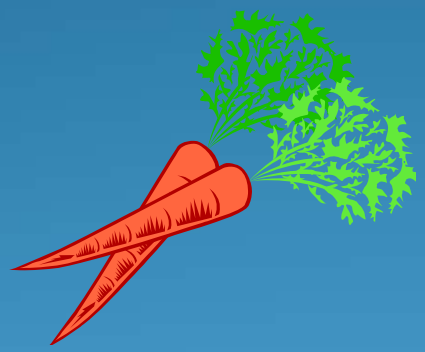
Standardizing Bioassessment Protocols: Collaboration without a carrot or a stick



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Overview

- Background
- Early Collaboration
- Funding
- Expected Project Outcomes
- Initial Steps
- Partnerships
- What is working

Background

- Macroinvertebrate data widely used in the Puget Sound/Western Washington Region
- Cities, Counties, Tribes, State and Federal agencies using macroinvertebrate data
- However, there were methodological inconsistencies
- Little data sharing between agencies
- No integrated reporting across agencies and jurisdictions
- No carrot or stick

Background – pre 2007

- Each entity managed data in Excel files provided by private taxonomic labs or separate in-house databases
- Various jurisdictions, taxonomic labs used different templates
- Across years / across projects/ across jurisdictions – integration or reporting was not done, therefore no regional context
- No way to standardize information

Early Collaboration: 2007-2008

- March 2007 kick-off
- Mutual need for better data management
- Desire for regional perspective
- Monthly meetings
  - Managers
  - Technical Staff
  - Database/IT gurus

King County

Pierce County

Snohomish County

City of Seattle

Puget Sound Stream Benthos (PSSB) was born! August 2008 Launch

www.pugetsoundstreambenthos.org/

- Analyzes benthic macroinvertebrate community structure using the Benthic Index of Biotic Integrity (BIBI) to determine stream health

- Multi-jurisdictional database. Participating agencies use this site to manage, analyze and share data from their ongoing stream monitoring programs

- Full access to the data by others, including the public

- Data are directly uploaded by the taxonomy labs

Puget Sound Stream Benthos

Home | Analysis ▸ | Monitoring Projects ▸ | Login | About Us | Site Map

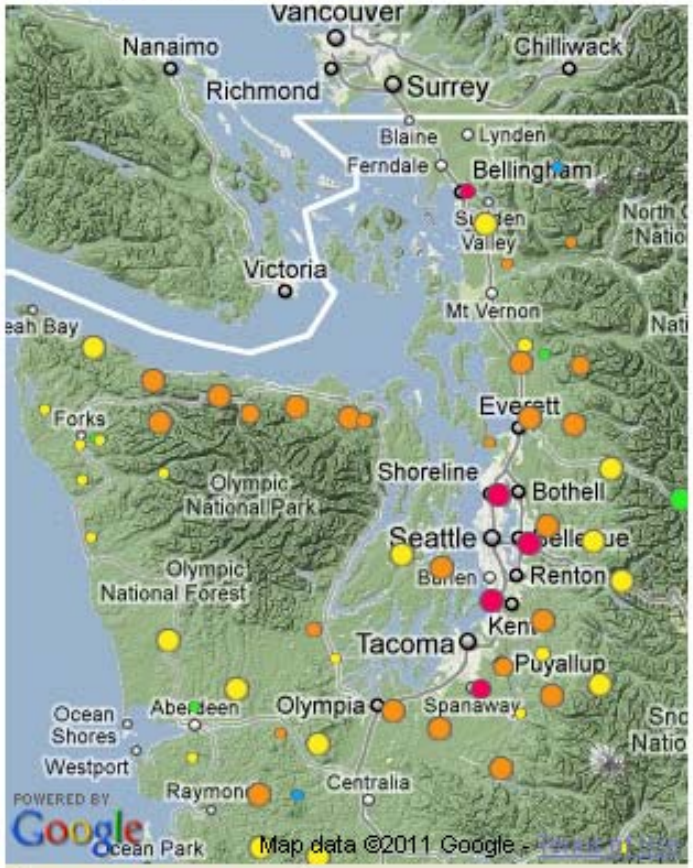
Analyzing Stream Health

This site analyzes benthic macro-invertebrate community structure to determine the ecological health of streams. Participating agencies use this site to manage, analyze and share data from their ongoing stream monitoring programs.

