COLLEGE OF THE ENVIRONMENT / UNIVERSITY of WASHINGTON

CLIMATE IMPACTS GROUP

Reducing climate risks requires robust and reliable information that people can use when making decisions. The Climate Impacts Group at the UW College of the Environment provides the fundamental scientific understanding, data, tools, and guidance decision makers need to identify and reduce climate risks.

UNDERSTANDING CLIMATE RISKS

Climate matters. From decisions about how we grow our economies to how we protect vital ecosystems, assumptions about future climate are deeply embedded in management and protection of our communities and natural systems.

But our climate is changing. While natural variations will continue to influence local climate, rapidly rising greenhouse gas emissions from human activities are altering the earth's climate system in ways that matter for both people and the environment. In the Pacific Northwest, we expect warming that is two to five times faster during the 21st century than during the 20th century. This means less water – but increasing demands – for summer irrigation, hydropower, and fish and wildlife needs. It also means increasing chances of water shortfalls, wildfires, harmful health impacts, and stresses on regional transportation systems. With the compounding factors of sea level rise and coastal erosion, we'll see even more coastal flooding and loss of valuable lands and critical habitat types to permanent inundation.

And that's just in the Pacific Northwest. Changes around the world will affect business supply chains, vulnerable populations, and ecological resources. These are driven by largely unavoidable changes in climate caused primarily by greenhouse gases already emitted into the atmosphere. Furthermore, these challenges are not all in the future — we face some of them today.

Photo Credit: *Victor Mesny Photography*

The Climate Impacts Group partners with federal, state, local, and tribal agencies, businesses, and non-profits to identify and reduce climate risks to Northwest ecosystems and human communities. Their work has dramatically improved decision-makers' abilities to use scientific information for building regional climate resilience.

WORKING TOWARDS SOLUTIONS

The Climate Impacts Group works with stakeholders to identify critical knowledge gaps for reducing regional vulnerability to climate-related risks, does the hard science to fill these gaps, and helps practitioners use this knowledge to inform today's planning and decision making. Their research, data, and technical assistance have been instrumental in:

- Identifying how climate fluctuations affect the Pacific Northwest, showing how patterns of natural climate variability like El Niño and La Niña, and human-caused climate change affect regional snowpack, streamflow, flooding, and droughts; forest productivity and risk of forest fire; salmon returns; and quality of coastal and near-shore habitat.
- Developing major regional and national assessments of the risks of a changing climate, including The Washington Climate Change Impacts Assessment (2009) and the Northwest chapter of the US National Climate Assessment (2014).
- Informing long-range planning for water supply and hydropower resources, including planning related to renegotiation of the US/Canada Columbia River Treaty, the Yakima Basin Integrated Water Resource Management Plan, the Columbia River Basin Long Term Water Supply and Demand Forecast, and long-term operation of Seattle City Light's Skagit and Boundary hydroelectric projects.
- Reducing risks associated with sea level rise and coastal hazards, by developing and supporting the application of sea level rise projections in decisions about redevelopment, risk assessment, planning and operations of urban and rural waterfronts (City of Seattle, Port of Bellingham, King County, Olympia, Swinomish Indian Tribal Community).
- Identifying and prioritizing threats and adaptation options for transportation systems and infrastructure in the Pacific Northwest (Federal Highway Administration, WA Department of Transportation, Sound Transit).
- Developing strategies for adapting public lands to a changing climate by providing knowledge, data, and technical assistance, including support for US Forest Service and National Park Service efforts to address future limits on public access and increasing risk of wildfire and insect outbreaks across 6 million acres in the northern Cascades.
- Providing guidance for practical, science-based approaches to identifying and reducing climate risks, including the groundbreaking 2007 guidebook, Preparing for Climate Change: A Guidebook for Local, Regional, and State Governments.

BUILDING STRONG PARTNERSHIPS

The Climate Impacts Group is relied upon regionally, nationally, and internationally as an experienced creator and honest broker of decision-relevant science. Working across geographic and disciplinary boundaries, the Climate Impacts Group develops actionable knowledge about climate, climate impacts, and managing climate risks. The team leverages the expertise of a small core staff and close to $20 million of federal investments in applied climate science at UW with a growing network of experts in atmospheric science, hydrology, oceanography, coastal and marine ecosystems, fisheries, forest ecosystems, biodiversity, public health, risk management, public policy, and communications.

Robust partnerships with federal, state, and local governments, businesses, and regional colleges and universities have been central to the Climate Impacts Group's work since its creation in 1995. Research and outreach activities are supported by grants and contracts from numerous private and public sources. The Climate Impacts Group is part of the US Department of Interior Northwest Climate Science Center and the proposed continuation of NOAA's NW Regional Integrated Sciences and Assessment (RISA) program, the Climate Impacts Research Consortium.

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Learn more online at cig.uw.edu. For more information, please contact the Climate Impacts Group: 206.616.5350, CIG@uw.edu, or the College of the Environment: 206.685.5410, coenv@uw.edu