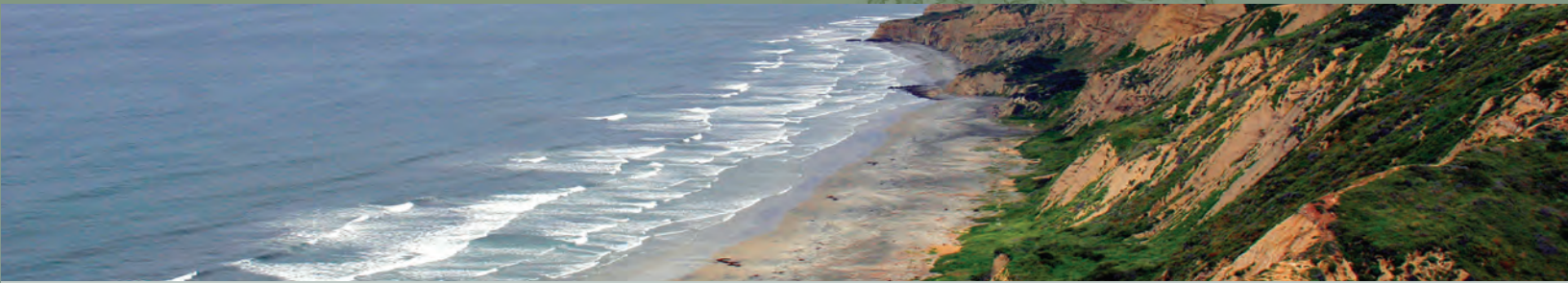


PROGRAM

PACIFIC NORTHWEST
Climate Science
Conference



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SEPTEMBER 9-10, 2014

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Fifth Annual Pacific Northwest Climate Science Conference

Conference Agenda – Overview

September 9-10, 2014 | University of Washington, Seattle

INTERNET ACCESS: UW NetID: event0410 | Password: NLEE-TJEA-VCEA

Please help us start and end on time by returning promptly from breaks and lunch

Tuesday, September 9

8:30 am – 12:15 pm	Opening Plenary Session ** KNE 130 ** [new location]
12:15 pm – 1:30 pm	Lunch (provided) [additional seating now available] <i>Conference participants are free to eat lunch outside. Seating is also available in KNE 225 and the By George Café (ground floor of Odegaard Library, across from Meany).</i>
1:30 pm – 5:00 pm	Concurrent Sessions <ul style="list-style-type: none"> • Pacific Northwest Climate (Parts 1&2) – KNE 120 • Hydrology and Water Resources (Part 1) – KNE 110 <i>(starting at 3:30)</i> • Terrestrial and Aquatic Ecosystems (Parts 1&2) – KNE 220 • Built Environment (Parts 1&2) – KNE 225
5:15 pm – 7:00 pm	Poster Session and Hosted Networking Reception - Meany Hall <i>Sponsored by the American Society of Adaptation Professionals, EcoAdapt, and Cascadia Consulting</i>

Wednesday, September 10

8:30 am – 9:30 am	Morning Plenary Session KNE 120
9:40 am – 12:30 pm	Concurrent Sessions <ul style="list-style-type: none"> • PNW Climate (Part 3) – KNE 120 <i>(9:40– 10:40)</i> • Hydrology and Water Resources (Parts 2&3) – KNE 110 <i>(9:40– 12:30)</i> • Shorelines, Oceans, and Marine Ecosystems (Part 1) – KNE 120 <i>(11:00– 12:30)</i> • Terrestrial and Aquatic Ecosystems (Parts 3&4) – KNE 220 <i>(9:40– 12:30)</i> • Working Across Boundaries – KNE 225 <i>(11:00– 12:30)</i>
12:30 pm – 1:30 pm	Lunch (provided) [additional seating now available] <i>Conference participants are free to eat lunch outside. Seating is also available in KNE 225 and the By George Café (ground floor of Odegaard Library, across from Meany). Please return promptly for Keynote Address at 1:30.</i>
1:30 pm – 1:50 pm	Keynote Address – Washington State Governor Jay Inslee ** KNE 130 ** [new location]
2:10 pm – 3:30 pm	Concurrent Sessions <ul style="list-style-type: none"> • Shorelines, Oceans, and Marine Ecosystems (Part 2) – KNE 120 • Hydrology and Water Resources (Part 4) – KNE 110 • Human Health – KNE 220
3:45 pm – 5:00 pm	Closing Plenary Session KNE 120

**Presentations will be posted on YouTube following the conference, pending author approval.*

Keynote Address: Washington State Governor Jay Inslee

Tuesday, September 10 – 1:30 pm to 1:50 pm, KNE 130

Jay Inslee became Governor of Washington in 2013, after serving in the U.S. House of Representatives from 1993-1995 and 1999-2012. During Governor Inslee's long career in public service, he has continually focused on addressing environmental issues and has promoted many policies related to climate change.

As Governor, Inslee has recognized that carbon pollution is one of the greatest challenges threatening the state of Washington. He recently signed the Washington Carbon Pollution Reduction and Clean Energy Action. This executive order sets forth an agenda to reduce carbon pollution and expand the use of clean energy in Washington State. The order calls for a task force to make recommendations on a market-based carbon pollution program, the elimination of electrical power produced with coal, improvements in the emissions performance of the state's transportation system, and the creation of state-wide programs related to clean technology and energy efficiency.



