Apr 5th, 10:45 AM - 11:00 AM

Sea level rise guidance for nearshore habitat restoration in Puget Sound

Harriet Morgan
Univ. of Washington, United States, hmorg@uw.edu

Nicole Faghin
Washington Sea Grant, United States, faghin@uw.edu

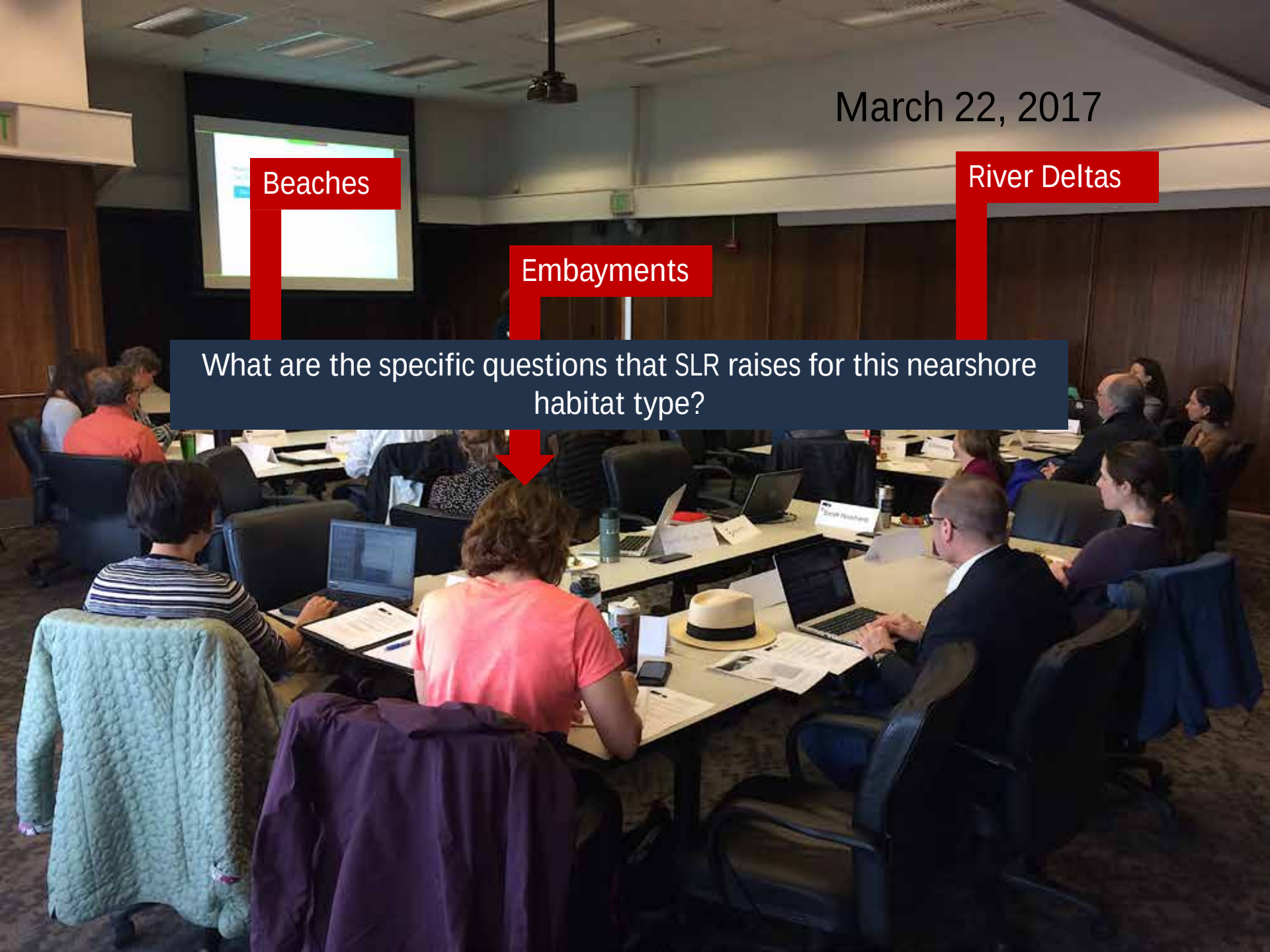
Jay Krienitz
Estuary and Salmon Restoration Program, United States, jay.krienitz@dfw.wa.gov

Tish Conway-Cranos
Estuary and Salmon Restoration Program, United States, Tish.Conway-Cranos@dfw.wa.gov

Guidance for Incorporating Sea Level Rise into Nearshore Habitat Restoration in Puget Sound

Harriet Morgan, UW Climate Impacts Group
Nicole Faghin, Washington Sea Grant
Tish Conway-Cranos, ESRP
Jay Krienitz, ESRP

Salish Sea Ecosystem Conference
4.5.18


March 22, 2017
Beaches
Embayments
River Deltas
What are the specific questions that SLR raises for this nearshore habitat type?

