Developing locally-driven (shoreline) monitoring programs in the Salish Sea (and beyond)

David Sale

ECO Resource Group, LLP, daves@ecoresourcegroup.com

Follow this and additional works at: https://cedar.wwu.edu/ssec

Part of the Fresh Water Studies Commons, Marine Biology Commons, and the Natural Resources and Conservation Commons

Sale, David, "Developing locally-driven (shoreline) monitoring programs in the Salish Sea (and beyond)" (2016). Salish Sea Ecosystem Conference. 32.

https://cedar.wwu.edu/ssec/2016ssec/engagement/32

This Event is brought to you for free and open access by the Conferences and Events at Western CEDAR. It has been accepted for inclusion in Salish Sea Ecosystem Conference by an authorized administrator of Western CEDAR. For more information, please contact westerncedar@wwu.edu.
Developing Locally-Driven Shoreline Monitoring Programs in the Salish Sea (And Beyond)

Bainbridge Island, WA

David Sale, Ecologist, ECO Resource Group
Former Chair, BI ETAC
Bainbridge Island

- No “major” watersheds
- Critical shoreline habitat for outmigrating salmonids
- Local aquaculture
- Mix of shoreline types
- Lots of vocal stakeholders
- Strong environmental and development interests

David Sale, Salish Sea Conference 2016
Balancing Tensions

2009- Begin SMP Update
2014 - SMP Update passed

SMP/GMA - No Net Loss not well defined
  + Local needs/State requirements
  + Site-specific Uncertainties/Solid shoreline Science
  + Controversy, different perspectives/oppts for collaboration
  + Ecological/social

David Sale, Salish Sea Conference 2016
• To Establish Baseline
• Look at effectiveness of the SMP regulations in preserving essential functions
• Look at efficacy of regulatory functions/tools
• Try to establish if BI is achieving No-Net Loss of ecological functions

And.....

• To help develop common ground and understanding
Shoreline Studies of Bainbridge Island

- Bainbridge Island Nearshore Characterization, 2004, Battelle
- Bainbridge Island Current and Historic Coastal Geomorphic/Feeder Bluff Mapping, 2010, Coastal Geologic Services
- Joint City of Bainbridge Island/Suquamish Tribal Beach Seining, 2002-2009
- Water quality monitoring
- Watershed Mapping and characterizations

David Sale, Salish Sea Conference 2016
THE QUESTION

What can we measure that will tell us, given limited resources, whether Bainbridge Island has achieved, or is achieving, No Net Loss of ecological functions by the time the SMP comes up for review?

David Sale, Salish Sea Conference 2016
COBI SMP AND NO NET LOSS MONITORING: The Players

**ETAC**
- provides advice on technical issues to city staff, planning Commission and Council
- Developed white papers on various SMP issues.
- Reviewed SMP technical provisions/science, and provided recommendations on monitoring

**COBI**
- Changing Council and staff

**CITIZENS**
- Shoreline Homeowners
- Environmental Groups (local and regional)
Extensive research and discussion by ETAC and others

Peer Workshop for review and refinement

Input from shoreline, monitoring and outreach experts

Develop a specific monitoring strategy

Gain Council and City management Acceptance

Develop First Year program
How and what do we measure?

- **Eelgrass and Kelp**: Monitoring Important Nearshore Subtidal Habitats
- **Intertidal Beach Sediment Supply, Sediment Distribution and Shoreline Position**: Monitoring Critical Habitat For Juvenile Salmonids, Forage Fish, Shellfish And Eelgrass, and Changes to Major Shoreline Features
- **Marine Riparian Vegetation**: Monitoring Shading, and Food Supply to the Nearshore
- **Water Quality**: Monitoring for Adequate Water Quality for Fish and Nearshore Resources
- **Estuarine Emerging Vegetation** (salt marsh): Monitoring for Changes in Critical Salt Marsh Habitats
Eelgrass and Kelp: Important Nearshore Subtidal Habitats

Overall question:
What is the status and trend for eelgrass and kelp beds?

Types of Measures:
• Location and extent of Macroalgal beds: extent, health, patterns
• Amount and type of bulkheads (mileage, etc.) and development near identified eelgrass—new, rebuilt, soft armoring (presence/absence)

Tools:
Aerial photography for areas of seagrass, kelp
Aerial photography for bulkhead and development type, length
Coordinate with water quality programs

Who else is doing?
DNR: Puget Sound Partnership; Kitsap County; PSEMP; UW Friday Harbor Labs
Shoreline Management Program: **Components**

- **Staffing** - Monitoring Program Coordinator (partial FTE) on development, management and implementation of the program.
- **Funding (program and monitoring)** – city funds and state/federal grants
- **Volunteers** – coordination with other groups for data collection
- **Coordination with other programs** – for access to data and funding
- **Data management and reporting** – integrating information and presenting to ETAC and Council
- **Community Participation** – Community Advisory Panel (Joint Fact-Finding)
- **Oversight (ETAC and others)**

*David Sale, Salish Sea Conference 2016*
Refining The Questions

- Is effective compliance with SMP regulations being achieved?
- Are gains or losses of ecological functions and processes occurring in the shoreline environment?
- If losses are occurring, what are the drivers? What are the programmatic and/or regulatory adjustments needed to achieve no net loss of shoreline functions and processes?
Monitoring Approach

- Baseline conditions
  - New and existing data
  - Existing development

- Implementation Monitoring

- (Limited) Status and Trends Monitoring

- SMP
  - Monitor type and magnitude of change

- Development Activity
  - Track Permits
  - Assess Compliance

- Shoreline Conditions
  - Is existing level of protection acceptable?

- Improved regulations
  - Improved implementation

- Council response
  - Community response
  - Assess need for change

- Adaptive Management

David Sale, Salish Sea Conference 2016
Monitoring Approach

The monitoring program will use two types of monitoring – implementation monitoring and status and trends monitoring – to inform adaptive management actions.

- **Implementation monitoring** - (a) capture and track permit activity and (b) ensure compliance with permit-level mitigation measures and performance standards.

- **Status and trends monitoring** - to monitor change in established ecological parameters.

- Monitoring results will inform an adaptive management process aimed at improving both regulations and program implementation as needed.
Coordination is key to take advantage of existing efforts, reduce cost and duplication and produce standard results. Coordination activities will include:

- The City will foster coordination with other monitoring programs, and local, university, state and federal jurisdictions doing shoreline monitoring in the West Sound.

- The City will pro-actively engage volunteer and agency groups currently conducting related shoreline monitoring (e.g.; Bainbridge Beach Naturalists, Kitsap Public Health District, Department of Natural Resources) to incorporate other data sources into monitoring results as appropriate.
Community Involvement

• Raising awareness by educating existing and future project proponents about regulations to enhance compliance with regulations.

• Landowners performing their own mitigation monitoring activities as part of shoreline permit approval.

• The opportunity for interested residents to participate in the workshop presenting results from the Puget Sound Marine and Nearshore Grant Program.

• Volunteer opportunities for field data collection in Year 2 and beyond.
Implementation

**Schedule:** Initiated in 2015 and extending through the City’s next SMP update in 2020. Year 1 will conclude at the end of 2015. Monitoring results will inform the City’s next SMP update, due in 2020.

**Funding:** First year funding includes only allocation/dedication of current planning staff (.20 FTE Associate Planner). **Subsequent years of the monitoring program will require additional funding** dependent upon results of Year 1 and recommendations for adaptive management and program growth.

**Reporting:** The first reporting activity will be the final grant report of the Puget Sound Marine and Nearshore Grant Program, due in December 2015. In subsequent years, staff will produce **annual monitoring reports** for Council review. As the program progresses, the annual monitoring reports will include an **adaptive management** component to evaluate whether modifications to SMP regulations or other City programs are needed.
**Schedule:** The monitoring program was initiated in 2015 and will extend through the City’s next SMP update in 2020. Year 1 will conclude at the end of 2015. Monitoring results will inform the City’s next SMP update, due in 2020.

**Funding:** First year funding includes only allocation/dedication of current planning staff (.20 FTE Associate Planner). **Subsequent years of the monitoring program will require additional funding** dependent upon results of Year 1 and recommendations for adaptive management and program growth.

**Reporting:** The first reporting activity will be the final grant report of the Puget Sound Marine and Nearshore Grant Program, due in December 2015. In subsequent years, staff will produce **annual monitoring reports** for Council review. As the program progresses, the annual monitoring reports will include an **adaptive management** component to evaluate whether modifications to SMP regulations or other City programs are needed.
Activity To Date: Baseline Data

Lidar – Aerial photos

Field Data Collection – (Ground Truthing)
Coordination with other data collection efforts – DNR eelgrass
Developing systems for Permit Tracking

David Sale, Salish Sea Conference 2016
• Make sure program is soundly based in science – technical review.
• Get local government commitments: “skin in the game”
• Community involvement – utilize volunteers and particularly shoreline homeowners
• Need for qualified Monitoring coordinator
• Understand more clearly what data is out there and what data may need to be generated
• Connect permitting, restoration and compliance data with monitoring program parameters
• Assure that there is internal capacity to handle data (mapping and other)
QUESTIONS?

Christy Carr  o  (206) 780-3719  o  ccarr@bainbridgewa.gov
David Sale  o  (206) 387-3065  o  daves@ecoresourcegroup.com