In Congress, Inslee led an effort to authorize the first comprehensive national study on ocean acidification. This 18-month study by the National Research Council was the first of its kind investigating the effect of acidification on wildlife and natural resources. In 2009, Inslee co-founded and co-chaired the House Sustainable Energy & Environment Coalition in order to promote policies to address climate change and advance clean energy innovation and jobs. During development of the American Reinvestment and Recovery Act, Inslee successfully pushed to include significant renewable energy investments, such as \$2 billion for the manufacture of advanced batteries that power electric vehicles. Inslee was an author and key leader in passing the American Clean Energy and Security Act in the U.S. House, the first major comprehensive climate and energy legislation passed by a house of Congress in American history. The bill did not pass the Senate to become law, but many of its policies continue to be considered at the federal level. For example, the Act required federal agencies to achieve 20 percent of their electricity from clean energy sources by 2020—a policy that President Obama adopted by executive order in December 2013.

Inslee's other environmental efforts and accomplishments in Congress include federal mining regulation to prevent arsenic contamination in water, federal restrictions on tanker traffic in Puget Sound, and federal projects to protect and restore critical ecosystems and habitats in the Puget Sound. Governor Inslee is the author, together with Bracken Hendricks, of the book *Apollo's Fire: Igniting America's Clean Energy Economy*, which describes how America can secure greater energy independence, create millions of jobs, and address the threat of climate change.

FIFTH ANNUAL PACIFIC NORTHWEST CLIMATE SCIENCE CONFERENCE PROGRAM

September 9-10, 2014

TUESDAY, SEPTEMBER 9

<i>Tuesday Morning – Opening Plenary (8:30 am to 12:15 pm, KNE 130)</i>	
<i>Time</i>	<i>Presentation</i>
8:30-8:40	Conference Welcome <i>Eric Salathé, UW and Conference Chair</i>
8:40-9:20	The Global View: The IPCC Fifth Assessment and Climate “Hot Topics” <i>Dennis Hartmann, University of Washington</i>
9:20-10:20	Pacific Northwest Climate Change: a Review and Preview <i>John Abatzoglou, University of Idaho and Amy Snover, UW Climate Impacts Group</i> <ul style="list-style-type: none"> Observed and Projected Changes in PNW Climate - <i>John Abatzoglou, University of Idaho</i> Key Findings from the PNW Chapter of the National Climate Assessment - <i>Amy Snover, UW Climate Impacts Group</i>
10:20-10:50	<i>Break</i>
10:50-11:30	Possible, but Likely? Assessing the Socio-economic and Technological Assumptions Underlying Energy-emissions Scenarios <i>Steve Davis, UC Irvine</i>
11:30-12:10	Climate Change Impacts: An “Apptitude” for Resilience <i>John Yaist, Esri</i>
12:10-12:15	Morning Plenary Close and Preview for the Afternoon
<p>12:15-1:30 Lunch (provided) <i>Conference participants are free to eat lunch outside.</i> <i>Seating is also available in KNE 225 and the By George Café (ground floor of Odegaard Library, across from Meany)</i></p>	

Tuesday Afternoon - Concurrent Sessions (1:30 pm to 3:30 pm)				
	KNE 120	KNE 110	KNE 220	KNE 225
Session	Pacific Northwest Climate (Part 1)	No talks in this room - 1:30-3:00	Terrestrial & Aquatic Ecosystems (Part 1)	Built Environment (Part 1)
1:30-1:40	Session opening comments		Session opening comments	Session opening comments
1:40-2:00	Glacial Record of Climate Change in Pacific Northwest - <i>Jon Riedel, National Park Service</i>		Relative Climate Change Sensitivity of Species in the Pacific Northwest - <i>Michael J. Case, University of Washington</i>	Assessing the Vulnerability of Wastewater Facilities to Sea-Level Rise – <i>John Phillips, King County</i>
2:00-2:20	Climate Change Impacts on Glacier Melt, Stream Temperature, and Discharge in the Headwaters of the Nooksack River, WA - <i>Oliver Grah, Nooksack Indian Tribe</i>		Evaluating Climate Change Vulnerability in the Pacific Northwest: Integrated Assessments of Potential Ecological Change in Three Case Study Landscapes - <i>Julia L. Michalak, University of Washington</i>	The Sound Transit Climate Risk Reduction Project – <i>Lara Whitely Binder, UW Climate Impacts Group</i>
2:20-2:40	Regional Patterns of Evolving Glacio-Hydrologic Processes in the Pacific Northwest - <i>Chris Frans, University of Washington</i>		The Interacting Roles of Climate and Soil in Plant Species Range Shifts in the Subalpine and Alpine Meadows of Mount Rainier National Park - <i>Kevin Ford, USDA Forest Service Pacific Northwest Research Station</i>	Addressing Climate Change in Design and Maintenance of Provincial Highways in BC – <i>Thomas White, British Columbia Ministry of Transportation and Infrastructure</i>
2:40-3:00	A Macroscale Glacier Model to Evaluate Climate Change Impacts in Columbia River Basin - <i>Joseph Hamman, University of Washington</i>		Climate Change Effects and Adaptation Approaches for Terrestrial Ecosystems, Habitats, and Species in Pacific North America - <i>Patricia Tillmann, EnviroIssues (formerly with National Wildlife Federation)</i>	Rainfall-Triggered Landslides in the PNW: Future Hazards and Risks – <i>Ronda Strauch, University of Washington</i>
Break (3:00-3:30 pm)				

