NOAA FISHERIES

Ecosystem & Socioeconomic Profile

Eastern Bering Sea Snow Crab Report Card

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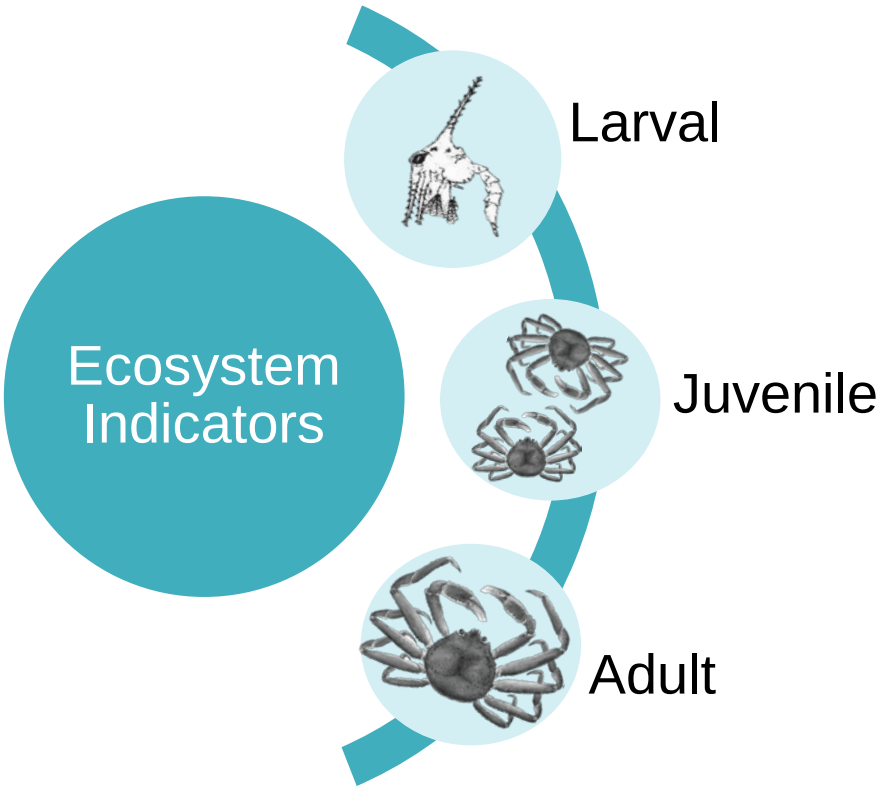
Ecosystem Indicators



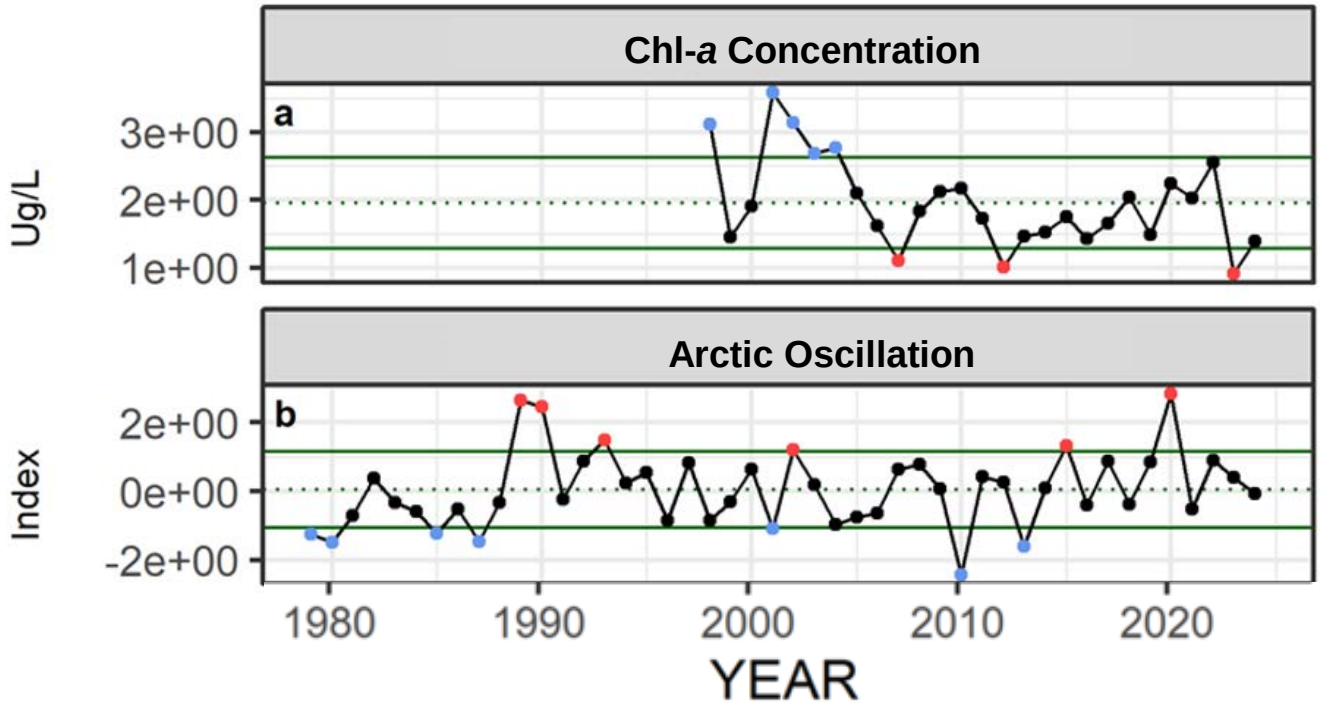
- Arctic Oscillation
+ Chl-*a* Concentration

