

2020 Southeast Alaska Pink Salmon Harvest Forecast



**NOAA
FISHERIES**

Alaska Fisheries
Science Center
Auke Bay
Laboratories



**Alaska
Department of
Fish and Game**

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2019 Purse Seine Task Force Meeting
Sitka, AK

December 3, 2019

Southeast Alaska Coastal Monitoring Research

- Surveys are now being conducted on ADF&G Research Vessel Medeia.
- Increased cooperation between NOAA and ADF&G; continued efforts to increase the value of information for the fishing industry.

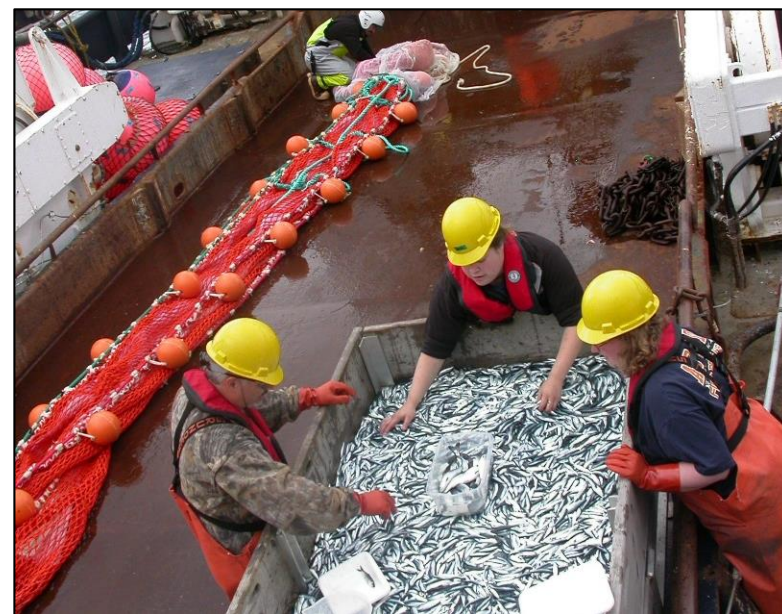
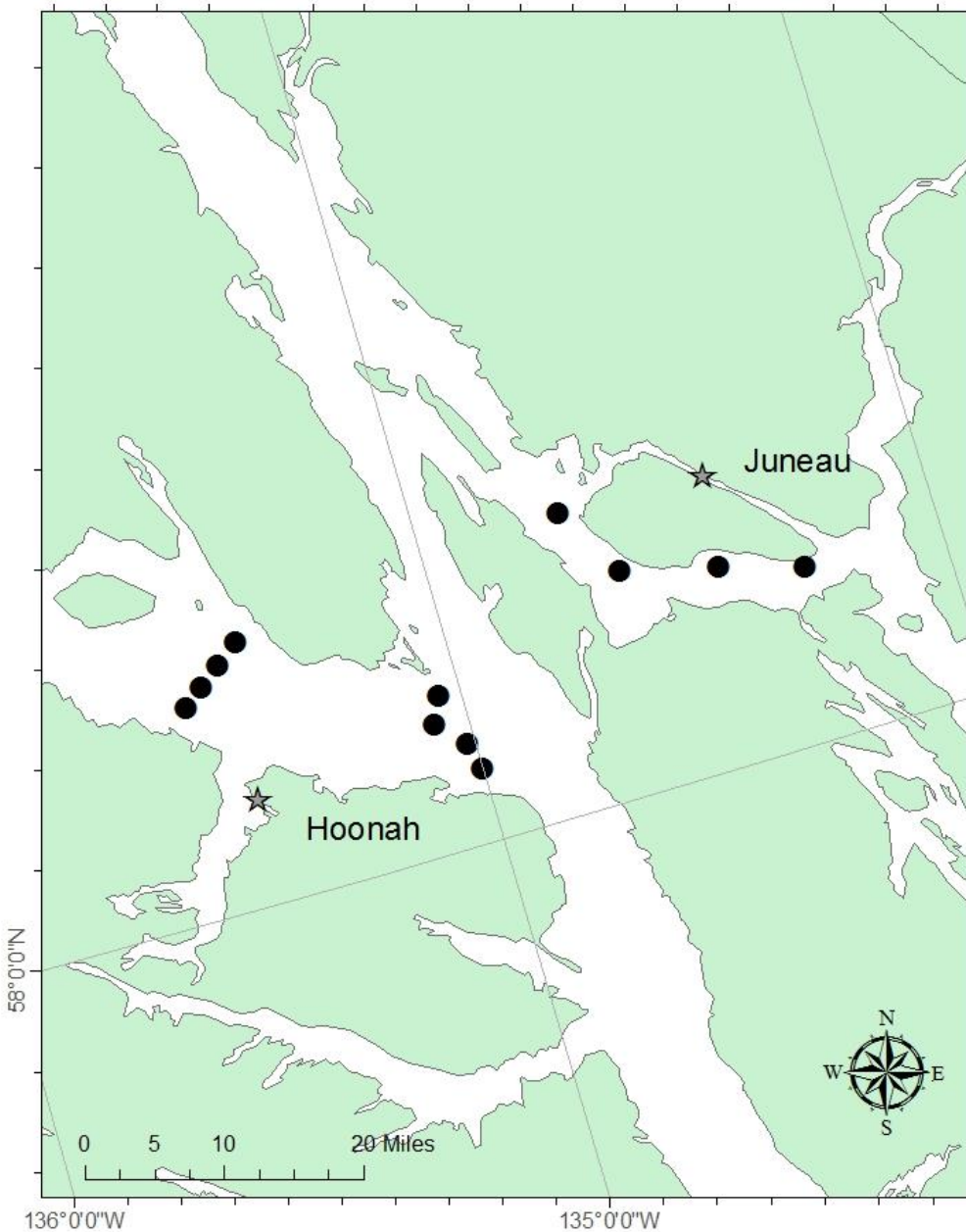




