# Northern Bering Sea Juvenile Salmon

NOAA FISHERIES
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Yukon River Fishermen's Drainage Association

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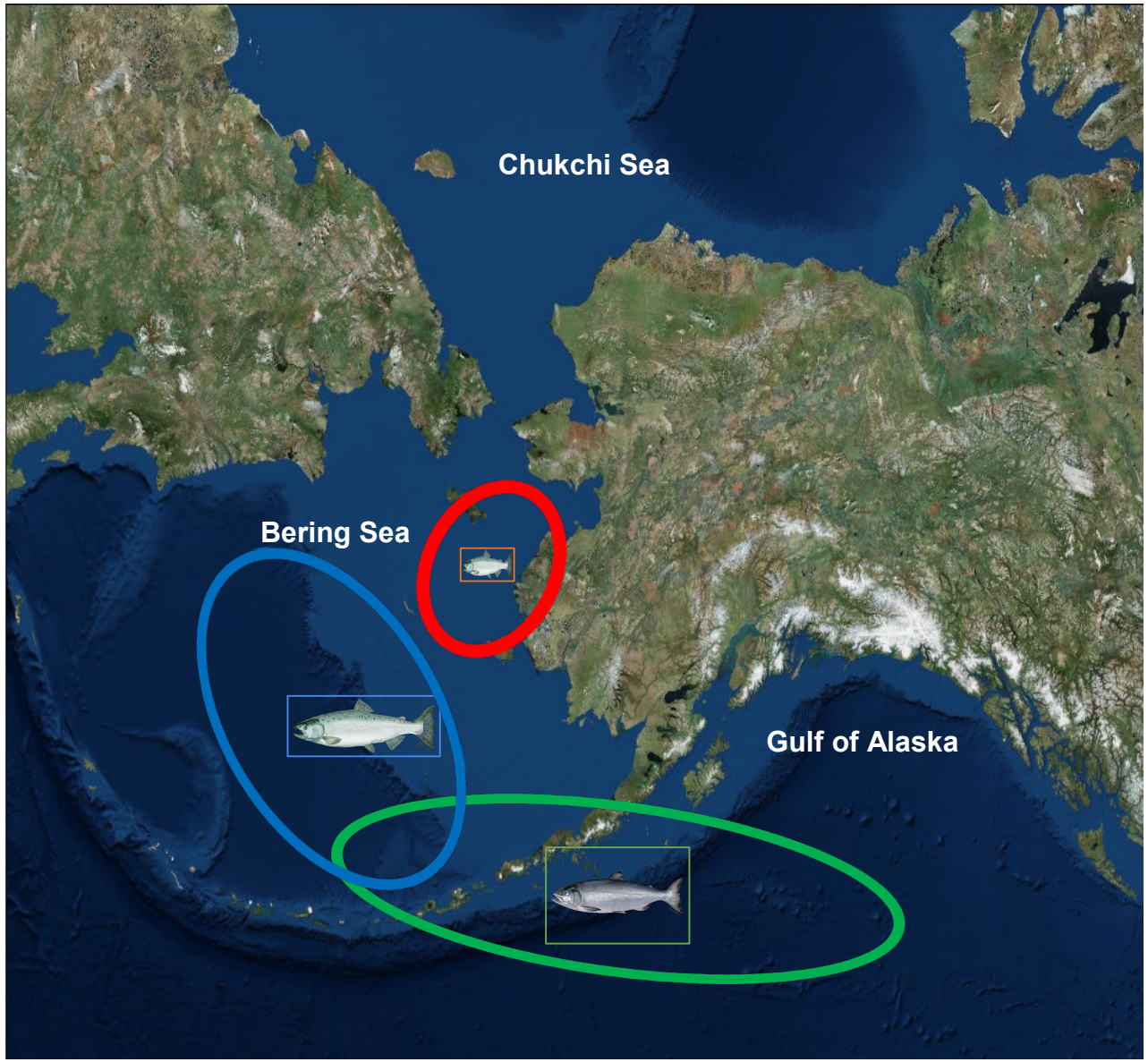
# Yukon Chinook and chum salmon in the ocean

