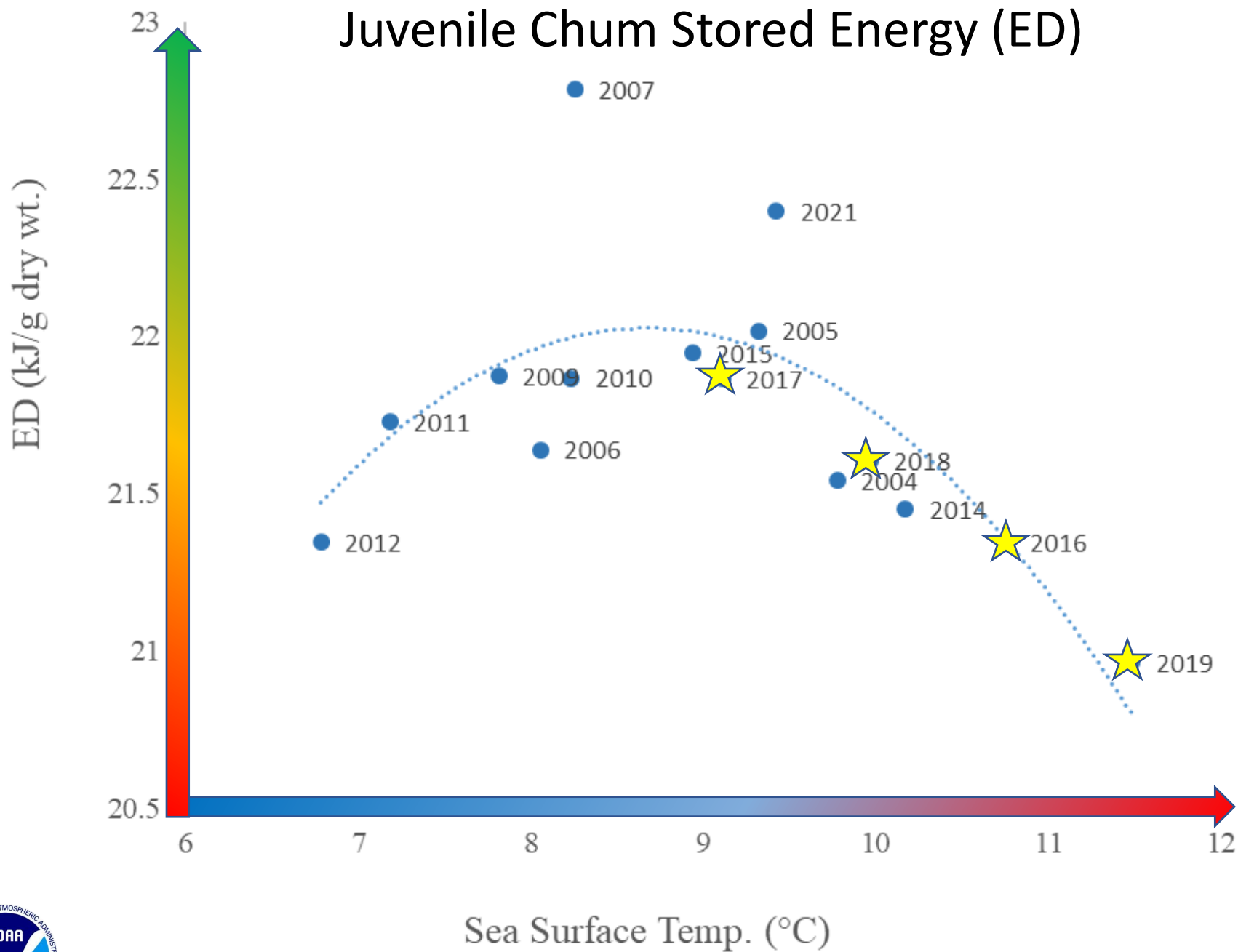


Chum salmon (mixed stocks)