+ Summer Cold Pool Spatial Extent
- Juvenile Temperature of Occupancy
+ Winter Sea Ice Extent
- Juvenile Disease Prevalence
+ Juvenile Energetic Condition
- Pacific Cod Consumption

+ Benthic Invertebrate Density
+ Male 50% Size at Terminal Molt
+ Mature Male Area Occupied
+ Mature Male Center of Abundance
+ Female Reproductive Potential**
+ Operational Sex Ratio**

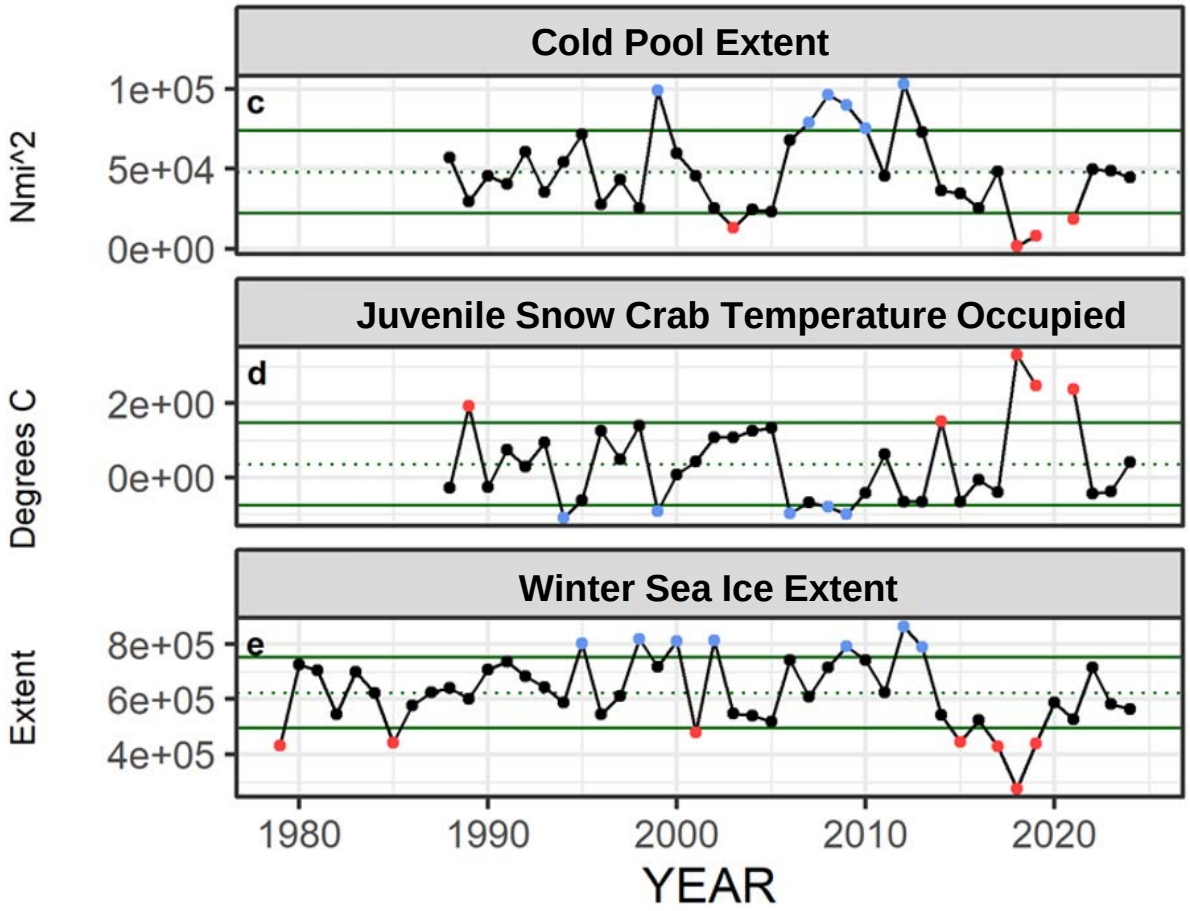
**New Indicator Inclusion Pending CPT Review

