PUGET SOUND
VITAL SIGNS

INDICATOR
ZOOPLANKTON INDEX

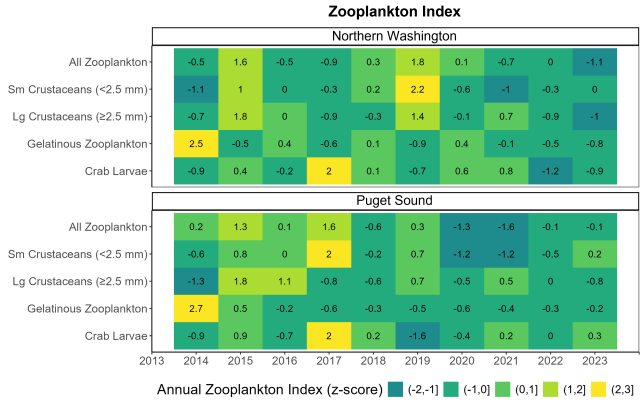
The Zooplankton Index is a concise way of visualizing the variability of biomass for select taxonomic groups in Northern Washington and Puget Sound regions. This indicator shows the change in annual average biomass of each zooplankton group, calculated from z-scores. Z-scores depict how far the biomass differs from the annual mean. Values closer to zero are near average, while values farther from zero show a greater difference above or below the average in any particular year. While these values do not indicate “good” or “bad” outcomes for zooplankton, they are useful in determining the degree of change these communities encounter over time.

Indicator Progress

NO TREND

Target Status

NO TARGET



Zooplankton Index reported as z-scores from 2014-2023 for five taxa groups in two regions, Northern Washington (NWA) and Puget Sound (PS). Colors indicate whether the annual average biomass was 1-3 standard deviations (SD) above (positive) or below (negative) the mean. Values are relative to the calculated mean of each region and taxon.

Target

No targets are currently set for this indicator.

Data Source

Puget Sound Zooplankton Monitoring Program Dataset

Indicator Lead

BethElLee Herrmann
blh1975@uw.edu
University of Washington

Last Updated

09/23/2024

Key Vital Sign Indicator Results

- In Northern Washington (NWA) waters, total zooplankton biomass (all zooplankton) was well above average in 2015 and 2019, and moderately below average in 2023.
- In Puget Sound (PS), total biomass was high in 2015 and 2017, and moderately high in 2019. Conversely, 2020 and 2021 were low biomass years in Puget Sound with 2018 and 2022-2023 being near average.
- Small crustaceans were well above average in 2019 in NWA and in 2017 in PS.
- Small and large crustaceans generally showed similar patterns to “All Zooplankton,” of which they were the main contributors.
- Large crustaceans were markedly higher than the annual mean in 2015 in both regions, in 2019 in NWA, and 2016 in PS.
- Gelatinous zooplankton biomass was highest in 2014 for both regions, yet dramatically declined during and after the 2015-2016 Pacific marine heatwave.
- Crab larvae were remarkably high in 2017 in both regions.

CONTRIBUTING PARTNERS

Washington Department of FISH & WILDLIFE

UNIVERSITY of WASHINGTON

NOAA NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION U.S. DEPARTMENT OF COMMERCE