Yukon River Chinook and chum spend their first few months in the northeastern Bering Sea, but chum salmon extend into the southeastern Bering Sea

Yukon Chinook spend the rest of their life in the Bering Sea

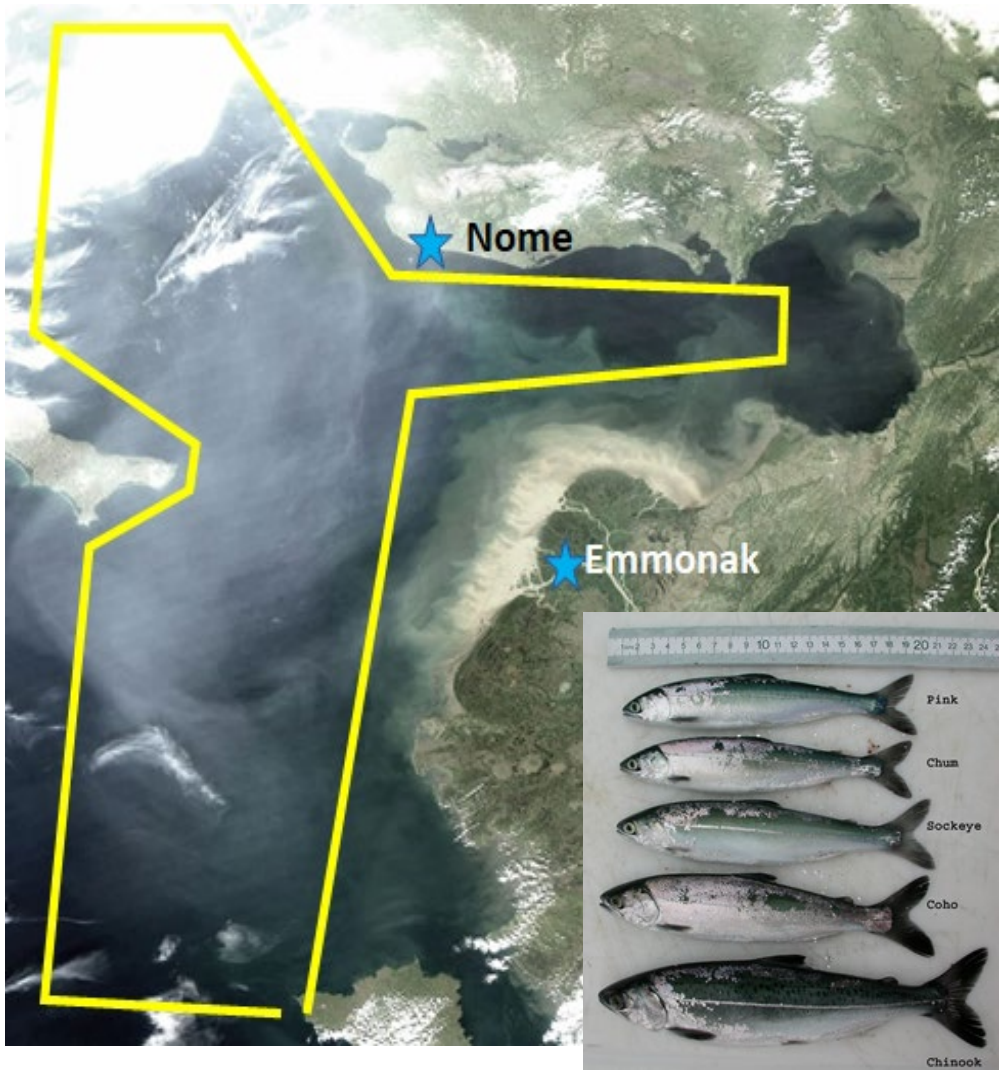
Yukon chum salmon spend their marine life migrating between the Gulf of Alaska/North Pacific Ocean and the Bering Sea

