

**PUGET SOUND MONITORING CONSORTIUM  
TECHNICAL ADVISORY COMMITTEE**

PROPOSED PILOT PROJECT #5:

**Stream Benthos Gap Analysis, Coordination, and Data  
Management: A Pilot Project Proposal for Demonstrating  
Regional Monitoring Coordination**

Scoping Committee: Jim Simmonds (King County), Dan Smith (Federal Way), Leska Fore (Statistical Design), Heather Kibbey (Pierce County)

**1. *What problem(s) is being addressed by the proposal, and what would be the expected outcome(s) of the project?***

Many Puget Sound entities, including local jurisdictions, state and federal agencies, tribes, and NGOs, collect stream benthic macroinvertebrate samples to assess stream health. Most collection efforts in the Puget Sound region generally follow collection protocols required for calculating the Benthic Index of Biotic Integrity (BIBI). Currently, each entity manages their data using spreadsheets, and it is extremely difficult to compare results across sampling programs and across years. King County, Pierce County, Snohomish County, and City of Seattle are developing an integrated data management system, with standardized taxonomic naming conventions and metric and index algorithms, allow for enhanced data analysis and interpretation. Expansion of this system to cover all stream benthic macroinvertebrate data collection efforts in Puget Sound is proposed.

**2. *What is the current status of the situation? In other words, is anything underway today to address or resolve the problem or are the “tools” needed to address it in place? Has there been some success, or is the problem getting worse?***

A data management system for stream benthic macroinvertebrate data is currently being jointly developed by King County, Pierce County, Snohomish County, and City of Seattle. This system is designed to manage data collected using protocols that are generally comparable to those required for calculating the BIBI. Version 1 of the system is projected to be completed and live by the end of the March, 2008. Version 1.1, addressing any additional high-priority needs, will be released by end of December, 2008. Key features of this system include:

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- Any jurisdiction, agency, or other entity that collects the data retains ownership of the data, with the exclusive right to edit or delete their existing data, along with the ability to add additional data, via a secure, web-based, data stewardship controls.
  - All entities that contribute data to the system agree to allow for unlimited data sharing with other jurisdictions, state and federal agencies, tribes, public, etc.
  - All entities that contribute data to the system agree to an ongoing annual fee (not yet determined, but currently estimated between \$1,000 to \$5,000) to maintain the system. Should an alternative funding source be developed for maintaining the system, the annual fee would be dropped.
  - Data will be displayed and downloadable via the web, and housed in a SQL database.
  - Key features of the website include maps for locating sampling sites, ability to download raw data (taxonomic counts), use of standardized Integrated Taxonomic Information System (ITIS) codes for taxonomic identification, ability to download multiple metrics (e.g., tolerant species, Hilsenhoff, etc), ability to download BIBI scores, ability to graph metrics and scores, etc.
  - Development of a standardized laboratory data form for participating entities.
  - Data will be hosted at an independent Internet Service Provider (ISP) to ensure data integrity.

### ***3. Who should participate in the project, and why?***

A small project team would implement this project. Every jurisdiction, agency, or other entity that collects stream benthic macroinvertebrate data within the Puget Sound region should participate in this project, with an aim of establishing long-term coordination and data sharing.

### ***4. What process or steps would be needed to address the problem and achieve the expected outcomes?***

Task 1 – Survey and Gap Analysis

Starting in June, 2008, staff will contact every jurisdiction, volunteer group, WRIA, and Tribe in the Puget Sound region to establish status of their macroinvertebrate sampling programs. Each entity will be asked whether they collect stream benthic macroinvertebrate data. Those that do collect stream benthic macroinvertebrate data will be asked whether they

- Are interested in sharing sampling plans, reports and data with others.
- Generally follow the collection protocols required for calculating the BIBI.
- Have need of a data management system for their stream benthic macroinvertebrate data.
- Might be interested in having their data be incorporated into the system currently being cooperatively developed.

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Results from this survey will be compiled in a technical memorandum by December 2008.

**Task 2 – Obtain and Enter Data**

Starting in January, 2009, those jurisdictions, agencies, and other entities that responded positively to the four survey questions will be contacted again to solicit electronic copies of their sampling plans, data reports, and data from 2002 through 2007. Each jurisdiction, agency, and other entity will also receive a copy of the laboratory data reporting sheet format for future use. Staff will coordinate with each jurisdiction, agency, and other entity to enter data into the Puget Sound stream benthic macroinvertebrate system. Data will be available on-line by June, 2009. A technical memo summarizing the level of participation, issues faced, and summarizing benthos data available on the system will be produced.

**Task 3 – Project Management**

Monthly progress reports will be produced documenting budget expended, progress made, obstacles encountered, and anticipated progress in the next month.

***5. What would be the approximate cost of the project? What portion of the costs would be paid out of the funding Department of Ecology received to launch this program? What portion if any, would be paid by others?***

The approximate cost of the project is shown in Table 1.

Table 1. Approximate Cost of Pilot Project to Expand BIBI Data Management System

Task	2008	2009	Total
Survey and gap analysis report	\$25,000	\$0	\$25,000
Obtain and Enter Data	\$0	\$50,000	\$50,000
Project Management	\$2,500	\$5,000	\$7,500
Total	\$27,500	\$55,000	\$82,500

This project builds on work already being conducted by King County, Pierce County, Snohomish County, and City of Seattle to construct a stream benthic macroinvertebrate data management system. The four coordinating jurisdictions are contributing over 1000 hours in staff time, along with over \$10,000 in consultant support to develop the initial system. The expansion of the system to include additional jurisdictions would be 100% funded by the Ecology grant.

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**6. *How would this project address interests, needs and concerns of rural communities?***

Many jurisdictions, agencies, and other entities collect stream benthic macroinvertebrate data. These data are collected in both urban, rural, and urbanizing areas of Puget Sound. This system will allow for data sharing and comparison between communities in a manner not previously possible.

**7. *How would the project meet the criteria agreed to by the Committee in October? Those criteria are:***

***a) Builds the credibility of the program.***

This proposal is to build on an existing coordination effort between four jurisdictions. Expanding this coordination to include all other entities collecting stream benthic macroinvertebrate builds on the credibility of all monitoring programs.

***b) Tests working relationships.***

This project will establish long-term, ongoing work relationships to coordinate and cooperate with regards to stream benthic macroinvertebrate monitoring.

***c) Provides credible and meaningful information that addresses the framework questions.***

This project allows for assimilating disparate monitoring data into useful information regarding overall health of watersheds. This directly addresses the framework questions.

***d) Encourages leveraging of resources.***

This project leverages resources already committed and partially expended by King County, Pierce County, Snohomish County, and City of Seattle.

***e) Is voluntary (“a coalition of the willing”) and attracts additional participants over time.***

By definition, this project is both voluntary and aimed at attracting additional participants.

***f) Is simple.***

This project is simple and achievable.

***g) Can get going in less than one year.***

Yes, this project will begin in 2008 and be completed in 2009.