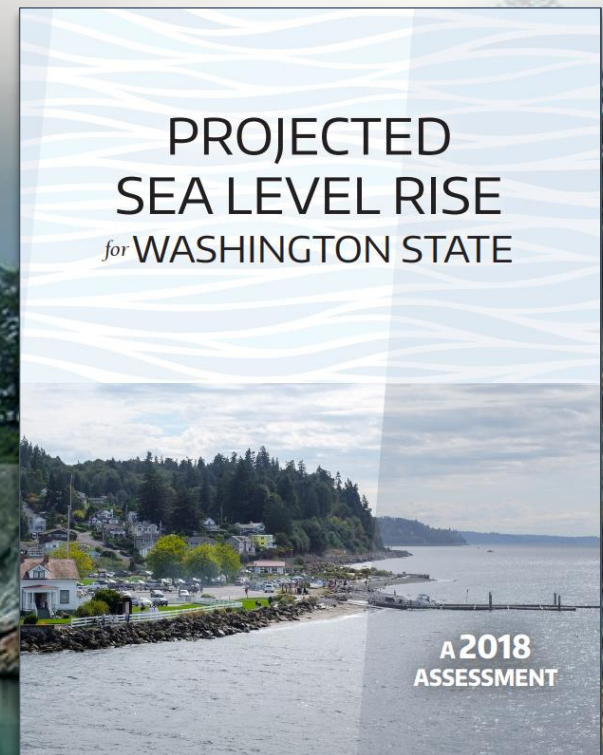# Sea Grant
Washington

Part 1

Innovations to Support Sea Level Rise Planning in Washington State

EEEI Livestream • 13 April 2020
Localizing SLR Projections to Support Decision-Makers

Ian Miller
Coastal Hazards Specialist
Washington Sea Grant and the
Washington Coastal Resilience
Project Team

