

# AYK Chum Salmon Marine Research Overview

## A Report to the Alaska Board of Fisheries

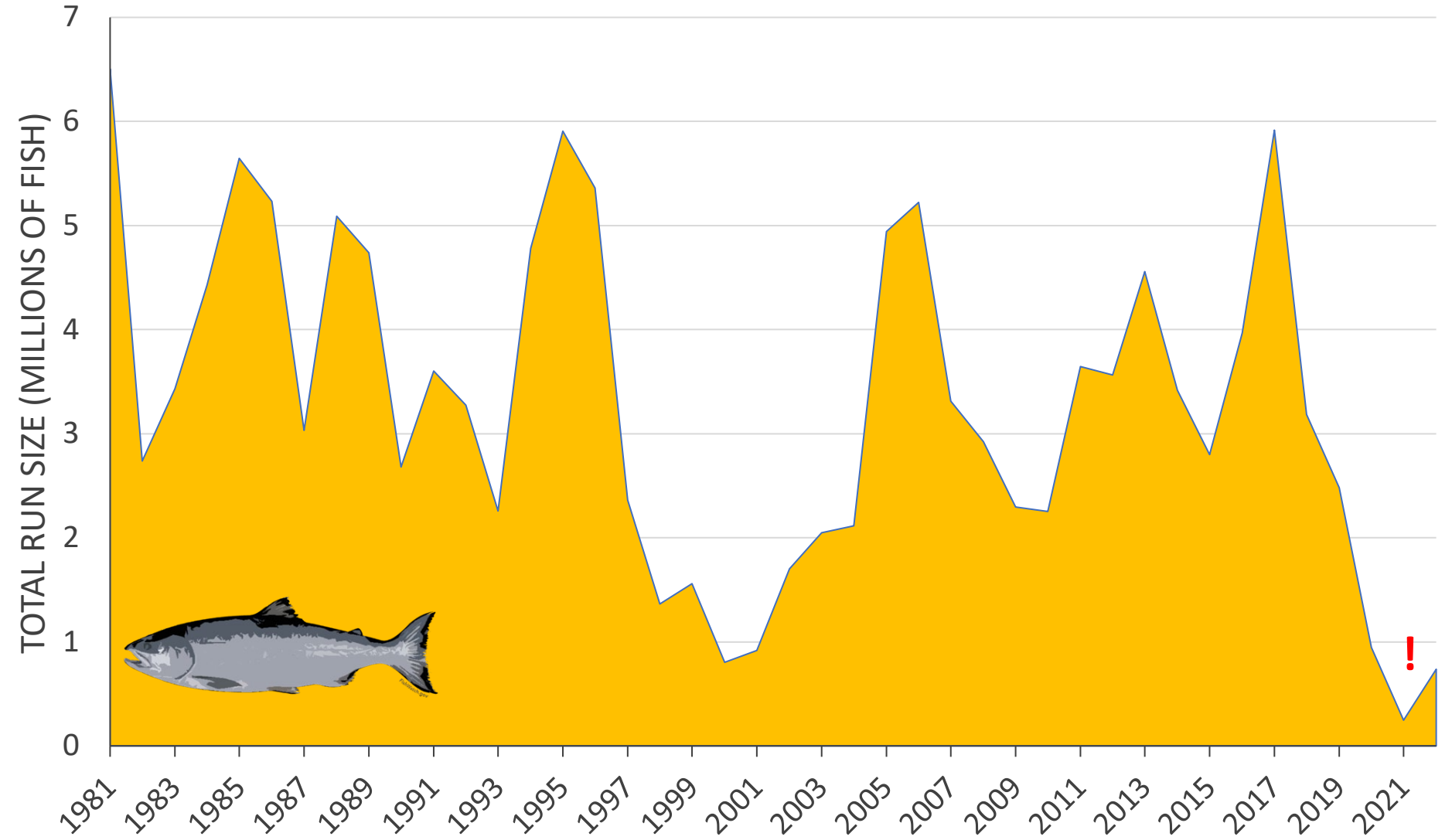


Dr. Kathrine Howard  
February 2023