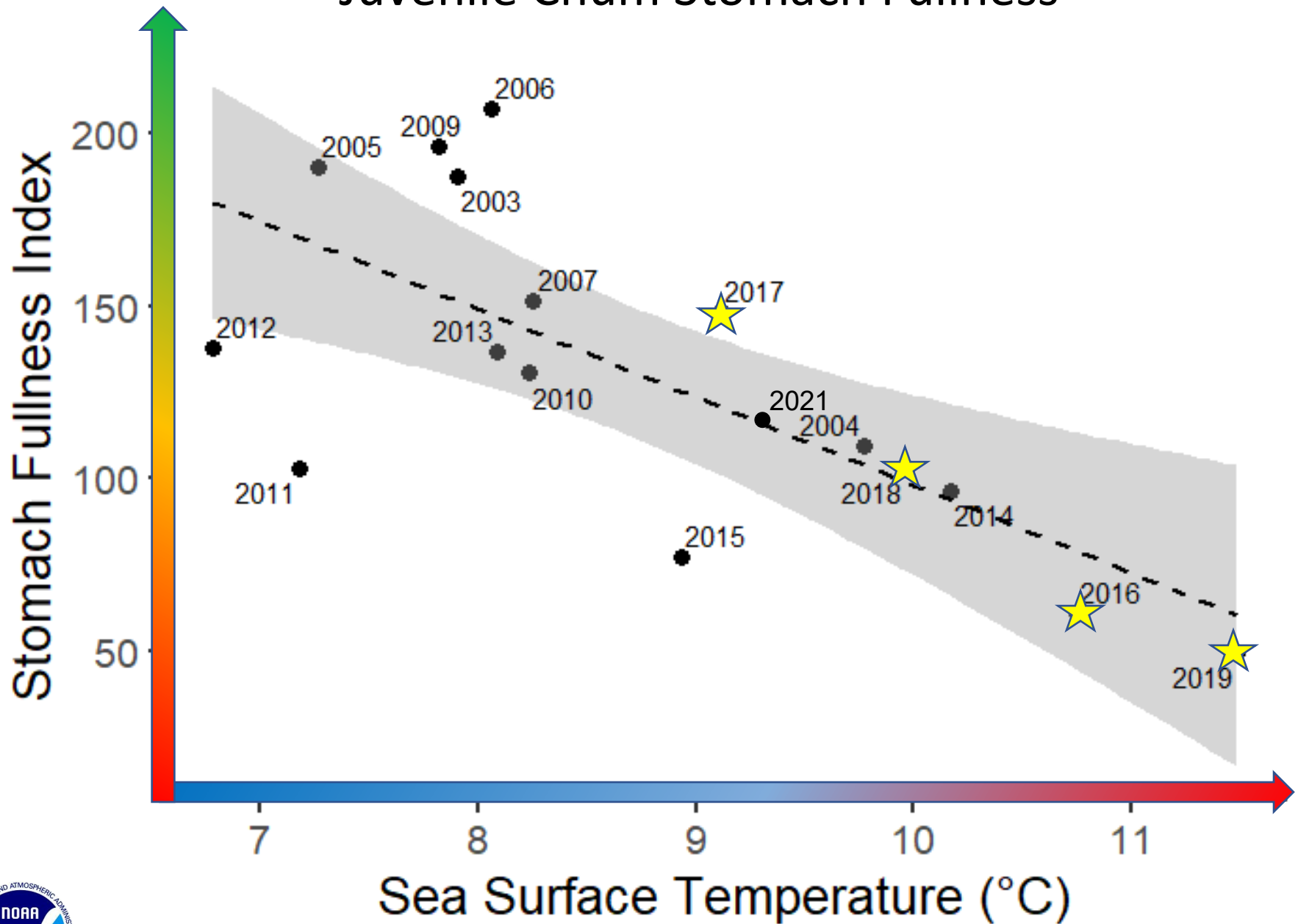


