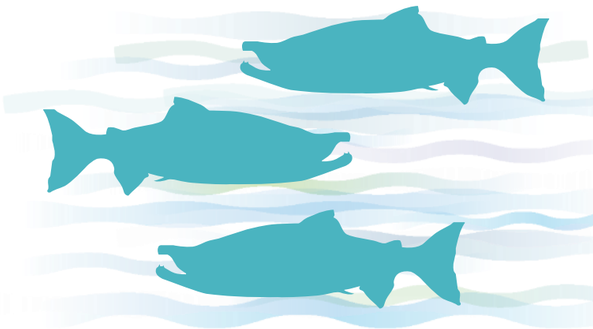
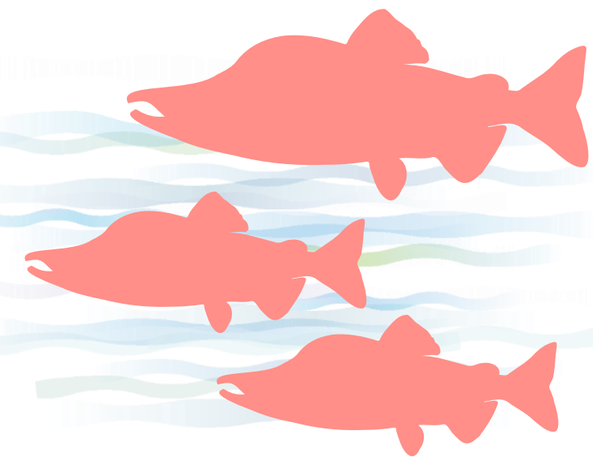
Noteworthy



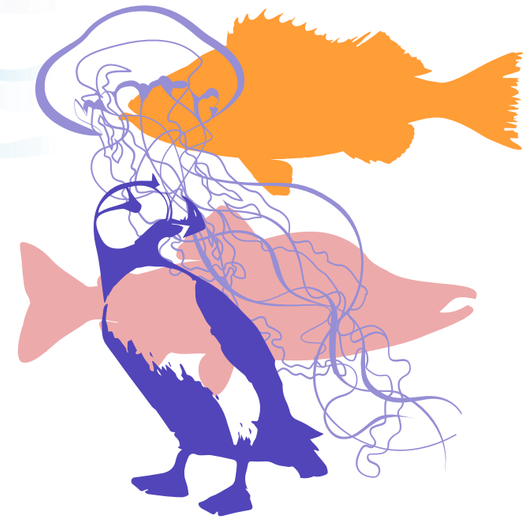
Low commercial salmon fishery catch in 2024.

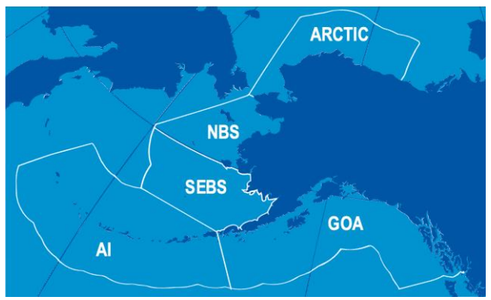
The GOA 2024 commercial salmon fishery landings were within the five lowest years since 1985, largely driven by low pink salmon returns. The returns of pink salmon were unexpectedly low, primarily in Prince William Sound. However, in southeast AK returns were consistent with the lower 2024 forecast. Potential reasons driving the low returns include (a) reduced early marine survival in 2023, due to low zooplankton biomass, including evidence of lower abundance, smaller average length, and lower body condition of juvenile pink salmon in 2023 in southeast AK; and (b) poor survival of juveniles/adults in their offshore habitat due to poor ocean conditions and/or increased competition with the strong odd year class of pink salmon in this oceanic region (environmental and prey conditions are unknown).



Management Uses

This section will be completed following the December 2024 North Pacific Fishery Management Council meeting.





More information on these and other topics can be found on the Ecosystem Status Report website.

https://www.fisheries.noaa.gov/alaska/ecosystems/ecosystem-status-reports-gulf-alaska-bering-sea-and-aleutian-islands

Reference: Ferriss, B.E. 2024. Ecosystem Status Report 2024: Gulf of Alaska, Stock Assessment and Fishery Evaluation Report. North Pacific Fishery Management Council, 1007 West Third, Suite 400, Anchorage, AK 99501.

