



Puget Lowland Ecoregion Streams Status & Trends

Brandi Lubliner, SAM Coordinator; Rich Sheibley, USGS; Curtis DeGasperi, King County; Chad Larson and Keunyea Song, Ecology; Leska Fore, Puget Sound Partnership



Scientific Recommendations

Q5: What parameters would be carried forward for status and trend assessment of SAM stream monitoring in the future, and at what timing and frequency?

- Minimum changes scenario
- Modified design scenario

Modified Design Scenario

- Study Design
 - Continue using a regional probabilistic study design.
 - Change focus of sampling from OUGA/WUGA to a gradient of urbanization.
- Target Population
 - Eliminate nested basins.
 - Limit to sites representing small to medium size streams (2.5-50 km²).
- Reference Sites
 - Collaborate with Ecology's Ambient Monitoring Program to secure comparable reference site data for a minimum of 16 Puget Sound reference sites.
 - Reference sites should represent similar watershed size within the Puget Lowland Ecoregion and meet other site selection criteria.
- Analysis of Land Cover and other GIS metrics
 - Repeat every reporting cycle to look at changes over time.

Modified Design Scenario

- Frequency of Sampling
 - Additional work is needed to finalize the details of the next round of the program.
 - Sampling frequency is not tied to the permit cycle but is defined with consideration given to the parameters sampled, signal to noise, or other utility concerns such as cost.
 - Each sampling cycle revisit 100-150 sites including all 2015 sites that meet revised criteria.
 - Sample another 50-100 new sites in rotation at a frequency to be determined based on the total number of sites sampled each year.
 - After a total of 250 sites are sampled, begin repeating visits to the less-frequently sampled sites.

Modified Design Scenario

- Parameters
 - **Add** continuous monitoring of stage at all sites.
 - **Continue at each site:** summer Watershed Health parameters per Ecology protocol, except sediment chemistry.
 - **Continue at each site** sieved (<2 mm) sediment analysis per USGS protocol for TOC, nutrients, PAHs, phthalates, select metals, and pesticide analyte list that includes dichlobenil, but use SIM method for PAHs.
 - **Drop** monthly water quality sampling and WQI calculation.
 - **Consider** creating an index period(s) for water quality (timeframe(s) TBD) for:
 - Fecal coliform, nutrients, conventionals, TSS, turbidity, metals (Pb, Zn, Cu, As, Cd, Cr), PAHs, pesticides.

Discussion