Chinook typically spend 2-4 years in the ocean before returning to spawn while chum salmon typically spend 3-4



# Northern Bering Sea Survey

- Provides an assessment of the status of juvenile salmon in the NBS (focus on Yukon River salmon stocks) and examines how warming climate is altering the diet and condition of juvenile salmon.
- The survey supports a wide range of additional research objectives, including: phytoplankton, zooplankton, forage fish, juvenile groundfish, juvenile crab, and seabird research.



# Impact of warming temperature on juvenile salmon

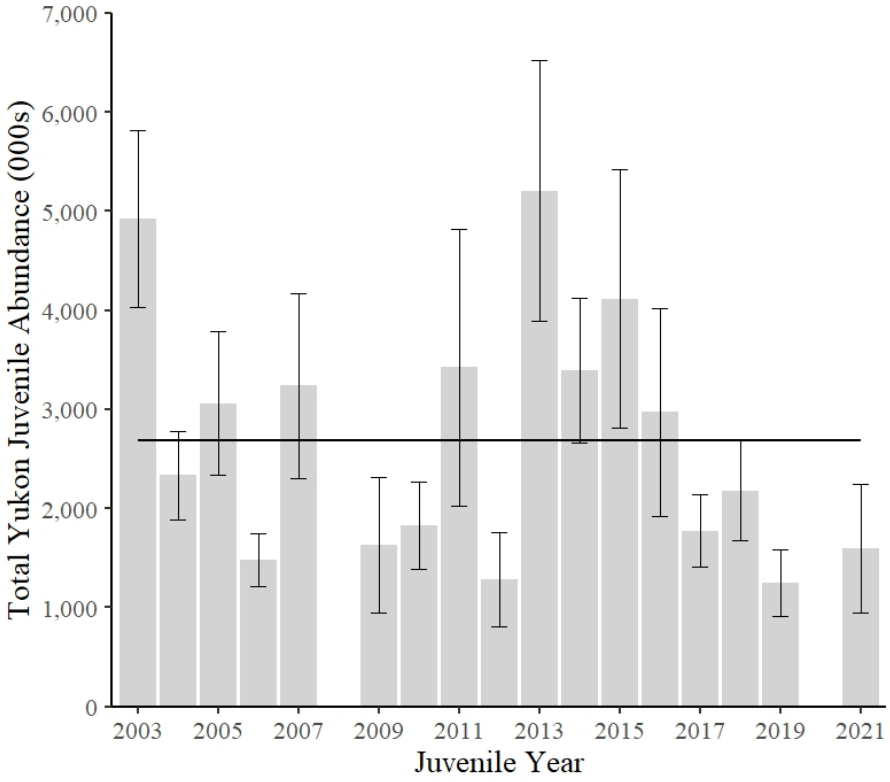
- **Diet and condition**


- Distribution and migration

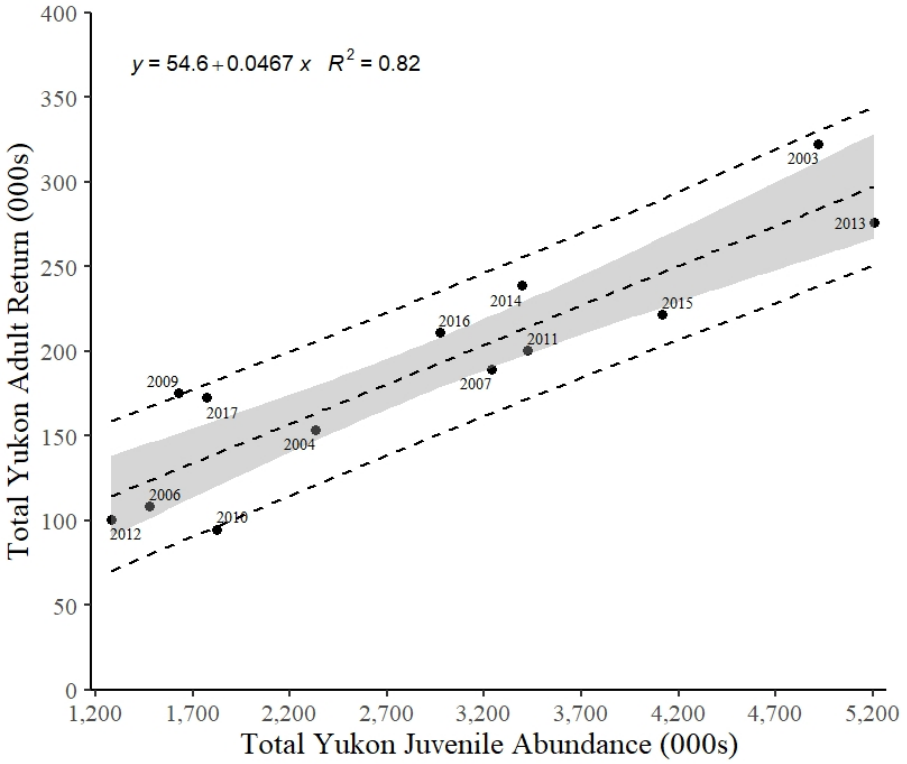

- Growth and maturation

# Juvenile Chinook salmon abundance in the northern Bering Sea

Juvenile abundance of Yukon River Chinook salmon has declined since 2013.