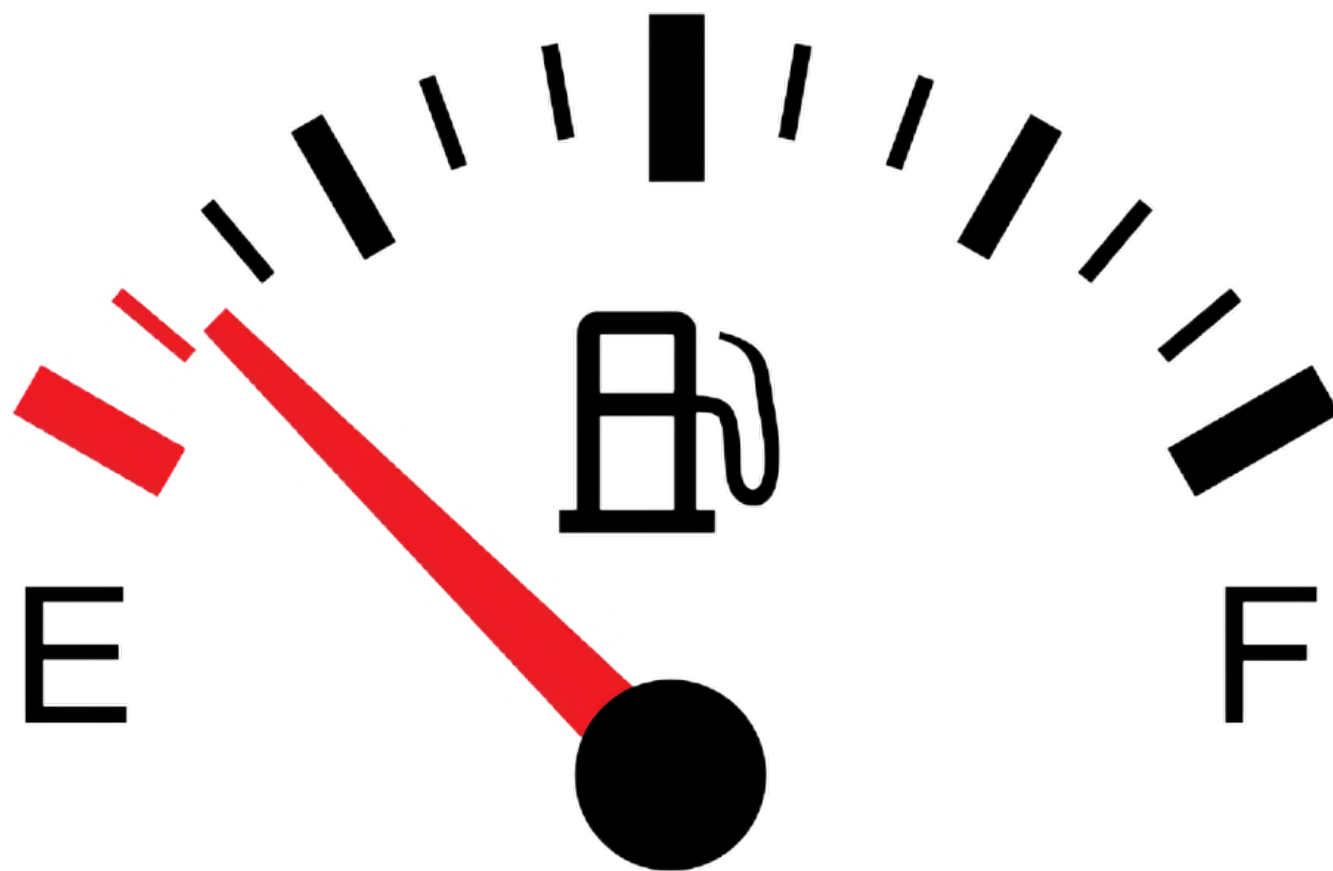


Juvenile Chum Stored Energy (ED)