Photo by master photographer Jim Murphy



Southeast Alaska Coastal Monitoring Research



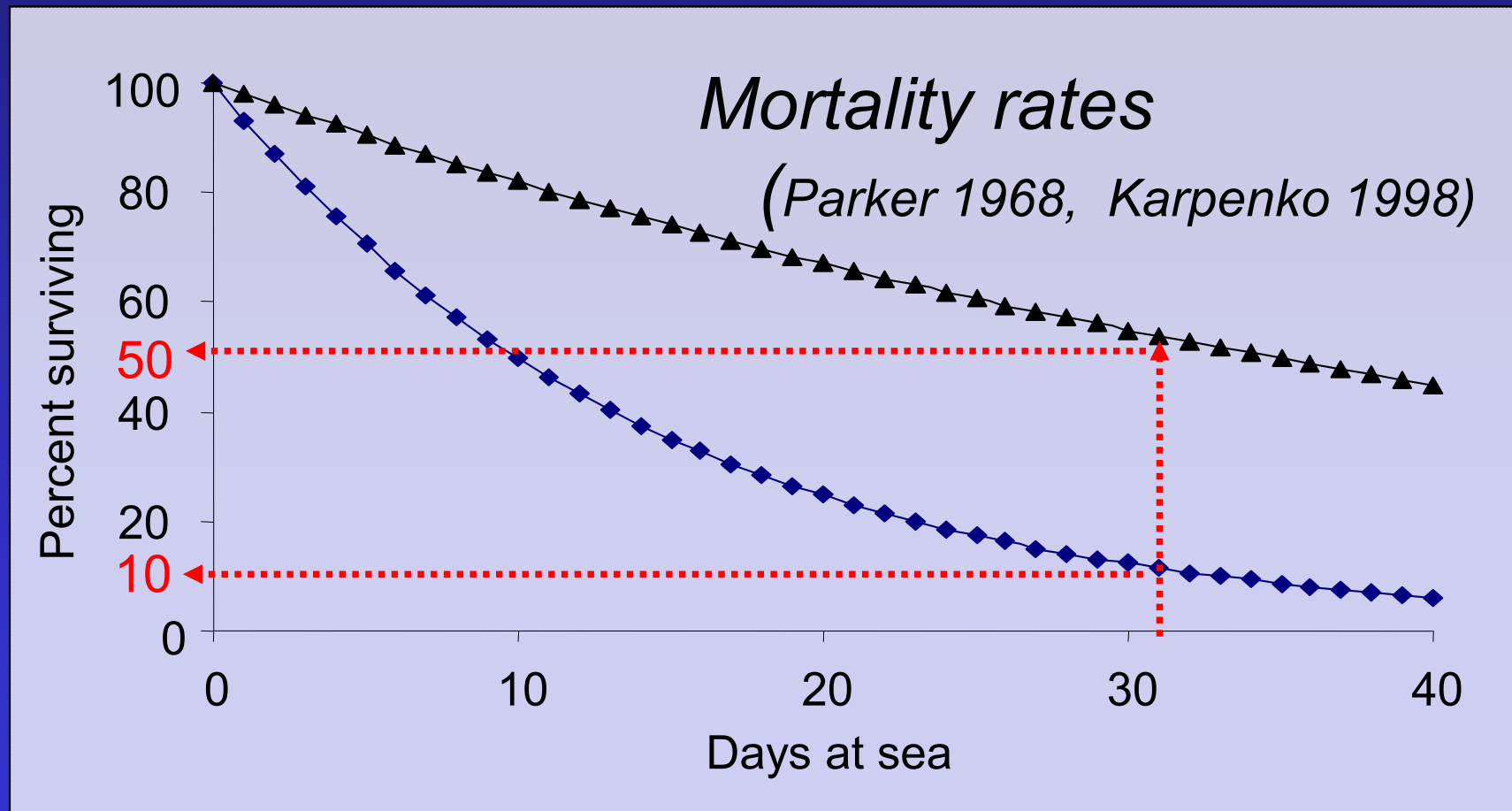
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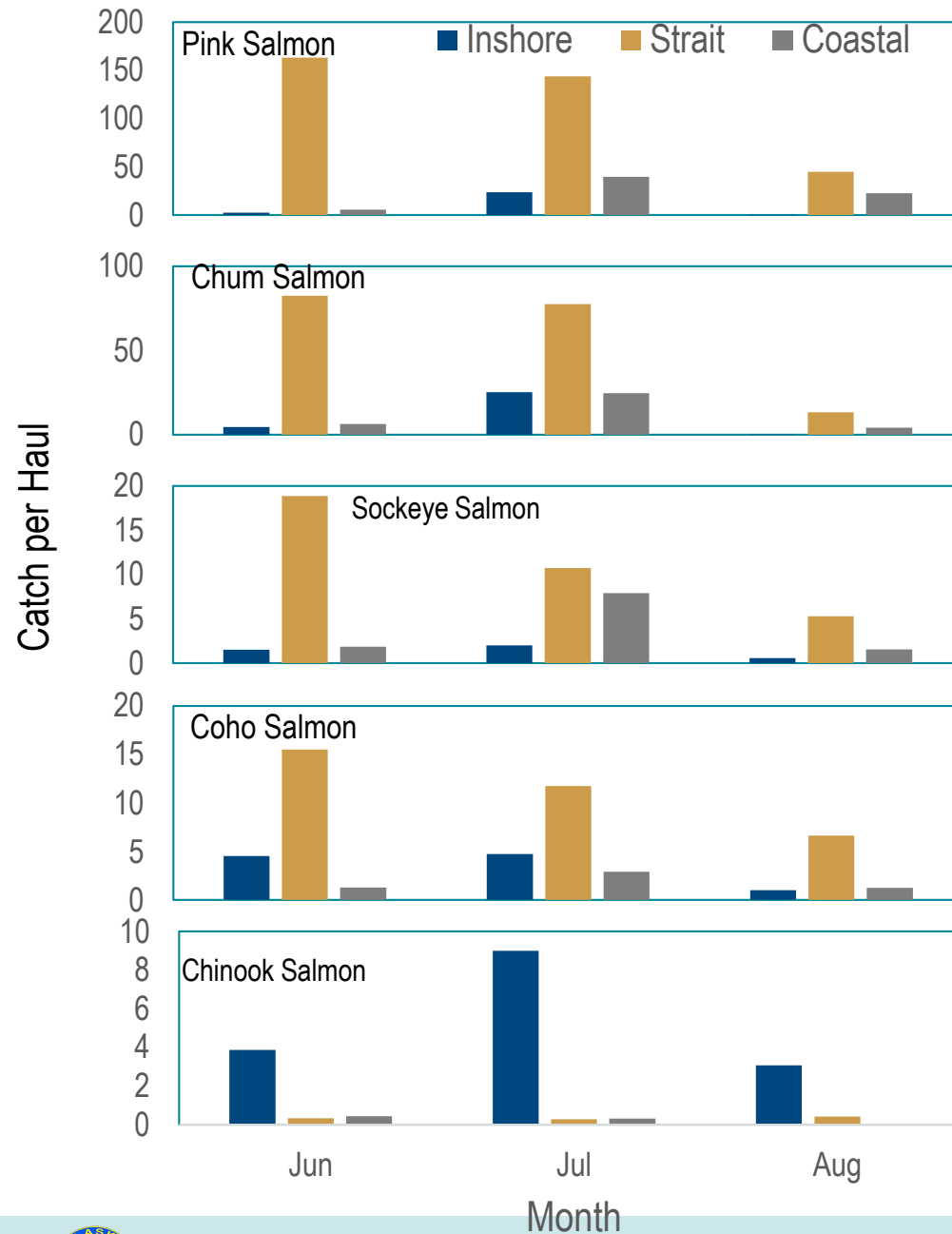
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Paradigm of pink salmon biology:

Mortality during early marine life is high, variable, and a major determinant of year class strength