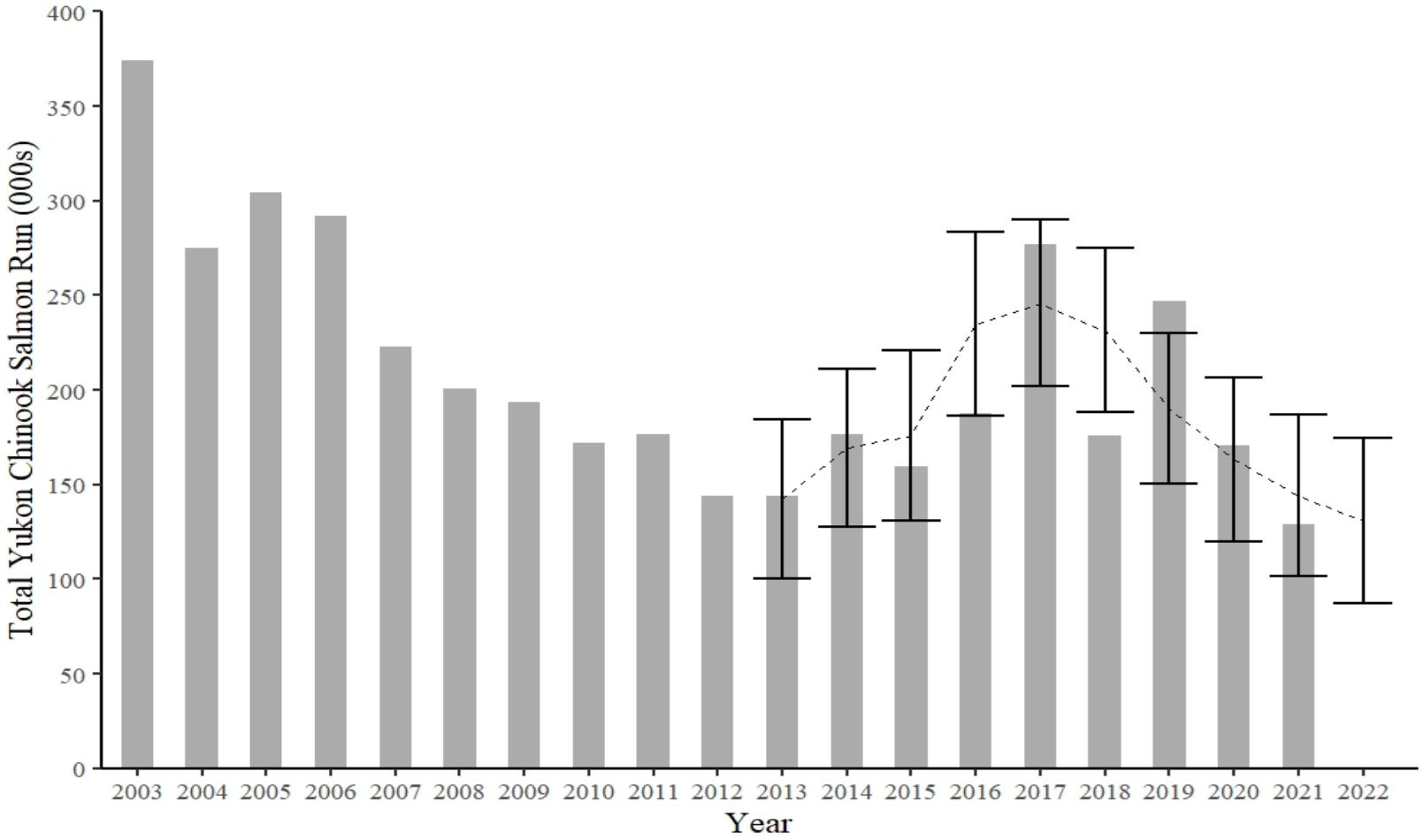



The relationship between Yukon River juvenile and adult Chinook salmon abundance