

# BEST PRACTICES



## Bugs as Vital Signs

Macroinvertebrates a.k.a. stream bugs are sensitive to changes in their watery world, including erosion, low oxygen levels, warm temperatures, and pollution. Akin to a routine checkup where a doctor takes your vital signs or looks at your blood work, measuring a creek's Benthic Index of Biotic Integrity (B-IBI) helps alert scientists to a potential water quality problem. A B-IBI score is calculated by collecting stream bugs and sending them to a lab where an entomologist counts the number of bugs and the different kinds of species.

Measuring the B-IBI is a powerful tool for understanding and responding to local creeks and stream changes. Over time, repeated B-IBI assessments show long-term trends in water body health, making it easier to identify and address issues. Finding pollution-intolerant bugs in the sample is a sign the water is clean, the habitat is suitable, and it will earn the creek a high B-IBI score. Finding many pollution-tolerant bugs will give the creek a lower B-IBI score and may indicate that the stream needs help.



### Good News!

"Most B-IBI scores [around Puget Sound] have either improved or remained stable. While development has increased in the region, stream health has improved in more than one of five streams and declined in only one of 50 streams. **This trend may be due in part to stream and riparian restoration as well as historic and ongoing actions that aim to control and treat stormwater.**"

— Puget Sound Vital Signs ([vitalsigns.pugetsoundinfo.wa.gov/VitalSignIndicator/Detail/16](https://vitalsigns.pugetsoundinfo.wa.gov/VitalSignIndicator/Detail/16))

Stream Team sponsors community science opportunities for the public to collect B-IBI each summer! To learn more about stream bugs, visit the Summer 2023 Stream Team Newsletter (pages 4–5). Next summer, join us as a volunteer to collect more bugs!

Source: Stream Team News, Winter 2023

Photo Credit: Michele Burton Photographer