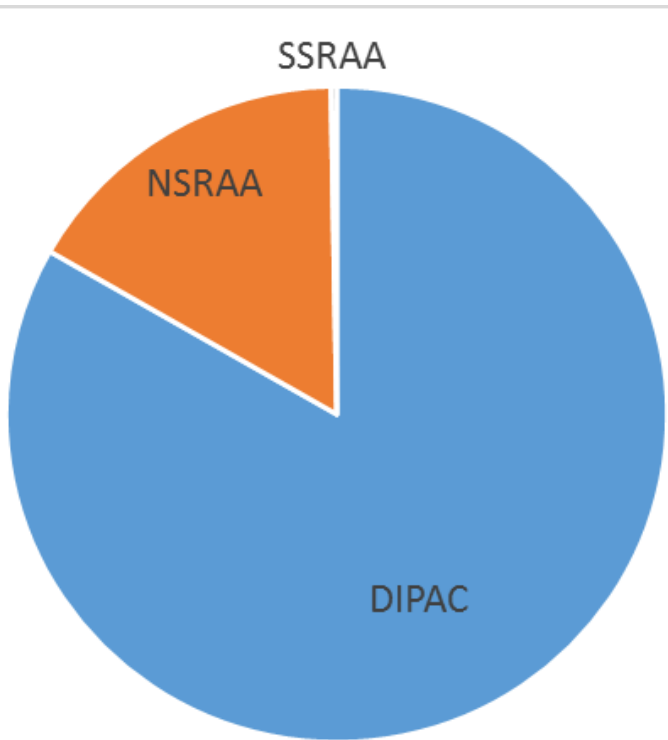


Surface Trawl Catch per Haul for Juvenile Salmon by Month

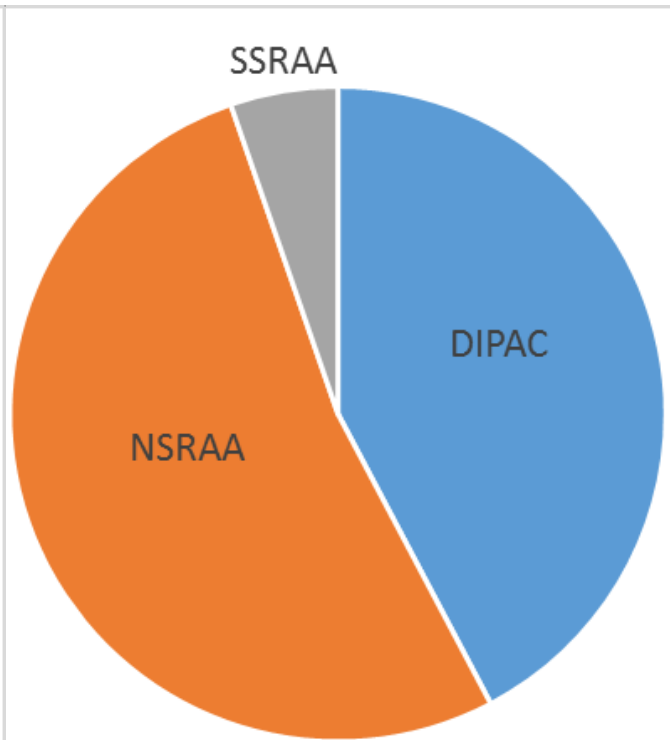


Icy Strait Hatchery Chum Salmon Origin (thermal mark recoveries 1997-2016)

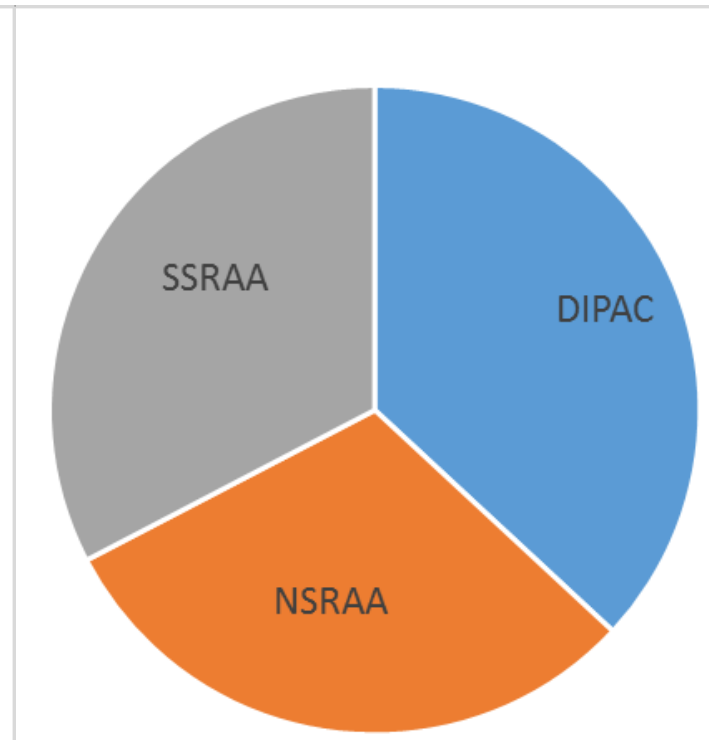
June



July



August



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Pink Salmon Harvest Forecast Model Structure

- Peak surface trawl catch rates (CPUE) in June or July.
- Icy Strait Temperature Index (ISTI)