has been relatively stable



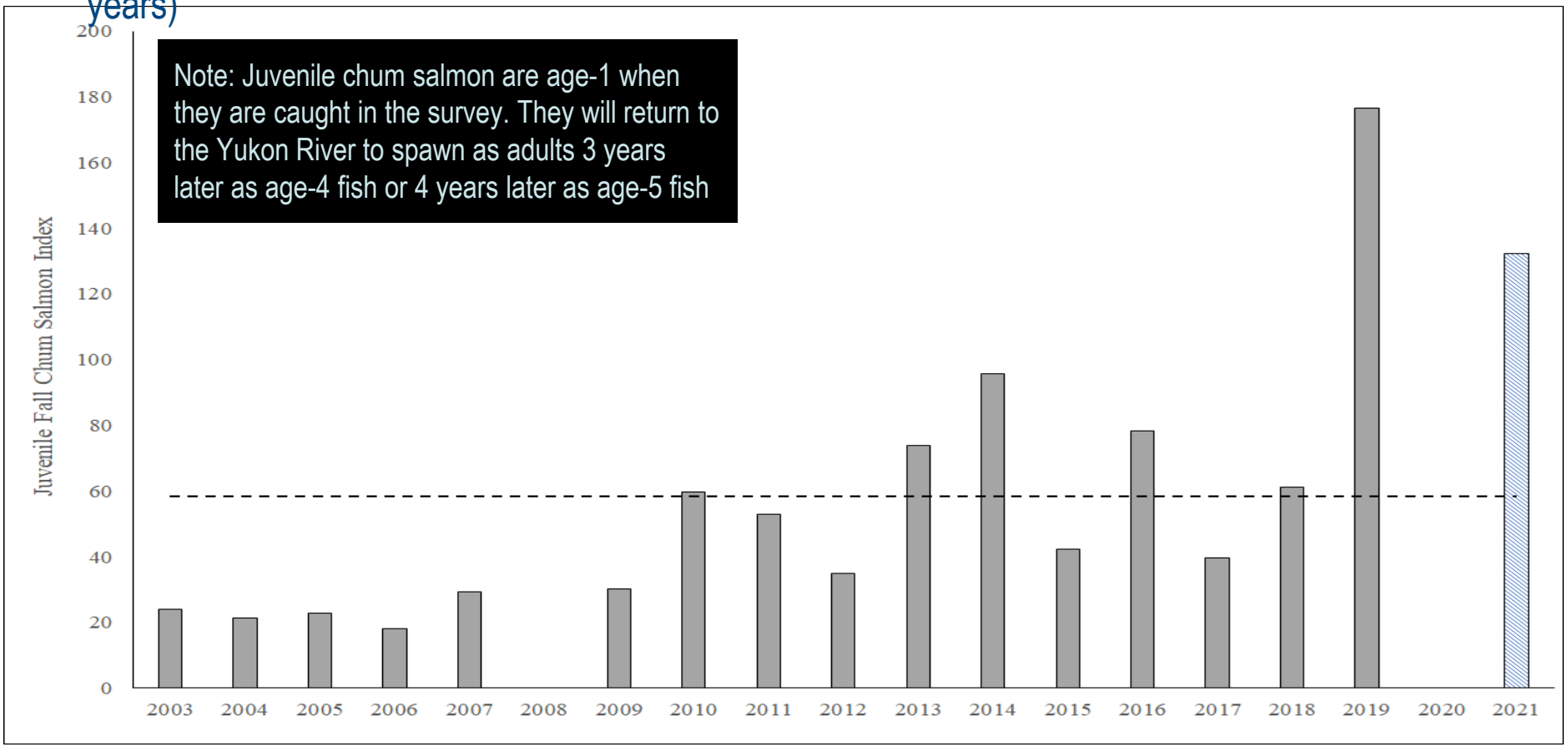
# Projected run size of Yukon River Chinook salmon