Larval Indicators



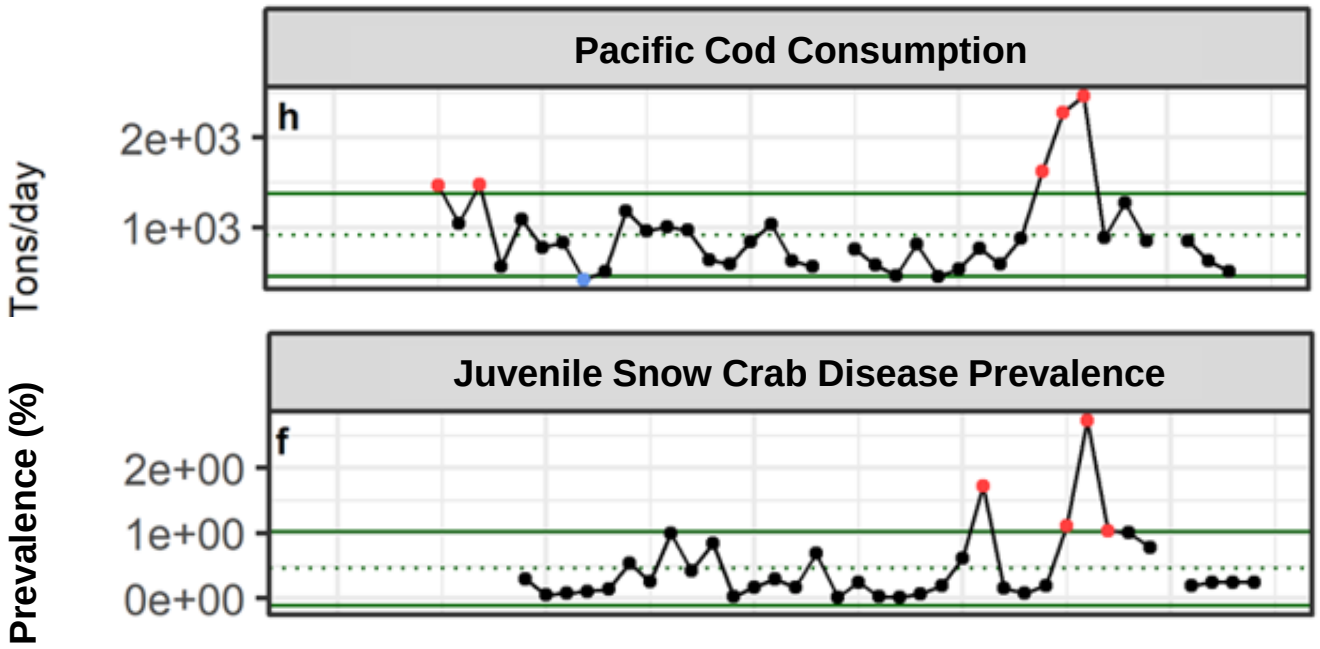
Low chlorophyll-*a* concentrations and a less pronounced spring bloom suggest poor larval feeding conditions and food supply to the benthos

Juvenile Indicators



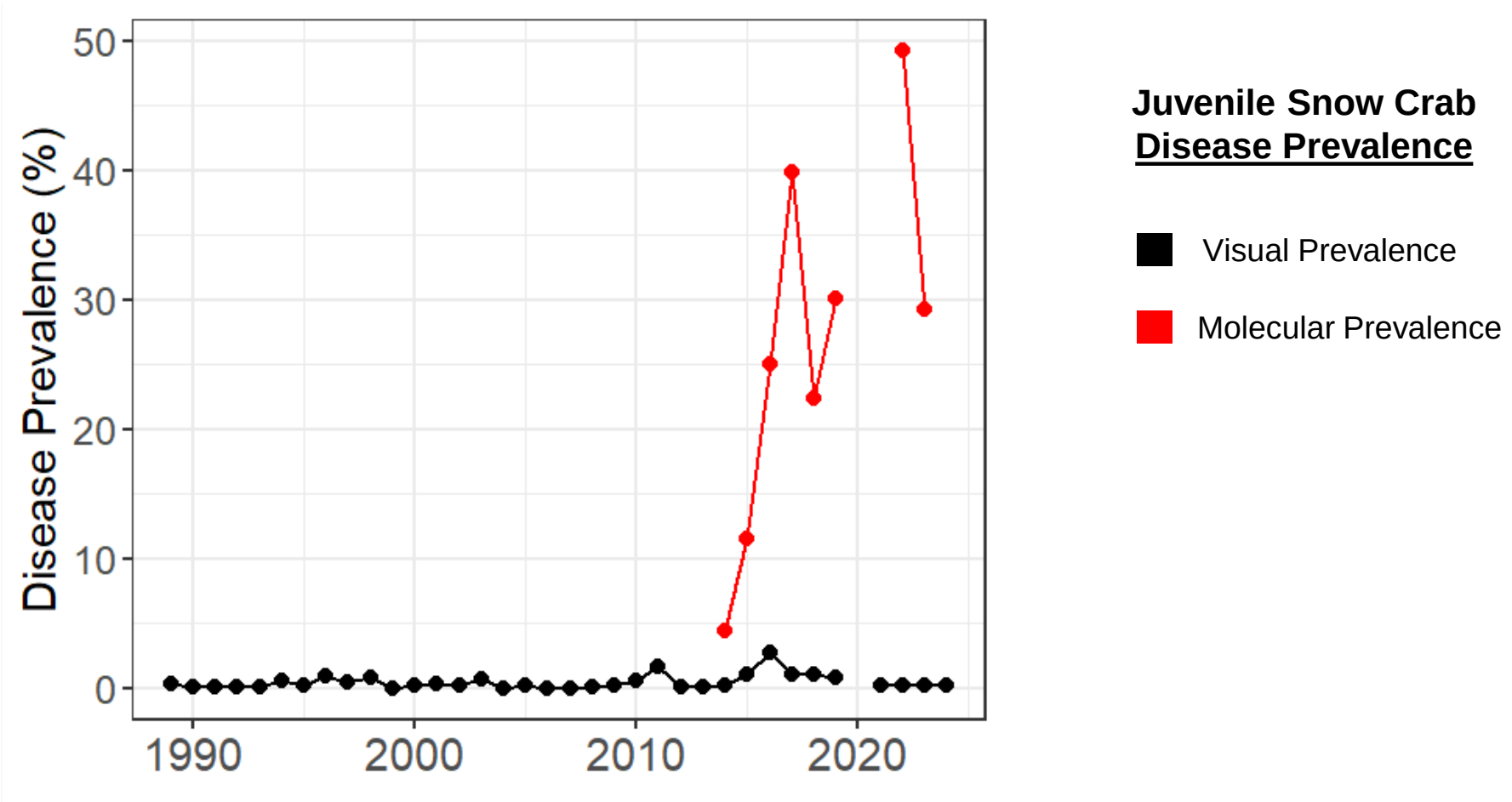
< 1°C temperatures occupied by juvenile snow crab indicate the return of cold water habitat critical for recruitment