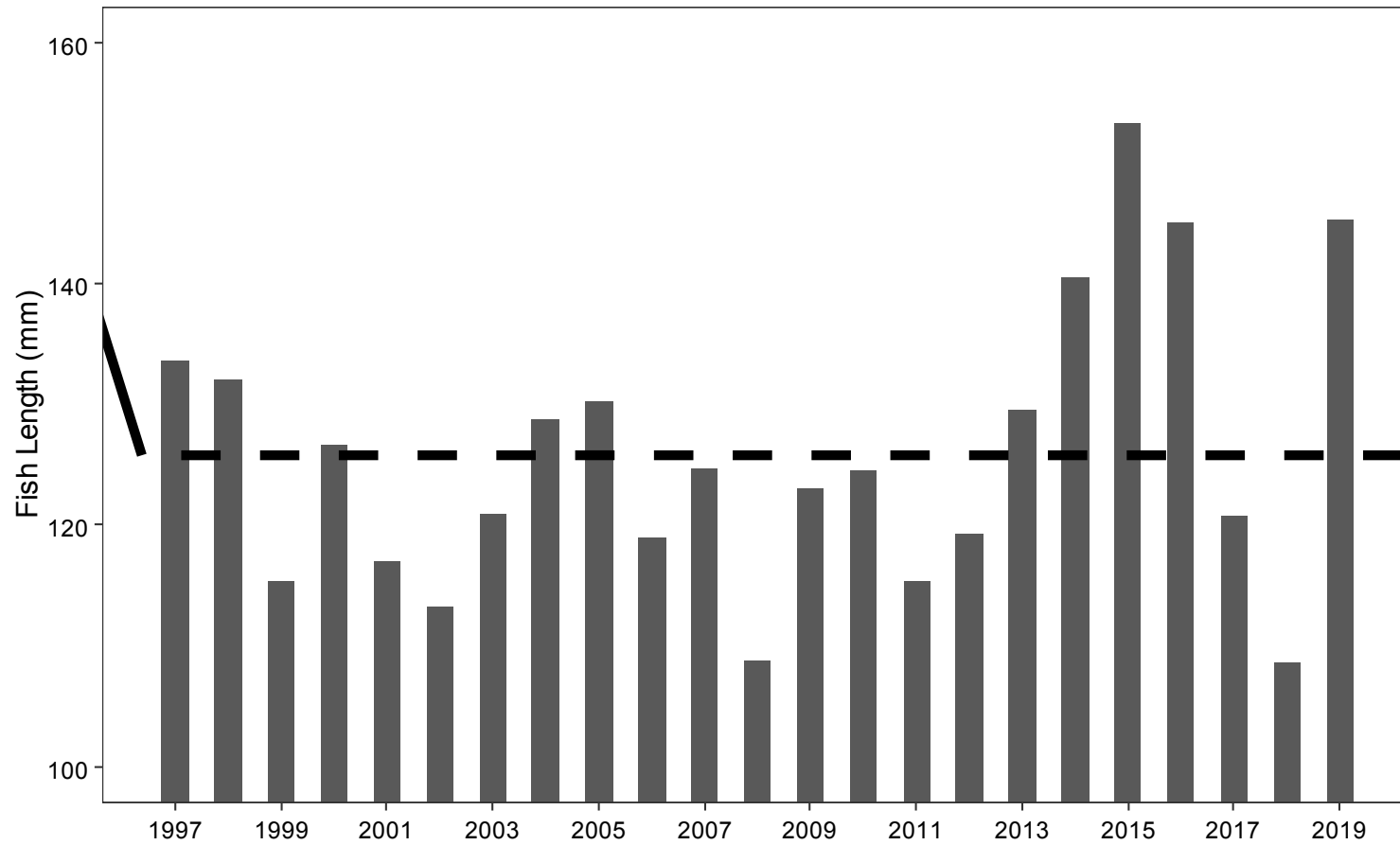


Forecast Model Considerations

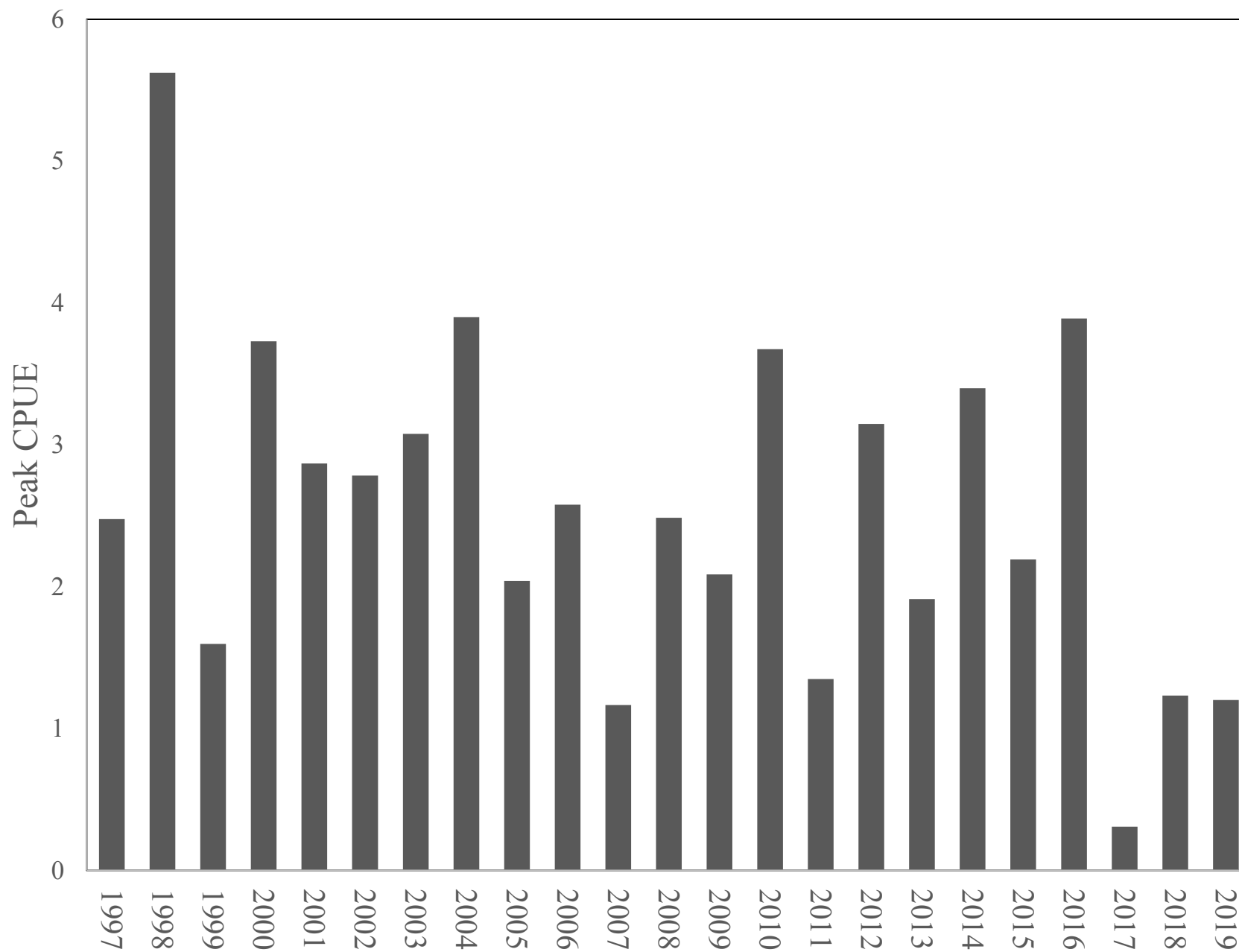
- There are several ways that temperature (ISTI) could be important to the forecast model.
 - Survival: reduced survival during warm years. Since growth is higher in warm years, this would imply that small fish have better survival.
 - Migration: Increased movement of SEAK stocks through Icy Strait during warm years.