The projected run-size of Yukon River Chinook salmon is expected to decline in 2022 due to declining juvenile abundance, however, the projected run size in 2022 is similar to the actual run size in 2021.



# Juvenile fall chum salmon index

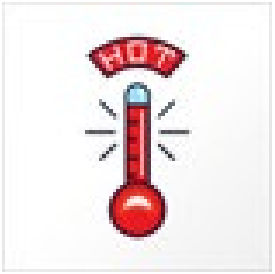
- Relatively new model and more work needs to be done
- Juvenile fall chum salmon abundance has fluctuated over time (some low years, some high years)



# Can juvenile chum salmon predict adult returns?

- Unfortunately, we don't know yet!

- For most years, higher numbers of juvenile chum salmon in the survey meant more adult chum salmon coming back to the Yukon River

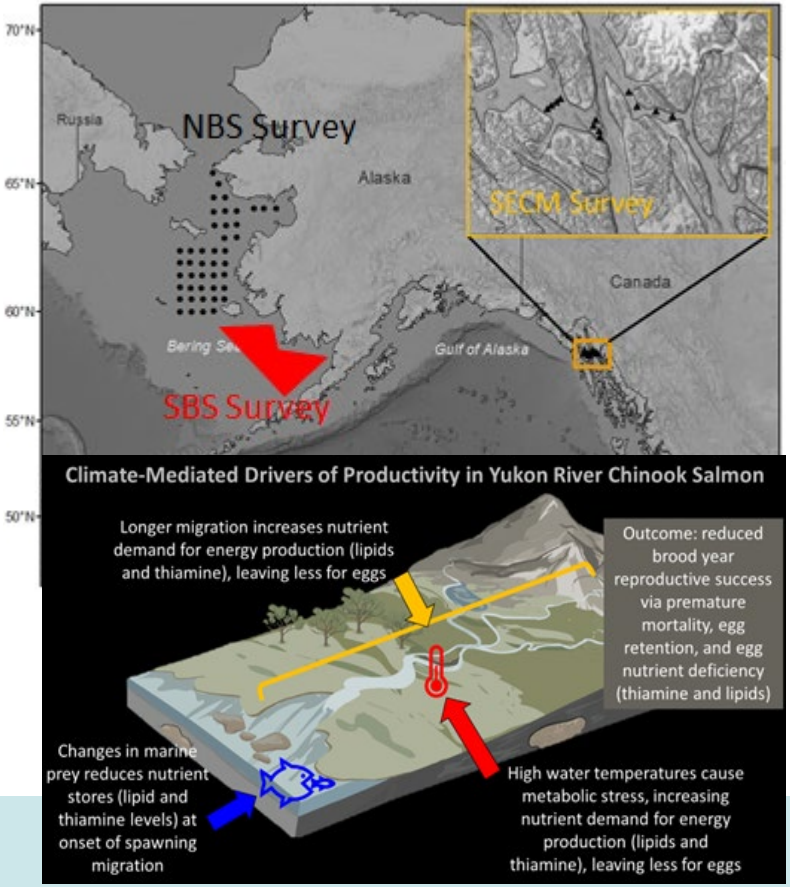


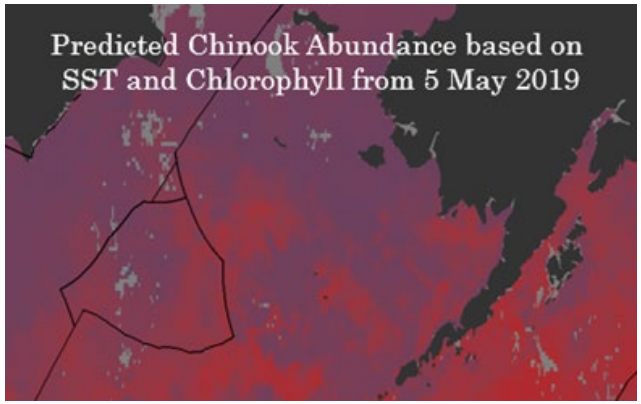

