

PUGET SOUND VITAL SIGNS

VITAL Sign STREAMS AND FLOODPLAINS

Streams and their associated riparian areas and floodplains provide invaluable ecosystem services including critical habitat for many plants and animals including Pacific salmon, protection from damaging floods, and improve water quality. They also support human health and well-being through recreational opportunities and economically valuable farmlands. The Streams and Floodplains Vital Sign tells us about periods of high and low streamflows and the extent of intact, functional habitat next to streams and rivers in Puget Sound. Climate change along with population growth and the related development needs continue to modify floodplains and exacerbate seasonal anomalies in streamflows.



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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VITAL SIGN > INDICATOR	PROGRESS	STATUS
Streams and Floodplains		
Floodplain function in large and small river systems	GETTING BETTER	NO TARGET
Summer low flow in streams and rivers	GETTING WORSE	NO TARGET
Extent of forest cover in freshwater riparian zones	INDICATOR TO BE DEVELOPED	NO TARGET
Frequency of flood events	INDICATOR TO BE DEVELOPED	NO TARGET
Changes in hydrologic regime in streams and rivers	INDICATOR TO BE DEVELOPED	NO TARGET

KEY VITAL SIGN MESSAGES

- The [17 major rivers of Puget Sound](#) have experienced a more than 60% reduction of floodplain function in the last 100 years. This loss is largely due to population growth and development that increases non-natural land cover and constrains river flow.
- Intact, healthy floodplains protect billions of dollars of residential, commercial, and industrial infrastructure by storing water to reduce the downstream effects of flooding. Additionally, floodplains provide critical habitat for fish and wildlife (which in turn play a role in human wellbeing).
- The occurrence of [below-normal streamflow](#) is increasing across Puget Sound rivers. Consecutive years with below normal summer flows have increased since 1985 and especially since 2015. In 2024, summer flows were below normal most of the time at 89% of stream gages measured for the Vital Signs program.
- Summer flows in Puget Sound streams and rivers respond to a variety of drivers including rainfall, snowfall, temperature, evapotranspiration, land-use conversion, forest practices, and human water use.
- Puget Sound's streams and floodplains are expected to be further stressed by climate change, which will impact the multiple benefits they provide.
- There are 3 additional indicators currently in development to support this 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/>

- [Habitat Strategic Initiative](#)
 - [Floodplains and Estuaries Implementation Strategy](#)

Indicator Targets

- 2020 Ecosystem Recovery Targets
 - [Leadership Council Resolution 2011-13: Adopting a 2020 ecosystem recovery target for floodplains](#)
 - [Leadership Council Resolution 2011-07: Adopting a 2020 ecosystem recovery target for summer stream flow](#)
 - [Floodplain Ecosystem Condition: Recommended 2020 Target Options Briefsheet](#)
 - [Summer Low Flows 2020 Target Briefsheet](#)

OTHER RESOURCES

- [gʷəḏʔadad, "Teaching of Our Ancestors"](#) - Tribal Nations identified floodplains as one of five key targets in their Tribal Habitat Strategy, focusing efforts on protecting, restoring, and enhancing hydrological and geomorphic connectivity between rivers and their floodplains and deltas for a recovered, resilient future. [Tribal Habitat Strategy storymap](#).
- [Floodplains by Design Network](#) is comprised of over 700 floodplain practitioners across Washington State that offers peer assistance through connecting network members, hosting workshops, and providing resources for integrated floodplain managers. Check out their website for some great resources!
- Grant programs investing in improving floodplain function:
 - [Floodplains by Design](#)
 - [Puget Sound Acquisition and Restoration \(PSAR\) fund](#)
 - [Estuarine and Salmon Restoration Program \(ESRP\)](#)
- [State of our Watersheds](#) report by the Northwest Indian Fisheries Commission

CONTRIBUTING PARTNERS

TO LEARN MORE ABOUT THE VITAL SIGNS VISIT: vitalsigns.pugetsoundinfo.wa.gov OR CONTACT: vitalsigns@psp.wa.gov