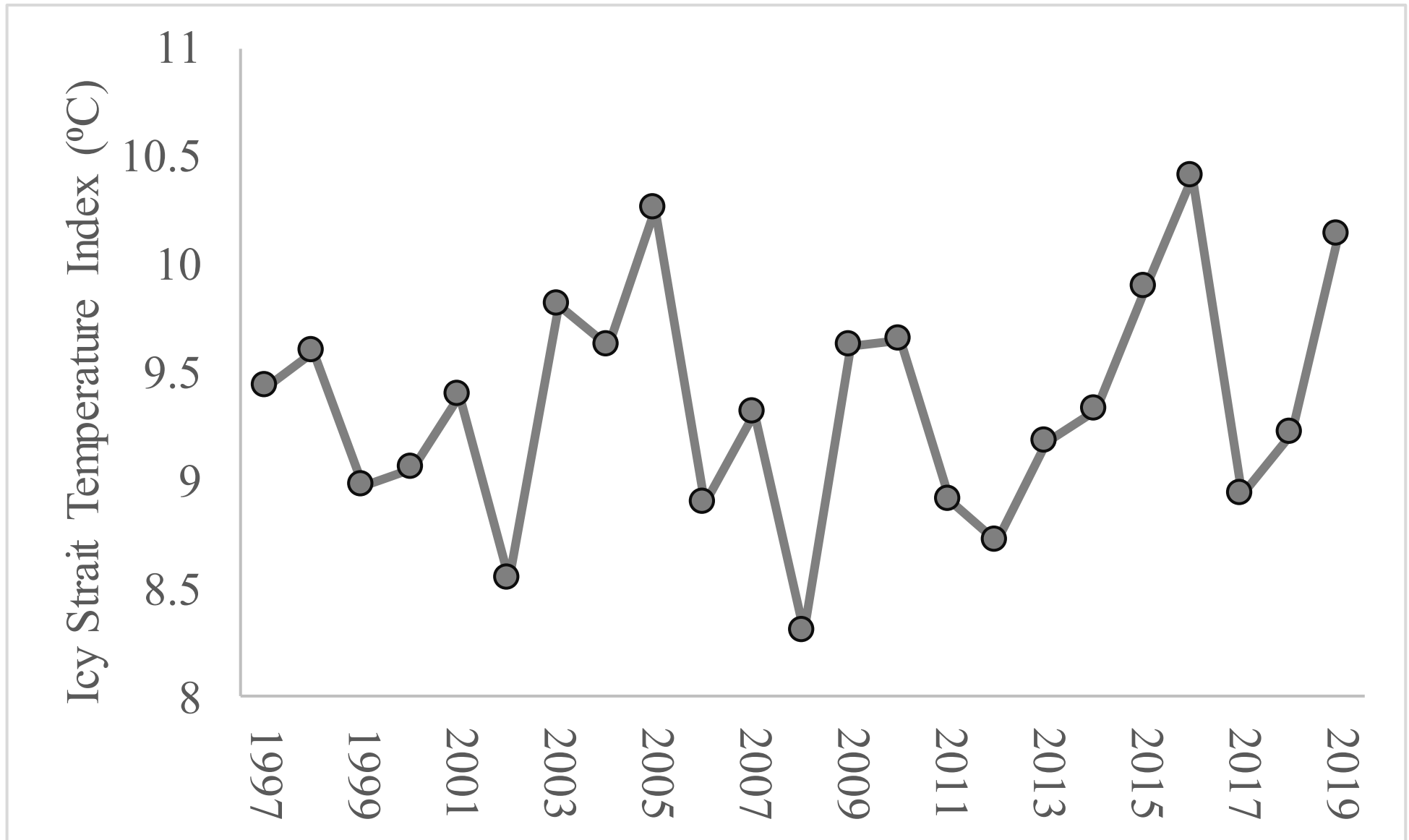
Length of Juvenile Pink Salmon



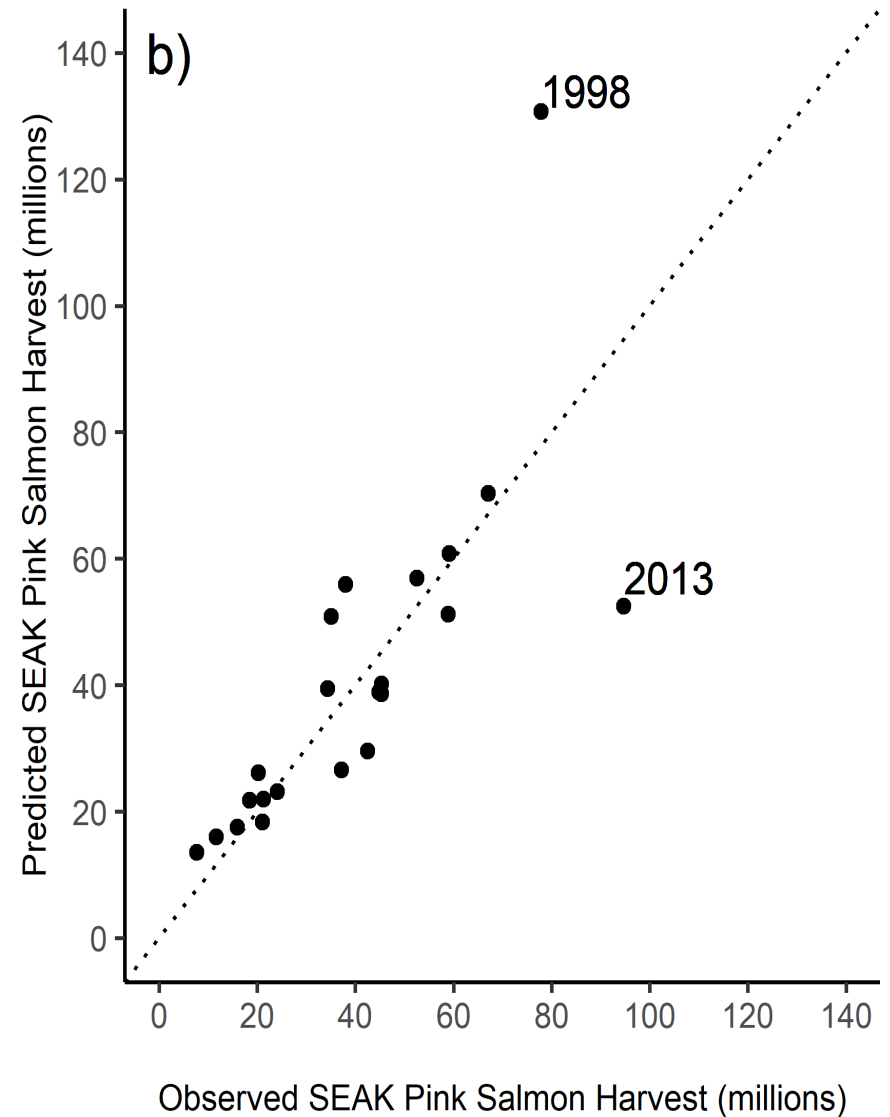
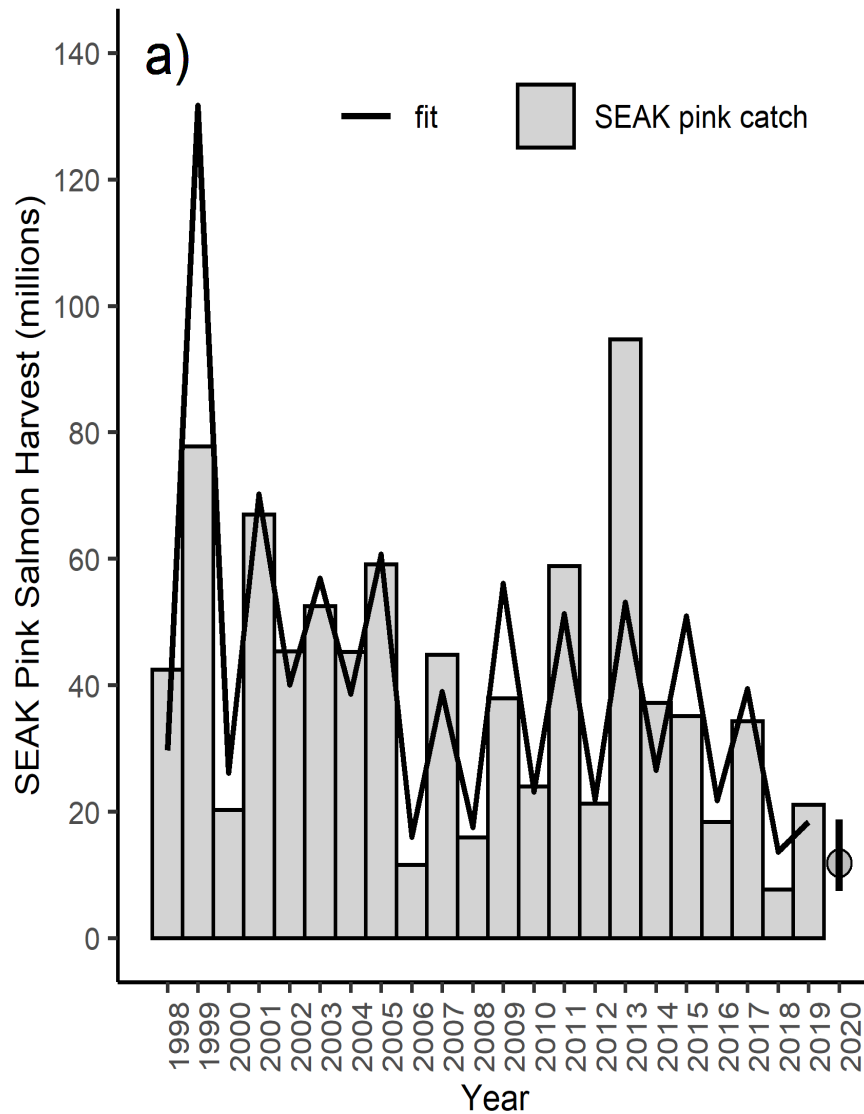
Peak CPUE (calibrated) of juvenile Pink Salmon



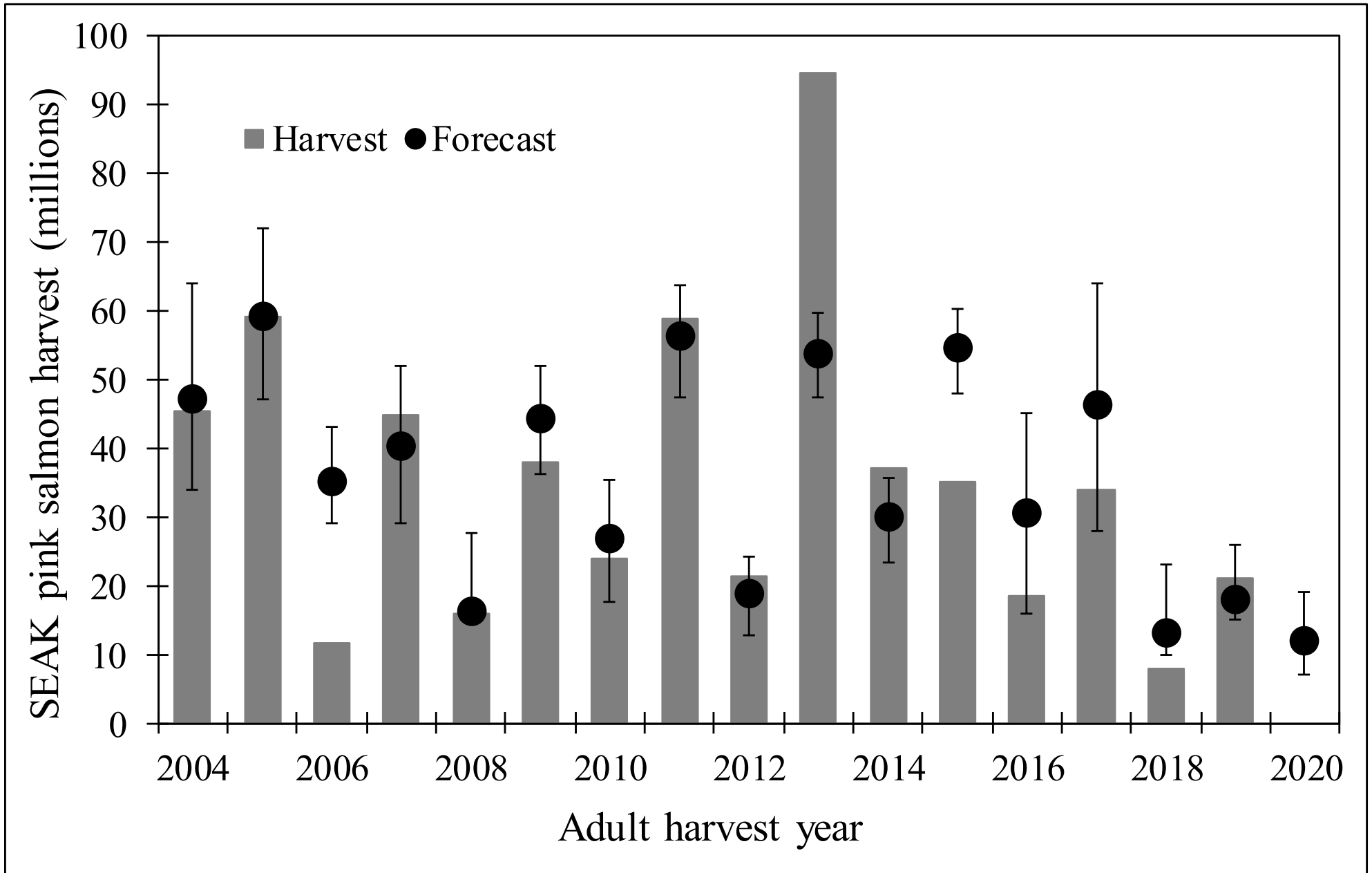
Icy Strait Temperature Index (ISTI)



Southeast Alaska Pink Salmon Harvest Forecast Model (Calibrated CPUE + ISTI)

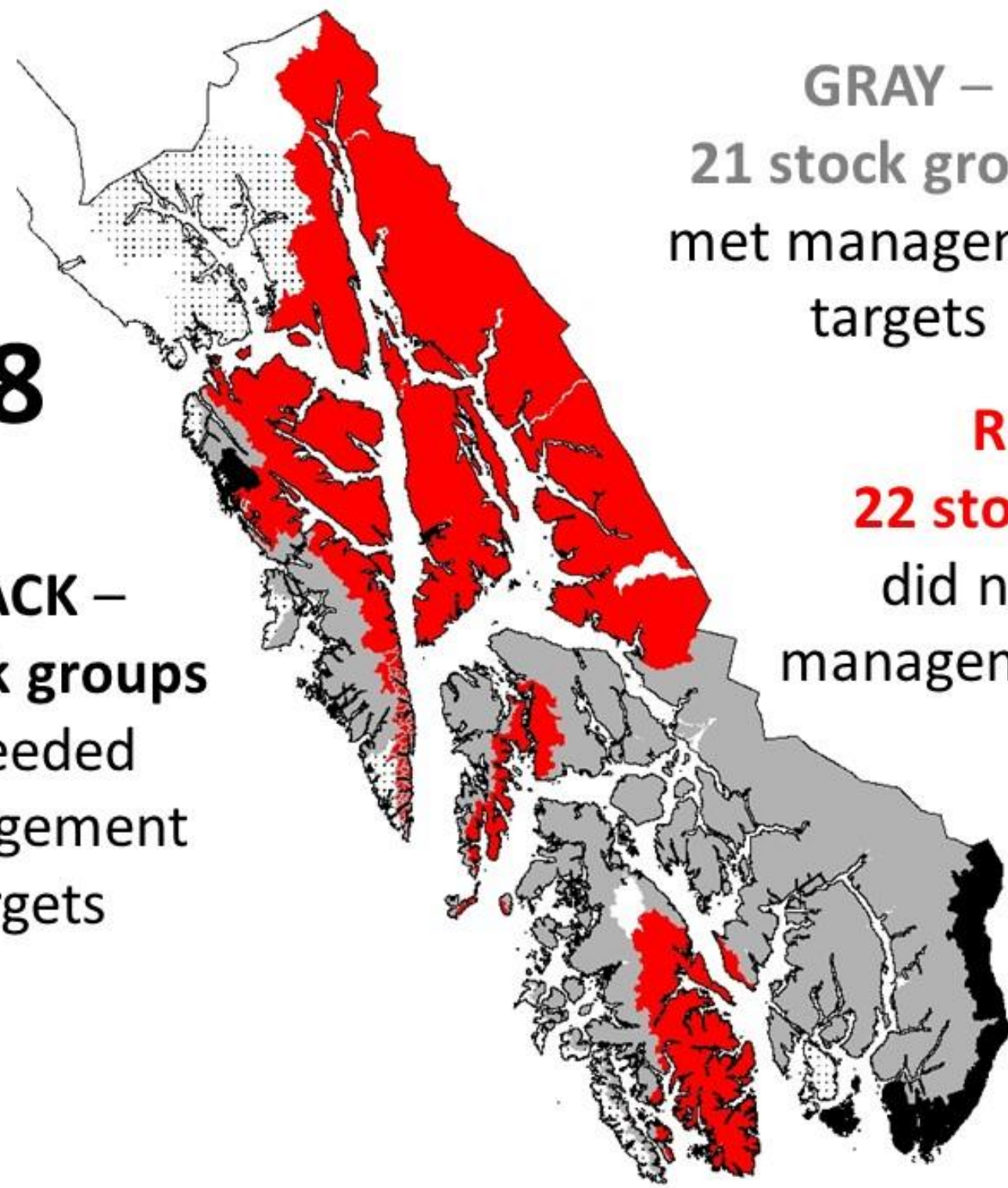


Southeast Alaska Pink Salmon Harvest Forecast Model Performance



2018

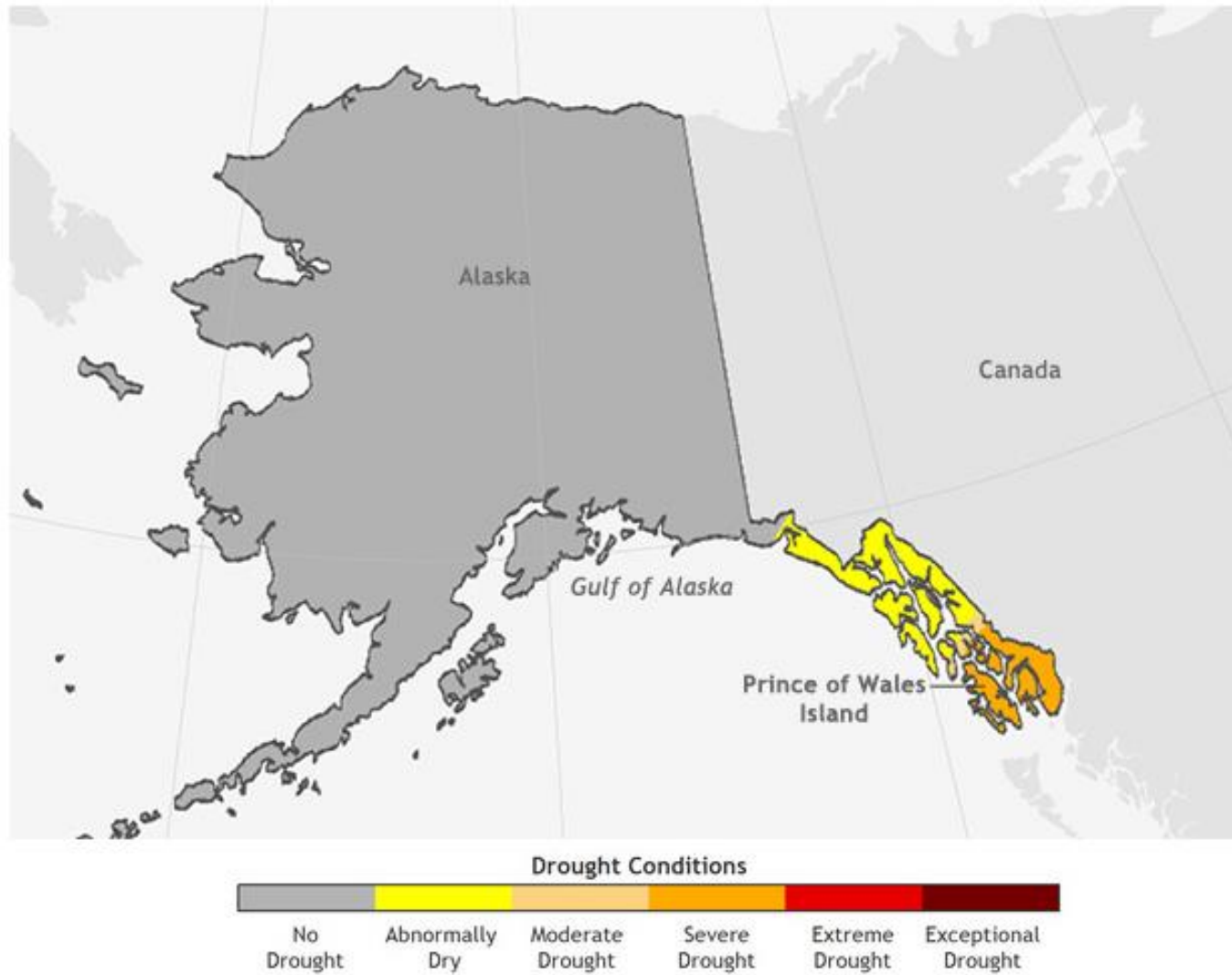
BLACK –
3 stock groups
exceeded
management
targets



GRAY –
21 stock groups
met management
targets

RED –
22 stock group
did not meet
management targets

Southeast Alaska Drought



U.S. Drought Monitor map from October 9, 2018, showing severe drought conditions in southernmost Southeast Alaska. NOAA Climate.gov image based on USDM data.



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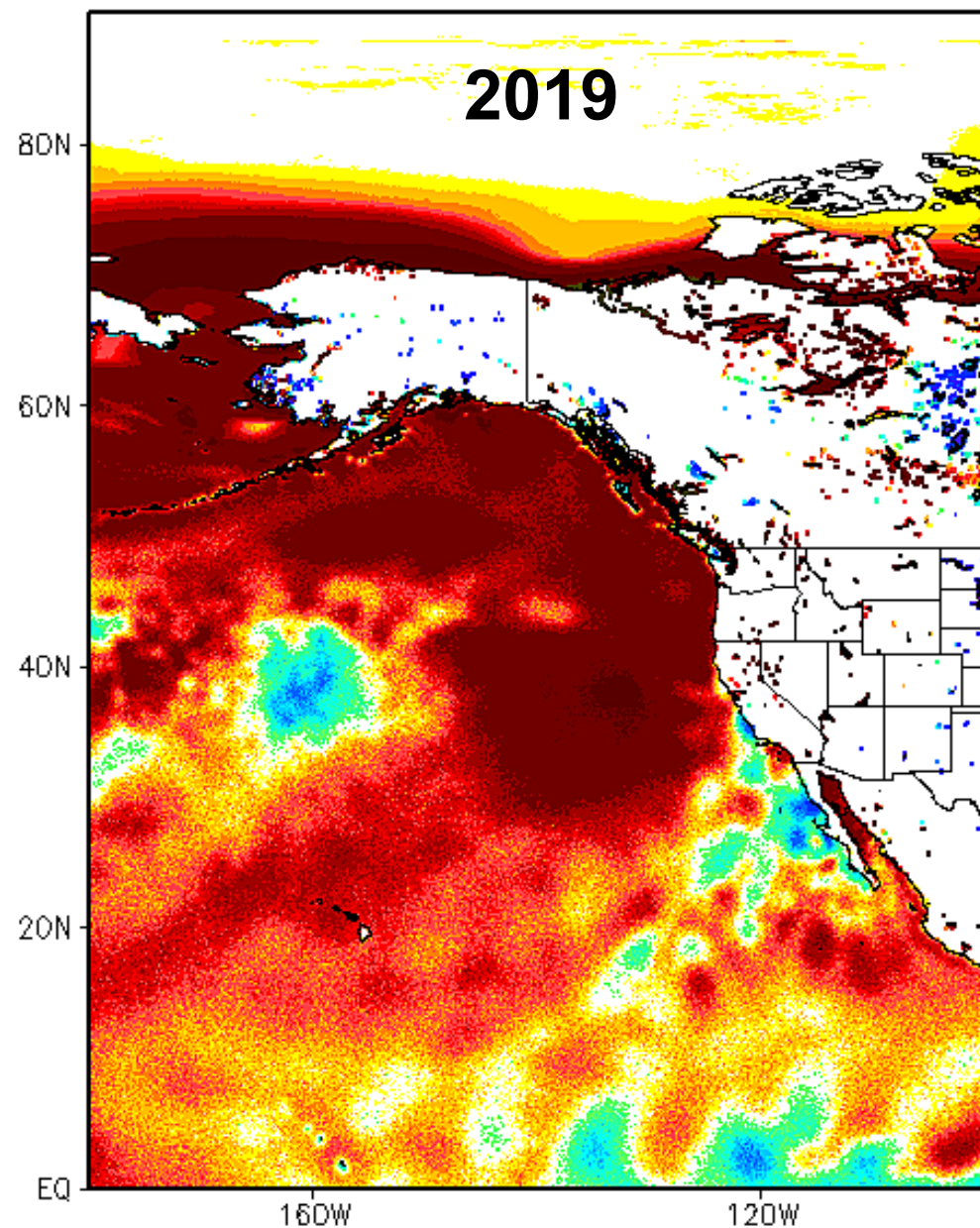
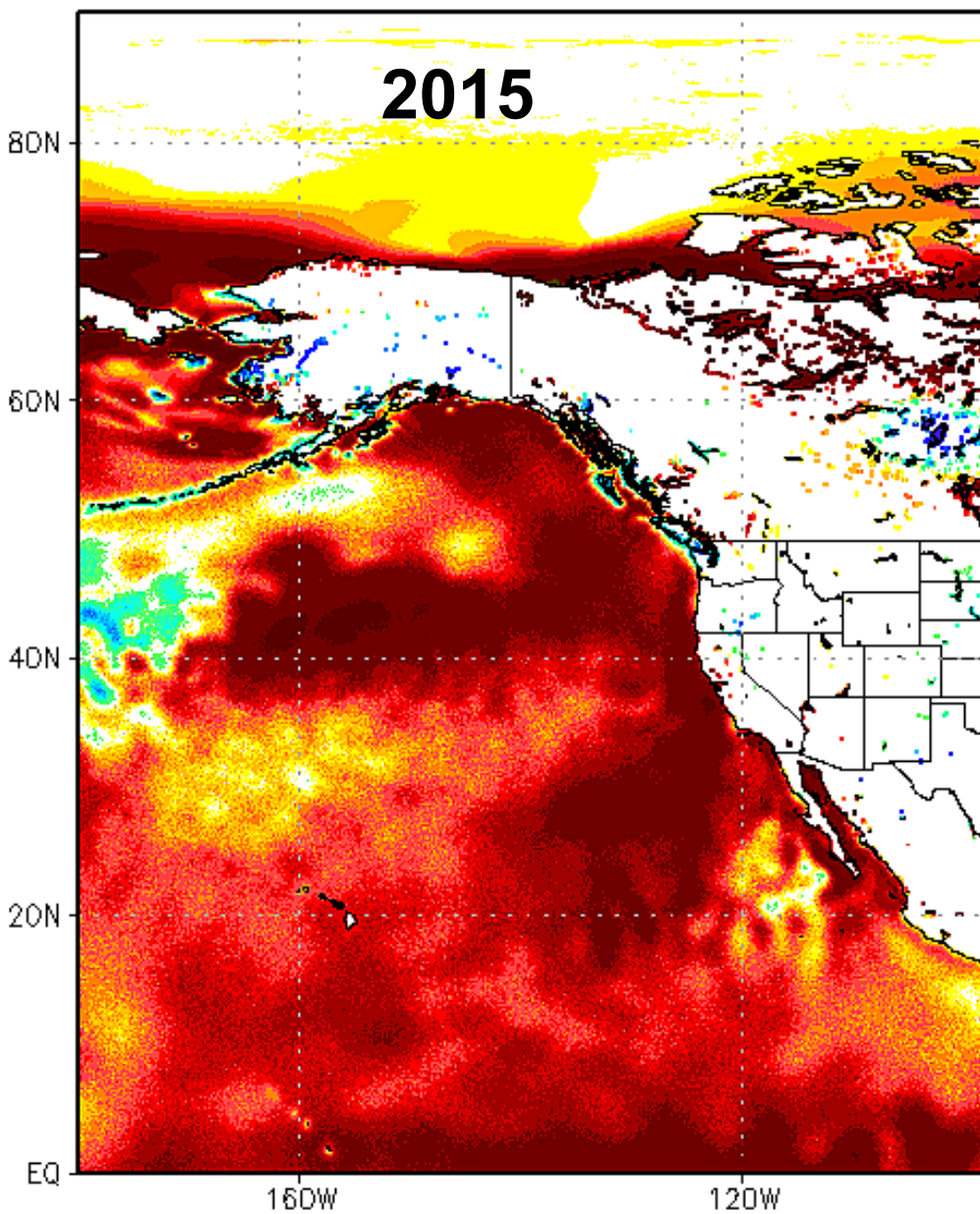


Photo by Dave Harris



Photo by Dave Harris

North Pacific Sea Surface Temperature Anomalies



2020 SECM Pink Salmon Forecast Summary

- The 2020 Southeast Alaska pink salmon harvest forecast is:
 - **12 million (80% CI = 7 – 19 million).**
- The forecast is based on a juvenile abundance index and temperature (ISTI). The significance of temperature is unclear, it could be due to variation in survival and/or migration of juveniles.
- Blob reformed in summer of 2018; significant drought throughout Southeast Alaska in 2018 and 2019.