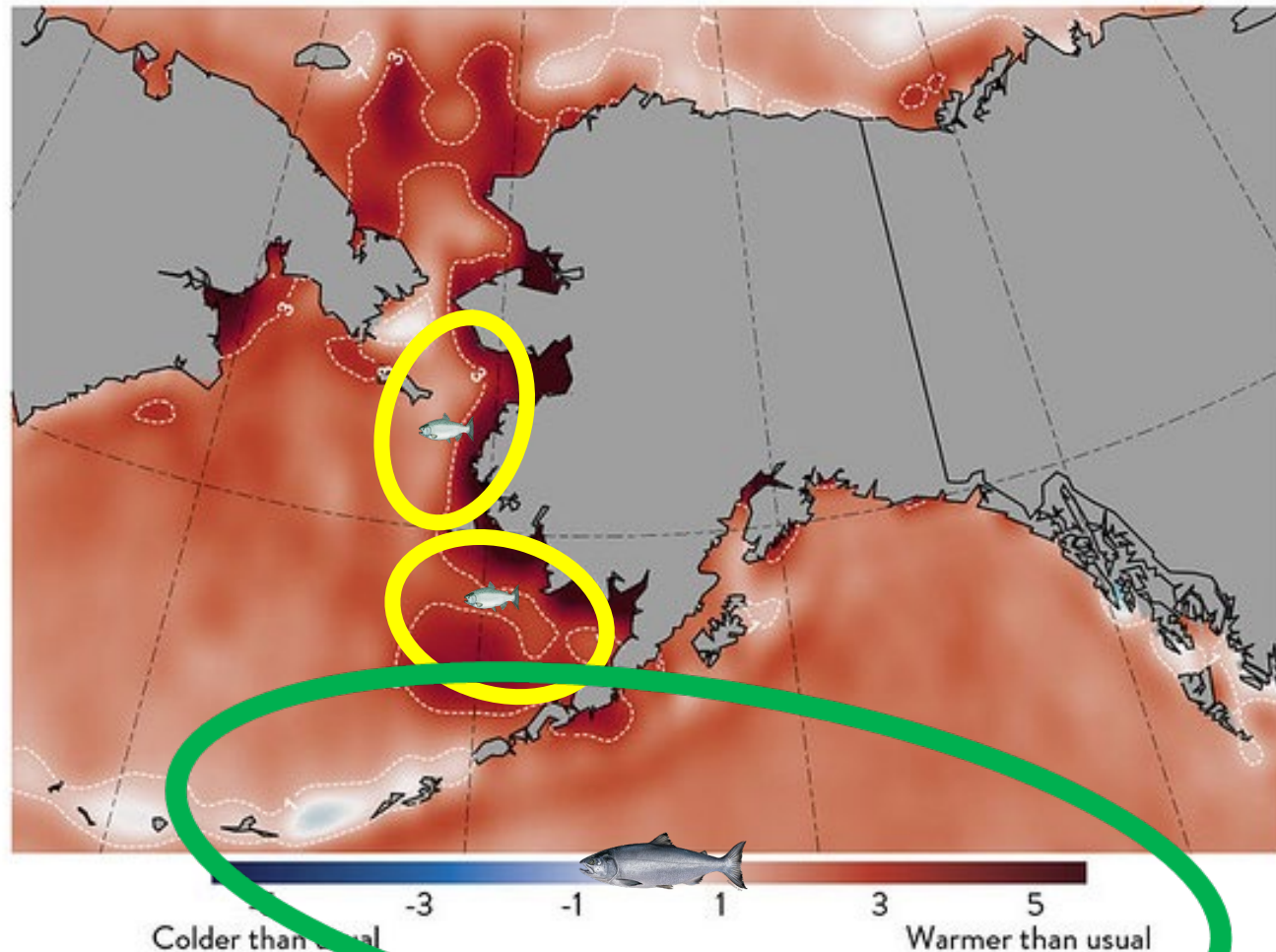


Juvenile Chum Stomach Fullness





Summer sea surface temperatures off Alaska, 2014–2019



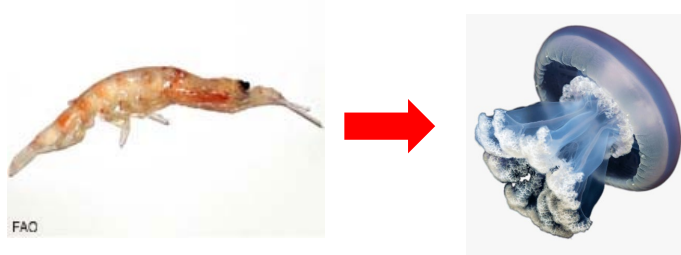
Data source: AMAP Ocean Acidification Report, 2018, [https://www.amap.no/publications/AMAP-OAR-2018](#); National Climate Change, 2017; Progress in Oceanography, 2015