Contact: bridget.ferriss@noaa.gov

Gina M. Raimondo
U.S. Secretary of Commerce

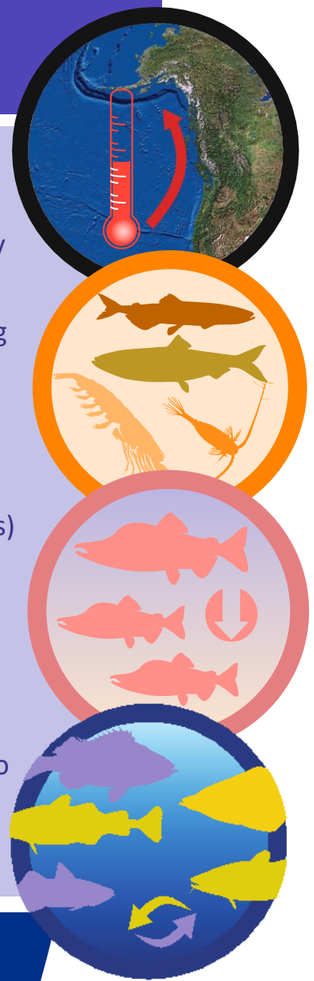
Richard W. Spinrad
Under Secretary of Commerce for Oceans and Atmosphere

Janet Coit
Assistant Administrator for Fisheries

National Marine Fisheries Service
Alaska Fisheries Science Center
7600 Sand Point Way N.E., Seattle, WA 98115-6349

www.fisheries.noaa.gov

2024 Gulf of Alaska Ecosystem Status Report:
IN BRIEF



Overview

- Long-term trends in the Gulf of Alaska (GOA) include warming ocean temperatures, changes in salinity, and a shift in the groundfish community to more zooplankton-eating fish.
- Moderate El Niño conditions occurred during the winter of 2024, including warm winter and spring surface temperatures and increased shelf circulation. Few ecological responses to the warm event were observed.
- Feeding conditions for groundfish improved from 2023 to generally above average. Biomass of zooplankton increased, including larger, nutritious species (large copepods, euphausiids). Forage fish (herring, capelin, others) abundance continued to be above average across the GOA.
- GOA commercial salmon landings were some of the lowest since 1985, driven by unexpected low returns of pink salmon in Prince William Sound. Low returns were probably due to poor juvenile marine survival in 2023 and potential competition in the ocean gyre (2023/2024).
- While the GOA continues to warm over the long term, 2025 is predicted to be cooler than the 1991 – 2020 average due to developing La Niña conditions.

GOA Multi-Year Trends in the GOA Shelf Groundfish Community

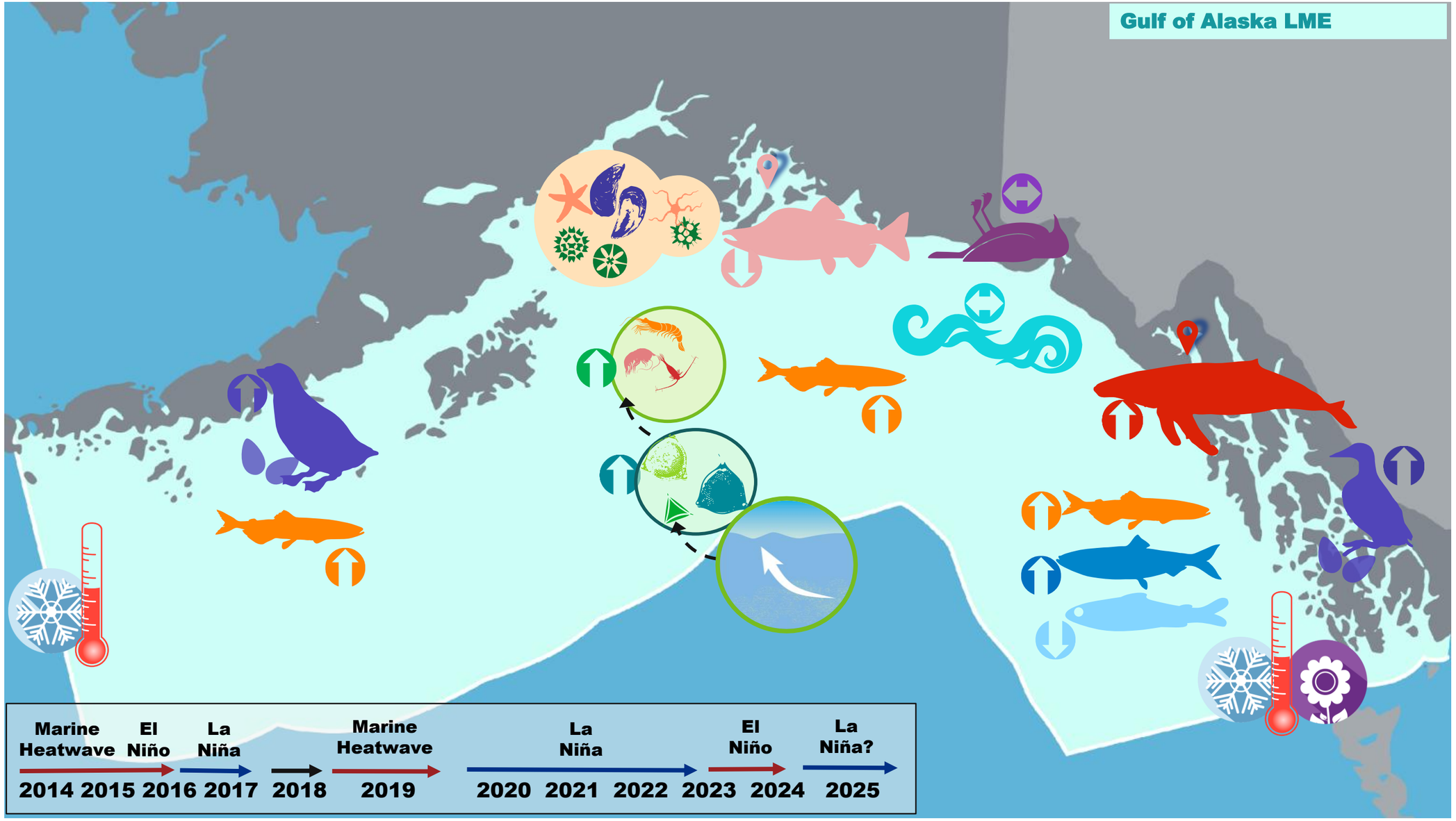
The groundfish species with the highest biomass in the GOA have changed over the past 20 years, as estimated by NOAA's bottom trawl survey (last surveyed in 2023). Pacific ocean perch biomass has been increasing, and the once-dominant arrowtooth flounder has been decreasing, since approximately 2003. Community changes also include relatively high biomass of pollock and reduced P. cod and halibut biomass. These trends in relative biomass reflect a shift to more zooplankton-eating groundfish predators (Pacific ocean perch, pollock) from the fish-, crab-, and invertebrate- eating groundfish predators (arrowtooth flounder, P. cod, P. halibut. Odd year elevated returns of zooplankton-eating pink salmon (including high returns in 2021 and 2023) would add to zooplankton predation in the GOA.