- 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





**Juvenile salmon (1st summer at sea)**

Bering Sea

Gulf of Alaska

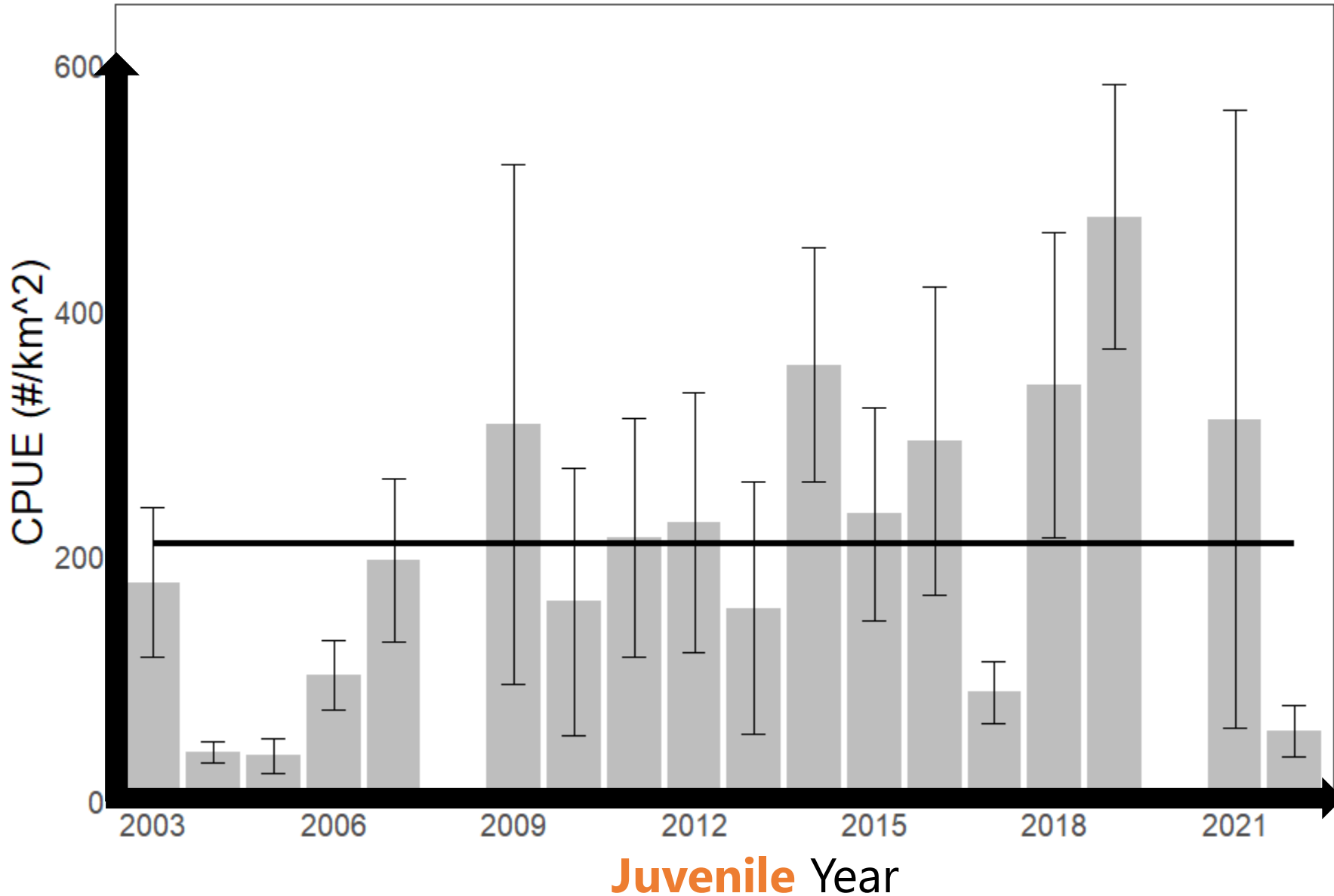
**Immature and Maturing Chum (3-4 years)**