Temperature Changes Affect Salmon

Increasing ocean temperatures  = poorer condition

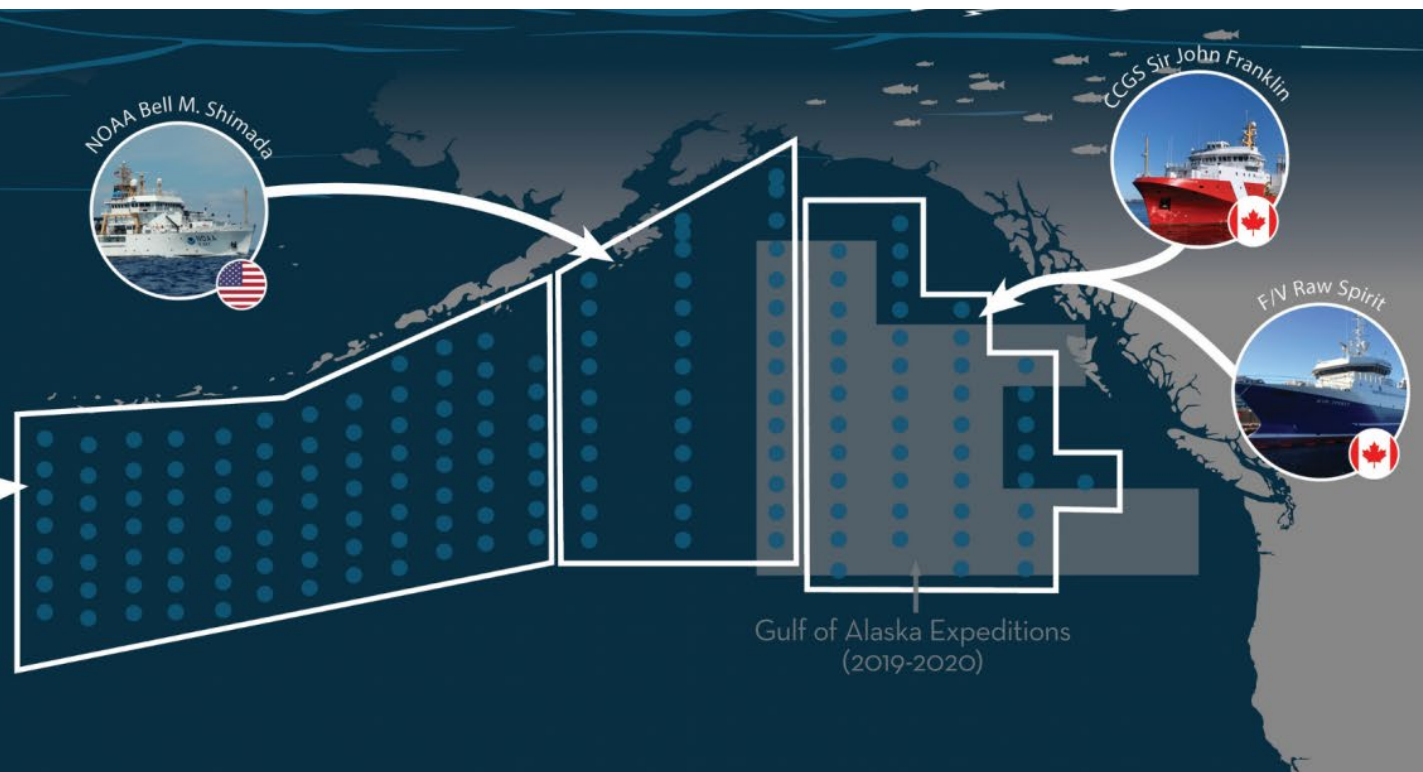
Empty stomachs 

Different food available



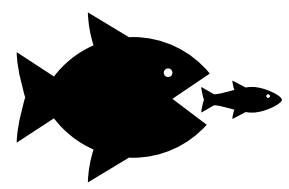
Stocks moving north



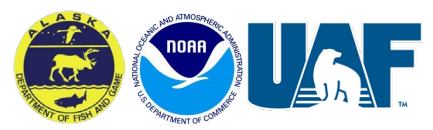


2022 Pan-Pacific Expedition

North Pacific Anadromous Fish Commission/International Year of the Salmon

