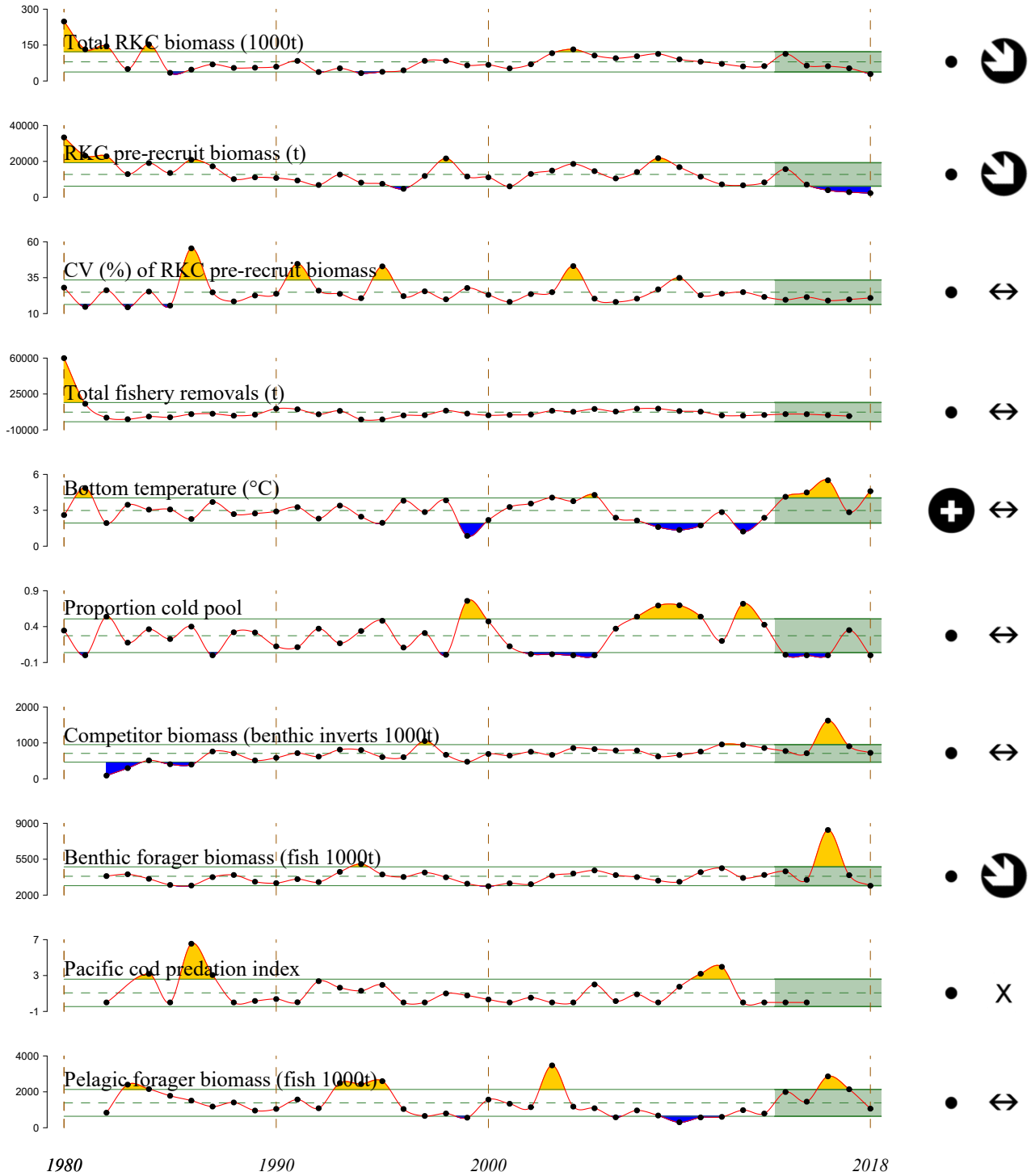










Bristol Bay Red King Crab



2014-2018 Mean

-  1 s.d. above mean
-  1 s.d. below mean
-  within 1 s.d. of mean
-  fewer than 2 data points

2014-2018 Trend

-  increase by 1 s.d. over time window
-  decrease by 1 s.d. over time window
-  change <1 s.d. over window
-  fewer than 3 data points

Ecosystem Indicators used for Bristol Bay Red King Crab

Total red king crab biomass: index for overall productivity of the stock. Includes all size ranges and both sexes.

Red king crab pre-recruit (110-134 mm CL) biomass: index for future abundance of legal crab. Includes male crabs (110-134 mm CL) that will likely enter the fishery (reach minimum legal size limit) the following year.

Coefficient of variation of red king crab pre-recruit biomass: index for variability in pre-recruit biomass. Variation is likely the result of spatial and temporal patterns of red king crab abundance within the Bristol Bay management area.

Total fishery removals: total catch and bycatch mortality biomass. Includes retained catch, pot bycatch, trawl bycatch, fixed gear bycatch, and tanner crab fishery bycatch.

Bottom temperature: impacts spatial distribution and reproductive dynamics of ovigerous females, which generally occur farther north in warm years relative to cold years.

Proportion cold pool: index of the southern extent of the cold pool.

Competitor biomass: likely competitors with juvenile and adult crabs for food. Includes sea star, hermit crab, urchin, and sea cucumber biomass from NOAA bottom trawl surveys.

Benthic forager biomass: likely predators of juvenile and adult crabs. Includes sculpin, flatfish, pacific cod, eelpout, octopus, and skate biomass from NOAA bottom trawl surveys.

Pacific cod predation index: index for top-down estimates of Pacific cod predation on red king crab from groundfish diet data on NOAA bottom trawl surveys.

Pelagic forager biomass: likely predators of crab larvae. Includes walleye pollock, herring, capelin, salmon, eulachon, and sand lance biomass from NOAA bottom trawl surveys.

Bristol Bay Red King Crab 2018 Report Card

- The 2018 **total red king crab biomass** was the **lowest ever** in the 39-year time series and **pre-recruit** (males 110-134 mm CL) biomass has remained **below the 39-year average** since 2014 despite **total fishery removals** remaining at a **near-average level**.
- **Spring/summer bottom temperatures in Bristol Bay were above average** during four of the past five years, and **the cold pool did not extend into the Bristol Bay** management area during these four warm years.
- **Survey biomass of competitors, benthic foragers, and pelagic foragers all increased in 2016** due to high catches of sea stars, northern rock sole, yellowfin sole, and pollock. **Since 2016, the overall trend** in biomass of competitors, benthic foragers and pelagic foragers **is decreasing**.