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Shoreline armoring implementation strategy: a regional strategy to support and align actions from local to regional scales

Jennifer Griffiths

Washington Dept. of Fish and Wildlife, United States, jennifer.griffiths@dfw.wa.gov

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Shoreline Armoring Implementation Strategy: Reducing armor impacts on Puget Sound shorelines

Jennifer Griffiths, Habitat Strategic Initiative, Washington Department of Fish & Wildlife

Four strategies were developed to accelerate the protection of unarmored shorelines and the implementation of armor removal projects.

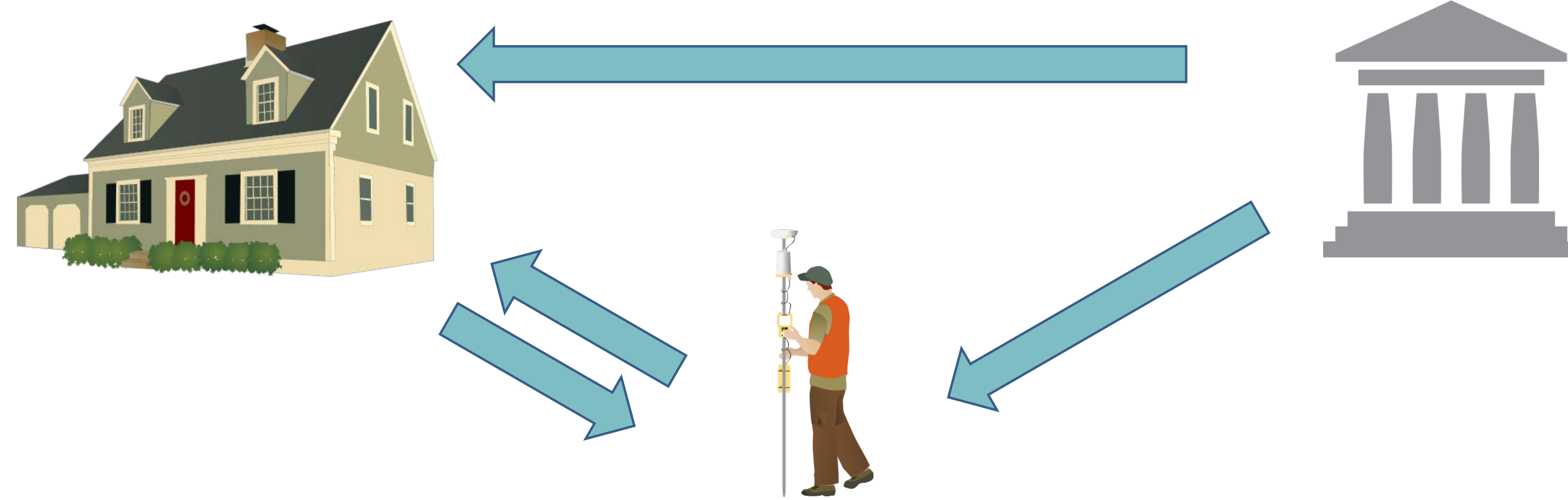
- **Habitat SI action:** Fund NTA 2016-0088: Maylor Point Feeder Bluff Armor Removal
- **Habitat SI action:** Fund NTA 2016-0196: West Central Restoration and Prioritization and Armor Removal (LIO-selected project)

Expand and improve incentives and education for residential property owners

Residential parcels account for over half of the Puget Sound shoreline and property owners have strong economic, recreational, aesthetic and emotional values tied to the shoreline. However, fears about erosion risk often result in shoreline management decisions, such as installing armor, which can have negative impacts on the nearshore processes that sustain the shoreline. Therefore, this strategy builds upon and leverages the substantial progress that has been made to develop incentive and education programs for property owners in the Puget Sound with the long-term goal of sustained resources to motivate voluntary actions for healthy shorelines

Near-term Priorities

- **Sustained funding in place for incentive and outreach programs focused on shoreline property owners**
 - **Habitat SI action:** Facilitate and support the Ecosystem Coordination Board's workshop on Sustaining Shoreline Incentive Programs, May 2, 2018
- **Expanded financial incentive alternatives available to property owners to incentivize ecologically friendly shoreline management**
- **Continue and expand property owner site visit programs**
 - **Habitat SI action:** Fund NTA 2016-0001 Shoreline Armoring Reduction Project
 - **Habitat SI action:** Fund NTA 2016-0196: West Central Restoration and Prioritization and Armor Removal (LIO-selected project)



Increase and improve regulatory implementation, compliance, enforcement and communication

Existing shoreline regulations are designed for outcomes that protect species and ecosystems while protecting private property and public safety and ensuring public access. Regulatory agencies, however, face challenges implementing and enforcing existing regulations for new or replacement armor and hurdles for armor removal remain high. This strategy identifies how effective implementation, compliance and enforcement can be improved within and across regulatory agencies in Puget Sound to reduce new (and especially illegal) armor, reduce the impact of repairs and replacements, and encourage armor removal. The strategy also identifies improved communication among regulatory agencies and with the public as a way to achieve efficiencies and improve outcomes.