Specific questions that sea level rise raises for restoration in Puget Sound were grouped in the following categories:

Biophysical/Habitat Considerations

- Erosion rates
- Sediment transport
- Drift cell dynamics
- Vegetation

Infrastructure Considerations

- On-site
- Adjacent property

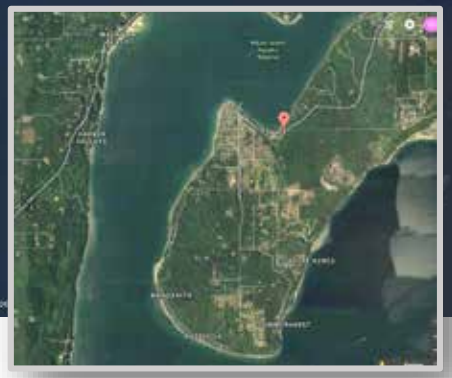
Social/Political Considerations

- Landowner willingness to do restoration
- Affects on adjacent land use

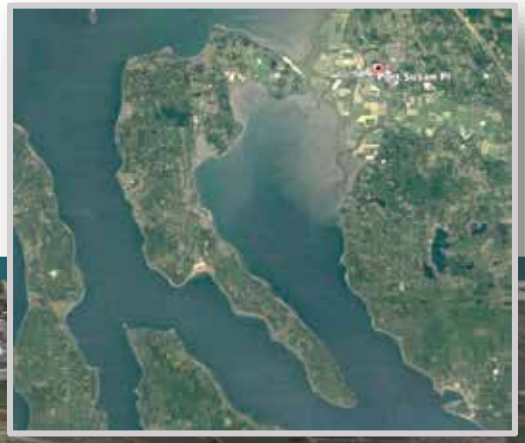
Beach: Dockton Park; Vashon-Muary Island

Is there upland space for landward migration of habitat?

Are setback distances for existing or planned infrastructure sufficient to maintain future habitat benefits?



River Delta: Leque Island & Ziz a ba, Snohomish County



Are expected rates of accretion from riverine sediment expected to keep pace with sea level rise?

Will increased exposure to salt water affect neighboring land uses?

Embayment: Tahuya, Hood Canal

Does increased risk of erosion change landowner willingness to conduct restoration?

Will project infrastructure (e.g., pumping/drainage structures) continue to function as intended given SLR projections?

LITERATURE REVIEW

DEVELOPING GUIDANCE FOR PUGET SOUND

Are expected rates of accretion from riverine sediment expected to keep pace with sea level rise?

Are setback distances for existing or planned infrastructure sufficient to maintain future habitat benefits?

Will increased exposure to salt water affect neighboring land uses?

Not prescriptive, but a **checklist of considerations** to help ensure an evaluation is made that may increase the resilience nearshore restoration project to SLR

Questions in guidance document are organized by...

Next Steps

- Continue drafting guidance document
- Workshop 2 (April) –
  - reconvene participants from workshop 1.
  - Share progress & receive feedback
- Incorporate edits
- Finalize guidance document (late summer / fall)

THE WASHINGTON COASTAL RESILIENCE PROJECT

Questions?

Harriet Morgan

hmorg@uw.edu

Washington Sea Grant • Washington Department of Ecology • Island County • The City of Tacoma • King County • Padilla Bay National Estuary Research Reserve • NOAA Office of Coastal Management • The Nature Conservancy • U.S. Geological Survey • University of Oregon • University of Washington Climate Impacts Group • University of Washington Department of Earth and Space Sciences • Washington Department of Fish and Wildlife

Funding Provided by NOAA Regional Coastal Resilience Grants Program

Extra Slide:

For each shoreform &expected impact of SLR, we identify a suite of information needs that will help answer the questions we pose.

Information needs:

- Topography of project and adjacent upland
- Location of sediment sources within the drift cell
- Armoring status of sediment sources within the drift cell
- Inundation tolerances of intended vegetation plantings

= Considerations of the impact likely needed.

= Considerations not likely to be needed.

= Uncertatin whether considerations are needed.

Shoreform	Management Actions	Potential Sea Level Rise Impact Pathways		
		Direct inundation	Saltwater intrusion	Wave impacts
Beaches	Acquisition for protection	≋	◔	◕
	Armor/structure removal	≋	●	◕
	Groin/Fill removal	≋	○	◕
	Topography restoration	≋	○	◕
	Re-vegetation	≋	●	◔
River Deltas	Acquisition for protection	≋	○	◔
	Channel rehabilitation	≋	◔	◕
	Dike/berm removal	≋	●	◕
	Hydraulic modification	≋	●	◕
	Topography restoration	≋	◔	◕
	Re-vegetation	≋	●	◔
	Construction of set-back dike	≋	○	◕