Benthic macro-invertebrates, also known as stream bugs, are animals that can be seen with the naked eye, do not have backbones and live in the **stream benthos**—in or near the streambed. They include insects, crustaceans, worms, snails, clams, etc.

Benthic macroinvertebrates are monitored because they are good indicators of the biological health of stream systems and play a crucial role in the stream ecosystem.

Plotting Biotic Integrity



Excellent to Very Poor

Click on biotic health markers for score details.

Click here to customize chart.

The BIBI Scoring System

We use the Benthic Index of Biotic Integrity (BIBI) scoring system to determine stream health. Since the BIBI is a standardized scoring system, it can be used to compare and rank the health of different streams.

BIBI has several variants, and we will support many of them over time. Currently, we are using Puget Sound Lowlands BIBI. This site allow you to filter the scores by a variety of parameters and then

- Plot the scores on maps
- Show the scores in tables

In the future, we will chart trends. We will also calculate scores using other scoring systems.

Database Expansion: 2009-2010

- Entered 2002-2007 data for 17 entities

- 359 new locations, over 50,000 records entered

- PSSB began work with Washington State Department of Ecology, who has it's own data management system – Environmental Information Management (EIM)

- Taxonomic data can now be downloaded in EIM format, then uploaded to EIM.

Great! But room for improvement…

- Methodological inconsistencies (3 vs. 8 sq feet)
- Attribute lists not empirically derived
- B-IBI precision, variability, regional applicability
- Participants wanted additional analysis options (RIVPACS, O/E)
- Lack of causal analysis tools
- Which prevented integrated reporting across agencies and jurisdictions

EPA Grant: January 2010

- EPA received funding for Puget Sound to address the Puget Sound Partnership's Action Agenda
- One category of funding was the Scientific Studies and Technical Investigation Assistance Program
- EPA put out a call for proposals for the Puget Sound Region
- King County (with other entities) submitted a proposal for addressing monitoring challenges, advancing tools, and partnering with others throughout the region
- They were awarded the grant!

Expected Project Outcomes

- Update taxa lists – empirically derived attributes
- Recalibrate BIBI
- Develop cross-walk between field methods
- Update database capabilities
- Develop freshwater ecosystem indicator

- Deb Lester, in the next presentation, will cover these topics in detail.

Initial Steps

- Form Steering Committee
  - Purpose: help guide project, meet monthly
    - King County, Ecology, EPA, Consultant (Leska Fore)
- Form Project Management Team
  - Purpose: encourage collaboration, advise, and provide feedback; improve regional coordination
  - 15 entities committed
    - 7 cities (Bellevue, Bellingham, Everett, Redmond, Federal Way, Issaquah, Seattle);
    - 6 Counties (Kitsap, Pierce, Thurston, King, Snohomish, Clallam);
    - Ecology
    - Skokomish Tribe

Partnerships

- Kick-off meeting in May 2011
- 42 people from 23 entities
- Broad interest
  - Review products: 25
  - Attend future meetings: 27
  - Participate in trainings: 26
- Showcased local projects that were innovative in using bioassessment data

Partnerships

- Summer field training/demo/discussion – July 2011
  - 32 people from 17 entities
  - Lead by Ecology
- Database workshop
  - 20 people from 8 entities

Data Collection: Summer 2011

- To compare field methods
- 9 partners
  - 3 cities
  - 5 counties
  - 1 non-profit
- Involving partners may have increased logistical and scheduling difficulties but it increases commitment to the project

What is working?

- Started small, but anticipated expansion
- Take advantage of expertise and experience of partners
- Ask questions: what is needed? What are questions of the data? How do you use biological data? What are the limitations you see?
- Providing opportunities for interaction
- Learning from each other – finding areas of common interest
- Collaboration on methods development

What is working?

- Regional connections
  - Puget Sound Partnership
  - Stormwater workgroup
  - NPDES permit
- Broad, regional and cross-jurisdictional participation
- Promote consistency thru cooperation and collaboration, not carrot or stick!

Questions?