

PUGET SOUND VITAL SIGNS

INDICATOR ZOOPLANKTON INDEX

The Zooplankton Index is a concise way to visualize the variability in 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 from the average in any particular year. While these values do not indicate “good” or “bad” outcomes for zooplankton, they are useful in determining how these communities change over spatio-temporal scales.

Indicator Progress

Target Status



Target

No targets are currently set for this indicator.

Data Source

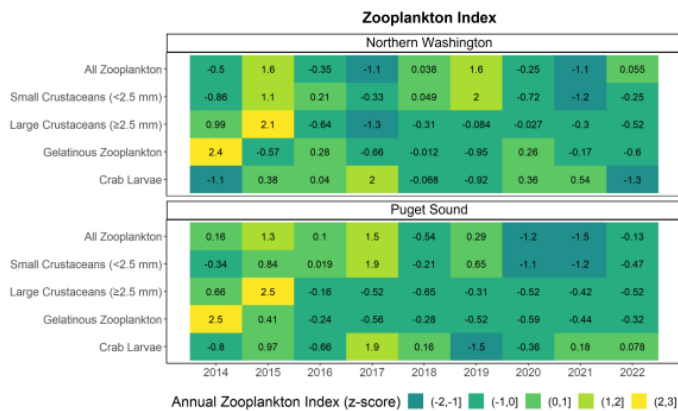
Puget Sound Zooplankton Monitoring Program Dataset

Indicator Lead

Julie Keister
jkeister@uw.edu
 University of Washington

Last Updated

5/10/2023



<p>Zooplankton Index reports as z-scores from 2014-2022 for various taxa groups at two regions, Northern Washington (NWA) and Puget Sound (PS). Colors indicate whether the annual average biomass is 1-3 standard deviations (SD) above (positive) or below (negative) the mean. Values are relative within the calculated means of each region and taxon.</p>

Key Vital Sign Indicator Results

- In Northern Washington waters, total zooplankton biomass (all zooplankton) was well above average in 2015 and 2019, and moderately below average in 2017 and 2021.
- In Puget Sound, total biomass was also very high in 2015, but remained above average through 2017, and was only moderately high in 2019. Conversely, 2020 and 2021 were low biomass years in Puget Sound with 2018 and 2022 being unremarkable.
- Small crustaceans generally showed the same pattern as total biomass.
- Large crustaceans were markedly higher than the annual mean in 2015 in both regions and were otherwise above the mean only in 2014.
- Gelatinous zooplankton biomass was highest in 2014 for both regions, yet dramatically declined during and after the 2015-2016 Pacific marine heatwave. While gelatinous zooplankton (consisting here of jellyfish and comb jellies) have long been touted as harbingers of poor ecosystem health, they are proving to be important in diets of pink and chum salmon.
- Most taxa were more variable across years in Northern Washington than in Puget Sound.

Contributing Partners



Washington Department of FISH & WILDLIFE