Near-term Priorities

- **Increase training and technical support for local regulatory staff**
 - **Habitat SI action:** Fund NTA 2016-0380: Enhancing Regional Technical Capacity Through the Marine Shoreline Design Guidelines
- **Design and implement regulatory implementation and effectiveness monitoring**
- **Establish active compliance monitoring and enforcement programs**
- **Regional bodies cultivate local political support**

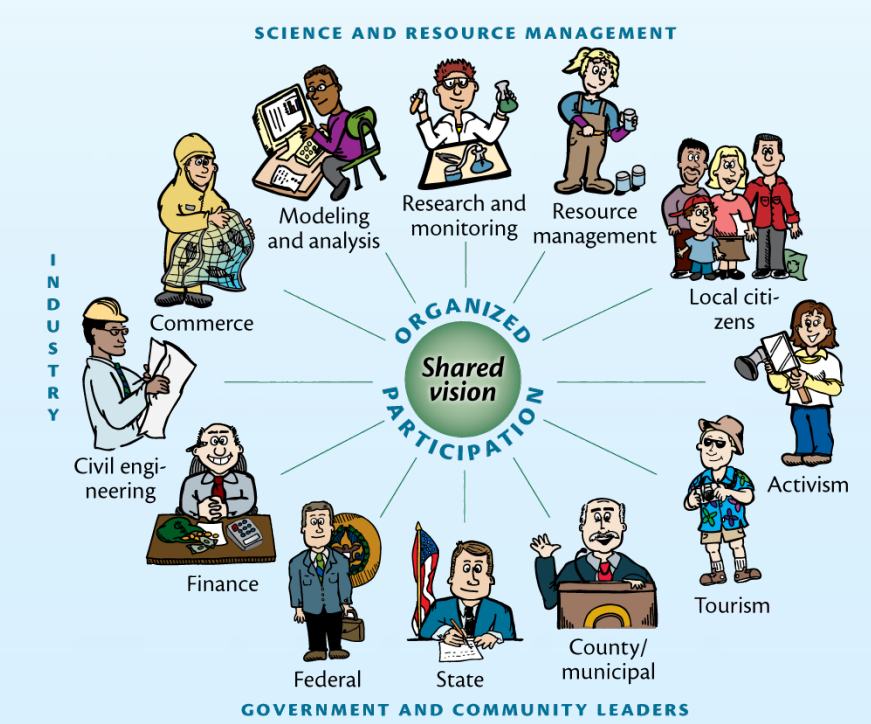
Increase and improve coastal processes-based design and technical training

Each shoreline parcel has unique shoreline attributes and existing infrastructure that determine the need for and the effect of armor. The regulatory environment, property owners, and the restoration community depend upon regional technical capacity to evaluate site characteristics and determine feasible solutions including no armor, removal, or soft shore protection. The outcome of this strategy is improved technical capacity including access to designs, guidance, and training to implement environmentally protective projects throughout the Puget Sound.

- **Habitat SI action:** Fund NTA 2016-0380: Enhancing Regional Technical Capacity Through the Marine Shoreline Design Guidelines

Near-term Priorities

- **Compile and analyze existing data from removal and soft shore projects to improve designs and site selection**
 - **Habitat SI action:** Fund NTA 2016-0119: Shoreline Monitoring Toolbox- Protocol Implementation and Data Management
- **Develop additional, complementary guidance to the Marine Shoreline Design Guidelines to improve implementation of removal and soft shore projects**



