Bridging the Gap Between Science and Decision-Making

Amy Snover, PhD
Director, Climate Impacts Group
University Director, Northwest Climate Adaptation Science Center
University of Washington

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Coastal Resilience

University of Washington
Guillaume Mauger
Harriet Morgan
Crystal Raymond

Heidi Roop
Robert Norheim
Ian Miller
Nicole Faghin

Tribal resources

Project Lead
Meade Krosby

University of Washington
Haley Kennard
Robert Norheim
Guillaume Mauger
Harriet Morgan
Crystal Raymond
Heidi Roop
Amy Snover
Kimberly Yazzie

University of Idaho
Katherine Hegewisch

Woven Strategies
Arwen Bird

Tribal Advisory Group
Don Sampson, ATNI
Laura Gephart, CRITFC
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Tableau
Lara Whitely Binder
The University of Washington Climate Impacts Group builds climate resilience by advancing awareness of climate risks & enabling science-based action to manage those risks.
Every single day, people are making decisions & investments that will either exacerbate or ameliorate the impacts of climate change, for decades to come.
Educating key actors about climate risks & response options
Enabling the use of climate (impacts/adaptation) science in risk assessment & management

How do we size our infrastructure for the storms of the future?

How can park planners incorporate sea level rise uncertainty into design?
Embedding scientists in management contexts & science in management processes

Adaptation Strategies for Resilient Cleanup Remedies

A Guide for Cleanup Project Managers to Increase the Resilience of Toxic Cleanup Sites to the Impacts from Climate Change

November 2017
Publication no. 17-09452

To date, RCO has awarded more than $861 million, which has funded 1,427 projects in nearly every county.

Guidance for state superfund clean-ups

Grantmaking criteria

King County

Seattle City Light
#1: Washington’s Sea Level Rise Planning Toolkit
Increasing Washington State’s Capacity to Prepare for Sea Level Rise

**What will happen here?**
State-of-the-art, Washington-specific sea level rise projections

**What is my specific risk?**
Locally-, greenhouse gas scenario-specific, and probabilistic risk estimates

**What can I do about it?**
Technical guidance for a range of applications
Best available sea level rise science for Washington?
Sea Level Rise Data Visualization Tool

171 locations
130 years
2 GHG scenarios
10 likelihoods

“How likely is it that we will see 1.5 feet of sea level rise here by 2050?”
Sea Level Rise Data Visualization Tool

171 locations
130 years
2 GHG scenarios
10 likelihoods

“When are we likely to experience 1.5 feet of sea level rise here?”

Likelihood of Selected RSLR(s) for This Location

Scenario, RSLR
- High (RCP 8.5), 1.5 ft
- Low (RCP 4.5), 1.5 ft

Select projections end year
- 2150

bit.ly/waslrviz
What can I do about it?
Coupling data & tools with technical advice

How to Choose (scenarios)

How to Map (impacts)

How to Use (in restoration)
#2: Co-Producing Tribal Resources for Climate Change Vulnerability Assessment
Addressing gaps in Tribal capacity for vulnerability assessment

“What will happen here?”
Provide climate data at the scale of tribal decision-making

“What can I do about it?”
Support tribal staff through the vulnerability assessment process

“What are best practices?”
Make the vulnerability assessment process more accessible to tribal staff
Provide tribally-relevant climate data

Previously available climate data for NW and Great Basin tribes:

- Average annual temperature and precipitation
- Reservation scale
To know what information will be most useful, ask the intended user.

Tribes are actually concerned about:

- Diverse impacts (wildlife, wildfire, heat, water availability, invasives...)

- Reservations and watersheds, counties, traditional territories, ceded lands
Tribal Climate Tool:
Climate summaries tailored to tribes

bit.ly/cigtvar
Climate Summary Report

Tribe: Confederated Tribes and Bands of the Yakama Nation

Area of Interest: Yakima Sub-Basin

Annual Average Temperature

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<tr>
<th>Emissions</th>
<th>Time</th>
<th>Value</th>
<th>Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Historical</td>
<td>1990</td>
<td>46.2 °F</td>
<td></td>
</tr>
<tr>
<td>Low</td>
<td>2010</td>
<td>48.5+/-0.7 °F</td>
<td>+2.3 °F</td>
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Data Source: MACAv2-METDATA

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</thead>
<tbody>
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<td>1990</td>
<td>76.8 °F</td>
<td></td>
<td></td>
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<tr>
<td>Low</td>
<td>2010-2039</td>
<td>79.9+/-1.0 °F</td>
<td>+3.1 °F</td>
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<tr>
<td>Low</td>
<td>2040-2069</td>
<td>82.3+/-1.7 °F</td>
<td>+5.5 °F</td>
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<tr>
<td>Low</td>
<td>2070-2099</td>
<td>83.5+/-1.9 °F</td>
<td>+6.8 °F</td>
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<tr>
<td>High</td>
<td>2010-2039</td>
<td>80.3+/-0.9 °F</td>
<td>+3.6 °F</td>
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<tr>
<td>High</td>
<td>2040-2069</td>
<td>84.2+/-1.7 °F</td>
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<td>2070-2099</td>
<td>88.4+/-2.6 °F</td>
<td>+11.6 °F</td>
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*To make information easy to use, solicit iterative user testing and feedback*
*Information on its own isn’t enough; support is often needed to ensure use*
Tribal Technical Support Desk remains open!

*Commit to sustained partner relationships*
Federal Government

Motivate & prepare to enable increasingly sophisticated climate-based decision making

Require & incentivize science-based action to address climate risks

Promote large-scale and targeted research (especially observation & modeling at all scales) designed to support decision-relevant questions

Build & sustain regional/local capacity to connect science/practice

Recognize local specificity of needs, relinquish expectations of universality, support knowledge transfer

Regional Boundary Organizations

Leverage federal resources and science programs for local benefit

Develop & sustain mutually-beneficial long-term relationships with local partners

Elicit local knowledge needs and adaptation priorities; innovate to meet these needs

Develop, deliver & support the use of actionable climate information

Develop capacities for researchers & practitioners to apply climate information in planning & implementation