Tuesday Afternoon - Concurrent Sessions (cont'd) (3:30 pm to 5:00 pm)				
	KNE 120	KNE 110	KNE 220	KNE 225
Session	Pacific Northwest Climate (Part 2)	Hydrology & Water Resources (Part 1)	Terrestrial & Aquatic Ecosystems (Part 2)	Built Environment (Part 2)
3:30-3:50	Persistent High Pressure over the NE Pacific during the Winter of 2013-14: Upper Ocean Response and Implications for the Weather of the Pacific Northwest in Summer 2014 - <i>Nicholas A. Bond, University of Washington</i>	How Much Has Snowpack Declined in the Western USA? - <i>Darrin J. Sharp, Oregon State University; Philip Mote, Oregon Climate Change Research Institute</i>	A Comprehensive Review of 1300 Papers on Climate Impacts on Salmon: What Have We Learned in the Last 5 Years? - <i>Lisa G. Crozier, NOAA-Fisheries</i>	<u><i>Special Session (3:30-5:00)</i></u> From Science to Practice and Back to Science: Preparing for Sea Level Rise in British Columbia – <i>Facilitated by Thomas White, BC Climate Action Secretariat</i> <ul style="list-style-type: none">• Sea Level Rise Adaptation: the Science-Policy Interface in British Columbia - <i>Thomas White, British Columbia Ministry of Environment</i>• Science and Policy on the Ground: Implementing Vancouver’s Adaptation Strategy – <i>Brad Badelt, City of Vancouver</i>• Beyond the Dykes - Preparing Surrey for the Potential Impacts of Sea Level Rise - <i>Carrie Baron, City of Surrey</i>• Adaptation of Waterfront Development to Sea Level Rise –Case Studies in Science to Practice and Back to Science - <i>David J. Reid, Golder Associates</i>
3:50-4:10	Extreme Weather Trends over the Pacific Northwest – <i>Cliff Mass, University of Washington</i>	Does Snowpack Sensitivity to Warming Temperature Differ Across the East/West Divide of the Cascade Mountains? - <i>Matthew G. Cooper, Oregon State University</i>	Assessing Climate-Change Risks to Cultural and Natural Resources in the Yakima River Basin, Washington, USA - <i>Jill Hardiman, U.S. Geological Survey</i>	
4:10-4:30	Changes in Pacific Northwest Heat Waves under Anthropogenic Global Warming - <i>Matthew Brewer, University of Washington</i>	Black Carbon and Dust Deposition on Seasonal Snow and Glaciers in Washington State: Implications for Water Resources - <i>Susan Kaspari, Central Washington University</i>	Riparian Climate-Corridors – Identifying Priority Areas for Conservation in a Changing Climate - <i>Meade Krosby, UW Climate Impacts Group</i>	
4:30-4:50	Elevational Dependence of Climate Variability and Trends in British Columbia’s Cariboo Mountains, 1950-2010 - <i>Aseem Raj Sharma, University of Northern British Columbia</i>	The Value of Stored Water to Summertime Recreational Uses of Reservoirs in the Willamette River Basin - <i>Kathleen Moore, Oregon State University</i>	Contributions of Interdisciplinary Social Science for Advancing Climate Adaptation Research - <i>Shannon Hagerman, University of British Columbia</i>	
4:50-5:00	Day 1 session closing comments; day 2 preview	Day 1 session closing comments; day 2 preview	Day 1 session closing comments; day 2 preview	
Break/Transition to Poster Session (5:00-5:15 pm)				

Poster Session and Hosted Networking Reception (Meany Hall, 5:15pm to 7:00 pm)

Please join us in Meany Hall for the Conference poster session and hosted networking reception from 5:15 pm to 7:00 pm.
Posters are listed by topic at the end of this program.
Reception sponsored by the American Society for Adaptation Professionals, EcoAdapt, and Cascadia Consulting.

-- WEDNESDAY SEPTEMBER 10 --

Wednesday Morning – Plenary (8:30 am to 9:30 am, KNE 120)

<i>Time</i>	<i>Presentation</i>
8:30-9:30	<p>Dancing with the Management Stars: Science-Management Partnerships That Provide Actionable Science</p> <p><i>Facilitated by:</i> Nicole DeCrappeo, DOI Northwest Climate Science Center and Gustavo Bisbal, DOI Northwest Climate Science Center</p> <ul style="list-style-type: none"> Finding A Common Language: Building Science to Match Forest Planning Needs in Southwest Oregon - <i>Emilie Henderson, Institute for Natural Resources, and Terry Fairbanks, Bureau of Land Management</i> Salt Marsh Management and the Coastal Ecosystem Response to Climate Change: A Bottom-Up Approach for Informing Adaptation Strategies – <i>Karen Thorne, USGS Western Ecological Research Center and Roy Lowe, U.S. Fish and Wildlife Service</i> Forest Gaps and Data Gaps: Choosing Relevant Sites and Strategies for Collecting Actionable Data – <i>Susan Dickerson-Lange, University of Washington and Rolf Gersonde, Seattle Public Utilities</i>
<i>Short Break/Transition to Concurrent Sessions (9:30-9:40 am)</i>	

