Recent progress toward reducing seawalls in Puget Sound

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Recent progress toward reducing seawalls in Puget Sound

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Hugh Shipman, Washington Dept of Ecology
Jenna Jewett, Washington Dept Fish & Wildlife
Nathalie Hamel, Puget Sound Partnership

Salish Sea Ecosystem Conference
Spring 2018
Puget Sound Partnership

2011 Shoreline Armoring Target(s)

- By 2020, remove more armor than is newly constructed
- Avoid new armor on feeder bluffs, and focus removals on feeder bluffs
- Utilize soft shore stabilization where feasible
Puget Sound Shoreline
~2500 miles

- 666 miles armored (27%)
- highest in King (73%) & Pierce (51%)
- ~50 miles of RR on east shore of central PS
- lowest in San Juan (4%) & Jefferson (11%)

*PSNERP Change Analysis (2011)*
We’ve come a long way...

1971 bulkhead criteria for vertical bulkhead construction.

1971 bulkhead criteria for sloping bulkhead construction.

“Bulkhead shall extend no more than 100’ seaward of MHHW”
By 2020, remove more armor than is newly constructed

Consistent across Puget Sound

Available & relatively inexpensive to obtain/analyze

Rate of change

Informative

Where?

By who?

What type?
HPA Database for permit management

- Query HPA database for marine shoreline armor permits
- Remove HPAs that are
  - not marine shoreline armor
  - repairs (less than 20' and same location/material)
Indicator: Shoreline Armor Extent 2011 - 2020

<table>
<thead>
<tr>
<th>Year</th>
<th>New Armor (Total)</th>
<th>New Armor (Ave)</th>
<th>Removed Armor (Total)</th>
<th>Removed Armor (Ave)</th>
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**Permitted Length of Shoreline Armor**

**Shoreline Armor 2005-2016**

**New, Remove, Replace**

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2016 Replacement Armor Data:
- 70% replaced at same location
- 27% landward of existing location

Needs more work:
- OHWM delineation
- Non-functional armor

Better: square footage & tidal elevation
Can we find a way to identify projects not pursued due to regulations, incentives, outreach programs, denials, etc.?
Where is the work taking place?

PERMITTED SHORELINE ARMOR LENGTH BY COUNTY 2011 – 2016
Who is doing the work?

NEW ARMOR

- Agriculture
- Government
- Non-Profit Agency
- Commercial/Industrial
- Multiple Family Use
- Single Family Residence

REMOVED ARMOR

PERMITTED SHORELINE ARMOR LENGTH BY APPLICANT TYPE 2011 – 2016
HPA Database

- **Issued permits – not completed projects**
  - Annual update
  - Not built according to plans or completed without permits
- Not all shoreline armor requires HPA (federal, tribal, cleanup)
- Does not identify armor extent in spatial database
- Definitions (e.g. softshore)
- Data analysis is difficult without familiarity of database
The Use of Soft Shoreline Techniques: Implications for the Shoreline Armor Vital Sign

Prepared for the Puget Sound Partnership

Hugh Skvarla
Washington Department of Ecology
August 2017

Armoring on Puget Sound Feeder Bluffs: Implications for the Vital Sign

Prepared for the Puget Sound Partnership

Hugh Skvarla
Washington Department of Ecology
June 2017

www.psp.wa.gov/vitalsigns/shoreline_armoring
What’s ahead?

- New ways of tracking shoreline armor extent
- HPA database under revision
- Boat survey protocol and data analysis
- Informing many projects: PSP, Common Indicators, Regulatory, Incentives...
- Combination in future?
Thank you!

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