PROJECTED
SEA LEVEL RISE
*for* WASHINGTON STATE

A 2018
ASSESSMENT

Available at wacoastalnetwork.com

Washington Sea Grant is a National Oceanic and Atmospheric Administration program housed at the University of Washington. We fund and conduct marine research, education and outreach programs throughout the state to support the health and sustainable use of our marine resources.
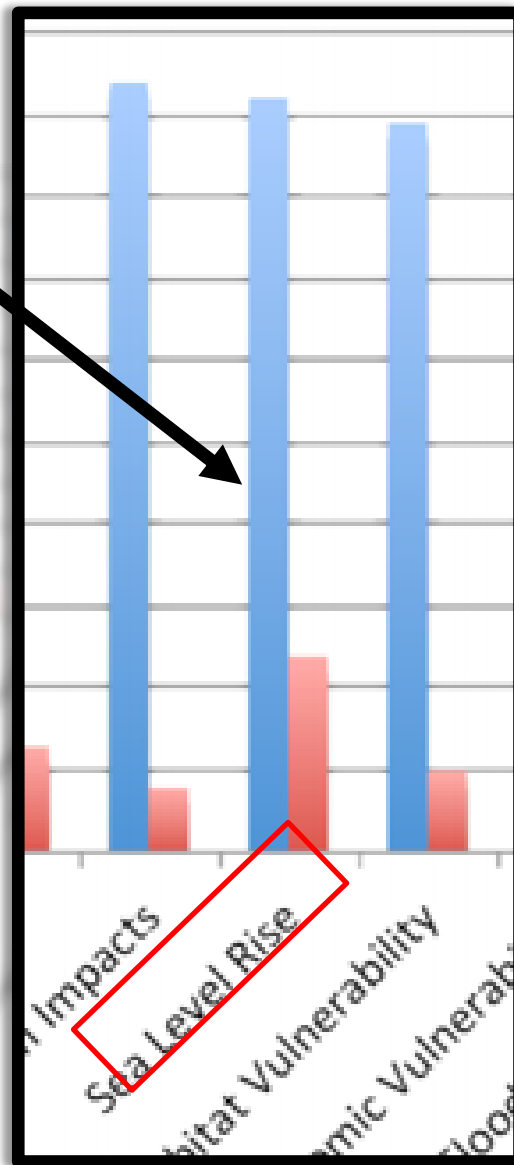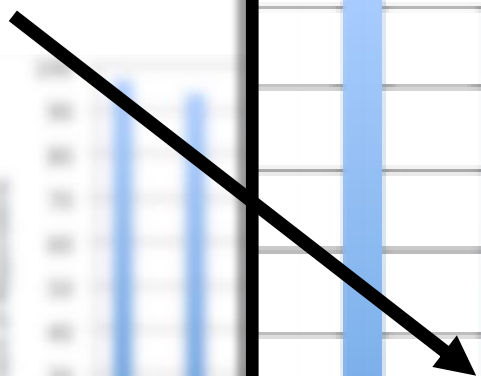
Importance of Climate Change Impacts as Compared to Information Needed
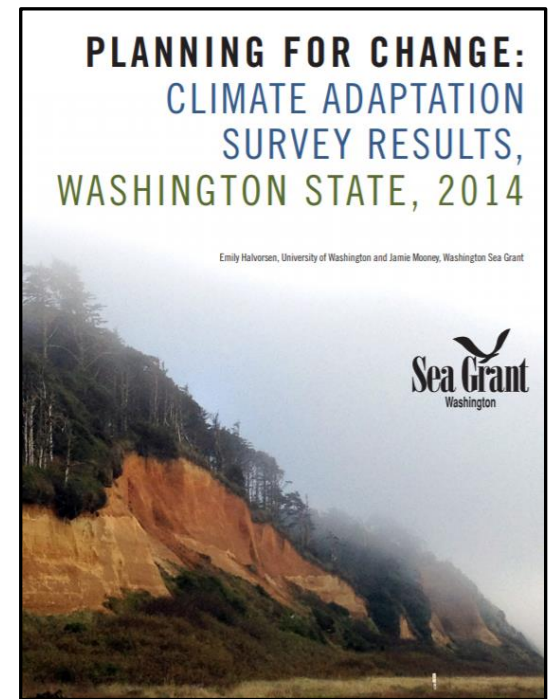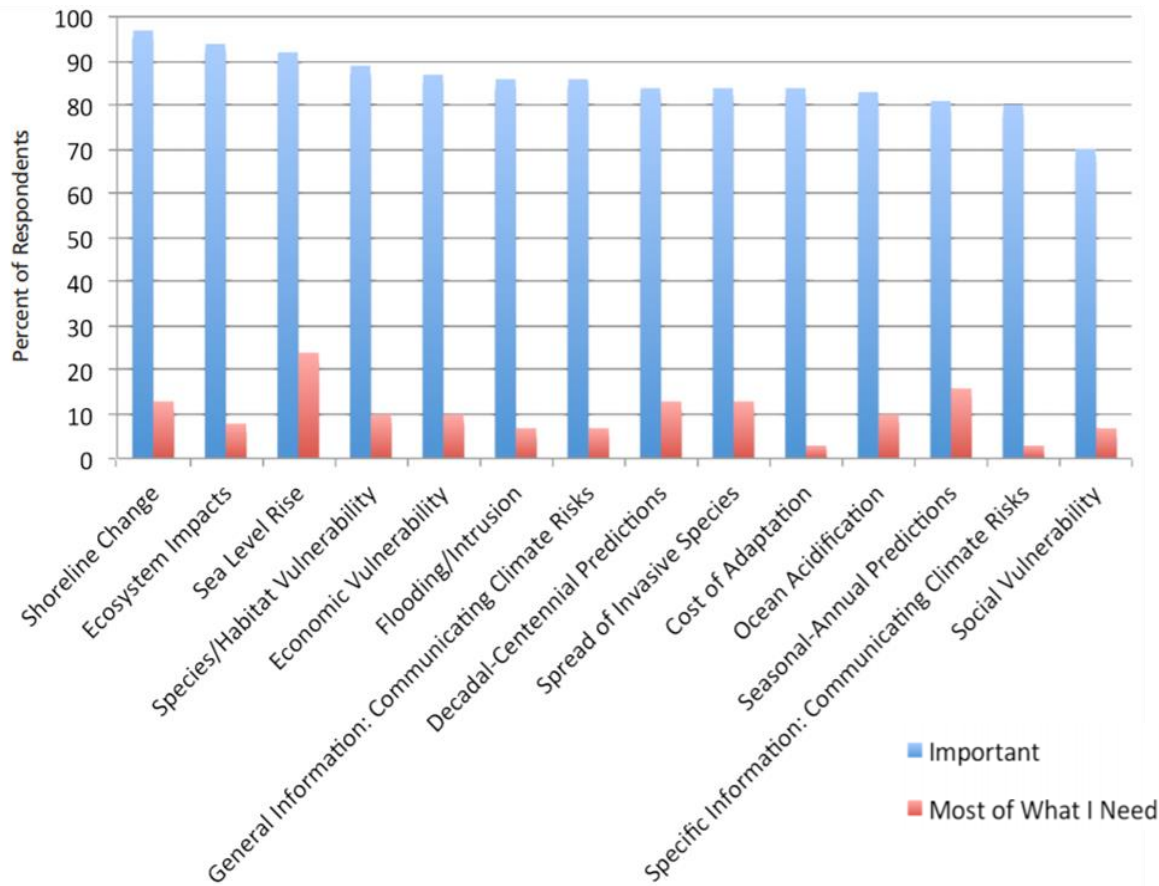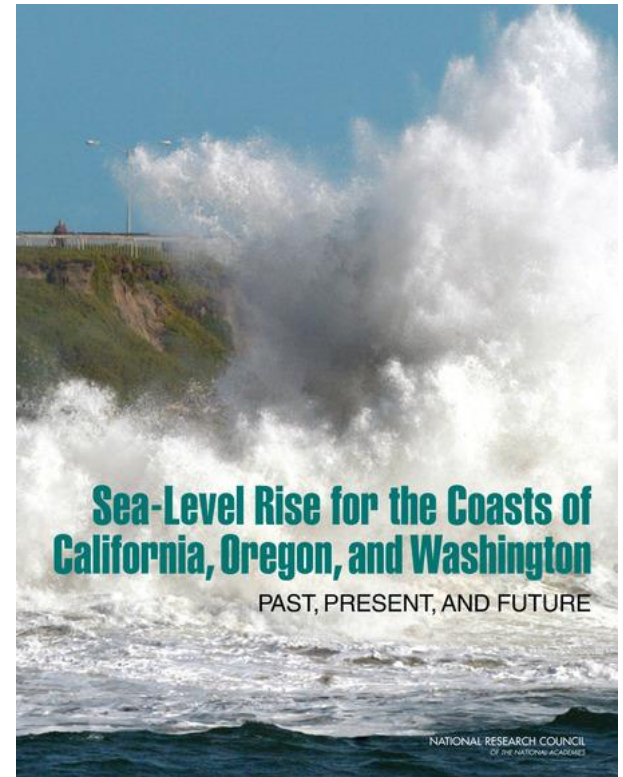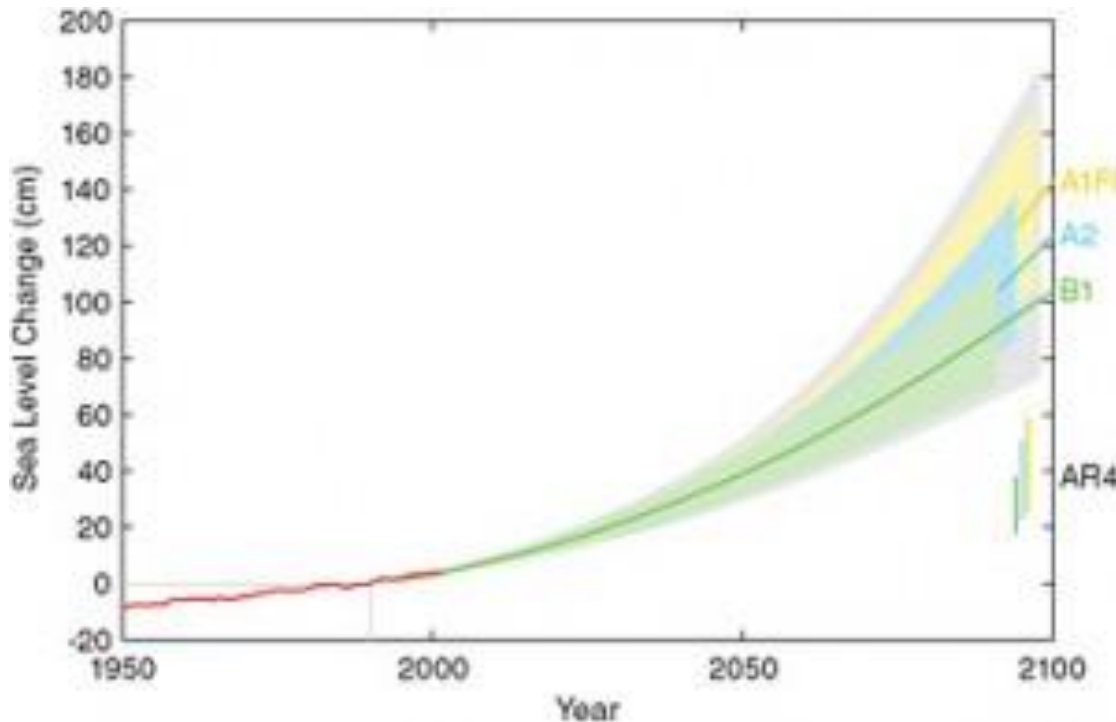