Wednesday Morning - Concurrent Sessions (9:40 am to 10:40 am)				
	KNE 120	KNE 110	KNE 220	KNE 225
Session	Pacific Northwest Climate (Part 3)	Hydrology & Water Resources (Part 2)	Terrestrial & Aquatic Ecosystems (Part 3)	No talks in this room 9:40-10:40
9:40 – 10:00	New Views on Future Northwest Climate - <i>David Rupp, Oregon State University</i>	Howard Hanson Dam, Green River, Washington, Climate Change Impacts and Adaptation Study - <i>Kevin P. Shaffer, U.S. Army Corps of Engineers</i>	Snow-Forest Interactions Along an Elevation Gradient in the Oregon Cascades: Implications for Forest Management - <i>Anne W. Nolin, Oregon State University</i>	
10:00 – 10:20	New Views of Regional Climate Change: The Advantages of a Super Ensemble - <i>Philip Mote and Christian McGillen, Oregon Climate Change Research Institute</i>	Piloting Utility Modeling Applications: The Co-Production of Water Utility Climate Change Impact Assessment between Seattle Public Utilities and the Climate Impacts Research Consortium- <i>Joan Kersnar, Seattle Public Utilities</i>	Will Climate Change Increase the Occurrence of Very Large Fires in the Northwestern United States? - <i>John Abatzoglou, University of Idaho</i>	
10:20 – 10:40	Selecting Climate Change Scenarios Using Impact-Relevant Sensitivities - <i>Julie Vano, Oregon State University</i>	Piloting Utility Modeling Applications: Evaluation and Examination of Custom-Downscaled CMIP5 Global Climate Model Data Supporting Seattle Public Utilities's Climate Change Impact Assessment - <i>Meghan Dalton, Oregon Climate Change Research Institute</i>	Current, Historical, and Future Weather Suitability for Mountain Pine Beetle Outbreaks in Lodgepole Pine Forests - <i>Polly Buotte, University of Idaho</i>	
Break (10:40-11:00 am)				

Wednesday Morning - Concurrent Sessions (11:00 am to 12:30 pm)				
	KNE 120	KNE 110	KNE 220	KNE 225
	Shorelines, Oceans, & Marine Ecosystems (Part 1)	Hydrology & Water Resources (Part 3)	Terrestrial & Aquatic Ecosystems (Part 4)	Working Across Boundaries
11:00 – 11:20	Carbon Chemistry Observations in the Salish Sea: Evidence for Upwelling Influence and Implications of Sills for Ocean Acidification Effects - <i>Jan Newton, University of Washington</i>	<u>Special Session (11:00-12:30)</u> Interactions of Climate and Land Use Change with Water Resources in the Pacific Northwest – <i>Facilitated by Roy Haggerty, Oregon State University</i>	<u>Special Session (11:00-12:30)</u> Climate Adaptation & Pacific Northwest Freshwater Wetlands: Strengthening Links between Science and Management – <i>Facilitated by Amanda Kissel, University of Washington & Simon Fraser University</i>	<u>Special Session (11:00-12:30)</u> Preparing Seattle for Climate Change: Lessons Learned from Adaptation at the Local Level - <i>Facilitated by Crystal Raymond, Seattle City Light</i>
11:20 – 11:40	Climate change and wind intensification in coastal upwelling ecosystems - <i>Sarah Ann Thompson, Farallon Institute for Advanced Ecosystem Research</i>	<ul style="list-style-type: none"> Willamette Water 2100: Anticipating Water Scarcity and Informing Integrative Water System Response in the Pacific Northwest - <i>Roy Haggerty, Oregon State University</i> 	<ul style="list-style-type: none"> Wetlands and Climate Change: Bridging the gaps in science and on-the-ground adaptation - <i>Maureen Ryan and Meghan Halabisky, University of Washington</i> 	<ul style="list-style-type: none"> From Glaciers to Grids: Preparing for Climate Change at Seattle City Light - <i>Crystal Raymond, Seattle City Light</i>
11:40 – 12:00	Climate-linked Mechanisms Driving Spatial and Temporal Variation in Eelgrass (<i>Zostera marina</i> L.) Growth and Assemblage Structure in Pacific Northwest Estuaries - <i>Ronald Thom, Pacific Northwest National Laboratory</i>	<ul style="list-style-type: none"> BioEarth: Envisioning and Developing a New Regional Earth System Model to Inform Natural and Agricultural Resource Management - <i>Jenny Adam, Washington State University</i> 	<ul style="list-style-type: none"> Evaluating Climate Change Effects on Wetlands with Field Surveys and/or Remote Sensing Techniques - <i>Se-Yeun Lee, University of Washington</i> 	<ul style="list-style-type: none"> Building Adaptive Capacity at Seattle Public Utilities - <i>Paul Fleming, Seattle Public Utilities</i>
12:00 – 12:20	The Hydrodynamic Response of Pacific Northwest Estuaries to Climate Change-Driven Boundary Conditions - <i>David Hill, Oregon State University</i>	<ul style="list-style-type: none"> WISDM: Understanding Feedbacks Between Human and Natural Systems through Changes in the Institutions of Water Resource Management - <i>Michael Brady, Washington State University</i> 	<ul style="list-style-type: none"> Wetlands and Climate Adaptation in the National Parks - <i>Regina Rochefort and Barbara Samora, National Park Service</i> 	<ul style="list-style-type: none"> Climate Adaptation in Municipal Watershed Ecosystems - <i>Amy LaBarge, Seattle Public Utilities</i>
12:20 – 12:30	Additional Q&A time	Session includes Posters 24, 30.	<ul style="list-style-type: none"> Managing for Wetlands Resilience at the US Fish & Wildlife Service - <i>Mike Rule, USFWS</i> 	<ul style="list-style-type: none"> Preparing Seattle for Climate Change – <i>Valerie Pacino, City of Seattle</i>
Lunch (provided) -- 12:30-1:30 pm Conference participants are free to eat lunch outside. Seating is also available in KNE 225 and the By George Café (ground floor of Odegaard Library) ** Please return promptly for the 1:30 pm Keynote Address **				

