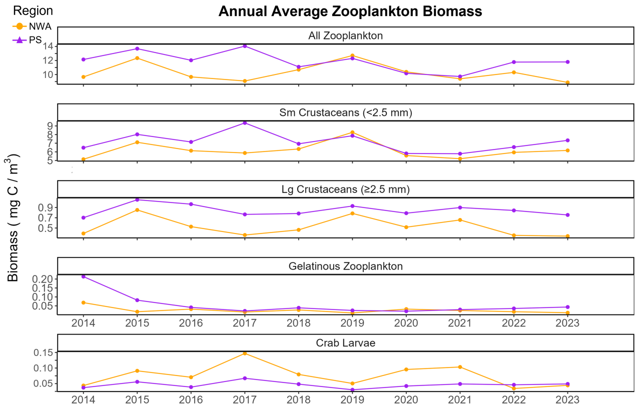
PUGET SOUND
VITAL SIGNS

INDICATOR

ANNUAL AVERAGE ZOOPLANKTON BIOMASS

This indicator measures the annual average zooplankton biomass (mg C/m^3) integrated annually across multiple locations in Northern Washington and Puget Sound marine ecosystems and captures the variability in zooplankton biomass among years.



Annual Average Zooplankton Biomass (mg C/m^3) in 2014-2023 for five taxa groups integrated across multiple locations in two regions, Northern Washington (NWA – yellow line) and Puget Sound (PS – purple line).

Key Vital Sign Indicator Results

- The annual average biomass for all zooplankton was higher in Puget Sound (PS) than in Northern Washington (NWA) during warmer years (2014-2017), yet similar or lower in the following cooler, more average years (2018-2021), with regional values diverging once again in the past couple of years. This pattern was clearly reflected in the juvenile salmon and forage fish prey field of small crustaceans (copepods, amphipods, krill, shrimp, and crabs).
- Total (all zooplankton) biomass displayed a zig-zag pattern in PS, alternating higher and lower biomass every other year for the first 7 years, a pattern somewhat consistent in small crustaceans and crab larvae.
- NWA crustacean biomass values were primarily driven by large to medium-sized ocean associated copepod species in the years following the marine heatwave, whereas Puget Sound (PS) biomass was driven by small Puget Sound resident species of copepods.
- Gelatinous zooplankton biomass was highest in 2014 in both regions, with a fairly high value remaining in PS in 2015. Biomass in subsequent years was relatively low and steady.
- Crab larval biomass was greater in NWA than PS in all years except 2022-2023. High values were driven by porcellanid, pinnotherid, and cancrid larval crabs in Bellingham Bay.

CONTRIBUTING PARTNERS

Washington Department of FISH & WILDLIFE

UNIVERSITY of WASHINGTON

NOAA

Indicator Progress

NO TREND

Target Status

NO TARGET

Target

No targets are currently set for this indicator.

Data Source

Puget Sound Zooplankton Monitoring Program Dataset

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Last Updated

10/15/2024

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