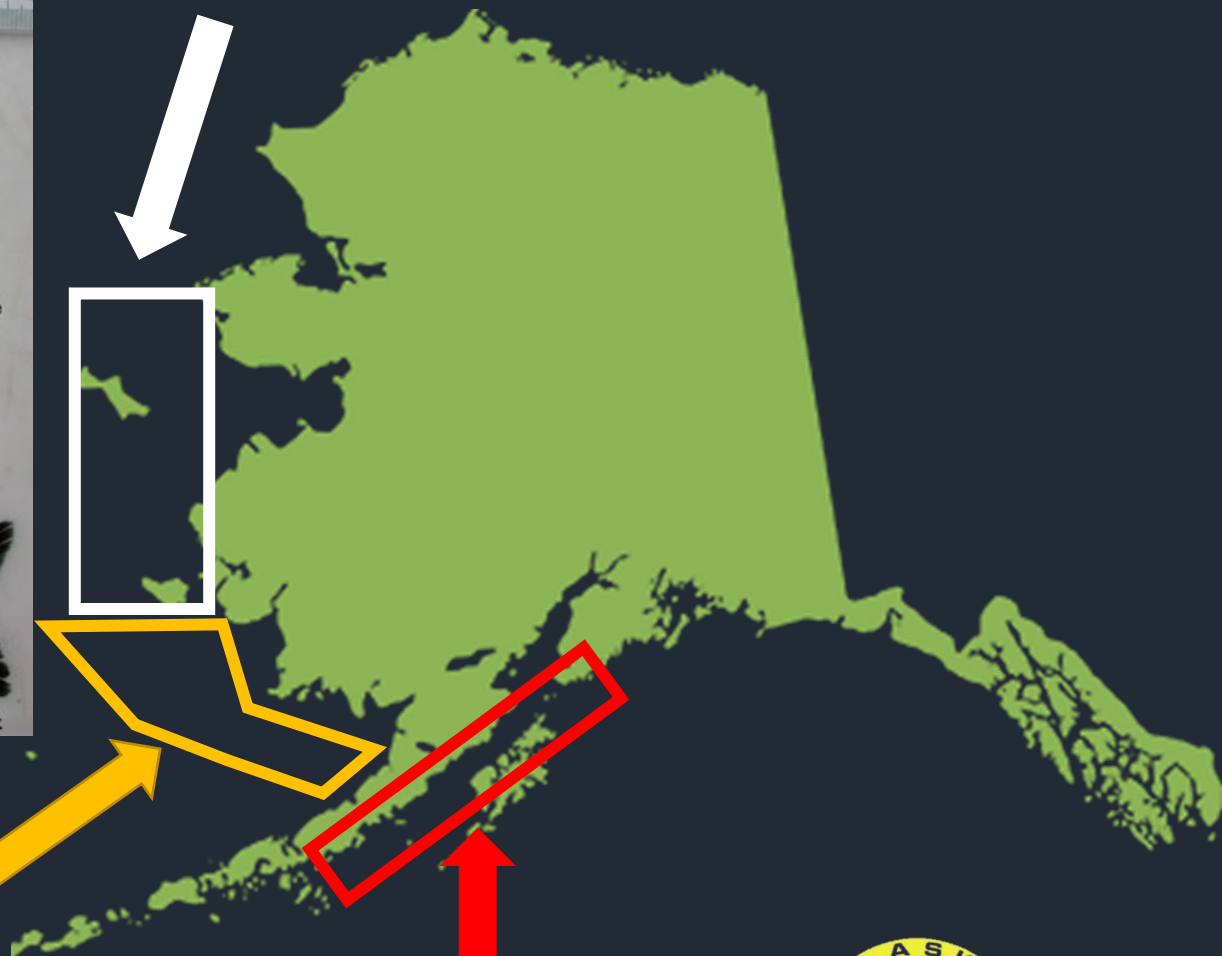


Competition between AYK
Chum and other
stocks/species in winter





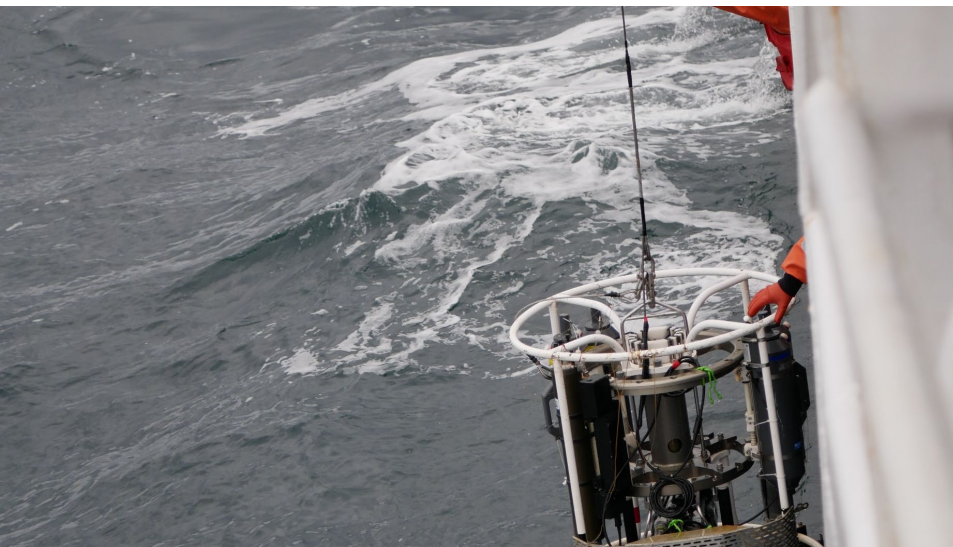
Northern Bering Sea Survey



Southern Bering Sea Survey

Western Gulf of Alaska Survey





Thank you!

kathrine.howard@alaska.gov

Follow us on Facebook:

