



NOAA
FISHERIES

Ecosystem & Socioeconomic Profile

Bristol Bay Red King Crab Report Card

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September 2024

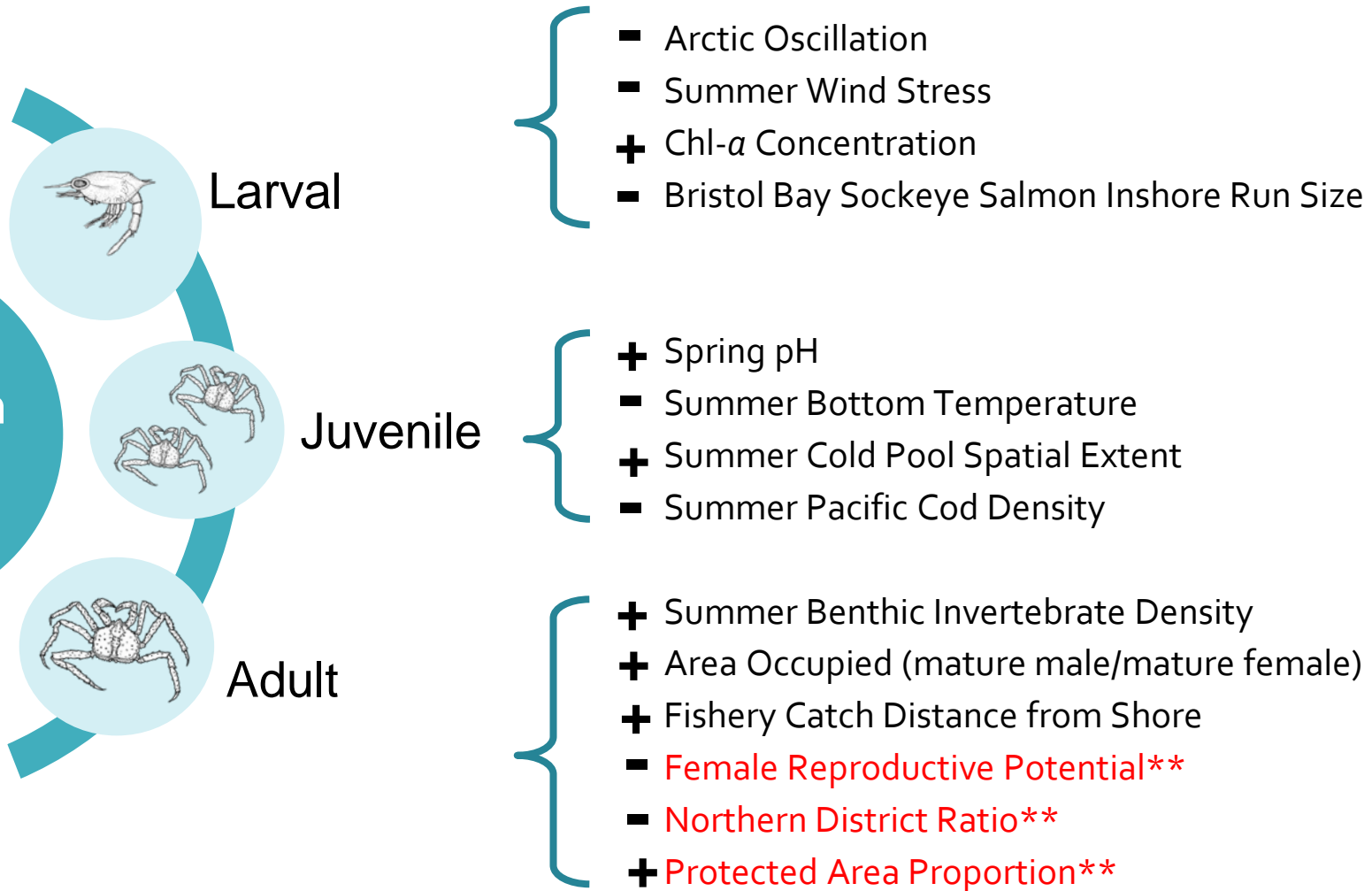
ESP Contributors: Matt Callahan, Curry Cunningham, Ben Daly, Shannon Hennessey, Jean Lee, Cory Lescher, Jens Nielsen, Katie Palof, Darren Pilcher, Dale Robinson, Emily Ryznar, Abigail Tyrell, and Leah Zacher

General Updates

- Tanner Crab Generalized ESP completed for 2024 risk table
- Plan for May 2025 CPT Meeting:
 - Snow crab/BBRKC intermediate stage indicator importance test methods development and results
- Socioeconomic Updates
- October Council Meeting: ESP summary alongside ESR summary?

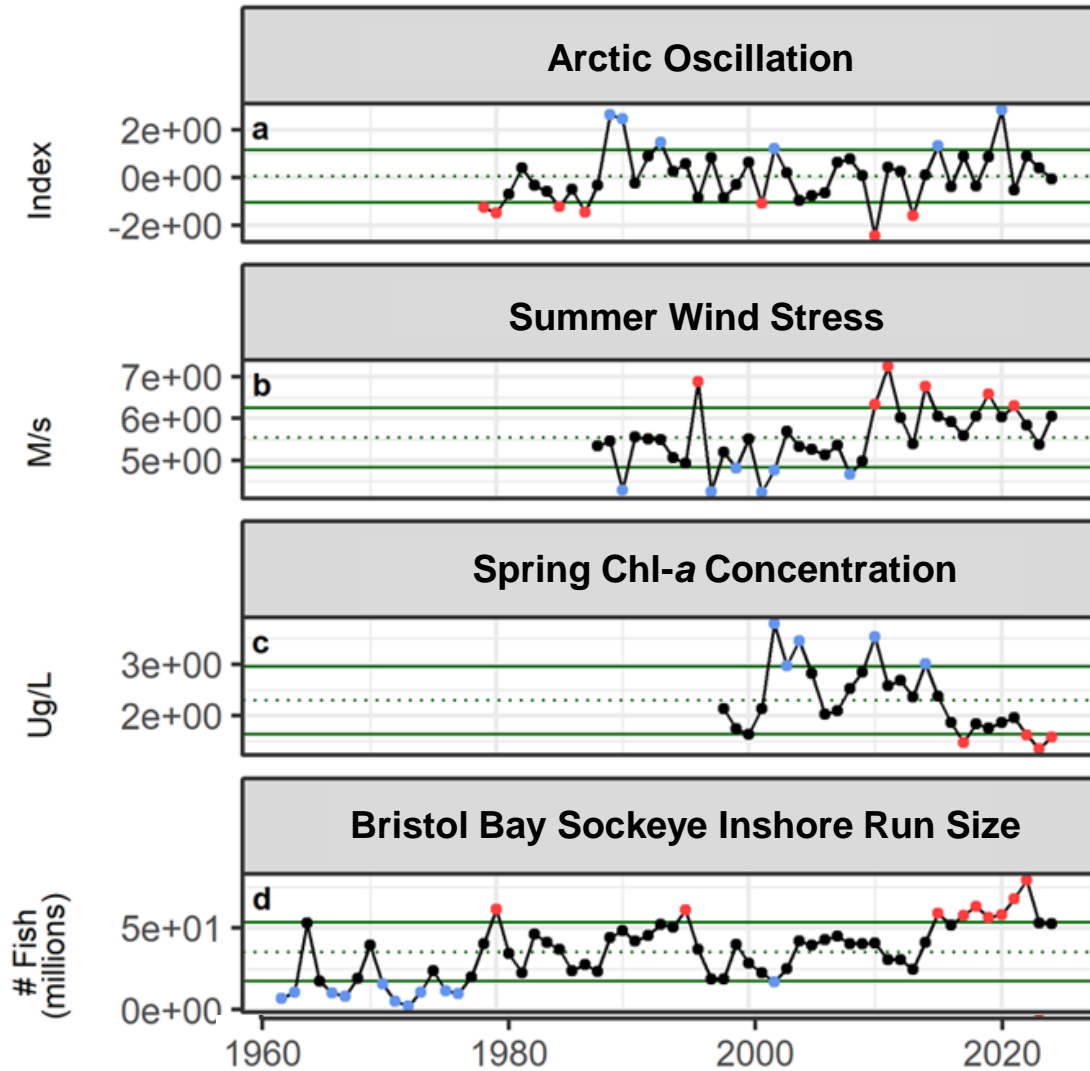
BBRKC Ecosystem Indicators

Ecosystem Indicators



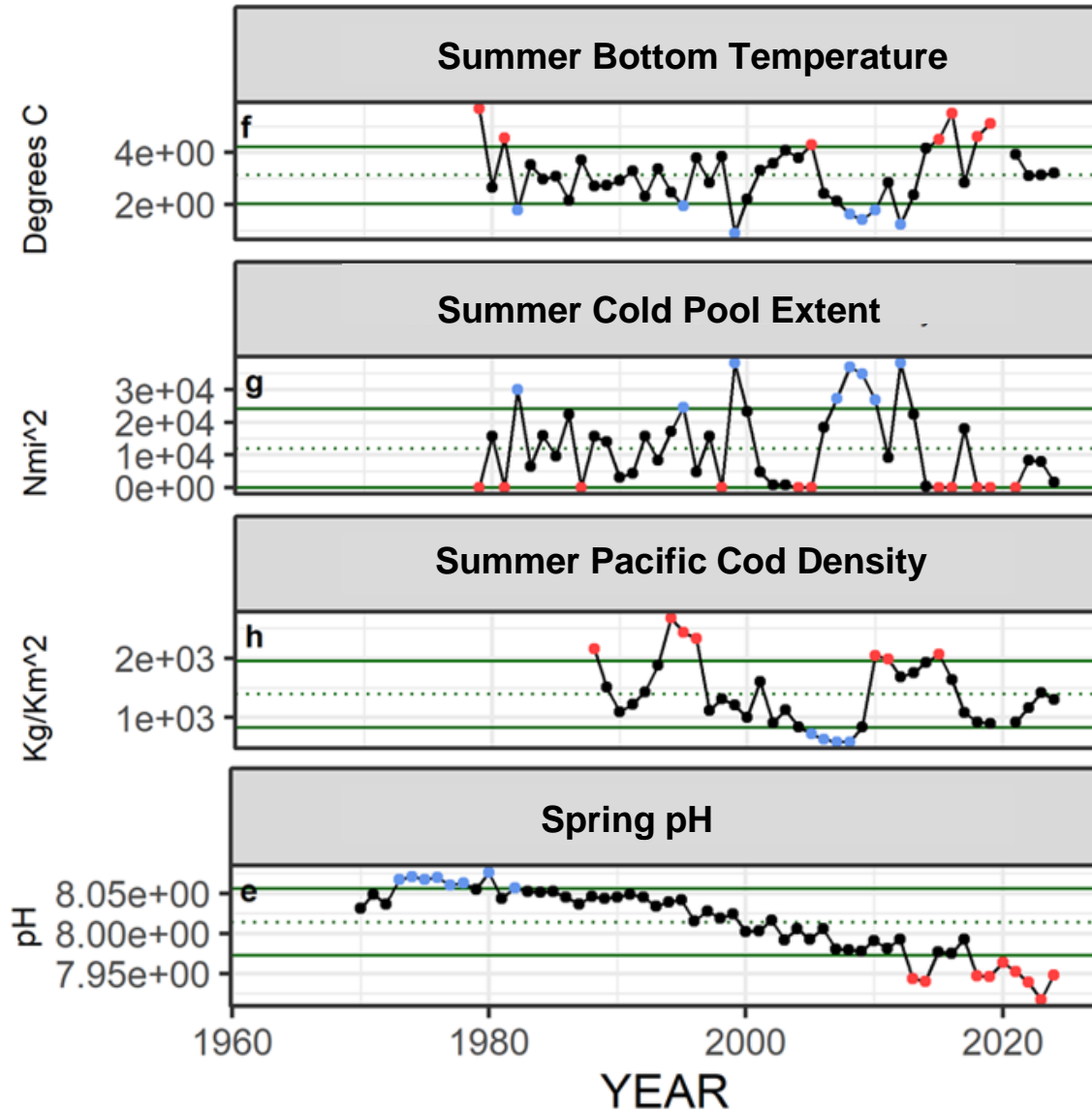
**New Indicator Inclusion Pending CPT Review

Larval Indicators



A continued high period of Bristol Bay sockeye salmon production and low chlorophyll-a concentration suggest poor larval feeding conditions and survival to settlement