Wednesday Afternoon – Keynote Address (1:30 to 1:50 pm, KNE 130)	
Time	Presentation
1:30 – 1:50	Keynote Address from Washington State Governor Jay Inslee <i>Increasing resilience in Washington State and the Pacific Northwest</i>
Break/Transition to Concurrent Sessions (1:50 -2:10 pm)	

Wednesday Afternoon - Concurrent Sessions (2:10 pm to 3:30 pm)				
	KNE 120	KNE 110	KNE 220	KNE 225
Session	Shorelines, Oceans, & Marine Ecosystems (Part 2)	Hydrology & Water Resources (Part 4)	Human Health	No talks in this room 1:30-5:00
2:10 – 2:30	The Carbon Sequestration Benefits of Large Scale Tidal Wetlands Restoration in Puget Sound: A Case Study of the Snohomish Estuary - <i>Steve Crooks, Environmental Science Associates</i>	<u>Special Session (2:10-3:30)</u> Extreme Precipitation, Sea Level Rise, and Flood Management in the Lower Snohomish River Basin – <i>Facilitated by Guillaume Mauger, UW Climate Impacts Group</i>	<u>Special Session (2:10-3:30)</u> Confronting Climate Change Heat-Health Risks in the Pacific Northwest – <i>Facilitated by Michael Yost, University of Washington</i> Session presentations:	
2:30 – 2:50	Using Inundation Modeling and Sum Exceedance Values to Predict Wetland Land Cover Distribution under Alternative Sea Level Rise and Tide Gate Management Scenarios - <i>Heida L. Diefenderfer, Pacific Northwest National Laboratory</i>	<ul style="list-style-type: none"> • Extreme Precipitation in the Northwest: Implications for the Snohomish River Basin - <i>Eric Salathé, UW Climate Impacts Group</i> • Flooding in the Lower Snohomish: Sea Level Rise, River Flooding, and Inundation - <i>Guillaume Mauger, UW Climate Impacts Group</i> 	<ul style="list-style-type: none"> • Preparing for Extreme Heat Events in Washington State: Historical Health Outcomes, Heat-Risk Mapping, and Public Health Policy Development - <i>Miriam Calkins, Michael Yost, Brendon Haggerty, and Jerrod Davis</i> 	
2:50 – 3:10	Developing a Time of Emergence Approach to Sea-Level Rise Adaptation – <i>James Rufo-Hill, Seattle Public Utilities</i>	<ul style="list-style-type: none"> • Floodplain Resilience: A Tool to Support Multi-objective 		

Wednesday Afternoon - Concurrent Sessions (2:10 pm to 3:30 pm)				
	KNE 120	KNE 110	KNE 220	KNE 225
3:10 – 3:30	Salt Marsh Response to Dike Removal: Implications for Future Sea Level Rise - <i>Martin Lafrenz, Portland State University</i>	Decision-making in Floodplains - <i>Julie Morse, The Nature Conservancy</i> <ul style="list-style-type: none"> Flood Management in the Lower Snohomish: Challenges and Opportunities - <i>Debbie Terwilleger, Snohomish Co.</i> 		
Short Break/Transition Back to Plenary (3:30-3:45 pm)				

Wednesday Afternoon – Closing Plenary (3:45 pm to 5:00 pm, KNE 120)	
<i>Time</i>	<i>Presentation</i>
3:45-4:15	Pioneering Public Perceptions of Climate Change in the Pacific Northwest <i>Leigh A. Bernacchi, University of Idaho</i>
4:15-4:45	Including Indicators of Indigenous Community Health in Climate Change Impact Assessments <i>Larry Campbell, Swinomish Indian Tribal Community, and Eric Grossman, USGS</i>
4:45-5:00	Conference Close <i>Eric Salathé, UW, and Conference Chair</i>

FIFTH ANNUAL PACIFIC NORTHWEST CLIMATE SCIENCE CONFERENCE
POSTER SESSION AND NETWORKING RECEPTION

September 9, 2014

Meany Hall, 5:15 pm – 7 pm

Reception sponsored by the American Society for Adaptation Professionals, EcoAdapt, and Cascadia Consulting

Poster presenters noted here; see online abstracts for the complete list of authors for each poster

Poster presenters are asked to stand by their posters during the following times:

5:30-6:15: Even numbered posters

5:45-6:30: Odd numbered posters

Conference attendees may wish to prioritize visiting posters according to the above times to facilitate discussion with poster authors.