Juvenile Indicators



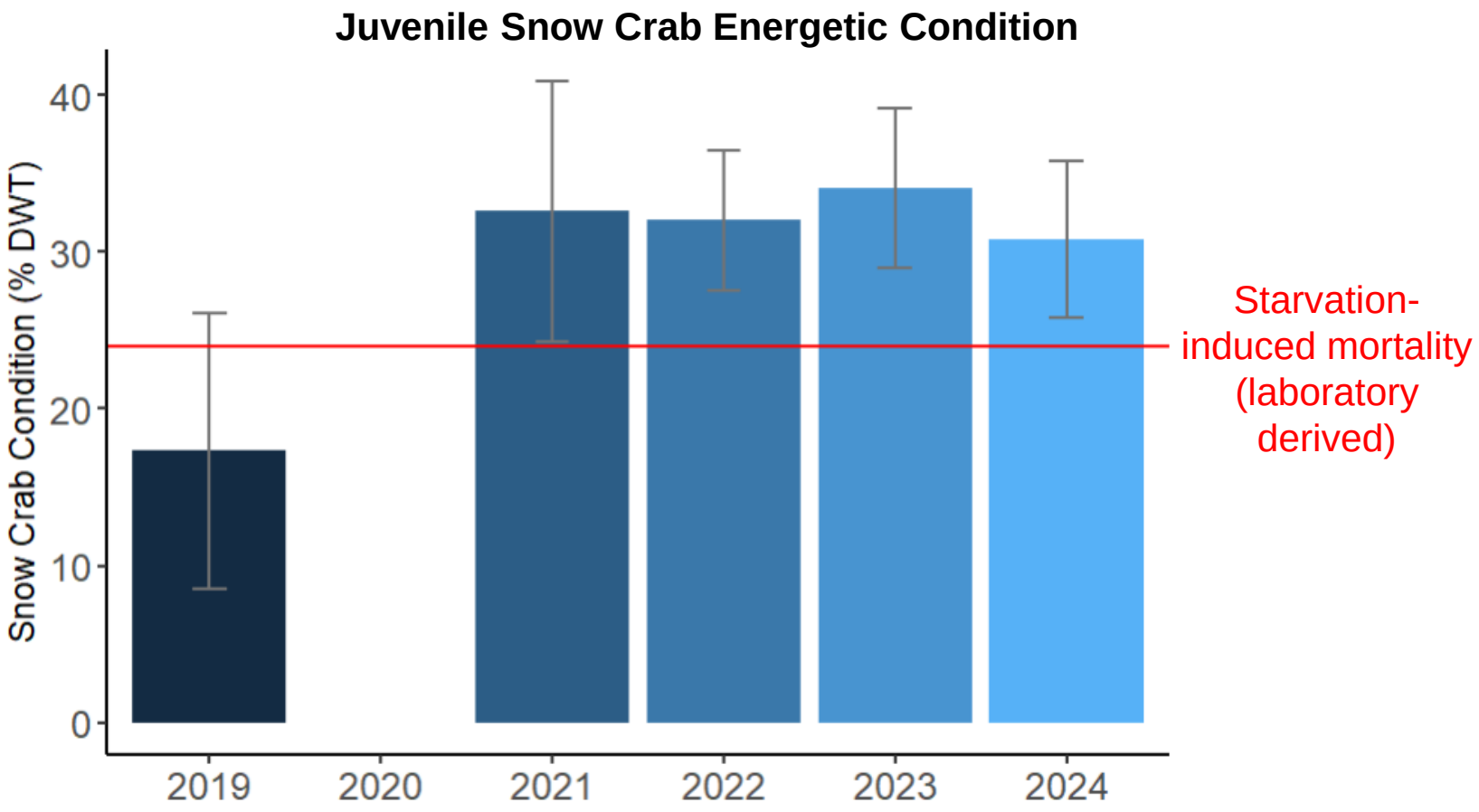
Post-collapse declines in Pacific cod consumption and visual prevalence of disease suggest a positive outlook for stock rebuilding