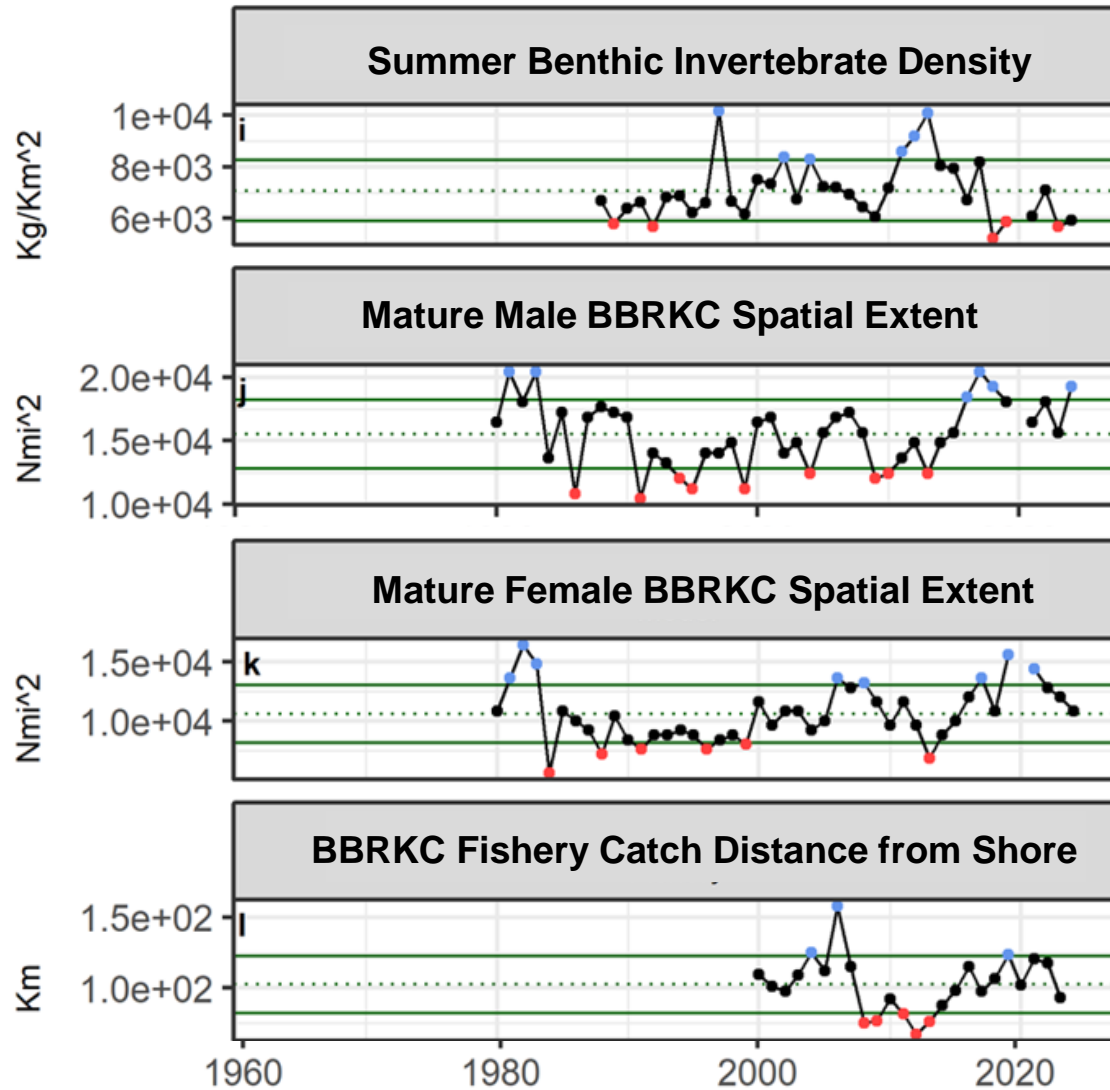
Juvenile Indicators



The cold pool did not extend into central Bristol Bay in 2024, but bottom temperatures are well within the preferred thermal range of juveniles