Agriculture: Impacts and Adaptation	
1	Natural Resource Decision-Makers' Reflections on What Constitutes "Useful" Regional Climate Information - <i>Georgine Yorgey, Washington State University</i>
2	Impacts of Increased Over-Winter Precipitation on Dryland Cereal Production Systems in The Pacific Northwest - <i>Nicole Ward, University of Idaho</i>
3	Impacts of Local Meteorology and Management Practices on Carbon and Water Budgets at Multiple Agricultural Sites in the Inland Pacific Northwest - <i>Jinshu Chi, Washington State University</i>
4	Changes in Soil Erosion Rates in Inland Pacific Northwest Agricultural Lands under Climate Change - <i>Paige Farrell, University of Idaho</i>
5	Exploring the Influence of Meteorological and Climatological Factors on Heterogeneity in Winter Wheat Yields in Pacific Northwest Through Remote Sensing - <i>Wenlong Feng, University of Idaho, Department of Geography</i>
6	A Field-Scale Sensor Network for Monitoring and Modeling the Spatial and Temporal Variation of Soil Moisture Content - <i>Caley Gasch, Washington State University</i>
7	Impacts of Irrigation Management on Water and Energy Fluxes over the Yakima River Basin - <i>Jenny Adam, Washington State University</i>

8	Food for Thought: Crop Yields in the Columbia River Basin on an Altered Future - <i>Jenny Adam, Washington State University</i>
9	Agricultural Water Dynamics in the Willamette Basin – 2010-2100 - <i>Cynthia Schwartz, Oregon State University</i>
10	Assessing the Value and Use of Data Repositories for Integrated Research Efforts - <i>Erich Seamon, University of Idaho</i>
11	Characterizing Regional Nitrous Oxide Emissions in the Inland Pacific Northwest Using Multi-Scale Monitoring - <i>Sarah Waldo, Washington State University</i>
12	Environmental and Climatic Thresholds Controlling Earthworm Distribution - <i>Chelsea Walsh, University of Idaho</i>
13	AgToolsTM: An Evaluation Tool for Agricultural Producers Facing Climate Change - <i>Jenna Way, Oregon State University</i>
14	Farmer to Farmer: Multi-Media Case Studies Build Adaptive Capacity Among Cereal-Based Farmers in the Pacific Northwest - <i>Georgine Yorgey, Washington State University</i>
Built Environment: Impacts and Adaptation	
15	Vulnerability of Major Wastewater Facilities during a 100-Year Storm Event - <i>Crystal Bach, King County Wastewater Treatment Division</i>
16	Eroding Coastlines: Seeking Balance at the Oregon Coast in the Face of a Changing Climate - <i>Meg Gardner, Oregon Coastal Management Program</i>
17	Evaluating the Role of Increasing Spatial Resolution in Climate Projections and the Effect on Climate Impacts Assessments for Highway Infrastructure in British Columbia - <i>Stephen Sobie, Pacific Climate Impacts Consortium</i>
Hydrology and Water Resources: Impacts and Adaptation	
18	Robust Changes and Sources of Uncertainty in the Projected Hydrological Regimes of Mid-Latitude Catchments - <i>Nans Addor, University of Zurich</i>
19	High-Resolution Modeling of Freshwater Discharge into the Gulf of Alaska - <i>David Hill, Oregon State University</i>
20	Predicting the Hydrologic Response of the Columbia River System to Climate Change: Initial Stages - <i>Oriana Chegwiddden, University of Washington, Department of Civil and Environmental Engineering</i>
21	Trends in Total Water Storage over the Eastern U.S., 2003-2012 - <i>Elizabeth Clark, University of Washington, Civil and Environmental Engineering</i>

22	Impacts of Climate Change on the Seasonality of Extremes in the Columbia River Basin - <i>Mehmet C. Demirel, Portland State University</i>
23	Testing an Empirical Model of Snowpack Duration Using Citizen Science Field Observations from The Mountains of the Pacific Northwest - <i>Susan Dickerson-Lange, University of Washington</i>
24	Scale refinements of Nutrient Export from Watersheds: Shifting orientation from global applications to the Columbia River Basin - <i>Will Forney, Washington State University</i>
25	Watershed-Scale Hydrologic Implications of the Post-Fire Snow Albedo Effect - <i>Kelly E. Gleason, Oregon State University</i>
26	Incorporating Climate Change into a CWA Temperature Total Maximum Daily Load (TMDL) and ESA Salmon Habitat Restoration Planning in the South Fork Nooksack River, Washington - <i>Oliver Grah, Nooksack Indian Tribe</i>
27	An Analytical Method for Deriving Reservoir Rule Curves to Maximize Social Benefits from Multiple Uses of Water in the Willamette River Basin, Oregon - <i>Kathleen Moore, Oregon State University</i>
28	Impacts of Future Changes on Groundwater Recharge and Low Flow in Highly-Connected River-Aquifer Systems: A Case Study of the Spokane River and the Spokane Valley-Rathdrum Prairie Aquifer - <i>Heather Baxter, Washington State University</i>
29	Future Change in Low Streamflows of Skagit River Lowland Subbasins - <i>Matt Stumbaugh, University of Washington, Civil and Environmental Engineering</i>
30	The Increasing Thirst for Groundwater in the Yakima River Basin: Insights from Stable Isotope Studies - <i>Carey Gazis, Central Washington University</i>
31	Integrated Snow and Hydrology Modeling for Climate Change Impact Assessment in Oregon Cascades - <i>Mohammad Safeeq, Oregon State University</i>
Pacific Northwest Climate: Climate Dynamics, Variability, and Change	
32	Where Does the Mismatch between Climate Model Simulations and Observations Come From? Differentiating between Natural Variability, Interpolation Errors and Model Biases - <i>Nans Addor, University of Zurich</i>
33	Statistical Multi-Criteria Analysis of CMIP5 GCMs for Climate Change Impact Analysis over the Columbia River Basin - <i>Ali Ahmadalipour, Portland State University</i>
34	WA Windstorms: Seasonality and Relationship to ENSO - <i>Karin Bumbaco, Office of the WA State Climatologist</i>
35	The Northern Oscillation Index as a Predictor of Precipitation and Storm Surge in the Southern Coastal Pacific Northwest - <i>Mariza Costa-Cabral, Northwest Hydraulic Consultants</i>