Juvenile Indicators



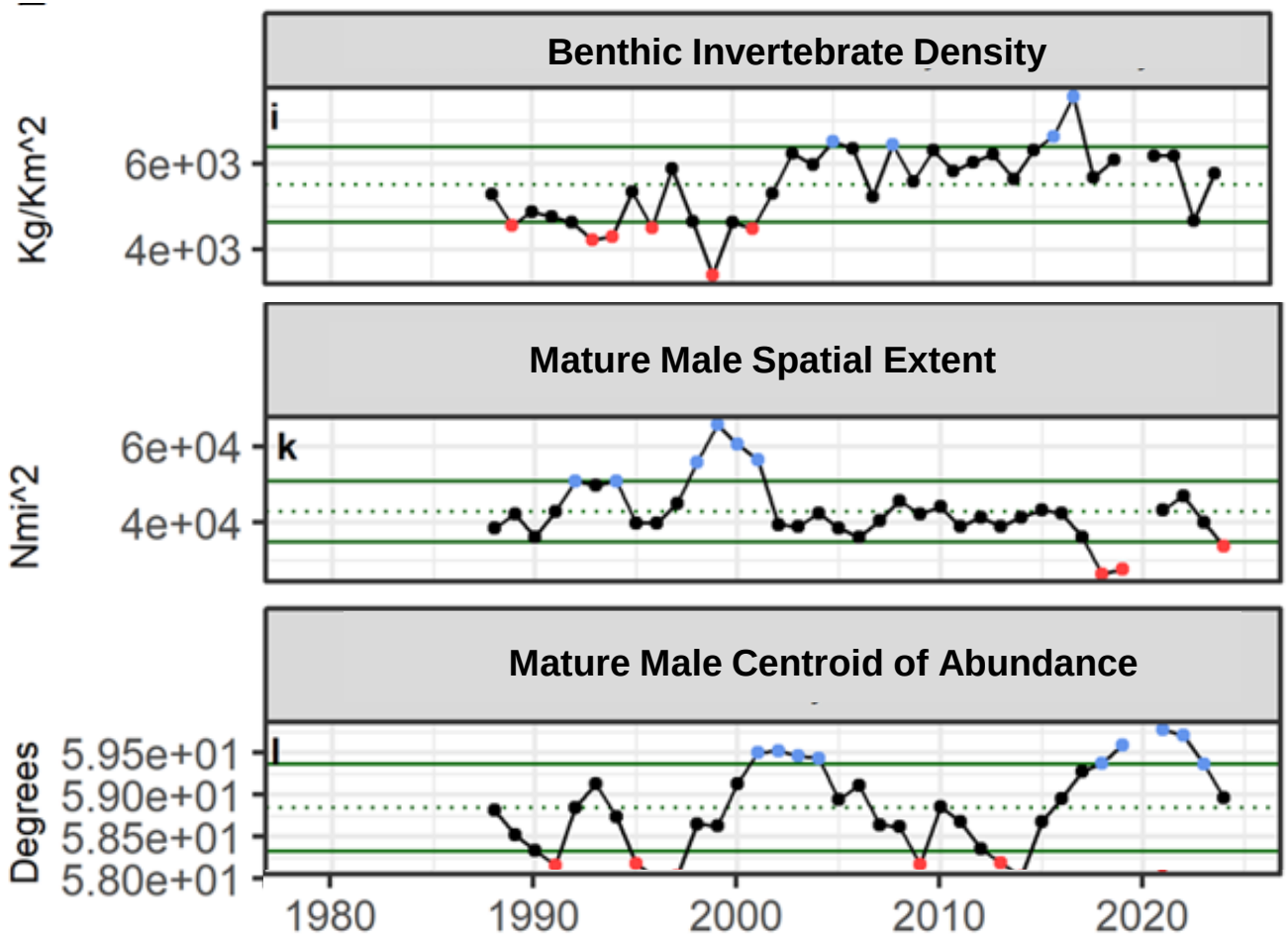
Visual detection methods substantially underestimate disease prevalence, and infections detected with PCR assays at disease monitoring sites indicate that prevalence levels have reached 50% in recent years

Juvenile Indicators



Energetic condition of juvenile snow crab declined slightly in 2024, but the current year estimate is well above a laboratory-derived threshold for starvation-induced mortality (~25% DWT)