- In recent years, this is no longer true!
  - Warming ocean temperatures could be affecting survival in later ocean life

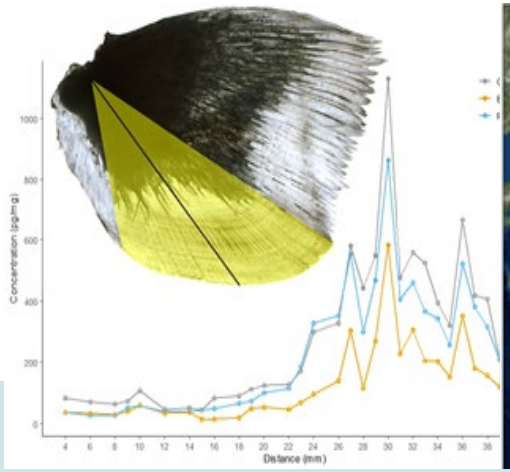
- 2019 and 2021 juvenile chum salmon abundance was high…
  - But we don't know that this will necessarily result in higher returns
  - We have more work to do to be able to predict future chum run size

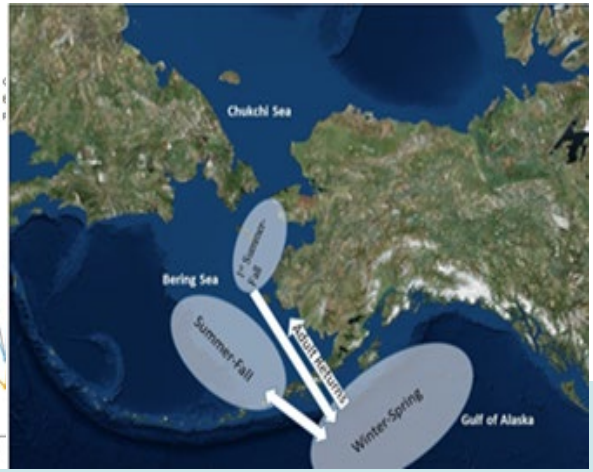
# Salmon Ocean Ecology Program (SOEP)

- **Who we are**: Statewide Fisheries Scientist, AYK Marine Biologist, Statewide Fishery Biologist 2
- **What we do**: Study the marine life of Alaskan salmon to try and understand what affects their populations



Thank you!

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