36	Analysis of Multi-Modeling of Climate Scenarios on Precipitation - <i>Mehmet C. Demirel, Portland State University</i>
37	Multivariate Probabilistic Assessment of Meteorological Drought under Climate Change Using Copula Based Regional Frequency Approach - <i>Md Rubayet Mortuza, Washington State University</i>
38	Statistically Downscaled Climate Data Using the Multivariate Adaptive Constructed Analogs Approach - <i>Katherine Hegewisch, University of Idaho</i>
39	Applications of the NorWeST Regional Stream Temperature Database and Model for Climate Change Analysis, Biological Vulnerability Assessments, and Interagency Coordination - <i>Dan Isaak, US Forest Service</i>
40	Decrease in Acid Rain over 24-Year Study at Paradise, Mt. Rainier National Park - <i>Naomi Beebe, Central Washington University</i>
41	Time of Emergence for Climate Extremes in the Pacific Northwest US - <i>Cary Lynch, University of Washington, Climate Impacts Group</i>
42	Spatial Coherence of Extreme Precipitation across the Northwestern United States - <i>Lauren Parker, University of Idaho</i>
43	Climate Change Impact Assessment in Pacific North-West Using Multi Downscaled-scenario Analysis - <i>Arun Rana, Portland State University</i>
44	Exploring the Time of Emergence of Detectable Climate Change in Management-Relevant Variables across the Pacific Northwest - <i>Rita Man Sze Yu, University of Washington, Climate Impacts Group</i>
Shorelines, Estuaries, and Marine Ecosystems: Impacts and Adaptation	
45	Coastal Ecosystem Response to Climate Change: Salt Marsh Vulnerability to Sea-Level Rise along the Pacific Coast - <i>Kevin Buffington, Oregon State University</i>
46	Crabs in Crisis: Biogeographic Distributions, Abundances, and Vulnerabilities to Climate Change of Crabs from the Gulf of California to the Beaufort Sea - <i>Christina Folger, US EPA</i>
47	Adaptive Capacity and Transgressive Migration Opportunities for Current and Future Tidal Wetlands under the Influence of Climate Change in Puget Sound: Variable Implications for Strategic Conservation and Restoration - <i>Brittany R. Jones, University of Washington</i>
48	Boundary-spanning Approaches to Ocean Acidification in Washington State - <i>Nina Bednarsek, NOAA</i>
49	Co-developing Adaptive Capacity in the Face of Evolving Coastal Vulnerability due to Climate Change Uncertainty - <i>Eva Lipiec, Oregon State University</i>