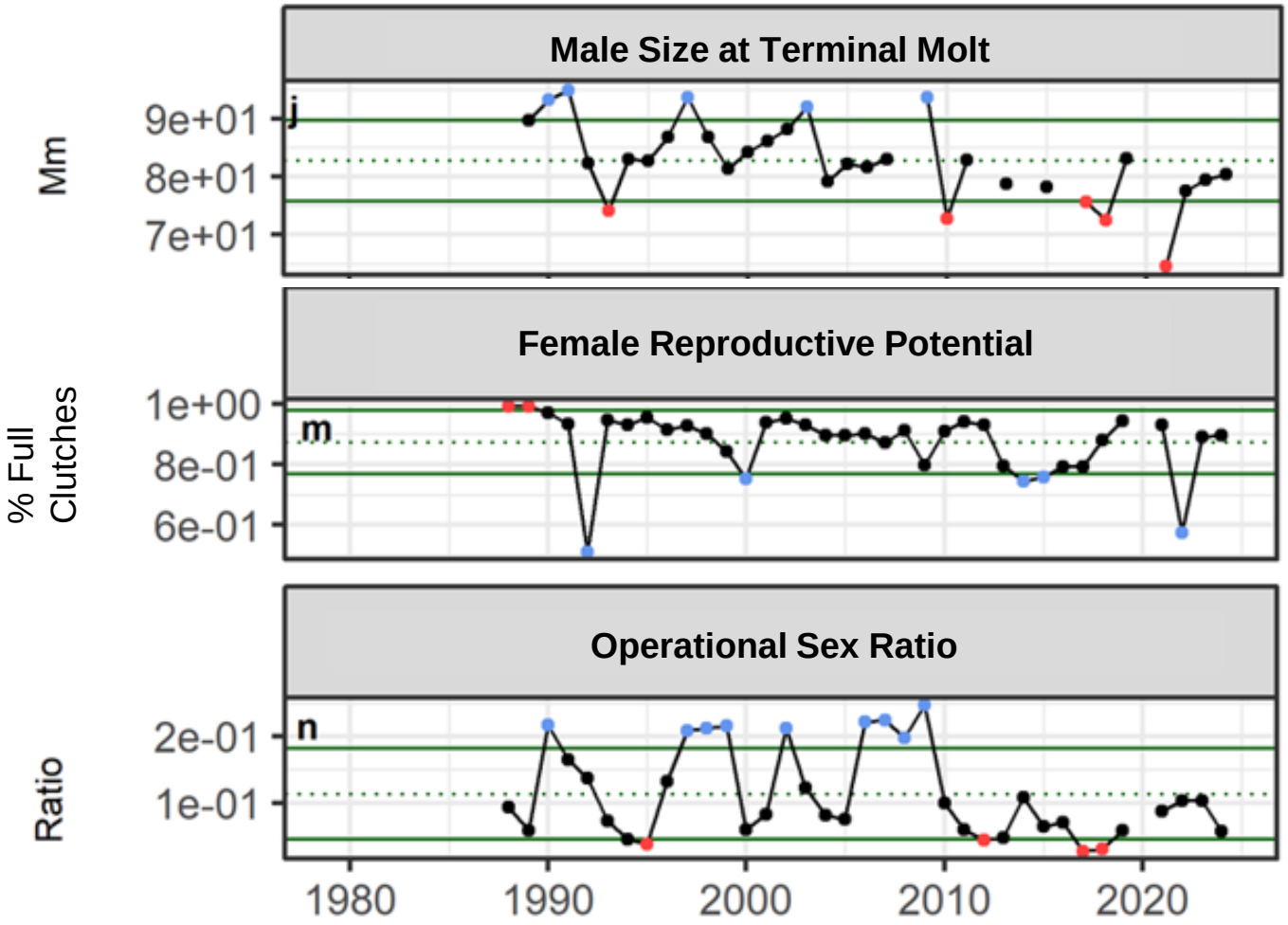
Adult Indicators



Prey density increased from 2023 to 2024

Southward shifts and declines in the spatial extent of mature male snow crab are consistent with depressed abundance of large males

Adult Indicators



A high proportion (90%) of mature females with full clutches in 2024 suggests relatively high reproductive capacity despite depressed large male abundance and a heavily female-biased operational sex ratio

Ecosystem Traffic Light Table

Indicator category	Indicator	2020 Status	2021 Status	2022 Status	2023 Status	2024 Status
Larval	Chlorophyll *a* Concentration	neutral	neutral	neutral	**low**	neutral
	Arctic Oscillation Index	**high**	neutral	neutral	neutral	neutral
Juvenile	Summer Cold Pool Extent	NA	**low**	neutral	neutral	neutral
	Juvenile Snow Crab Temperature of Occupancy	NA	**high**	neutral	neutral	neutral
	Winter Sea Ice Extent	neutral	neutral	neutral	neutral	neutral
	Juvenile Snow Crab Disease Prevalence	NA	neutral	neutral	neutral	neutral
	Juvenile Snow Crab Energetic Condition	NA	neutral	neutral	neutral	neutral
	Summer Pacific Cod Consumption	NA	neutral	neutral	neutral	NA
Adult	Summer Benthic Invertebrate Density	NA	neutral	neutral	neutral	neutral
	Male Snow Crab Size at Terminal Molt	NA	**low**	neutral	neutral	neutral
	Summer Male Snow Crab Area Occupied	NA	neutral	neutral	neutral	**low**
	Summer Male Snow Crab Center of Abundance	NA	*high*	*high*	*high*	neutral
	Female Snow Crab Reproductive Potential	NA	neutral	**low**	neutral	neutral
	Snow Crab Operational Sex Ratio	NA	neutral	neutral	neutral	neutral

Socioeconomic Indicators

Fishery Performance

- Centroid of fishery (snow crab fishery)
- Catch-per-unit-effort (snow crab fishery)
- Total potlifts (snow crab fishery)
- Number active vessels (snow crab fishery)
- Incidental catch of snow crab (groundfish fisheries)

Economic

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

Community

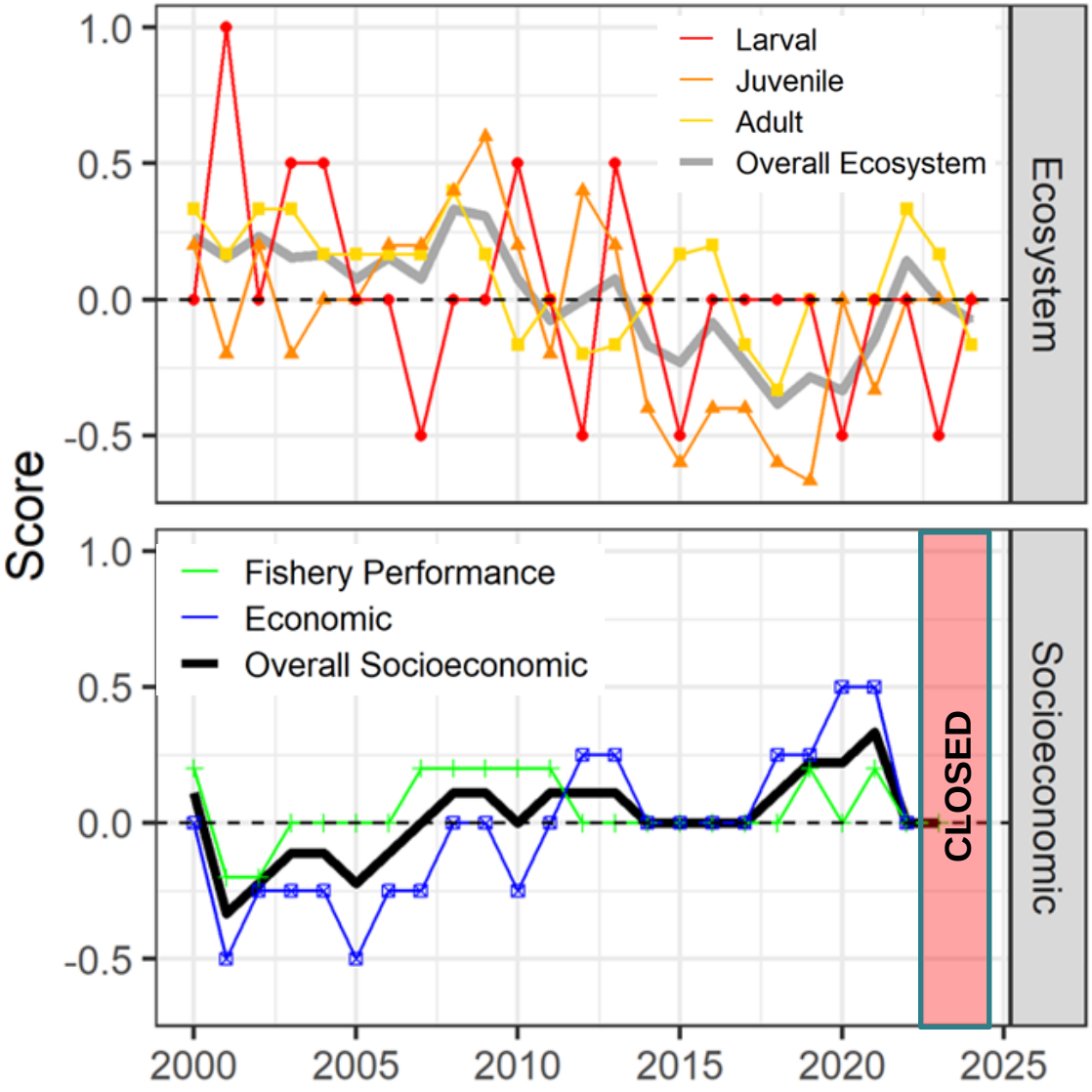
- ABSC Skipper Survey

Only incidental catch in the currently ongoing groundfish fisheries was updated due to the continued snow crab fishery closure