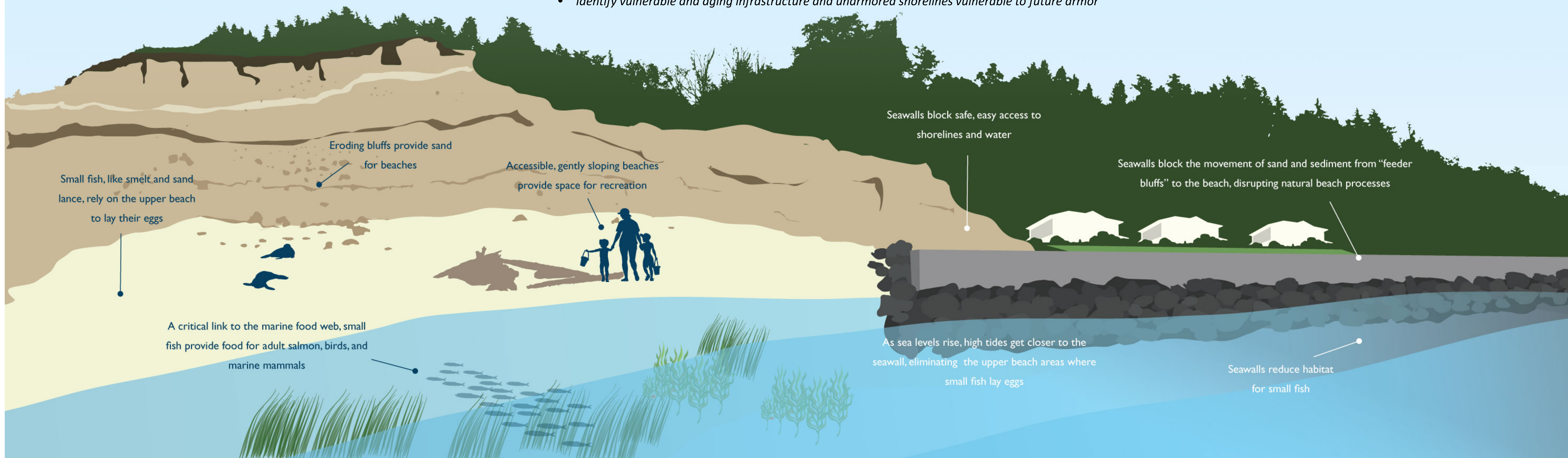
Improve long-term strategic planning

Land use planning related to development patterns, infrastructure replacement and future climate change scenarios influence shoreline armor trends over timescales of 10 – 50 years. If the tools and resources needed to support long-term planning are not initiated today, we may be unable to address foreseeable challenges in the future. This strategy describes the planning efforts, research questions, and monitoring that should be in place today in order to effectively reduce armor impacts in the future.

- **Habitat SI action:** Fund NTA 2016-0328: Subtidal monitoring of shoreline restoration effectiveness
- **Habitat SI action:** Fund NTA 2016-0140: Advancing Sea-Level Rise in San Juan County (LIO-selected project)

Near-term Priorities

- **Complete mapping of Puget Sound shoreline attributes**
- **Improve the quantification of shoreline armor impacts on the Puget Sound nearshore ecosystem**
- **Scale up successful case studies, which leverage large-scale, public works projects to remove shoreline armor, into regional programs including coordination among agency and industry partners**
- **Identify vulnerable and aging infrastructure and unarmored shorelines vulnerable to future armor**



What is your 15% Solution?

Pick a near-term priority

↓

Think about what the region needs to do to move forward

↓

What can you do to help within your authority & where do you feel empowered?

↓

Record on the sticky note one new action you can do in the next week or month

Put sticky note here

Take action on your 15%

Learn More & Sign-up for Updates:
<https://pspswa.box.com/v/PublicIS-ShoreArmoring>

Contact:
 jennifer.griffiths@dfw.wa.gov
 360-902-2212
 pugetsoundestuary.wa.gov

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 Other symbols: T. Saxby, J. Thomas, IAN/UMCES Symbol and Image Libraries

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<p>Implementation Strategy: Road map to achieve the Vital Sign target</p> <p>Vital Sign: Measure for tracking the overall health of the Puget Sound ecosystem</p> <p>Indicator: Specific and measureable metric for a Vital Sign</p>	<p>Shoreline Armoring Vital Sign 2020 Indicator Target</p> <p>From 2011 to 2020, the total amount of armor removed should be greater than the total amount of new armor in Puget Sound (total miles removed is greater than the total miles added).</p>	<p>Trends in the Shoreline Armoring Vital Sign Indicator Data: Washington Department of Fish & Wildlife Hydraulic Project Approvals http://www.psp.wa.gov/vitalsigns/in-amount-permitted-shoreline-armoring.php</p>		<ul style="list-style-type: none"> ■ Permitted New ■ Permitted Removed ● Annual Net ◆ Cumulative Net from 2011
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