

# Global Change, Local Impacts

**Dr. Edward Miles**

**Climate Impacts Group**

Center for Science in the Earth System  
Joint Institute for the Study of the Atmosphere and Oceans  
University of Washington



*Climate Science in the  
Public Interest*

*October 27, 2005*

*The Future Ain't What It Used to Be: Preparing for Climate Disruption*

My colleagues and I are delighted that Ron Sims has so effectively stepped up to the plate to face the need for planning for an increasingly warmer world. We at the University of Washington's Climate Impacts Group have been singing this song since 1997 and are delighted that we have been heard. We are also delighted to have been asked to provide the science-based workshop materials that will provide the foundation for today's presentations and discussions.



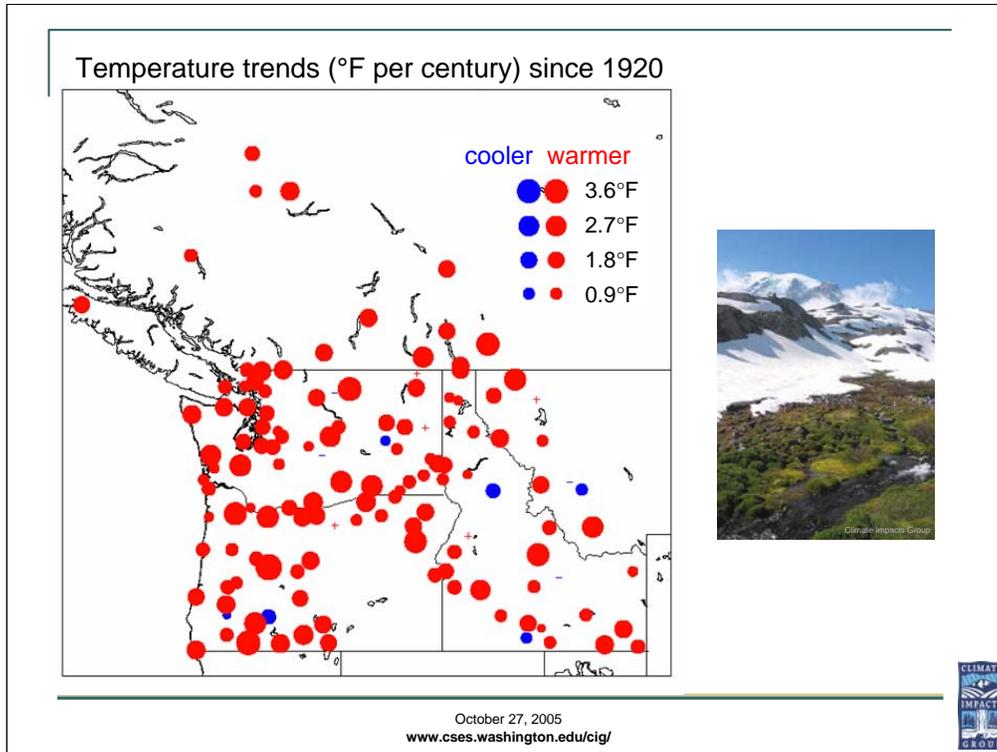
I'd like to begin by introducing the Climate Impacts Group – members of whom will be presenting here momentarily. The Climate Impacts Group is an interdisciplinary research team based at the University of Washington that works at the intersection of climate science and public policy. We are funded by the National Oceanic and Atmospheric Administration (NOAA's) Office of Global Programs as the first of eight similar teams across the country. We also receive support from the University of Washington and are hosted by the UW/NOAA Joint Institute for the Study of the Atmosphere and Ocean.

The Climate Impacts Group draws on expertise from departments across campus – atmospheric sciences, fishery sciences, civil & environmental engineering, forestry, marine affairs, and more. For ten years, we've been working to understand how *both* natural variations in climate – like El Niño and La Niña – *and* human caused climate change affect the environment and natural resources in the PNW. Through research and interaction with regional stakeholders, the CIG works to increase the resilience of the Pacific Northwest to fluctuations in climate. In addition to fundamental research on climate impacts, we work with PNW planners and policy makers to apply information about climate impacts to regional decision making.



Life in the Pacific Northwest (PNW) is shaped by the rhythms of climate. The evidence is all around us. The wet and mossy evergreen forests that tower west of the Cascade Range. The sage-steppe, orchards, and rolling wheat fields of the dry and sunny area east of the mountains. Each year we see a hefty winter snowpack build in our mountains and witness the spring melt sending water surging into our largest rivers. The ongoing cycle brings the spring blooms of Skagit Valley tulips, the summer cherries of the Yakima Valley, the fall apple crops of Wenatchee, and the fall and winter return of tens of thousands of Pacific salmon to the streams of Puget Sound.

Just like the natural systems that make the PNW unique, human- systems have evolved in ways that work with the climate of this place. We have developed economies around the region's natural gifts – timber, shellfish, and recreation to name a few. We have also built an extensive infrastructure to tap into (and at times protect us from, in the case of flood control) our renewable resources. Disruptions in these natural systems can push our natural and human systems to the edge.



As you will soon see, the PNW has been warming consistently over the last 50 years. It is likely that the region is already seeing global warming and that the warming will continue for decades, if not centuries, to come.

As you will also see, the implications of this warming are serious for the region's forests, fish, coasts, agriculture, urban water supplies, flooding, storm- and wastewater management, and hydropower production, as well as other sectors we won't be addressing today. The decreases in snowpack projected to result from climate change (decreases that you will hear about in just a few minutes) will ricochet through many ecosystems on which we depend and through many economic sectors of activity which are central to the concerns of the Pacific Northwest.

We in Washington State are late getting off the mark in preparing for climate change. The fundamental assumptions we hold about managing our natural systems are shifting as a result of climate change. New approaches to resource management will be required and it will take time for institutions to respond to these needs. For these reasons and more, planning for climate change should begin today.

To start this journey, I am pleased to introduce three members of my team at the Climate Impacts Group who will share our team's most up-to-date understanding of what global climate change means for us here in Washington.

- First, Dr. Philip Mote, who is also the Washington State Climatologist, will describe how our climate has already changed and how it is likely to change in the future.
- Then, Dr. Nathan Mantua will discuss how the changes in regional climate will affect our natural resources over the next few decades.
- Finally, Dr. Amy Snover will present some strategies for planning for these changes, strategies that will help us all decrease our vulnerability to global warming.

It is our hope that the conversation that begins here today will stimulate state-wide discussion and action on preparing for global warming. It is up to all of us to ensure that we take the actions needed to prepare for a warmer future.