

Summary: Regional Impacts of Global Warming

Changes in Temperature and Precipitation

- Over the last century, the average temperature in Oregon has increased approximately 2.5° F, and precipitation has increased by 20% over much of the state
- Some models predict that average temperatures in Oregon may increase 4°-5°F by 2050
- Anticipated changes in precipitation are still uncertain; the rainy season may see 10-15% more precipitation and the dry season may see up to 10% less precipitation annually
- Scientists have made it clear that global warming is here to stay and is already effecting the earth with higher temperatures, reduced snow pack, insect infestation, increased fire danger in our forests, and rising sea levels on our ocean shores
- Energy generation, salmon recovery and basic facilities such as roads, bridges, and dams are likely to be directly affected by climate change impacts within the next 20 years

Effects on Human Health

- Summer heat-related deaths may rise by as much as 150% in Portland, given a 4° F rise in temperatures
- Air pollution, which tends to worsen with hot, stagnant temperatures, may increase
- Warming could heighten the spread of disease in Oregon, as conditions become more favorable to carrier insects and rodents. Risk may increase for such diseases as Lyme disease, St. Louis and California encephalitis, malaria and dengue fever

Coastal Zone Impacts

- Global warming will cause sea levels along Oregon's coast to rise an estimated 6 inches by 2100
- Maximum wave height will likely increase, resulting in greater beach erosion, shoreline retreat and more frequent flooding and landslides
- Coastal marshes in the Tillamook and Coos Bay areas may be lost by a sea level rise of 1-3 feet

Water Resources

- The warmer, wetter winters and warmer, dryer summers will likely result in less overall snow pack, earlier and faster snowmelt, and increased chance of flooding
- A reduction in the mountain snow pack will also intensify already tight water supplies leading to many agricultural production problems along with an altered pattern of power generation
- Scenarios of future climate change in the Northwest for the University of Washington Climate Impacts Group show a snow pack decline by 2090 that could reach 72 percent below the base period of 1960 to 1990
- Lower summer flows may adversely affect fish populations, agriculture, drinking water supply, hydropower production and recreation
- Lower summer flows and higher temperatures may concentrate pollutants, and reduce the ability of streams to assimilate wastes

Forests

- With climate change, the extent of forested areas in Oregon may decrease by 15%-25%, especially east of the Cascades, as forests are replaced by grasslands
- The composition of the state's forests may change; warmer, drier weather would favor Douglas fir, lodgepole pine and ponderosa pine at the expense of hemlock and sitka spruce

- The frequency and intensity of wildfires will likely increase as summers become hotter and drier. In fact the climate variability, far more than fire suppression, has led to the sudden rise and severity of recent wild fires
- Climate change could increase the elevation of the timberline, resulting in a reduction of alpine tundra and associated unique species

Ecosystems

- Lower summer stream flows and higher spring floods would negatively affect fish populations in Oregon. Specific impacts include decreased salmon migration and spawning, loss of fish habitat, increased stream temperatures and decreased dissolved oxygen concentrations
- Changes in offshore upwelling could cause changes in nutrient supplies, resulting in adverse effects on anadromous fish populations
- Ecosystem disturbances may exacerbate the threat of invasive species state-wide

Recreation

- Higher temperatures and insect infestation restrict opportunities for most outdoor activities
- With high temperatures and increased air pollution, public activity and health decline, leading to a more drastic decline of outdoor activity
- Reduced snow pack will lead to shortened seasons at Oregon's ski areas and potential closure of lower elevation areas

Benefits of Taking Action

- The economy can greatly benefit if the issue of global warming is addressed. As Oregon is in a region with substantial renewable energy resources and advanced energy efficient technology, Oregonians can easily capitalize on these strengths, investing in renewable energy sources leading to a booming economy and a healthy natural world
- Energy dollars previously used on overseas oil and gas suppliers can now be invested at home
- Low-carbon policies will save billions of dollars in energy costs
- By reducing the demand for natural gas and oil, prices would stabilize rather than spiral upwards
- Reduction of fossil fuels will reduce the pollutants that cause smog, soot, haze and toxic air pollutants
- Adequate water supplies, preserved farm and forest land uses and reduced traffic congestion will all be ensured if these strategies are adopted and used

Sources:

Climate Change and Oregon, EPA State and Local Climate Change Program, September 1998.

[http://yosemite.epa.gov/oar/globalwarming.nsf/UniqueKeyLookup/SHSU5BVJZ4/\\$File/or_impct.pdf](http://yosemite.epa.gov/oar/globalwarming.nsf/UniqueKeyLookup/SHSU5BVJZ4/$File/or_impct.pdf)

Scientific Consensus Statement on the Likely Impacts of Climate Change on the Pacific Northwest, drafted and signed at the "Impacts of Climate Change on the Pacific Northwest" Symposium, Oregon State University, June 2004.

http://www.ef.org/westcoastclimate/E_OSU%20Consensus%20Statement.pdf

Overview of Climate Change Impacts in the U.S. Pacific Northwest, Climate Impacts Group, University of Washington at Seattle, July 2004.

http://www.ef.org/westcoastclimate/D_PNW%20impacts.pdf

West Coast Governors' Global Warming Initiative, Staff Recommendations to the Governors, November, 2004. http://www.ef.org/westcoastclimate/WCGGWI_Nov_04%20Report.pdf

World Wildlife Fund, Climate Change>What You Can Do.
<http://www.worldwildlife.org/climate/involved/individuals.cfm>

Green House Net Work, Take Action
www.greenhousenet.org