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NOAA's Nearshore Conservation Program and Calculator – What is New

Stephanie Ehinger

Puget Sound Nearshore Habitat Conservation Calculator

What is New

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April 2022
Salish Sea Ecosystem Conference

Agenda

The Conservation Calculator: What is it?

- The Models Supporting the Conservation Calculator
- Five Nearshore Zones

What is New: More Precise Assessment of Areas affected by Shoreline Armoring

- Typical Stratified Beach Slopes
- Incorporation of Sea-level Rise

Questions & Answers

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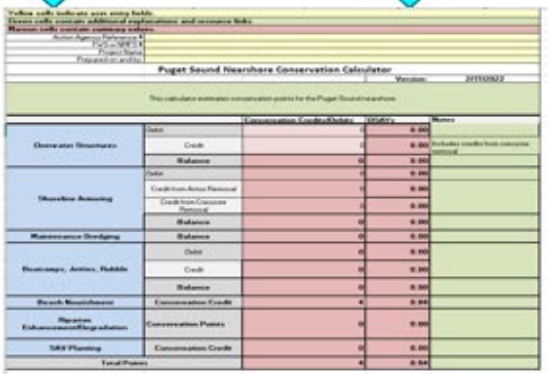
What is the Puget Sound Conservation Calculator?

Puget Sound Chinook Salmon

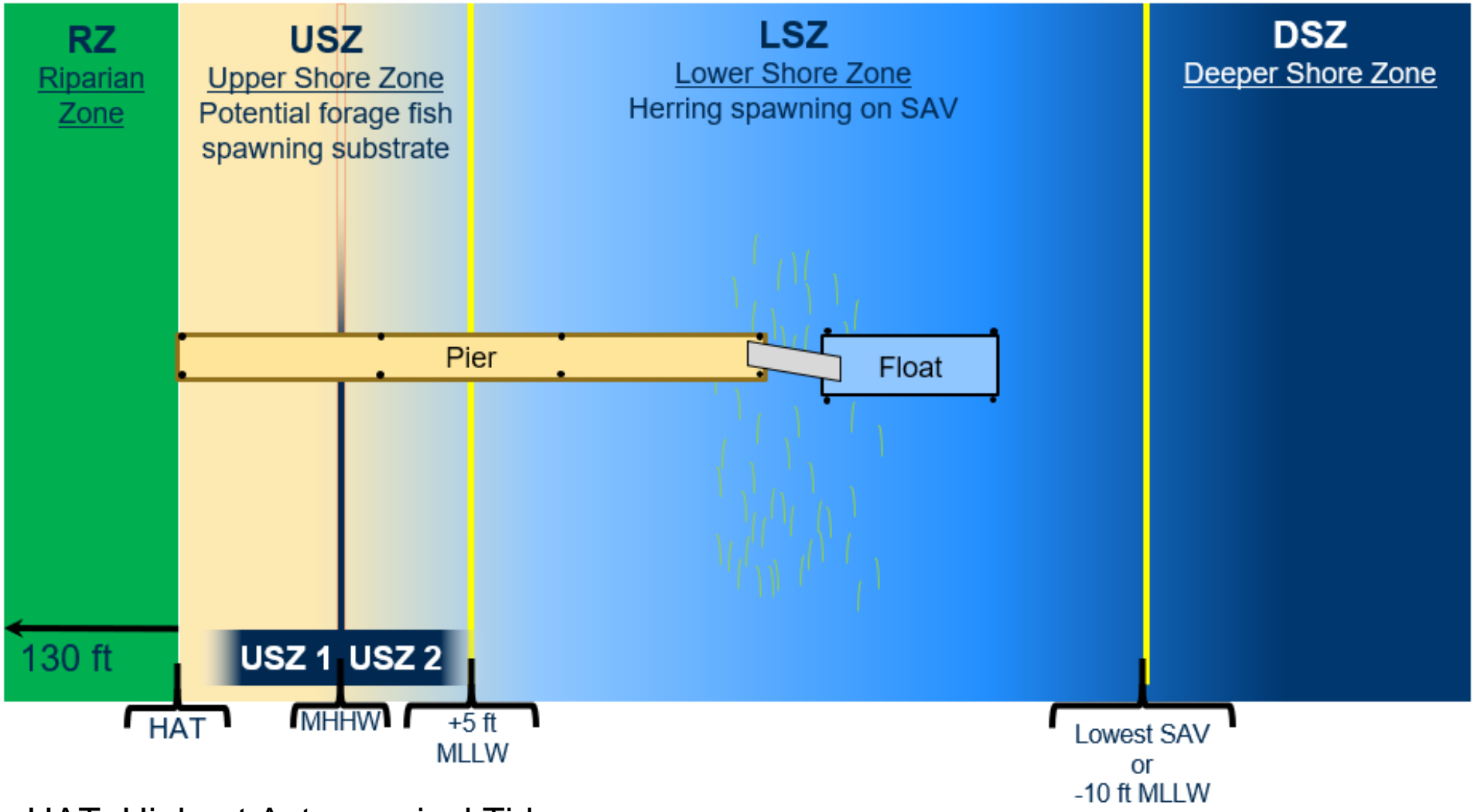
Habitat Impacts or Improvements

Hood-Canal Summer-Run Chum



The Conservation Calculator is an area-based functional rapid assessment tool.