Socioeconomic Traffic Light Table

Indicator category	Indicator	2020 Status	2021 Status	2022 Status	2023 Status	2024 Status
Fishery Performance	Number of Active Vessels in Snow Crab Fishery	neutral	neutral	low	**Closed**	**Closed**
	Annual CPUE of Snow Crab Fishery	neutral	neutral	neutral	**Closed**	**Closed**
	Total Potlifts in Snow Crab Fishery	neutral	neutral	neutral	**Closed**	**Closed**
	Snow Crab Fishery Centroid	neutral	high	high	**Closed**	**Closed**
	Annual Snow Crab Incidental Catch	neutral	neutral	neutral	neutral	NA
Economic	TAC Utilization of Snow Crab Fishery	neutral	neutral	neutral	**Closed**	**Closed**
	Ex-vessel Value	neutral	neutral	low	**Closed**	**Closed**
	Ex-vessel Price	high	high	high	**Closed**	**Closed**
	Ex-vessel Revenue Share	high	high	neutral	**Closed**	**Closed**

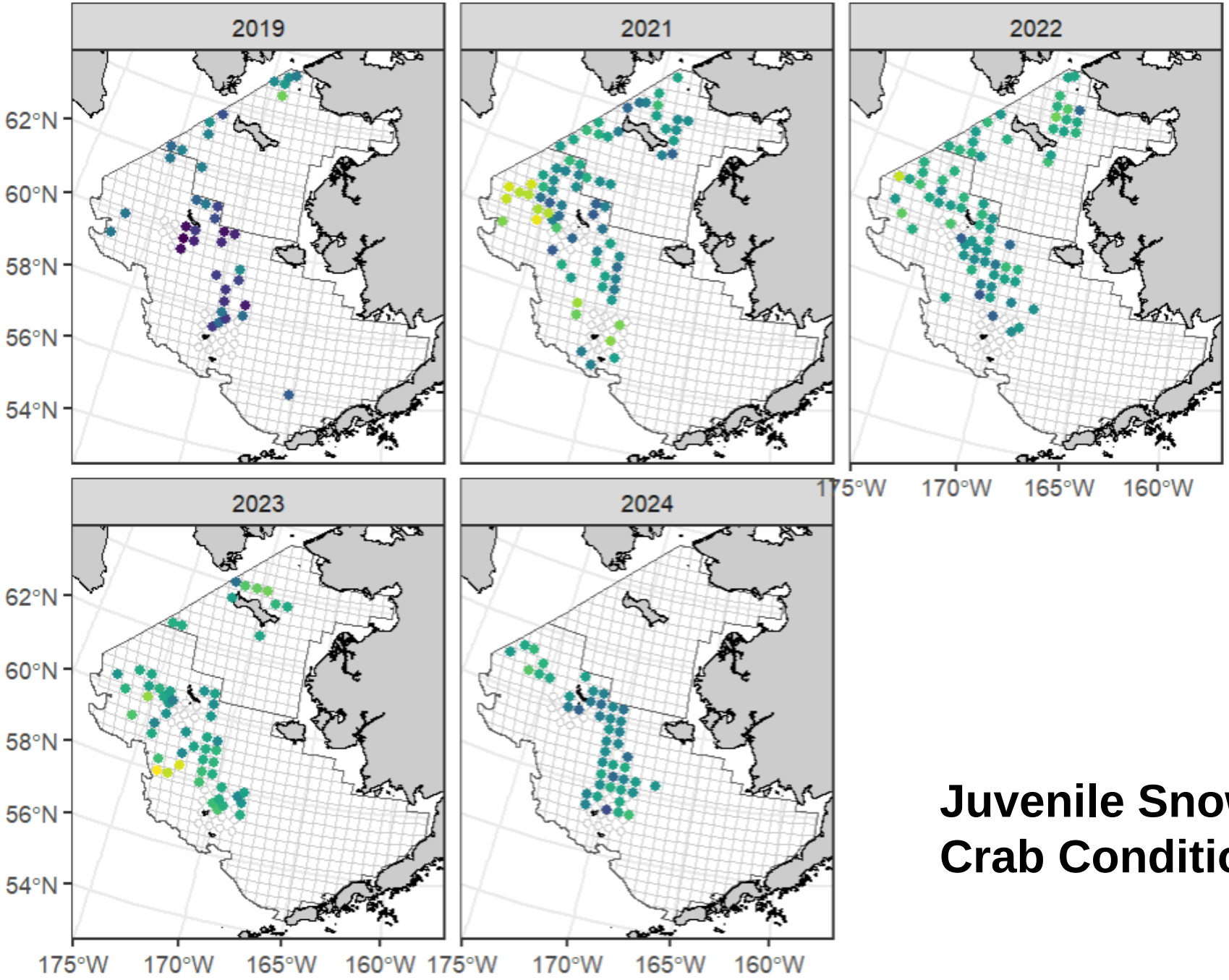
Indicator Monitoring Analysis:
Traffic Light Score



The majority of 2024 ecosystem indicators were neutral, emphasizing the return of cold-water conditions and ecosystem stabilization following the 2018-2019 marine heatwave

Missing 2023-2024 socioeconomic data should emphasize the economic hardships being faced by the snow crab harvesters and processors during closure periods


Questions?



Juvenile Snow Crab Condition