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The beach strategies geodatabase

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Beach Strategies
an ESRP Learning Project

Branden Rishel, BS  Andrea MacLennan, MS  Alison Lubeck, BS
Objectives of the Beach Strategies Project

Compile and augment data available to nearshore managers to inform nearshore strategy development and decision-making for beach systems in the Puget Sound region.

♦ Build on previous Beach Strategies work
♦ New data relevant to beach systems
♦ Higher resolution
♦ Common thread with other efforts
  ♦ Marine Shorelines Design Guidelines
  ♦ Shore Friendly; Social Marketing
  ♦ PSNERP
♦ Outreach to end-users
Objectives of the Beach Strategies Project

- Update & refine data
- Integrate in single framework
- Link with end-user strategies
- ID data gaps
- Develop queries & metrics
- Present to end-users
- Develop accessible outputs

We are here

General flow of tasks that comprise the larger Beach Strategies project.
Phase 1 of the Beach Strategies Project

Data Assessment
- Update Shore Armor

Data Development
- Net Shore-Drift Cells + DZs + Linear Referencing
- Comprehensive Shoretypes
- Calculate Fetch & Erosion Potential
- Comprehensive Shoreline Parcels

Data Integration
- Companion Project Nearshore Geospatial Framework

Deliverables
- Geodatabase
- Summary Report
- GIS user guide
- End-user Outreach

Outreach Efforts
Shoreline Armor: Armor Assessment

- Updated armor compilation
  - Feeder Bluff Mapping + Change Analysis
  - Integrated new armor mapping since those data (2016)
- Evaluated source data
  - Age (year or original data collection)
  - Method
  - Other supporting data (i.e. original compilation)
  - Resolution (minimum mapping unit)
- Updated armor mapping method (tidal elevation, condition, materials, HFB status)
- Identified priority areas to update armor mapping
  - Remapped 367 miles of priority shoreline in Mason, Jefferson and Island Counties
    - Island County funded separately
Armor Mapping: After

- 43 miles done in Discovery Bay and Port Townsend
- 110 miles done in southern Hood Canal and Hartstene Island area
- 214 miles (non-project) done for Island County Armor Mapping
- 15% of Sound shores covered this year under new protocols, including elevation, condition, and materials
- Shore armor shot with lasers thousands of times
- Still more left to update
Shoretype Mapping

- **Objective:** Complete comprehensive shoretype mapping
- Identify appropriate shoretypes for armored shores (MOD)
  - HFBs
  - NFBs
- Complete Pocket Beach mapping at better resolution
Shoretype Mapping: Results

Summary of feeder bluff conditions by county

<table>
<thead>
<tr>
<th>County</th>
<th>FB Intact, miles</th>
<th>FB Armored, miles</th>
</tr>
</thead>
<tbody>
<tr>
<td>Clallam</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Island</td>
<td>90</td>
<td>10</td>
</tr>
<tr>
<td>Jefferson</td>
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<td>King</td>
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<td>Kitsap</td>
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<tr>
<td>Mason</td>
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<tr>
<td>Whatcom</td>
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</tbody>
</table>
Effective Fetch: Methods

Fetch measure applied Sound-wide


- Averaged measured from 3 degree intervals across 24-degree swath

- Higher resolution than ShoreZone
Nearshore Geospatial Framework

Beach Strategies shoretypes

Beach Strategies net shore-drift cells

Aquatic nearshore polygons to 10m deep
Onshore polygons inland 100, 200, and 400 FT
Pseudo-hydrologic basins
HUC 12 watersheds

Created for the Nearshore Geospatial Framework
Phase 1 of the Beach Strategies Project

Where do I find the deliverables?

Salish Sea Wiki – search for Beach Strategies. There you will find links to all reports, including:

- Summary Report with appendices:
  - Geodatabase Refinements Summary (brief)
  - GIS user’s guide
  - Armor assessment
  - Historical Feeder Bluff Mapping docs
- Youtube video with tour of geodatabase
- Example metrics – “baseball cards”

How do I get the geospatial data?

Ask Jay and Tish at ESRP for access
Phase 2 of the Beach Strategies Project

- Continue outreach to end-users via surveys
- Develop conceptual linkages that demonstrate relationships between beach ecosystem elements and end-user needs
- Develop suite of updated metrics using new data
  - Example: armored feeder bluffs per drift cell
- Review draft results, refine, and analyze and present again!
- Present and package results in formats requested by end-users
  - Raw data, query results, priority areas (at multiple scales), in GIS and via web-based platform

Provide your contact information on your survey if you would like to be part of the process!