NOAA FISHERIES
Alaska Fisheries Science Center

Ecosystem Assessment

Ocean temperatures were warmer than average across the GOA shelf in the winter and spring, ranging from 4◦C/5◦C (March) to 12◦C/14◦C(Aug) in western and eastern GOA respectively. The eastern GOA surface temperatures exceeded the marine heatwave threshold for most of Dec.-May, covering up to ~75% of the eastern GOA shelf area. Conditions remained warm through the summer. The warm late spring/early summer surface temperatures in the eastern GOA may have created favorable feeding and survival conditions of larval sablefish and rockfish. During the western GOA winter, warm **surface temperatures** cooled more quickly and returned to average by March. The warm late winter and early spring surface temperatures did not appear to exceed egg and larval temperature thresholds of early spring spawners (walleye pollock, Pacific cod, northern rock sole) and may have benefitted their growth.

Above-average spring zooplankton biomass provided good prey resources for zooplankton-eating adult groundfish walleye pollock, Pacific Ocean perch, dusky and northern rockfish), and larval/juvenile groundfish. **Offshore upwelling** of nutrient-rich waters supported an **increase in diatoms, large phytoplankton.** Diatoms help transfer more energy up from the base of the food web, supporting an increase in larger, more **energy rich zooplankton species (euphausiids and copepods).** The reproductive success of zooplankton-eating **seabirds** was above average across the GOA reflecting good prey availability for zooplankton predators.



The GOA forage fish populations varied across the GOA but provided average to above average prey resources for fish-eating groundfish (Pacific cod, sablefish, arrowtooth flounder) in 2024, similar to 2023. **Capelin** continues to rebound from a population decline during the 2014 – 2016 marine heatwave, which is beneficial for seabirds, marine mammals, and piscivorous groundfish. **Herring** populations in southeast Alaska are some of the highest in at least 30 years, supported by the strong 2016 and 2020 year classes. Forage species that are relatively lower in abundance include eulachon, sand lance, and **juvenile salmon**. The reproductive success of fish-eating seabirds was variable, but generally above average across the GOA, reflecting adequate prey availability for forage fish predators.

Other ecosystem components monitored around the GOA reflect ongoing ecological changes but are no cause for concern for 2025. The number of juvenile **humpback whales** observed in Glacier Bay (relative to adults) increased to levels not seen since the 2014 marine heatwave. **Harmful algal blooms** remained of approximate average intensity and frequency. Intertidal communities **(seastars, algae, mussels)** varied between sampling sites from Prince William Sound to the AK peninsula, reflecting regional variability that is expected when the GOA is not experiencing a major oceanic event (such as a marine heatwave). There was no observed change in the occurrence of **dead seabirds** (a potential sign of extreme environmental changes) in 2024.

La Niña conditions are predicted to develop in the fall of 2024 and persist through the winter of 2025. In the GOA, La Niña events are associated with cooling sea surface temperatures. A productive spring zooplankton community and approximately average temperatures in the fall of 2024 are conducive to potentially favorable groundfish larval growth in 2024 and survival into 2025. The predicted cooling in the winter and spring of 2025 are generally favorable conditions for adult groundfish in 2025.