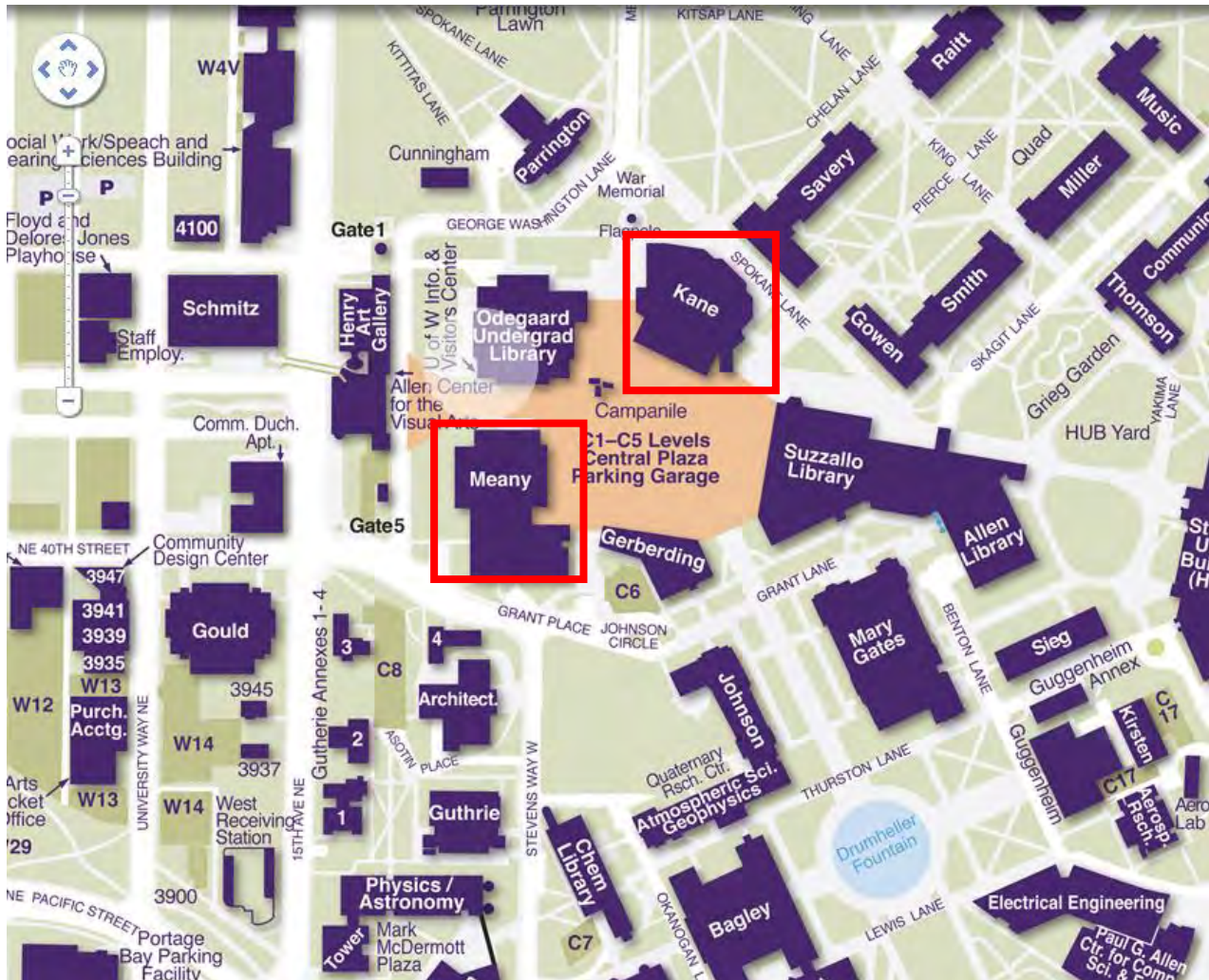
50	Stressed Sebastes: A Trait-Based Evaluation of Climate Risks to Rockfishes of the Northeastern Pacific Using the Coastal Biogeographic Risk Analysis Tool (CBRAT) - <i>Katharine Marko, US EPA, Western Ecology Division</i>
51	New Thoughts on Envisioning Climate Change Impacts to Coastal Communities: Providing Usable Metrics For Adaptation Planning - <i>Katherine Serafin, Oregon State University</i>
Terrestrial and Aquatic Ecosystems and Species: Impacts and Adaptation	
52	Biotic Interactions Need to be Incorporated into Species Distribution Models During a Biological Invasion - <i>Sheel Bansal, US Forest Service</i>
54	Modeling Effects of Climate Change on a Vertebrate Headwater Stream Indicator Species - <i>Gwendolynn W Bury, Oregon State University</i>
55	Climate Change and Bioenergy Harvesting in the Oregon Coast Range - <i>Megan Creutzburg, Portland State University</i>
56	Potential Climate Change Impacts on Fire Danger Indices in Washington and Oregon - <i>Meghan Dalton, Oregon Climate Change Research Institute</i>
57	Growth Patterns across Tree Species Elevational Ranges at Mount Rainier National Park Suggest Complex Impacts of Climate Change - <i>Kevin R. Ford, US Forest Service, PNW Research Station</i>
58	Creating a Climate-Informed U.S. Forest Service - <i>Eric Mielbrecht, EcoAdapt</i>
59	Adapting Natural Resource Management to Climate Change: The Blue Mountains Adaptation Partnership - <i>Jessica Halofsky, University of Washington</i>
60	Reproducing Reproduction: How Does Climate Affect how Plants Reproduce? - <i>Constance Harrington, US Forest Service, PNW Research Station</i>
61	A Thermal Map for all Oregon Streams - <i>Dan Isaak, US Forest Service</i>
62	Forecasting of Fire Season Severity for the State of Oregon - <i>Heather Lintz, Oregon Climate Change Research Institute</i>
63	Soil Depth Affects Simulated Carbon and Water in the mc2 Dynamic Global Vegetation Model - <i>Wendy Peterman, Conservation Biology Institute</i>
64	Adapting Natural Resource Management to Climate Change: The Northern Rockies Adaptation Partnership - <i>Jessica Halofsky, University of Washington</i>
65	Evaluating the Impacts of Climate Change on Ecosystem Response to Atmospheric Nitrogen Deposition in Subalpine Meadows of the Cascades - <i>Justin Poinsett, Washington State University</i>

66	Eco-Hydrologic Modeling of Rangelands: Evaluating a New Carbon Allocation Approach and Incorporating Grazing Impacts on Ecosystem Processes - <i>Julian Reyes, Washington State University</i>
67	Including Land Management in Landscape-scale Simulation of Climate Change Impacts on Forests - <i>David Turner, Oregon State University</i>
Working Across Issues, Sectors, and Boundaries	
68	Regional Approaches to Climate Change for Inland Pacific Northwest Cereal Production Systems - <i>Jodi Johnson-Maynard, University of Idaho</i>
69	Meeting Federal Managers Needs in Addressing Climate Change by Using the Pacific Northwest Cooperative Ecosystem Studies Unit (PNW CESU) - <i>Chris Lauver, National Park Service</i>
70	The Use of Vulnerability Assessments in the Boise River Basin: A Policy Network Approach - <i>Katherine Gibble, Boise State University</i>
71	The North Pacific LCC Conservation Planning Atlas: A Resource for Landscape Scale Conservation and Climate Vulnerability Assessment - <i>Tom Miewald, North Pacific LCC</i>
72	Detecting and Attributing Change in Puget Sound Marine Waters: A Coordinated, Interdisciplinary, Multi-Agency Monitoring Network - <i>Stephanie K. Moore, NOAA Northwest Fisheries Science Center</i>

Campus Map

All regularly scheduled plenary and concurrent sessions are in Kane Hall.

The poster session on 9/9 is in Meany Hall.



Conference Notes: