Feeder Bluffs on Puget Sound: Tools for Improved Management

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Shipman, Hugh; MacLennan, Andrea; and Johannessen, Jim, "Feeder Bluffs on Puget Sound: Tools for Improved Management" (2014). *Salish Sea Ecosystem Conference*. 45.  

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Feeder Bluffs

Feeder Bluff: *An eroding coastal bluff that delivers a significant amount of sediment to the beach over an extended period of time and contributes to the local littoral sediment budget.*

Steep, bluff-dominated coast

Abundant, beach-forming sand and gravel

Relative small, independent drift cells
Drift Cells and Sediment Budgets

- Over 800 Drift cells
- Sources of sediment
  - Rivers
  - Streams
  - COASTAL BLUFFS
Bluff Erosion

- Variability
- Factors
  - Erosion rate
  - Bluff height
  - Composition
Feeder Bluffs and Nearshore Ecosystems

Puget Sound Nearshore

FEEDER BLUFFS

SEAWALL

BARRIER ESTUARY

Tidal Wetland

BEACH

Volume
Width
Grain Size

Coastal Forest

Large Wood

Forage Fish Spawning

Shellfish

Eelgrass

SPIT

Longshore Sediment Transport (Drift)

Littoral Cell
Feeder Bluff Project: Objectives

- Complete sound-wide mapping
- Disseminate maps broadly
- Educate broad audience about bluffs and beaches
- Provide guidance to better manage the shoreline
Coastal Mapping

LEGEND

- **Bluffs**
- **Spits and barrier beaches**
- **Rocky**
- **Deltas and Estuaries**
- **Artificial**
Distribution of Shoreline Types

• Puget Sound
• Regional differences
Shoreline Management
Conservation and Restoration

Indian Point
Feeder Bluff Project

Web Site

Coastal Atlas

Reports

www.ecy.wa.gov/programs/sea/shorelines/FeederBluffs
Summary

- Feeder bluffs are important to Puget Sound beaches
- Erosion is a key ecosystem process – preventing it has implications
- Maps provide better discrimination among bluffs and improve ability to prioritize at both regional and drift-cell scales
- Protecting high-value bluffs requires large setbacks, restrictions on stabilization measures, and emphasis on long-term conservation
- Bluff erosion, sediment delivery, and beach processes are much more complicated than we think!
Acknowledgements

• Mapping team – CGS, Qwg, and Sound GIS
• Ecology team – Web Design and GIS
• Reviewers – Thank You!
• WDFW Marine and Nearshore Grants Program
• EPA and the National Estuary Program

This project received funding from the EPA under an agreement with WDFW. The contents do not necessarily reflect the views and policies of the EPA. Mention of trade names or commercial products does not reflect endorsement.