PUGET SOUND
VITAL SIGNS

VITAL Sign
FRESHWATER

Freshwater is vital to people, fish, and wildlife populations. The Freshwater Vital Sign tells us about the quality of water in Puget Sound's streams and rivers and whether efforts to reduce excessive nutrients and restore and protect stream conditions are working. Freshwater quality is affected by many different factors including weather and climate patterns, water withdrawals and diversions, erosion and stormwater runoff, discharges from wastewater treatment plants and industries, nutrient input, and other sources of pollution.

VITAL SIGN > INDICATOR	PROGRESS	STATUS
Freshwater		
Freshwater Benthic Index of Biotic Integrity	GETTING BETTER	NO TARGET
Water temperature in streams and rivers	INDICATOR TO BE DEVELOPED	NO TARGET
Nutrient concentration in streams and rivers	INDICATOR TO BE DEVELOPED	NO TARGET

Related Strategies

- Awareness of Effects of Climate Change
- Climate Adaptation & Resilience
- Education Partnerships
- Floodplains & Estuaries
- Freshwater Availability
- Funding
- Healthy Shorelines
- Research & Monitoring
- Riparian Areas
- Smart Growth
- Stewardship & Motivating Action
- Stormwater Runoff & Legacy Contamination
- Strategic Leadership & Collaboration
- Working Lands
- Working Lands Runoff

Vital Sign Reporter

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KEY VITAL SIGN MESSAGES

- The Benthic Index of Biotic Integrity (B-IBI) indicator uses the diversity and abundance of invertebrates – the insects, snails, and worms that live in the stream bed – to measure stream health. The B-IBI is correlated with land use conversion and urbanization. Scores tend to be lower in areas with more urban development and less tree canopy cover in the watershed.
- The Interdisciplinary Team of regional experts leading development of the B-IBI Implementation Strategy identified four priority strategies likely to improve stream condition. The strategies focus on 1) increasing capacity of local stormwater management programs, 2) coordinating watershed planning across jurisdictions, 3) encouraging restoration through education and incentives, and 4) preserving land for forestry and farming.
- Stormwater runoff from urban and urbanizing areas is one of the biggest threats to streams, lakes, and Puget Sound. The Stormwater Action Monitoring (SAM) program is a collaborative, regional monitoring program that measures stormwater quality throughout Puget Sound watersheds with the goal to improve stormwater management.
- Untreated stormwater from city roads is directly tied to adult coho salmon deaths in urban creeks. One solution that SAM is studying is bioretention. Bioretention filters stormwater through soil and is effective at reducing pollutants in runoff and preventing lethal impacts to coho salmon (see also the Toxics in Aquatic Life Vital Sign).

BACKGROUND DOCUMENTS

Implementation Strategy

The Partnership and its affiliated network of researchers works with the three Strategic Initiative Lead Teams on Implementation Strategy development and operationalization. Please read more about these teams and our shared work at https://pugetsoundestuary.wa.gov/recovering-puget-sound/

- Stormwater Strategic Initiative
  - Freshwater Quality Implementation Strategy

Indicator Targets

- 2020 Ecosystem Recovery Targets
  - Leadership Council Resolution 2011-08: Adopting a 2020 ecosystem recovery target for freshwater water quality
  - Leadership Council Resolution 2011-09: Adopting a 2020 ecosystem recovery target for benthic invertebrate communities in small streams
  - Setting 2020 Targets for Puget Sound Recovery Revised Addendum to Technical Memorandum on Runoff from the Built Environment dated March 23, 2011
  - Freshwater Water Quality 2020 Target Briefsheet

OTHER RESOURCES

- Stressor Identification and Recommended Actions for Restoring and Protecting Select Puget Lowland Stream Basins (King County, 2019)
- Stormwater Action Monitoring, Department of Ecology
- Puget Sound Starts Here

CONTRIBUTING PARTNERS

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