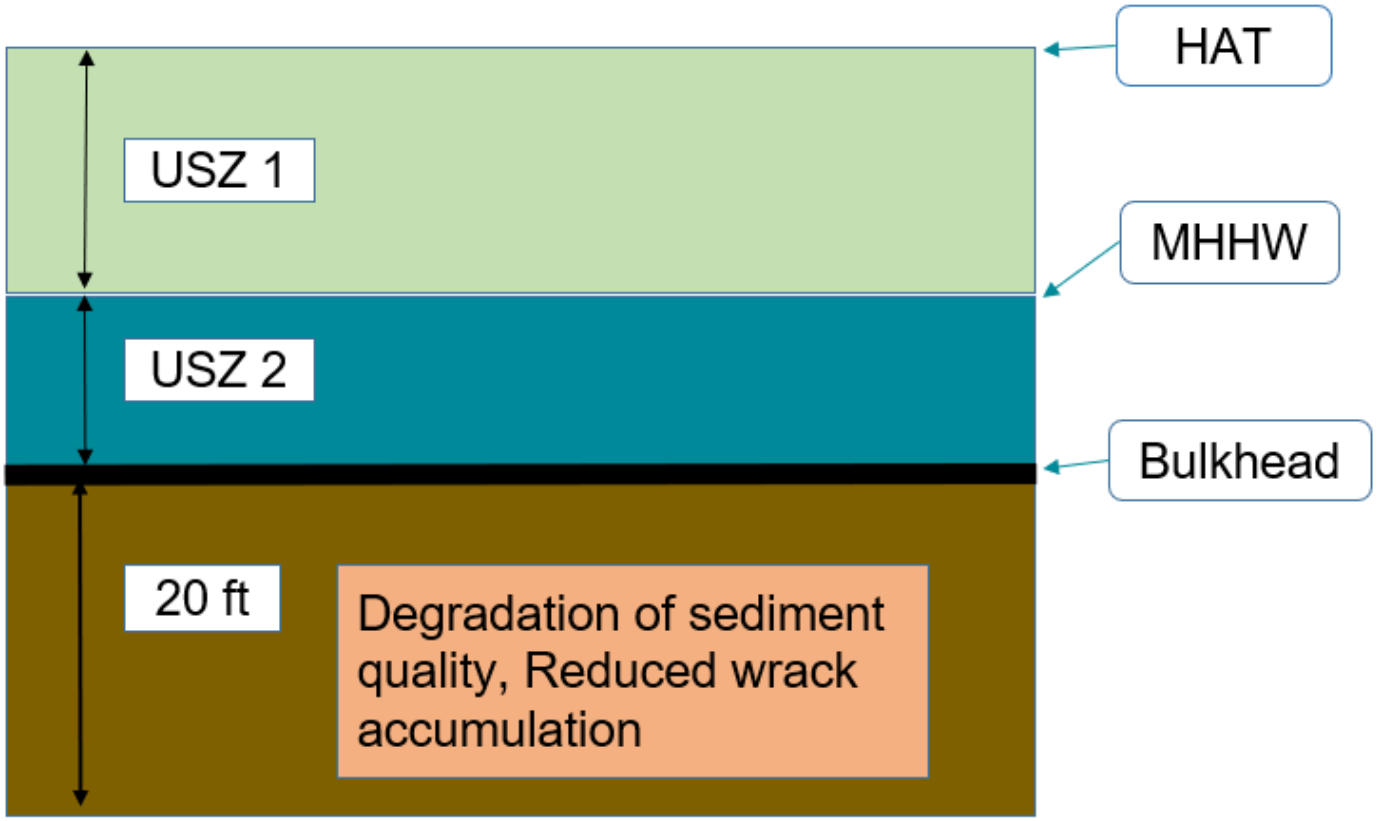
Puget Sound Nearshore Zones



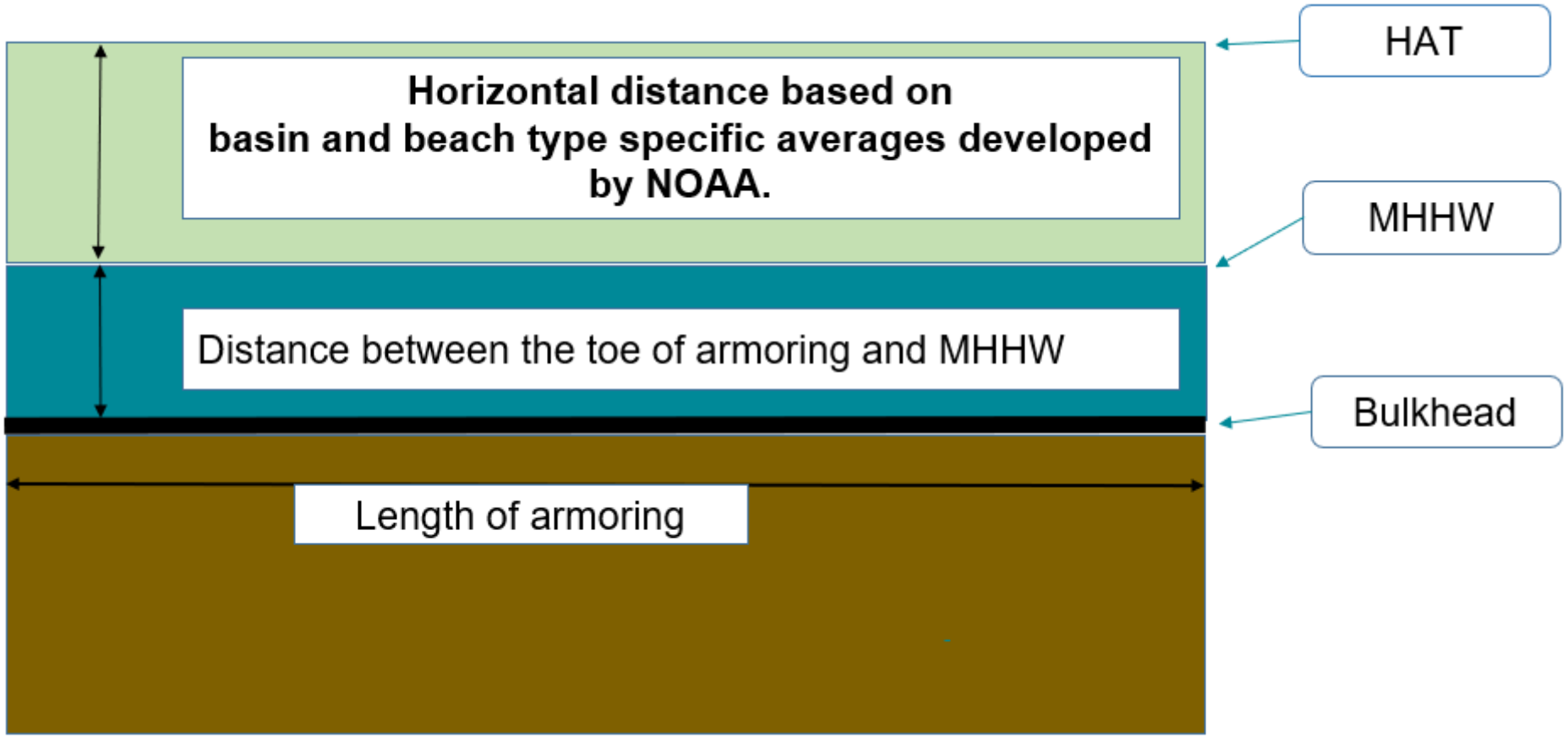
HAT: Highest Astronomical Tide
MHHW: Mean Higher High Water

Hard Armoring Waterward of MHHW

- No fish access landward of BH. USZ functions as disconnected riparian.
- Interrupted sediment transport.