Back in 2014…

Action Gap?

Best Available Science: 2012

- Narrow range of uncertainty for each emissions scenario

- Not "localized" for most communities

Sea-Level Rise for the Coasts of California, Oregon, and Washington
PAST, PRESENT, AND FUTURE

NATIONAL RESEARCH COUNCIL
OF THE NATIONAL ACADEMIES

NOAA Funded "Regional Resilience" Project

Objectives

- Support an updated sea level rise and storm surge assessment for coastal Washington

- Build climate resilience principles into state agency processes and plans

- Look for resilience co-benefit from existing planning processes and nearshore investments

- Create outreach tools to facilitate implementation of resilience projects and plans

Innovation 1:
Kopp's Probabilistic Framework

Washington State SL Projections for RCP 8.5
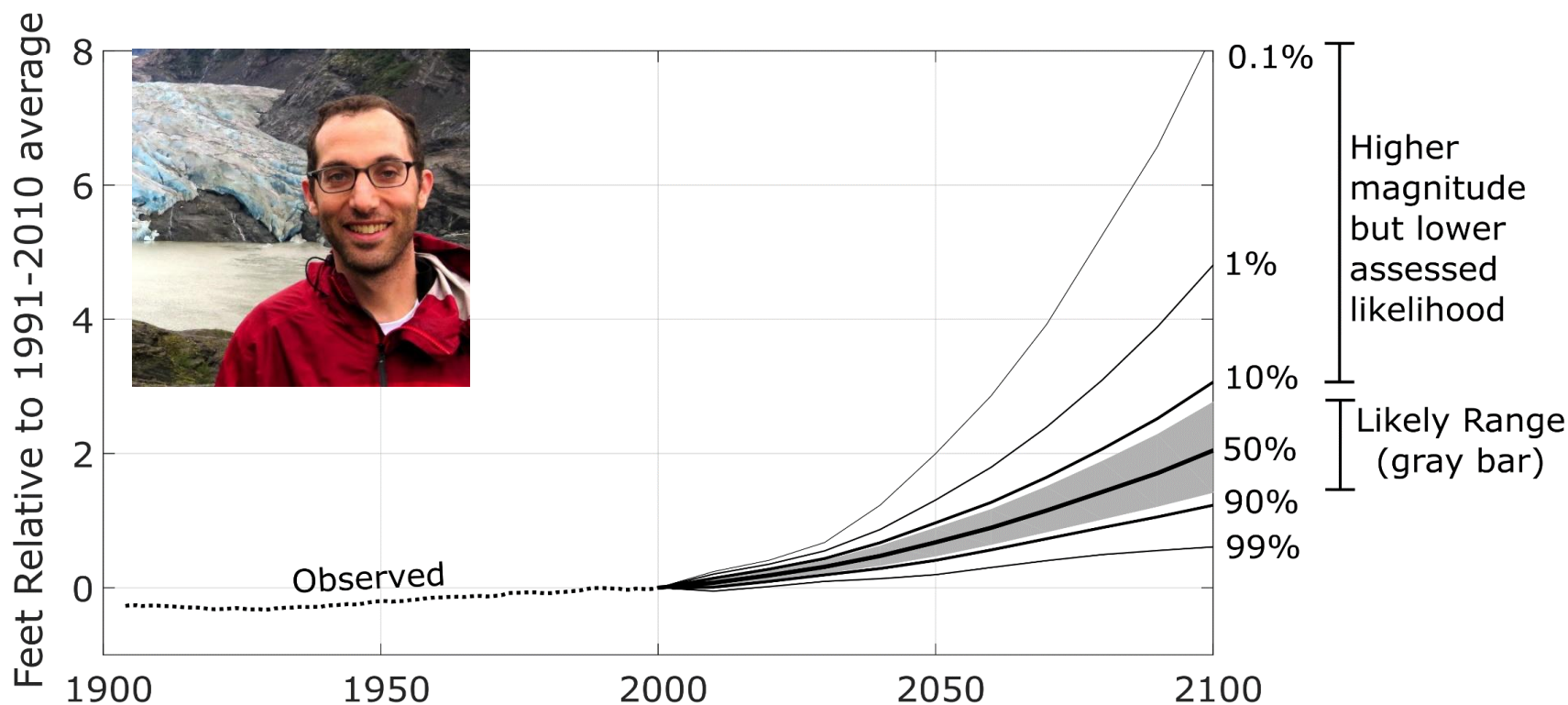
From Miller et al., 2018. Derived from Kopp et al, 2014

Innovation 2: Localizing

Neah Bay, WA

Seattle, WA

Vertical Land Movement

From Miller et al., 2018, "Sea Level Rise in Washington State – A 2018 Assessment"
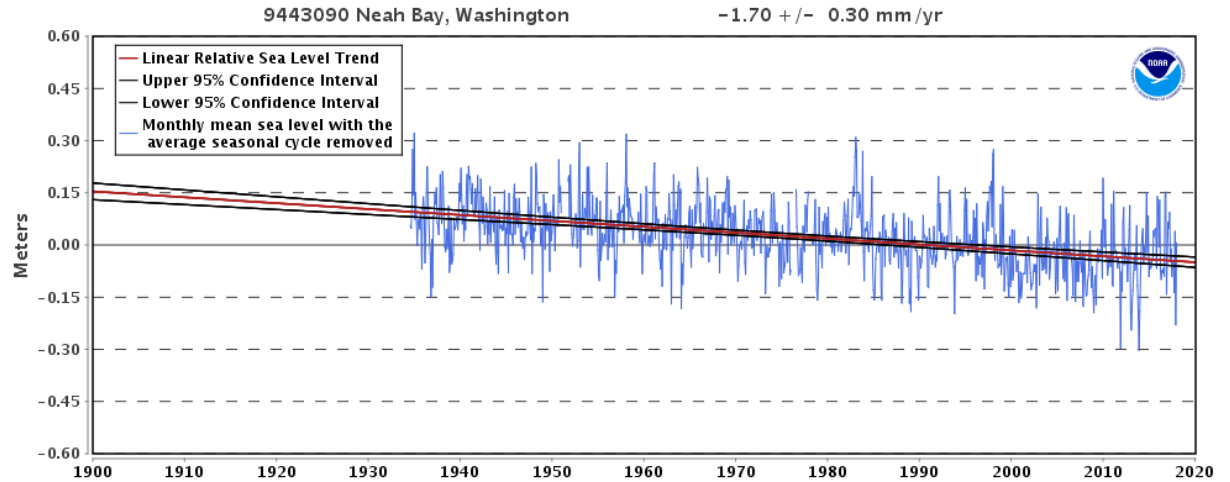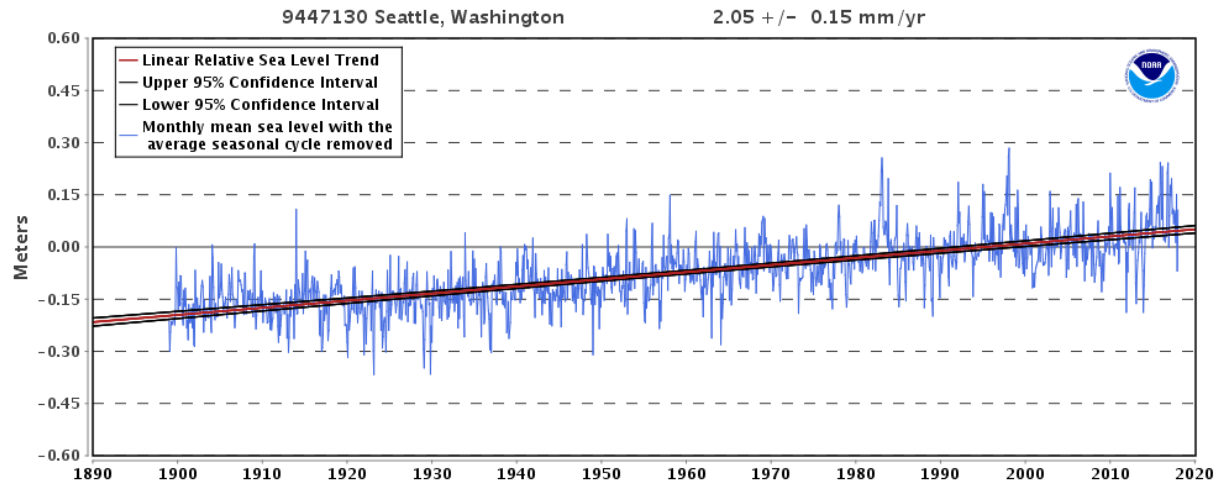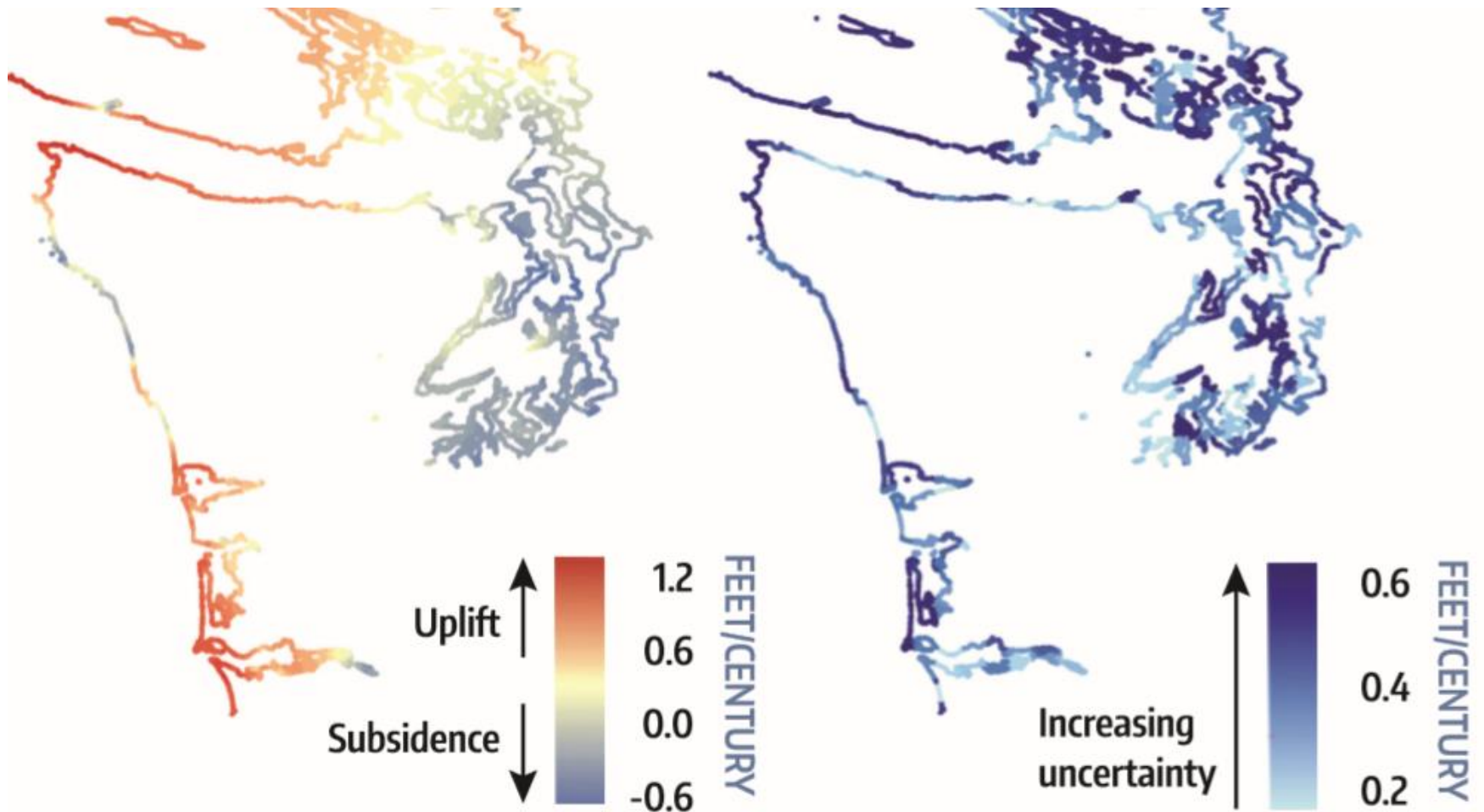
The Dreaded Matrix

Table 1: Projected average sea level magnitudes, in feet, for different assessed likelihoods and time periods										
	Assessed Probability of Exceedance:									
19 year period cente	99	95	90	83	50	17	10	5	1	0.1
2010	-0.1	0	0	0	0.1	0.2	0.2	0.2	0.3	0.3
2020	-0.1	0	0.1	0.1	0.2	0.3	0.4	0.4	0.5	0.6
2030	-0.1	0.1	0.1	0.2	0.3	0.5	0.6	0.6	0.7	0.9
2040	0	0.1	0.2	0.3	0.5	0.7	0.8	0.9	1.1	1.4
2050	0	0.2	0.3	0.4	0.7	1	1.1	1.3	1.5	2.1
2060	0.1	0.3	0.5	0.6	1	1.3	1.5	1.7	2	3
2070	0.1	0.5	0.6	0.8	1.2	1.7	1.9	2.1	2.7	4
2080	0.2	0.6	0.8	1	1.5	2.1	2.3	2.6	3.4	5.4
2090	0.3	0.7	1	1.2	1.8	2.5	2.8	3.1	4.1	6.9
2100	0.3	0.8	1.1	1.4	2.2	3	3.4	3.8	5	8.6
2110	0.4	1	1.2	1.5	2.3	3.2	3.6	4.1	5.7	10.1
2120	0.5	1.1	1.4	1.7	2.6	3.7	4.2	4.8	6.7	12.2
2130	0.6	1.2	1.6	1.9	3	4.2	4.7	5.5	7.8	14
2140	0.6	1.3	1.7	2.1	3.3	4.7	5.3	6.2	9	16.2
2150	0.6	1.4	1.9	2.3	3.6	5.2	5.9	7	10.2	18.5

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Tableau-based Interactive SLR Projection Tool
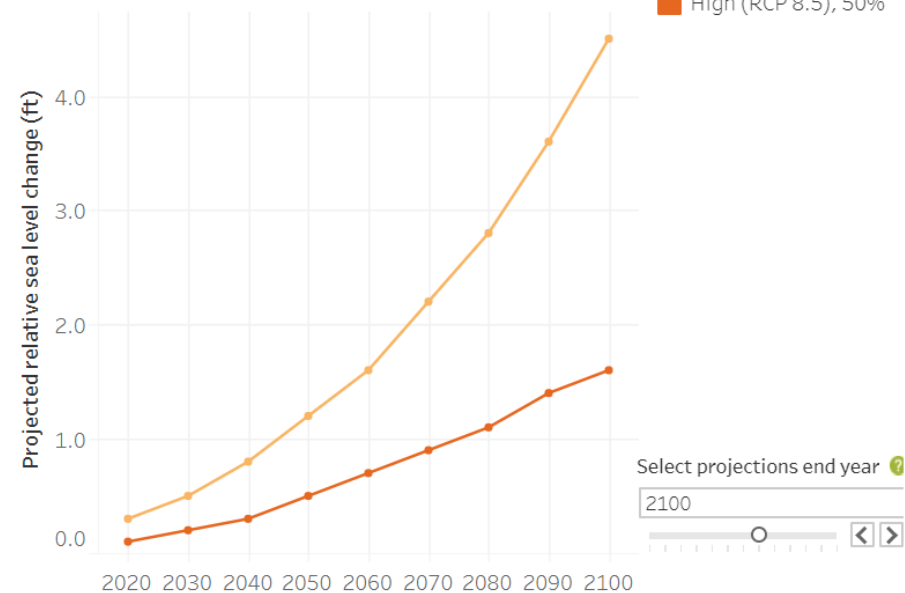
Take it away Nicole!

Ian Miller, *Coastal Hazards Specialist*

Washington Sea Grant
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Port Angeles, WA
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