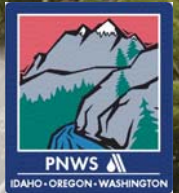


PNWS-AWWA Water Resources Committee Presents:  
**CLIMATE CHANGE: WATER RESOURCE PLANNING AND  
MANAGEMENT IMPACTS AND RESPONSES**



**Tuesday, September 16th, 2008**

Lunch and Learn Workshop

Time: 11:30 - 1:30pm

Cost: \$10

**CH2M HILL Center, 2020 SW 4th Ave, Suite 300 Portland, Oregon 97201**

The recent release of the Intergovernmental Panel on Climate Change (IPCC) AR4 Synthesis Report in November 2007 and the U.S. Climate Change Science Program Synthesis and Assessment Product 4.3 (June 2008) describing "The effects of Climate Change on Agriculture, Land Resources Water Resources and Biodiversity in the United States Synthesis" identified the sectors most likely to be affected by climate change. Water resources managers will feel the effects of the projected impacts of climate change. Pacific Northwest impacts include warmer winter temperatures, decreasing mountain snowpacks resulting in increased amount of precipitation falling as rain rather than snow and an earlier snowmelt and increased intra-annual climate variability. The two Lunch and Learn sessions will focus on the products and services available to help water resource managers cope with a changing climate.

***Framework For Integrating Climate Change Information  
with Water Resource Planning  
with Philip Pasteris***

This presentation will focus on a framework for integrating climate change information and water resource planning. The framework is user-driven and allows the user to assess water resource risk and vulnerability based on historical, current, and future climate projections. The framework supports a planning process to meet state environmental requirements to consider the likely environmental consequences of a proposal.

***New Water Supply Forecasting Technology and Products Available  
from the Internet to Help Manage Water Resources on a Daily Basis  
with Tom Pagano***

The projected impacts of climate change on Pacific Northwest snowpacks are the subject of numerous publications. The Snow Survey and Water Supply Forecasting Program has operated the SNOTEL (Snow Telemetry) network for nearly 30 years throughout the West. The 750 station network provides a snowpack, precipitation, and temperature information critical for managing water supplies westwide.

Dr. Pagano's presentation will focus on new water supply forecast and risk-based snowpack products derived from the SNOTEL network that help water managers assess expected seasonal water supplies and manage existing water supplies on a daily basis. The presentation will also examine the projected impacts of climate change on snowpacks and water supplies in the Pacific Northwest.

*see reverse for detailed speaker information*

**Lunch will be provided for those who RSVP:  
James Lee - 503.736.4122 - james.lee@ch2m.com**



## SPEAKER BIOS

**Mr. Pasteris** is a principal technologist with CH2M HILL's Water Business Group in Portland, Oregon. He is responsible for providing technical input and senior review for water resources-related climate change proposals, projects, and papers; leading and supporting client interface with federal government agencies supporting water and environment climate change projects and programs; and maintaining corporate understanding and leadership in climate change modeling and technologies that impact the water cycle.

**Dr. Pagano** is a Water Supply Forecaster at the National Water and Climate Center (NWCC) of the USDA Natural Resources Conservation Service (NRCS). Since joining the agency in 2002, he has been responsible for forecasting approximately 200 locations in diverse Western climates ranging from the Desert Southwest to the top of the Arctic Circle. He has developed new forecasting methods and products, such as creating a hydrologic simulation modeling system, inventing and rapid prototyping an interactive statistical forecast environment and generating automated real-time visualizations of basin moisture conditions for web delivery. He has also conducted research on streamflow and snowpack trends in the western US and has written about business models for the effective transfer of research to operations. His 2004 dissertation from the University of Arizona department of Hydrology and Water Resources was on the operational linkage of climate and water supply information.