Hard Armoring Waterward of MHHW

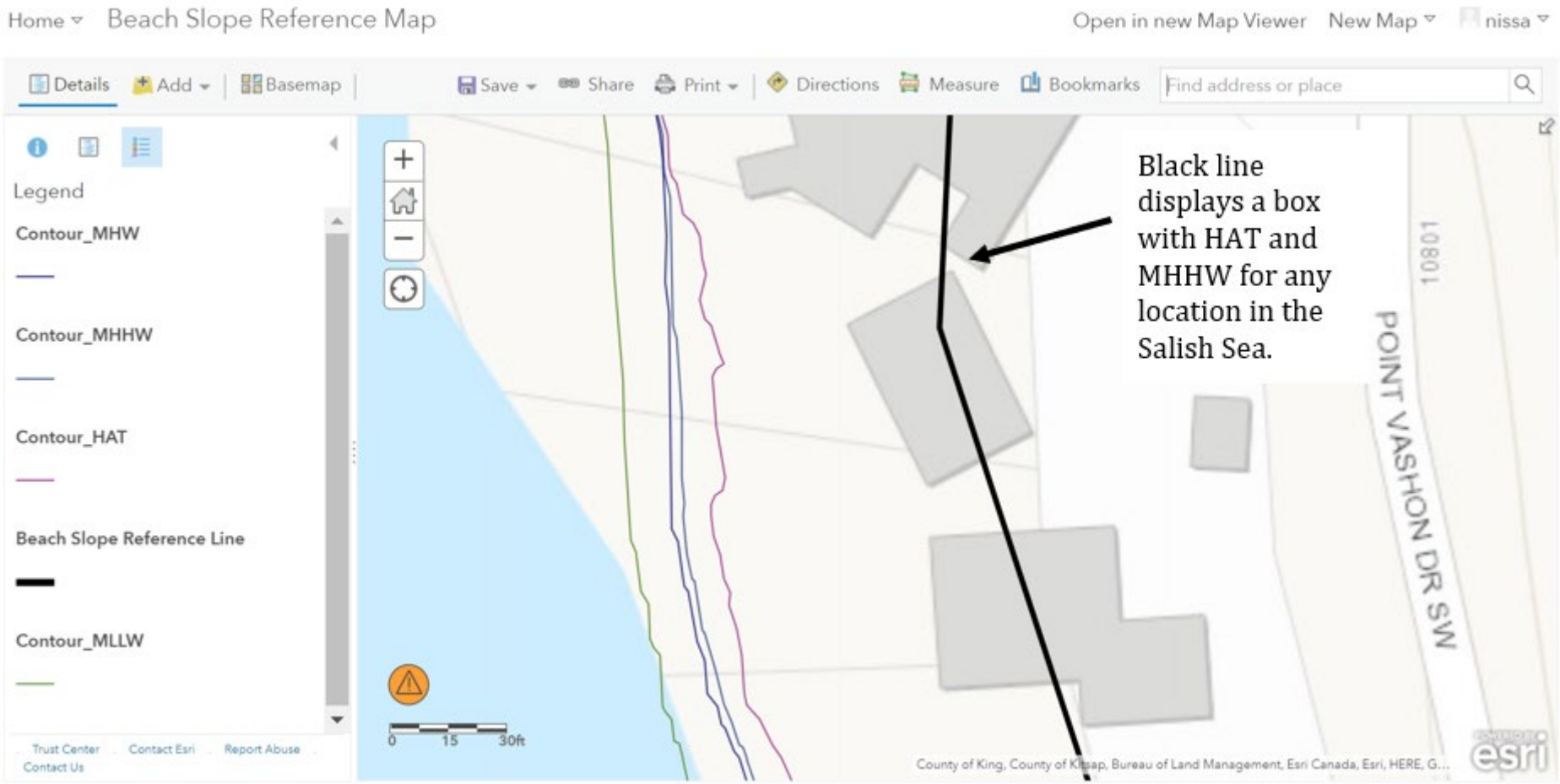


Entry Parameters to Determine Affected USZ Areas:

1. Length of armoring
2. Whether the toe of armoring is below or above MHHW
3. Distance between the toe of armoring and MHHW
4. **Horizontal Distance between HAT and MHHW**


HAT ?

HAT and MHHW Contour Lines for Puget Sound



Horizontal distance between HAT and MHHW based on Typically Stratified Beach Slopes

Estimation of Typical High Intertidal Beach-Face Slope in Puget Sound
Cereghino et.al. 2022 in prep

- **Development of Typical Beach Slope by Geographic Basin and Beach Type** (Accretion, Feeder Bluff, etc.)
- Selected Unarmored Beaches
- Determined Horizontal Distance between HAT and MHHW
- Determined Vertical elevation distance: HAT - MHHW
- Calculated slope as Rise over Run
- Averaged beach slopes by basin and shore type

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Horizontal distance between HAT and MHHW based on Typically Stratified Beach Slopes

Basin	Beach Type	Slope (rise over run) use this column to link to D7
Hood Canal	Accretion	0.142
Hood Canal	Feeder Bluff	0.28
Hood Canal	FB Exceptional	0.17
Hood Canal	Transport	0.287

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Application of Typical Beach Slopes with Puget Sound Conservation Calculator

For Shoreline Armoring: Determination of horizontal distance between MHHW and HAT used for the determin Encoachment.					
	MHHW [feet]	HAT [feet]	Typical slope	Distance between MHHW and HAT [feet]	N
Notes	Find elevation in feet, the GIS layer offers both units, feet and meters		Lookup slope in Table to the right: Typical Stratified Beach Slopes. Link cell D7 to applicable slope.		
Determination of distance between MHHW and HAT	Determined site specifically using NOAA GIS interplation layer.				
Example	5.6	8	0.17	17.47058824	c
Project Site	1	3	0.177	14.51977401	

Basin	Beach Type	Slope (rise over run) use this column to link to D7
Hood Canal	Accretion	0.142
Hood Canal	Feeder Bluff	0.28
Hood Canal	FB Exceptional	0.17
Hood Canal	Transport	0.287

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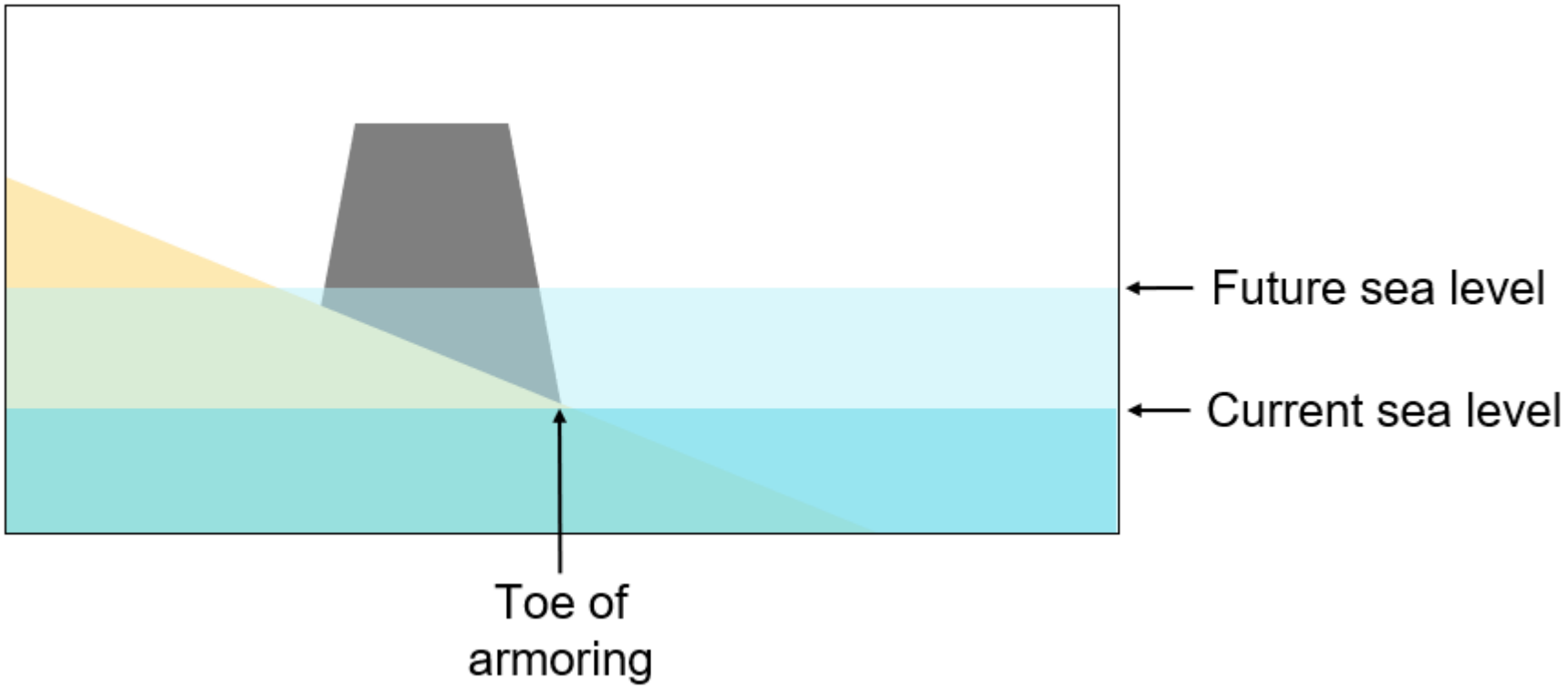
Relative Sea Level Rise and Shoreline Armoring



RSLR: Relative sea level rise (Miller et al. 2018)

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Questions
&

Answers