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Oregon's Rogue River Basin to face climate-change hurdles

University of Oregon's Climate Leadership Initiative collaborates with other agencies to look at 2040 & 2080

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(Editor's Note: The report will be released at 1:30 p.m., Tuesday, Dec. 16, during a briefing co-sponsored by the Rogue Valley Council of Governments at the Medford Public Library, 205 S. Central Ave., Medford, Ore.)

EUGENE, Ore. -- (Dec. 16, 2008) -- Three major global climate-change projections scaled down to Oregon's Rogue River basin point to hotter, dryer summers with increasing wildfire risk, reduced snowpack and more rainy, stormy winters, according to a report coordinated by the University of Oregon's Climate Leadership Initiative and the National Center for Conservation Science & Policy.

Among the report's recommendations: a gradual relocation of structures and people from areas at most risk of flash flooding and wildfires and a call for governments, private firms and households to prioritize and cooperatively pursue strategies and policies to prepare for the changes.

"Preparing for Climate Change in the Rogue River Basin of Southwest Oregon" is the first of four such reports that, authors say, represent the first such comprehensive scaling down of global models to specific river basins in the United States. The three models involved (Hadley, CSIRO and MIROC) are used by the Intergovernmental Panel on Climate Change, a scientific intergovernmental body established in 1988 by the World Meteorological Organization and United Nations Environment Programme.

Many buildings and infrastructure in the Rogue basin are in flood plains, while many rural populations reside year-round in narrow and steeply sloped canyons. Storms and other climate stresses, the report concludes, could threaten millions of dollars in direct costs and five to 10 times that in indirect costs. There currently are a total of \$21.5 billion in taxable properties in Josephine and Jackson counties alone, although not all are considered in harm's way.

At a policy level, the report urges governments to work with collaborative mindsets. It also will be important that climate preparation become a priority and that any proposed solutions also consider potential impacts on other sectors to assure continued vitality for the region's population centers and economies. The report focuses on conditions projected for 2040 and 2080.

"Our research found that climate change will significantly stress the natural environment of the Rogue basin," said Bob Doppelt, director of the Climate Leadership Initiative. "These changes will,

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in turn, have important consequences for the economy, social welfare and quality-of-life in the region. Proactive steps to prepare for climate change should become a priority for every government, private company and household in the basin."

A bottom line for the Rogue basin, Doppelt said, is that: "It is going to transition into an area that, for comparison purposes, could seem similar to Sacramento, Calif. It gets very hot and very dry there in the summer months." Urban areas at risk include Ashland, Medford, Central Point, Grants Pass and Cave Junction.

A brief preliminary presentation of the report on Dec. 3 was well received by the Rogue Valley Council of Governments, said Craig Harper, manager of the council's natural resources department. The council co-sponsored the Dec. 16 official release of the report in Medford, Ore.

"Rogue basin communities must take the necessary steps to learn how to cope with the effects of climate change, and to develop the systems that will allow them to recover from its impacts," Harper said. "Our region is resilient and strong, but to remain so we must begin to respond to these coming changes."

Forthcoming reports will cover Oregon's Upper Willamette, Klamath and Umatilla river basins. The four documents are being prepared by the UO's Climate Leadership Initiative and the Ashland, Ore.,-based National Center for Conservation Science & Policy in partnership with the U.S. Forest Service Pacific Northwest Research Station through its Mapped Atmosphere-Plant-Soil System (MAPSS) Team. The reports incorporate findings and recommendations of separate panels of scientists, land managers and policy experts.

Widespread risk to industry, species and economies

Agriculture may be hard hit in the Rogue basin, including vineyards that produce much of Oregon's famous Pinot Noir wine. Pear crops, already are sensitive to temperature variations, also will be at risk, said co-author Roger Hamilton, government program manager for UO's Climate Leadership Initiative. These crops, he said, "may need to move toward the coast or northward."

As projected average temperatures in the Rogue basin rise 1-3 degrees Fahrenheit by 2040 and 4-8 degrees by 2080 -- and summers heat up 7-15 degrees by 2080 -- dramatic impacts are possible for fisheries, forestry, agriculture, hydroelectric power generation, transportation systems (road infrastructure and fuel costs) and water quality, the report concludes. Another major issue will be public health and emergency services, especially in at-risk areas.

"The global climate models forecast increased precipitation at high latitudes and decreased precipitation at desert latitudes," said Ron Neilson of the USFS Pacific Northwest Research Station MAPSS program. "The Rogue River Basin falls directly in the transition between these two major

global bands, rendering future forecasts of precipitation highly uncertain. Most importantly, the models forecast increased severity and variability of precipitation events, particularly in the Rogue basin transition zone between the wet north and the dry subtropics. More severe and variable weather might mean longer and deeper droughts, as well as longer and more severe floods."

Science panelists addressed the restoration and maintenance of floodplains and fisheries, including the survivability of salmon, steelhead and other native species, as well as protection measures for forests and forest wildlife species. At risk to wildfires will be Port Orford Cedar and Brewer's Spruce, which are relics from the last ice age, as well as the Marbled Murrelet, an already threatened coastal seabird that nests in old-growth forests, Spotted Owl and fisher, the report noted. High-elevation changes also will threaten other bird species and native vegetation.

Policy and land-management panelists focused on the implications to economic systems, including those related to the timber and agricultural industries, the relocation of structures and human populations, changes necessary to maintain transportation systems, alternative energy sources such as solar and high-efficiency thermal biomass, water allocation and groundwater use, emergency management and ramifications for public health.

The consistent theme of the panels' recommendations was the call integrated governmental efforts. Specifically, the report calls for plans and policies that focus on a "future range of variability" rather than the long-held approach of management based on historic patterns. It also calls for "expanded planning and decision-making to the landscape level rather than planning at the forest, county, city or project levels in isolation from other regions or interests."

"Society's challenge is two-fold," said Cindy Deacon Williams, senior scientist for the National Center for Conservation Science & Policy. "We not only must reduce our emissions, we also must prepare for the climate impacts already on the way. Even if emissions are successfully reduced, it will take 50 to 100 years for the climate to stabilize. During that time we are likely to see significant consequences in the Rogue basin. Communities need to start taking action now to prepare for those impacts."

Doppelt, Hamilton, Williams and Marni Koopman, a climate scientist with the National Center for Conservation Science & Policy wrote the final report.

About the University of Oregon

The University of Oregon is a world-class teaching and research institution and Oregon's flagship public university. The UO is a member of the Association of American Universities (AAU), an organization made up of 62 of the leading public and private research institutions in the United States and Canada. Membership in the AAU is by invitation only. The University of Oregon is one of only two AAU members in the Pacific Northwest.

About the National Center for Conservation Science & Policy

The National Center for Conservation Science & Policy is a non-profit conservation science and policy organization working to bridge the gap between sound conservation science and natural resource policy. The National Center translates conservation science for community and government leaders to ensure that policy decisions are based on the best available science.

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Sources:

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Links: UO Climate Leadership Initiative: <http://climlead.uoregon.edu/>; UO Institute for a Sustainable Environment: <http://www.uoregon.edu/~enviro/>; National Center for Conservation Science & Policy: <http://www.nccsp.org/>; U.S. Forest Service Pacific Northwest Research Station MAPSS: <http://www.fs.fed.us/pnw/mdr/mapss/index.shtml>; and Rogue Valley Council of Governments: <http://www.rvcog.org/>.

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