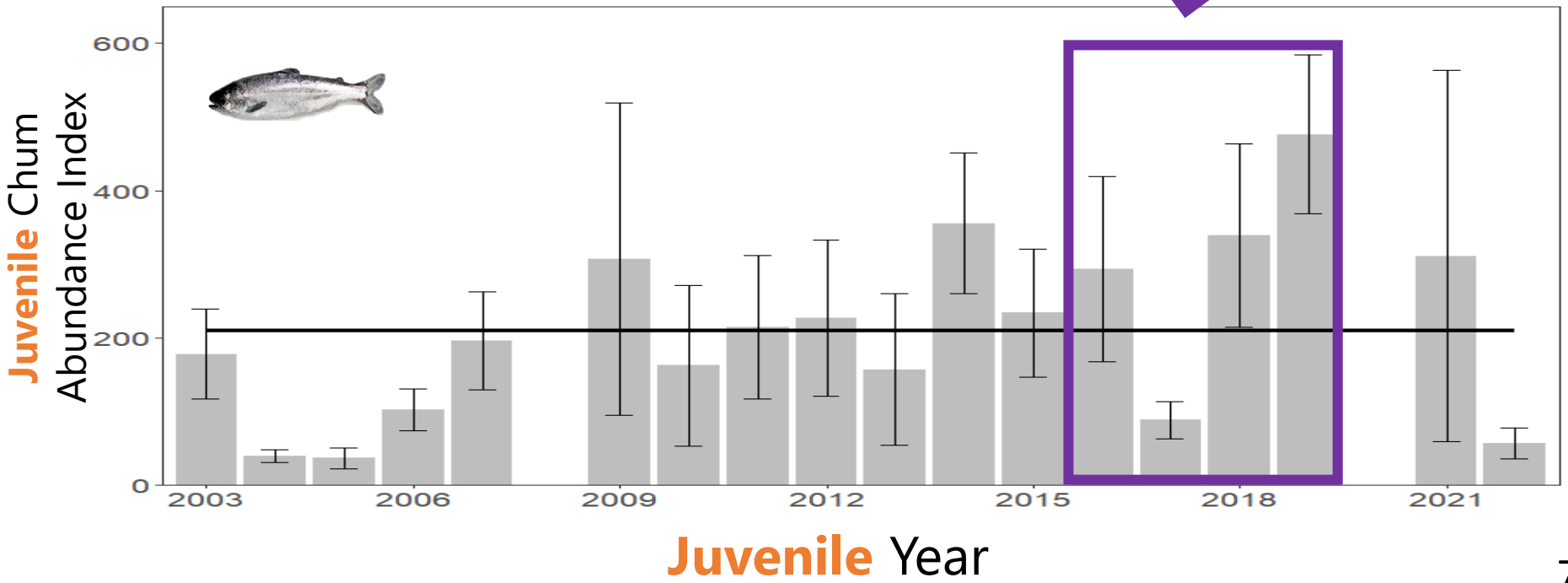
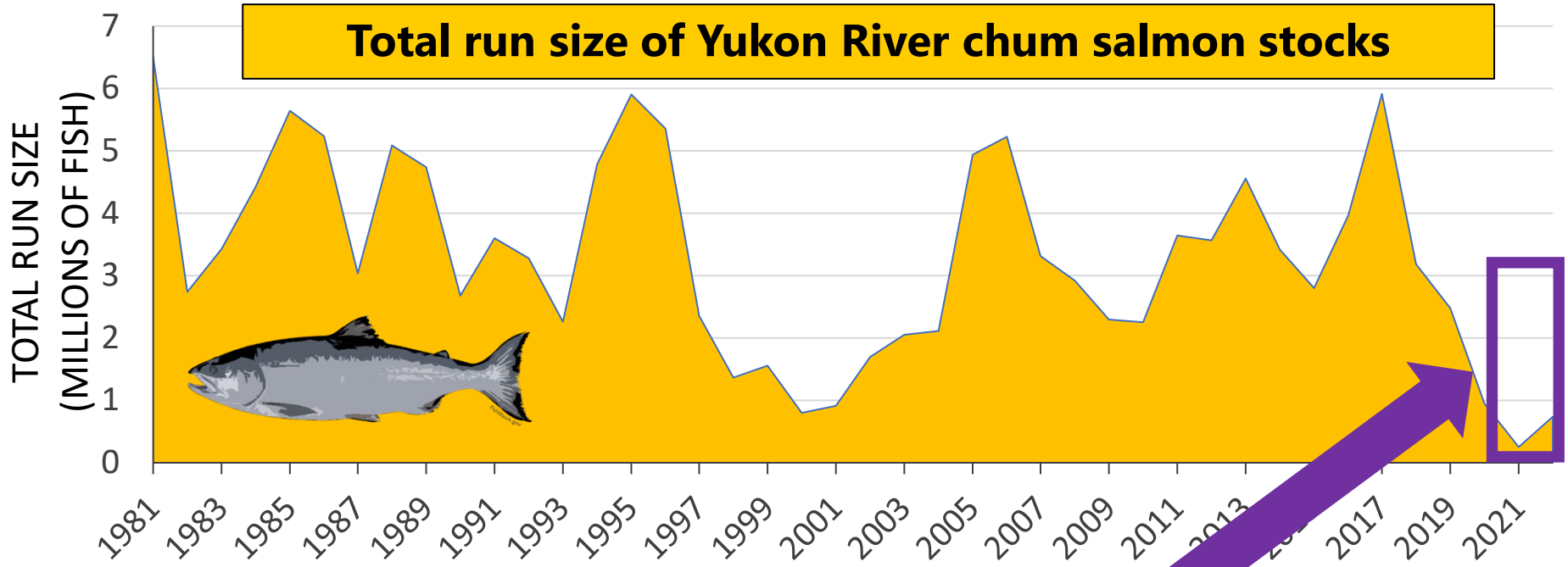


# Chum salmon (mixed stocks)

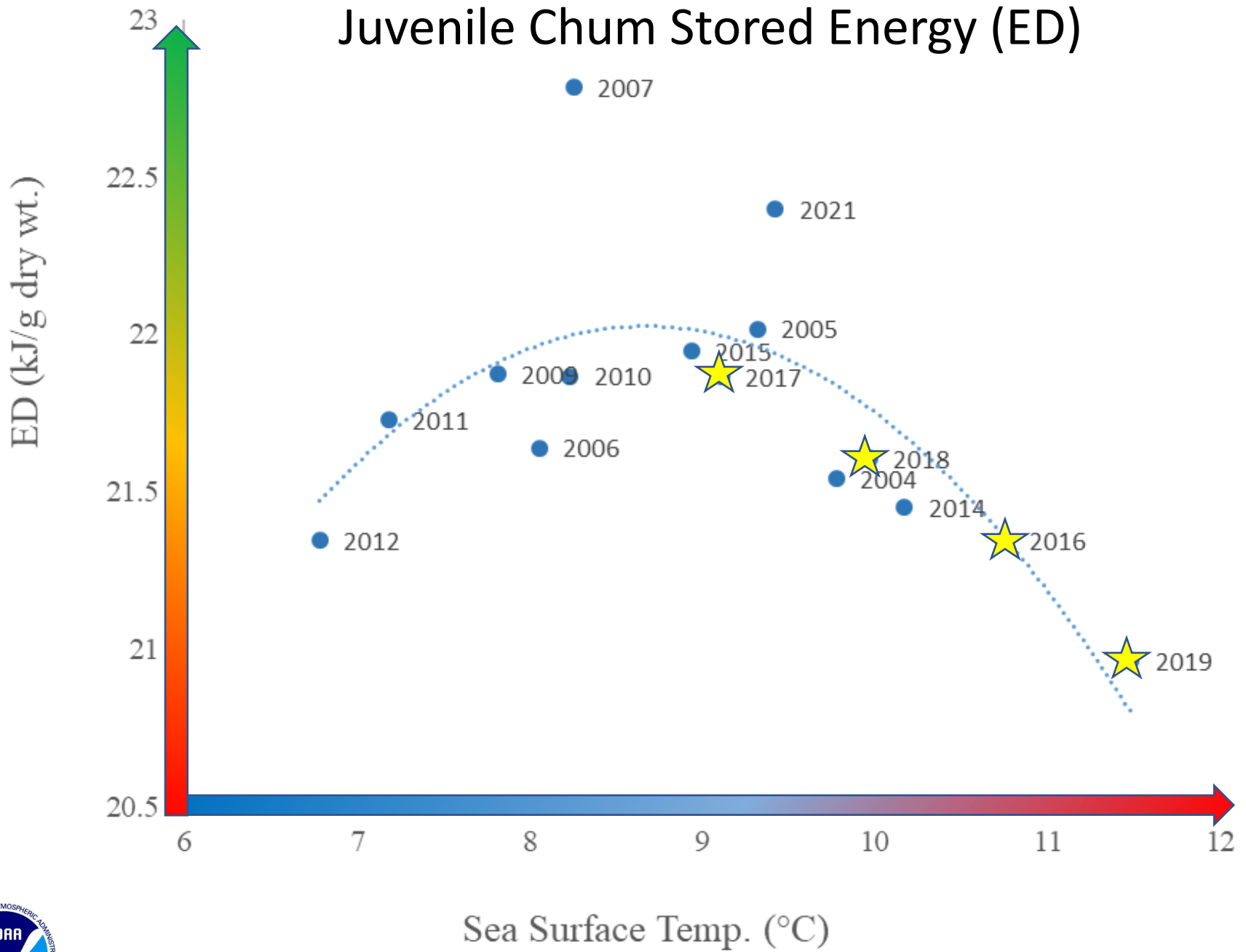


**Juvenile** Chum Abundance Index



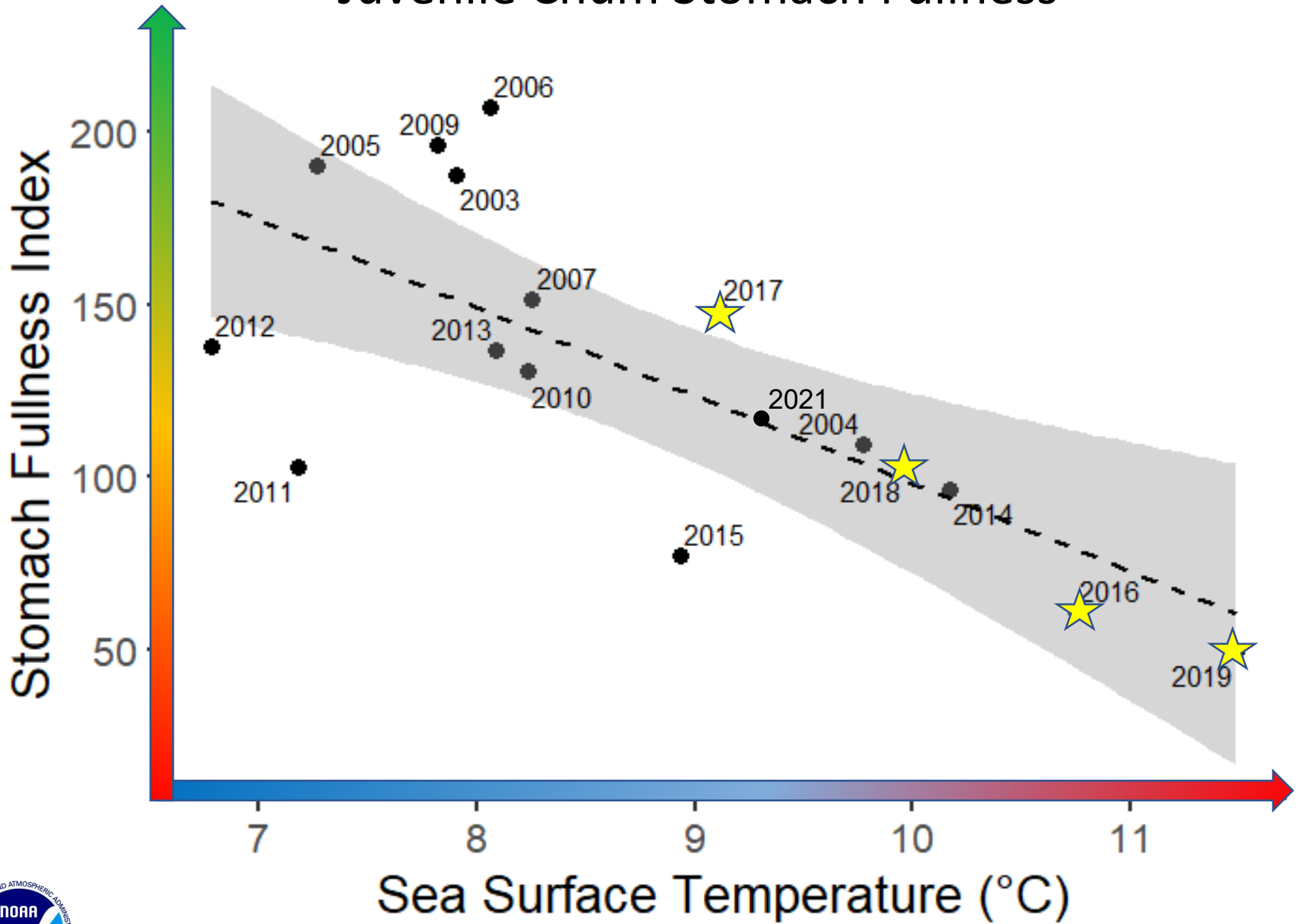


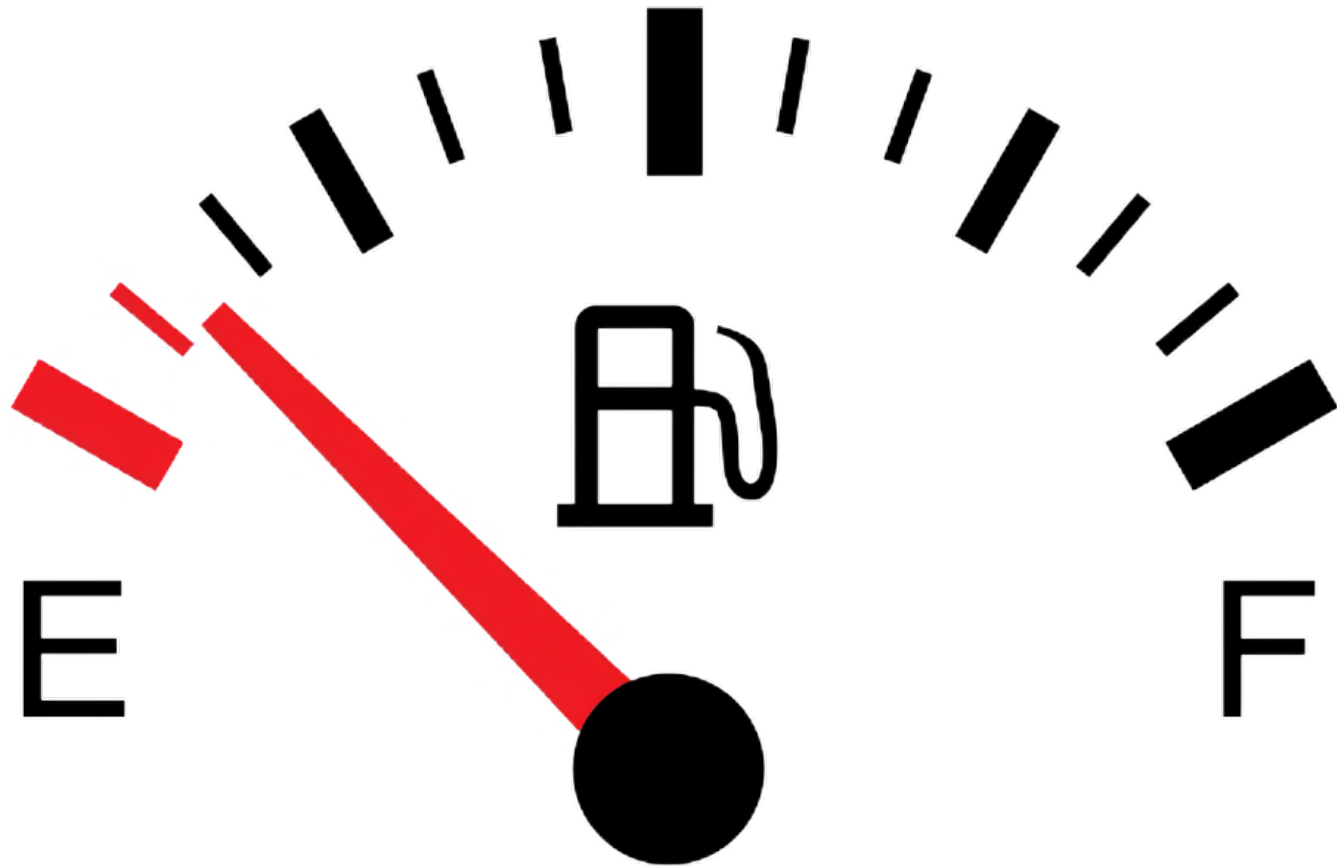
# Juvenile Chum Stored Energy (ED)



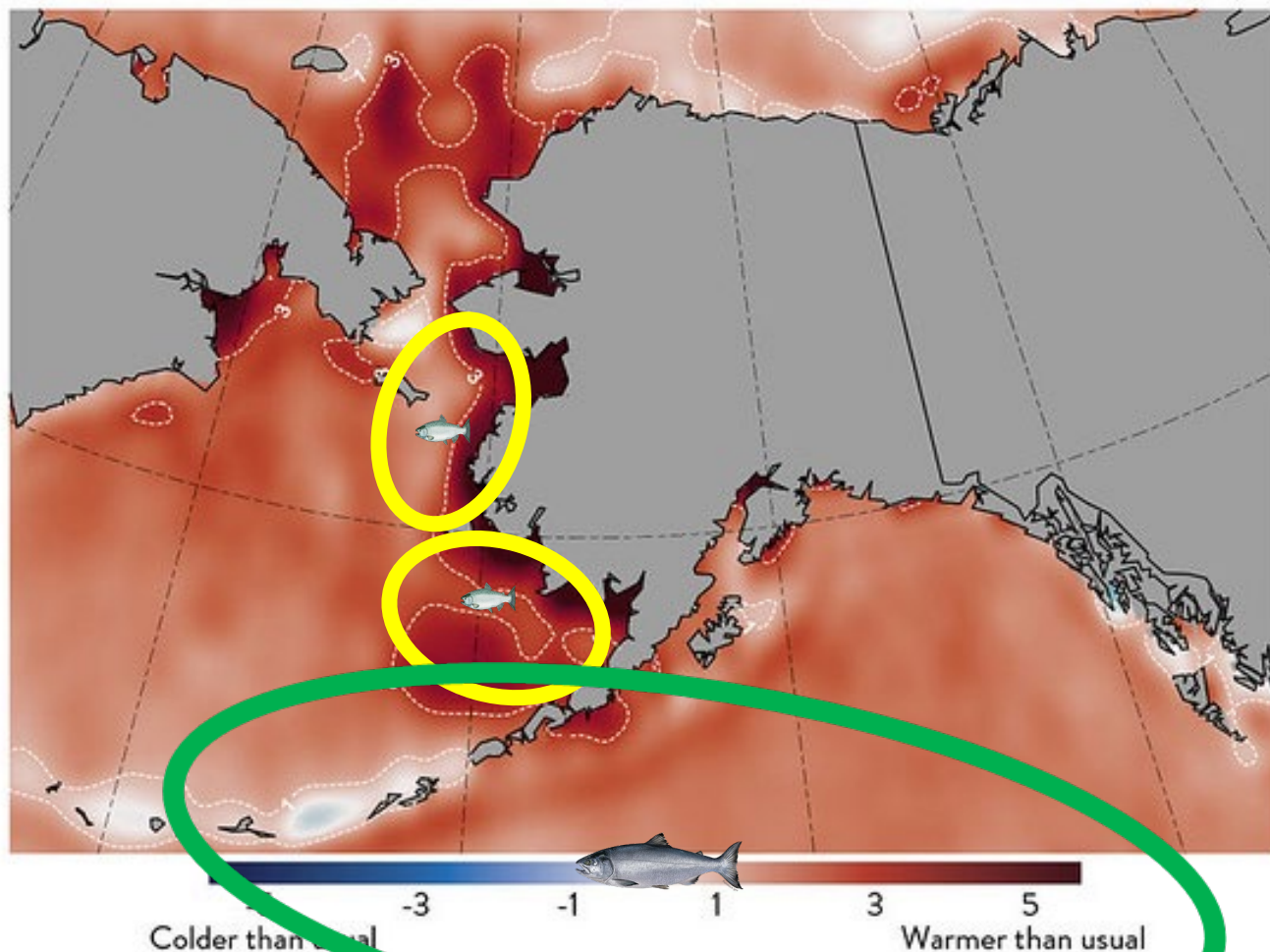


# Juvenile Chum Stomach Fullness





# Summer sea surface temperatures off Alaska, 2014–2019



Data source: AMAP Ocean Acidification Report, 2016, *Nature Climate Change*, 2017; *Progress in Oceanography*, 2015

# Temperature Changes Affect Salmon

Increasing ocean temperatures  = poorer condition

Empty stomachs 

Different food available



Stocks moving north





2021 Western Pacific Winter Expedition



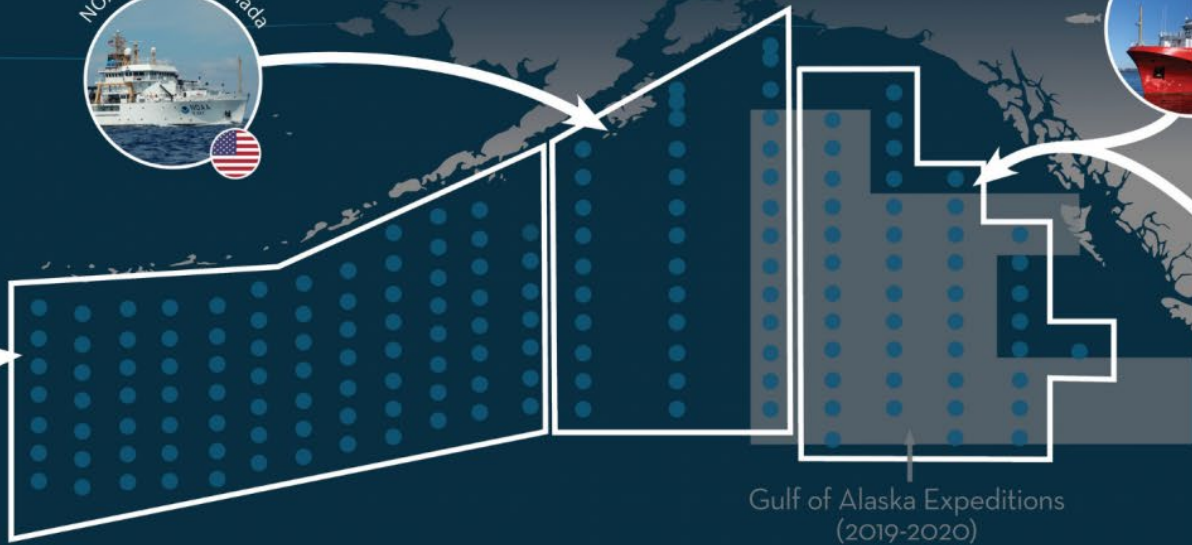
NOAA Bell M. Shimada



CCGS Sir John Franklin



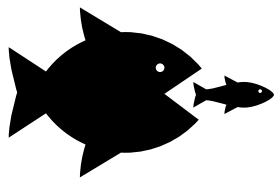
F/V Raw Spirit



Gulf of Alaska Expeditions (2019-2020)

# 2022 Pan-Pacific Expedition

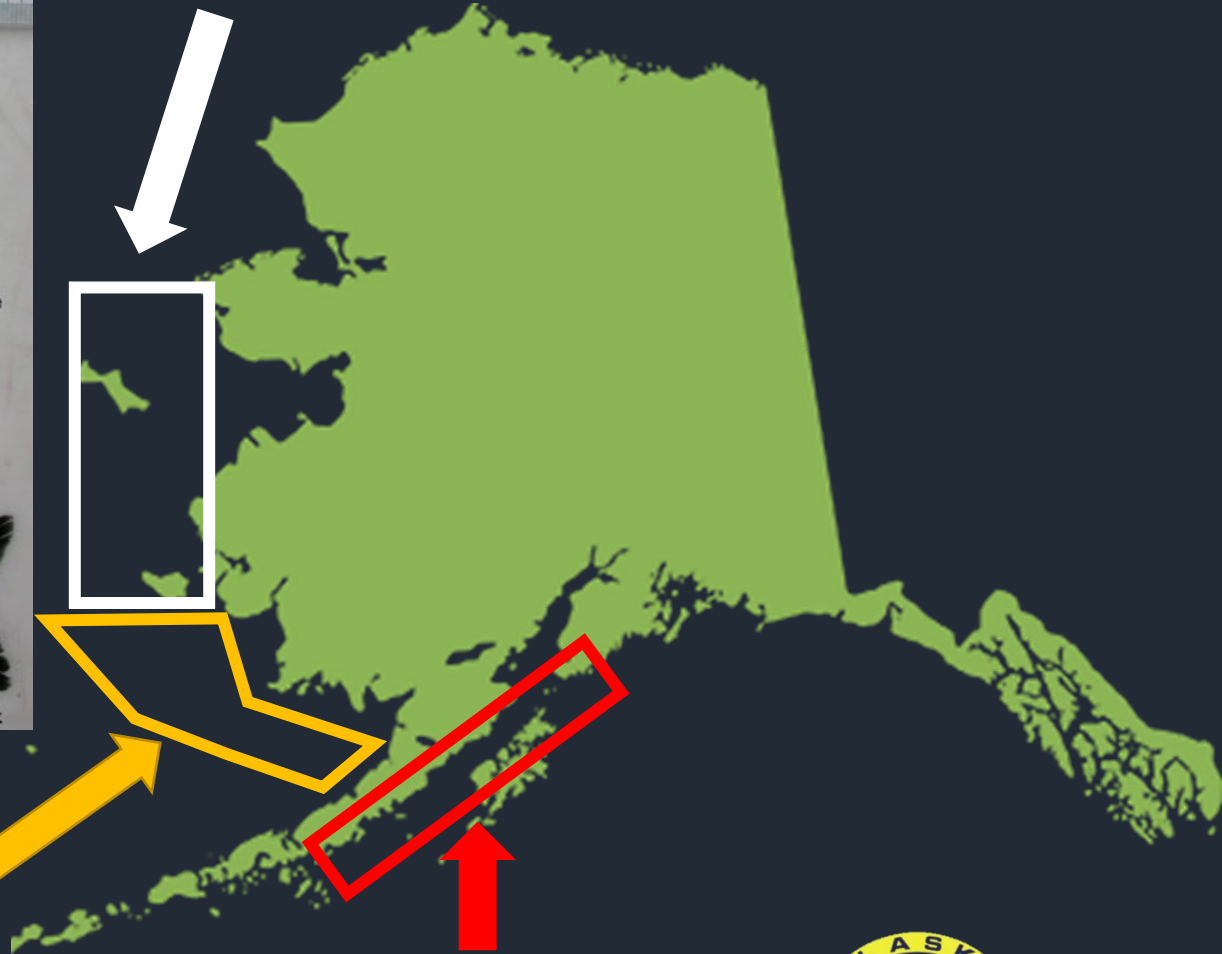
North Pacific Anadromous Fish Commission/International Year of the Salmon



Competition between AYK Chum and other stocks/species in winter



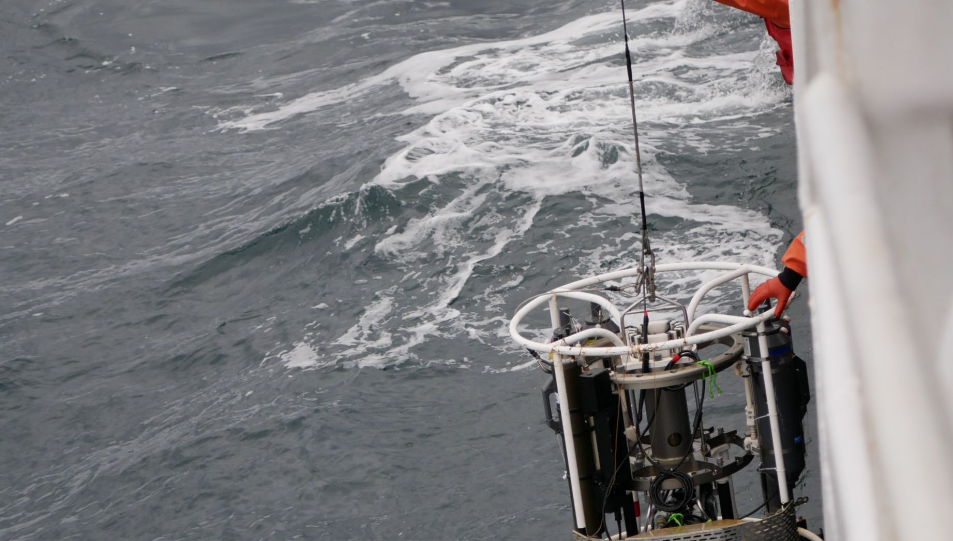
# Northern Bering Sea Survey



Southern Bering Sea Survey

Western Gulf of Alaska Survey





# Thank you!

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