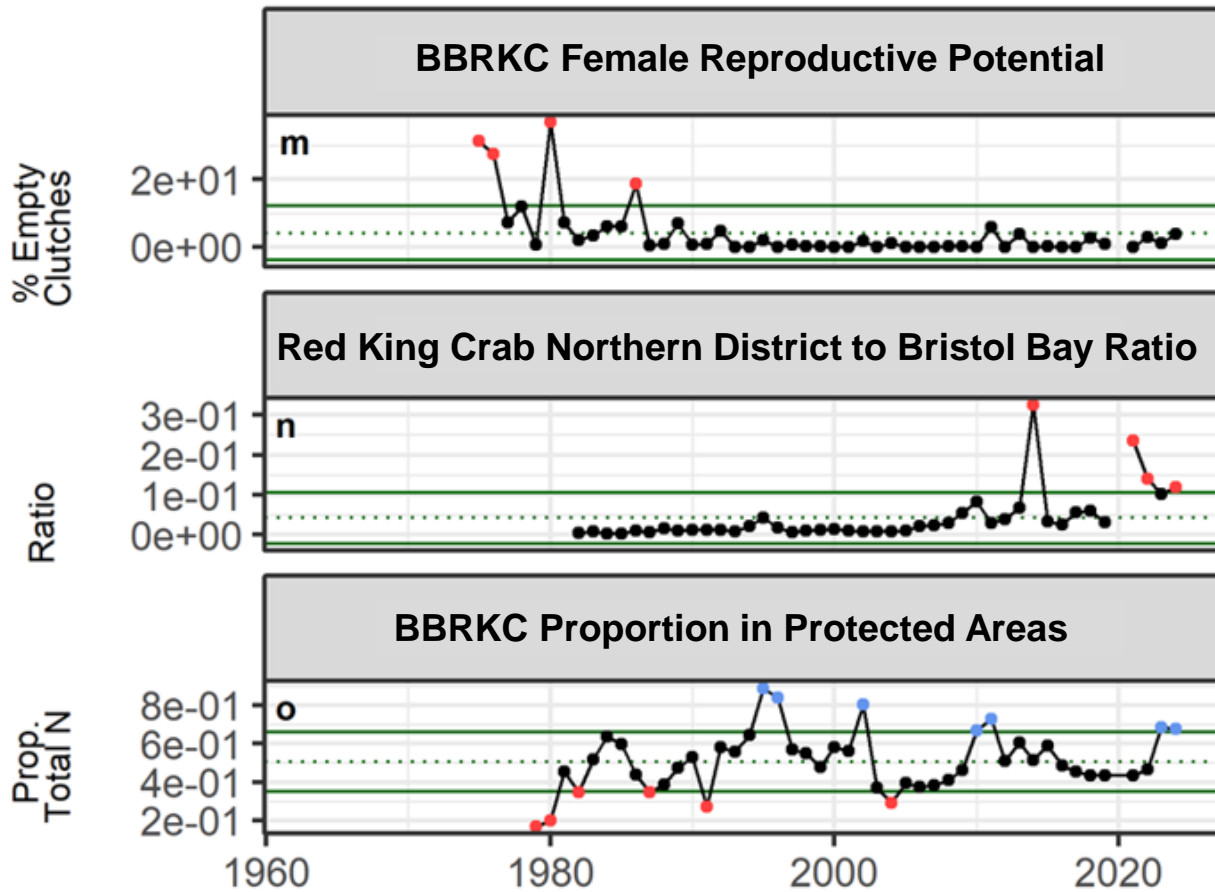
Bottom water pH in Bristol Bay increased in 2024, although red king crab have experienced a steady decline in bottom water pH in the past two decades

Adult Indicators



The contraction of mature female spatial extent in recent years has been attributed to high survey catches north of Port Moller and an overall southeast shift in centroids of abundance since 2019

Adult Indicators



Although empty clutch proportion remains small (~4%), clutch failures should continually be monitored under depressed population levels

The high ratio of Northern District to Bristol Bay District red king crab since 2021 is consistent with a northward range expansion

In 2024, 68% of mature males were located in closure areas during the summer survey period

Ecosystem Traffic Light Table

Indicator category	Indicator	2020 Status	2021 Status	2022 Status	2023 Status	2024 Status
Larval	Arctic Oscillation Index	high	neutral	neutral	neutral	neutral
	Summer Wind Stress	neutral	high	neutral	neutral	neutral
	Spring Chlorophyll <i>a</i> Concentration	neutral	neutral	low	low	low
	Bristol Bay Sockeye Inshore Run Size	high	high	high	neutral	neutral
Juvenile	Spring pH	low	low	low	low	low
	Summer Bottom Temperature	NA	neutral	neutral	neutral	neutral
	Summer Cold Pool Extent	NA	low	neutral	neutral	neutral
	Summer Pacific Cod Density	NA	neutral	neutral	neutral	neutral
Adult	Summer Benthic Invertebrate Density	NA	neutral	neutral	low	neutral
	Summer Red King Crab Male Area Occupied	NA	neutral	neutral	neutral	high
	Summer Red King Crab Female Area Occupied	NA	high	neutral	neutral	neutral
	Annual Fishery Catch Distance from Shore	neutral	neutral	neutral	neutral	NA
	Summer BBRKC Female Reproductive Potential	NA	neutral	neutral	neutral	neutral
	Summer BBRKC Northern District Ratio	NA	high	high	neutral	high
	Summer BBRKC Protected Area Proportion	NA	neutral	neutral	high	high

Socioeconomic Indicators

Socio-economic Indicators



Fishery Performance

- Catch-per-unit-effort (BBRKC fishery)
- Total potlifts (BBRKC fishery)
- Number active vessels (BBRKC fishery)
- Incidental catch (Groundfish fisheries)



Economic

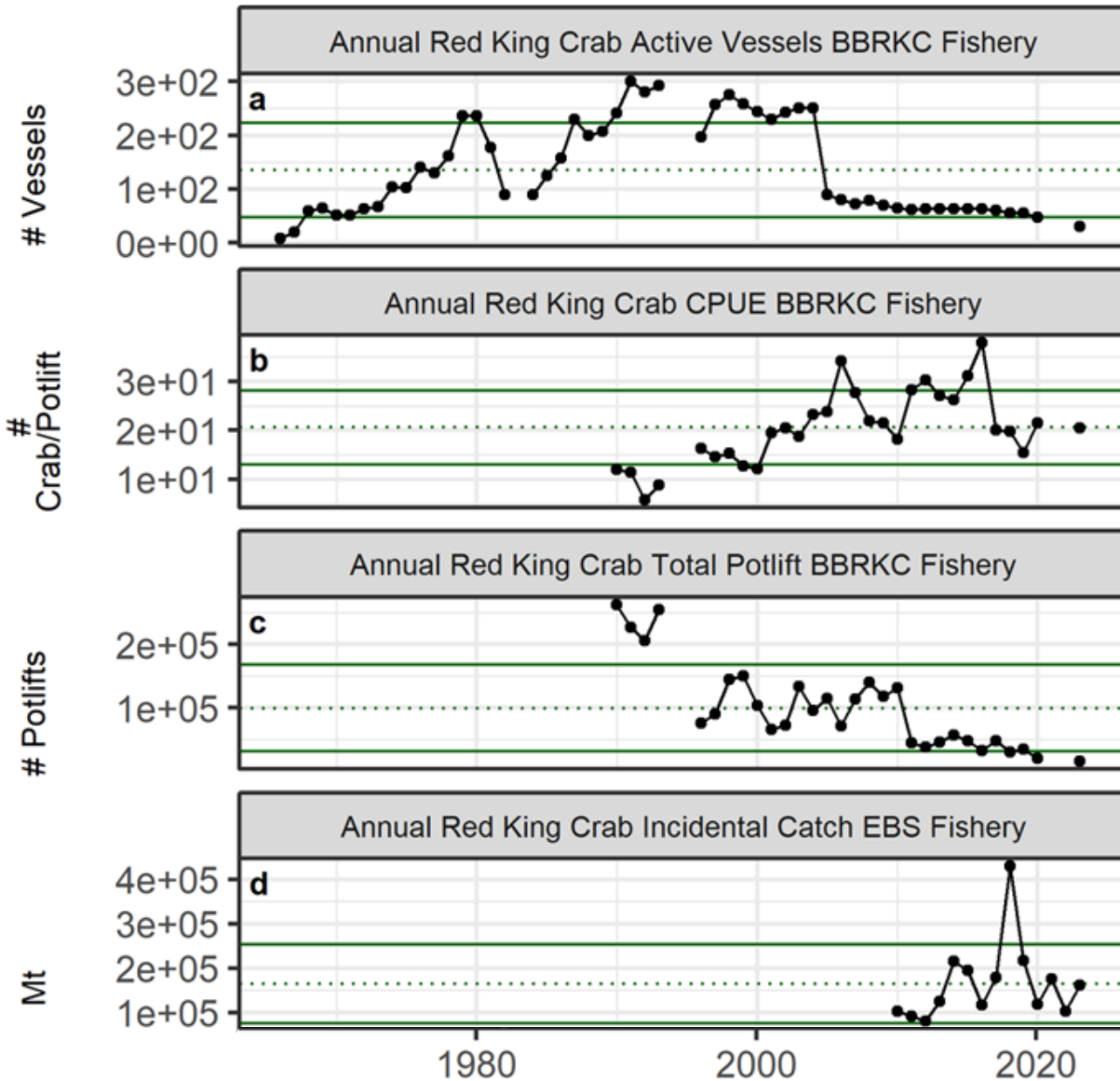
- TAC Utilization (BBRKC fishery)
- Ex-vessel value (BBRKC fishery)
- Ex-vessel price/lb (BBRKC fishery)
- Ex-vessel revenue share (BBRKC fishery)



Community

- ABSC Skipper Survey

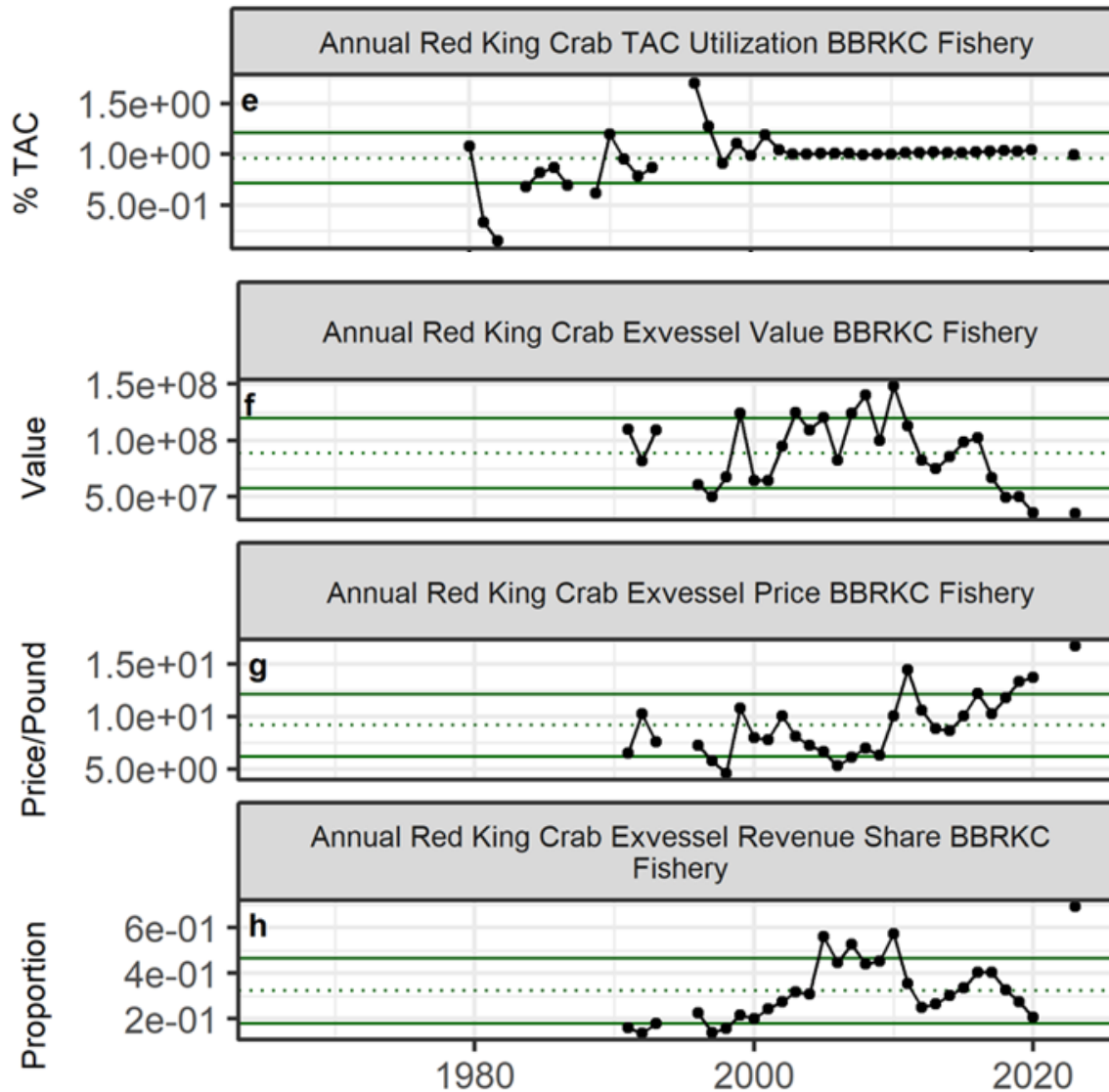
Fishery Performance Indicators



The consolidation from 47 active vessels during 2020 to 31 in 2023 likely reflects the importance of the snow crab fishery in vessel owners' decisions to enter the BSAI crab fisheries in a given year

It may also indicate a more persistent consolidation of the BSAI crab fleet as a result of financial pressures on vessel owners associated with recent crab fishery closures

Economic Indicators



The trend of declining ex-vessel value over the most recent five open BBRKC seasons coincided with upward-trending, and historically high ex-vessel price, which culminated in an unprecedented extreme high value in 2023

This record-high ex-vessel price reflects the contemporaneous closure of the snow crab fishery and limited availability of other fishing targets for the BSAI crab fleet

Community Indicators



ABSC Industry Skipper Survey

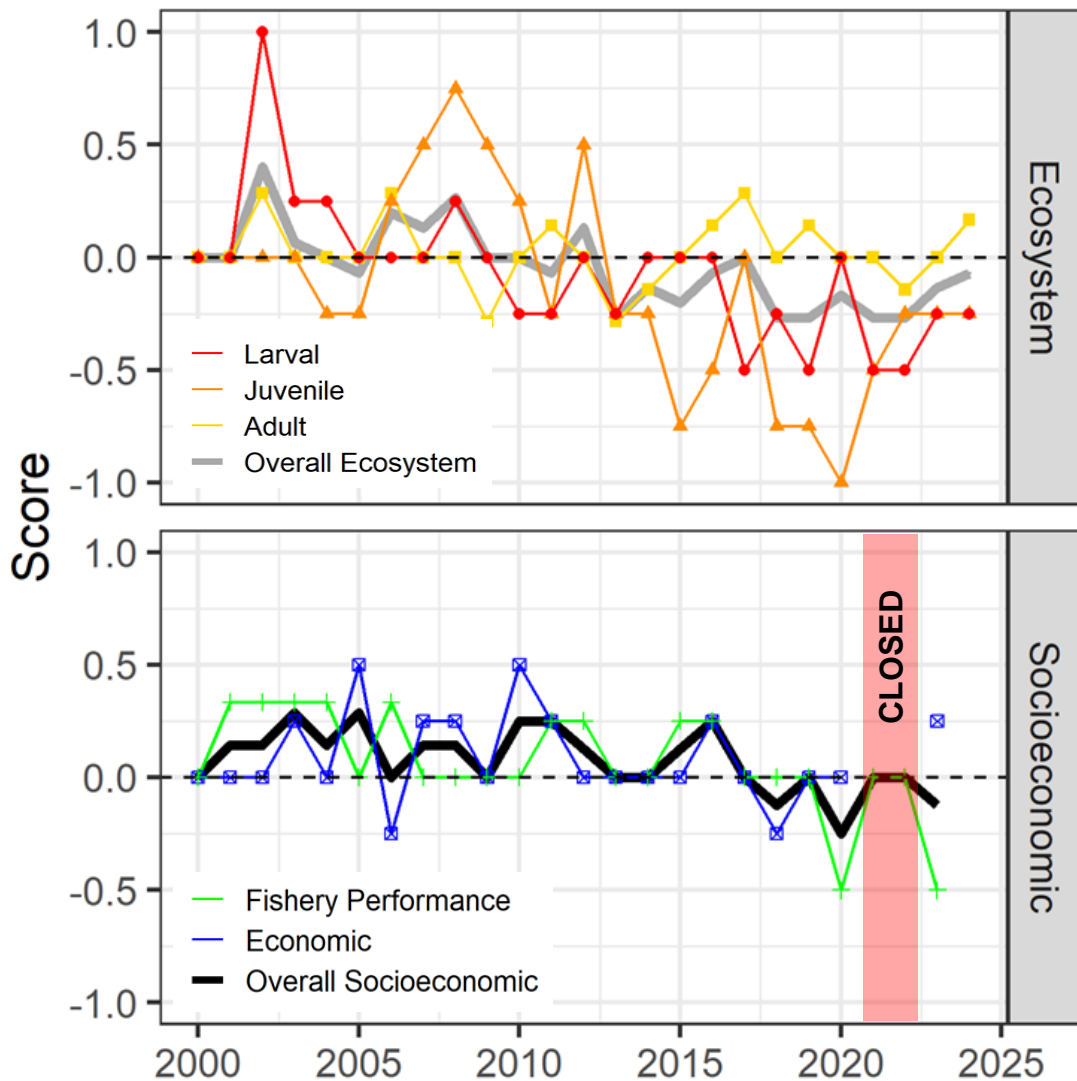
42% of participation from skippers that participated in the 2023-2024 BBRKC fishery

- 61% of the skippers that participated in the survey changed their fishing behavior this season by using longer soak times to reduce sorting of sub-legal males and females, increase CPUE of legal males, and reduce bycatch
- Responses to perceived abundance varied, likely due to locations fished, and skipper experience and skill
- Anecdotal comments indicated that mature females were further east of fishing grounds, and skippers collectively attempted to move off female hot spots by increasing communication between vessels

Socioeconomic Traffic Light Table

Indicator category	Indicator	2019 Status	2020 Status	2021 Status	2022 Status	2023 Status
Fishery Performance	Number of Active Vessels BBRKC Fishery	neutral	low	Closed	Closed	low
	Annual CPUE BBRKC Fishery	neutral	neutral	Closed	Closed	neutral
	Annual Total Potlifts BBRKC Fishery	neutral	low	Closed	Closed	low
	Annual Incidental Catch	neutral	neutral	neutral	neutral	neutral
Economic	Annual TAC Utilization BBRKC Fishery	neutral	neutral	Closed	Closed	neutral
	Annual Ex-vessel Value BBRKC Fishery	low	low	Closed	Closed	low
	Annual Ex-vessel Price BBRKC Fishery	high	high	Closed	Closed	high
	Annual Ex-vessel Revenue Share BBRKC Fishery	neutral	neutral	Closed	Closed	high

Indicator Monitoring Analysis: Traffic Light Score



The overall ecosystem indicators score in 2024 increased from 2023, but remained below average

The overall socioeconomic indicators score in 2023 remained below average, but increased from 2020

Questions?

