

Chapter 10

Global Warming

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Photo by US Fish and Wildlife



Certain gases in the earth's atmosphere act like a blanket by holding heat from the sun close to the earth's surface. This natural "greenhouse" process keeps the planet warm and makes it habitable. However, since the Industrial Revolution, our society has released increasingly larger quantities of carbon dioxide (CO₂) and other blanketing gases into the atmosphere. Because CO₂, the major culprit in global warming, is collecting in the atmosphere at unnaturally high levels, we are seeing major changes in the earth's climate.

The official forecast for the globe is a warming of 2.4-10.4 degrees Fahrenheit by the year 2100. For comparison, during the last Ice Age the planet averaged only 9 degrees colder than it is today. By 2050 warming could eliminate more than half the current winter snow pack in the Cascades leading to dramatic reductions in summer stream flows.

The burning of coal, oil and gas for electricity and transportation are the primary sources of CO₂. Although the United States represents only 4% of the world's population it produces nearly a quarter of the planet's CO₂ emissions. Oregon alone emits more CO₂ per year than 52 developing countries combined.

Solutions to global warming include:

- reducing our reliance on fossil fuels
- expanding our use of renewable energy sources such as solar, wind, geothermal or small scale hydro generators
- investing in energy efficiency measures, including more fuel efficient cars
- adopting tailpipe standards that limit global warming pollution from cars
- encouraging alternative modes of cleaner transportation

Scientific Evidence

Scientists have reached overwhelming consensus that humans are disrupting the global climate. The Intergovernmental Panel on Climate Change (IPCC) studies scientific evidence about global warming and its consequences. It includes more than 2,000 scientists representing 150 countries and is considered to be the most non-biased authoritative voice on the issue. In its fourth assessment on climate change released in early 2007, IPCC scientists state there is "stronger evidence" than ever before about the human influence and that it is "very likely" that increasing man-made greenhouse gases already "have contributed substantially to the observed warming over the last 50 years."



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Impacts of Global Warming

The National Oceanic and Atmospheric Administration (NOAA) verified that 15 of the warmest years ever measured since records have been kept occurred since 1980, with 2005 almost matching 1998 as the being the hottest year on record, 2002, the third hottest and 2003 the fourth. However, global warming does not warm all parts of the planet evenly, or effect rain-fall patterns in the same way across the globe. Generally speaking, normal climate patterns are changing, thereby disrupting agricultural practices, disease patterns and storm frequency and severity.

While no specific storm can be attributed to global warming, some governments are already beginning to point to recent extreme weather events as examples of how global warming has already impacted the planet. In its 2001 report on the impacts of climate change the IPCC notes "inflation-corrected catastrophe losses have increased eight-fold in North America over the past three decades."

Climate Change in the Pacific Northwest

Studies released by the Climate Impacts Group of the University of Washington indicate that global warming in the northwest will likely mean:

- an increase in temperature of 2 to 5 degrees Fahrenheit by 2050
- smaller snow packs (Cascade snow pack is predicted to drop by around 60 percent by 2050 from 1990 levels) resulting in more summer droughts and less water available for summer and fall crop irrigation, drinking water, salmon runs and electricity.
- More winter flooding because precipitation will fall as rain, not snow.
- The inundation of low-lying sections of recreational beaches, coastal highways and properties under a rising sea.
- Degradation of forests from drought, severe fires or pest infestations
- Increased risk of extinction for already endangered salmon runs.

The Economics of Global Warming

In 2005 a group of Northwest economists, scientists and resource specialists came together with stakeholders from private and public sectors to discuss the economic consequences of unchecked global warming in Oregon. In their preliminary assessment it was found that eight key sectors of Oregon's economy could be adversely impacted. These sectors include agriculture, forestry, power generation, coastal tourism and recreation, snow sports and winter recreation, salmon recovery and public health. Some of the biggest impacts will be on farm and fisheries productivity and hydroelectric energy production. Loss of hydroelectric power will impact energy costs for every Oregonian.

The preliminary assessment also found significant opportunities for economic development in responding to the many challenges posed by global warming. Because Oregon has a long history of investing in sustainable practices, the state is poised to take a leadership role in emerging global markets for clean energy technologies and energy management. When energy dollars remain in Oregon, those same dollars employ local workers and generate more income that support local businesses.

International Treaty Negotiations

By signing the Kyoto Protocol in 1997, 38 industrialized nations committed to cutting their greenhouse gas emissions to 5.2 percent below 1990 levels within a 2008-2012 time frame. In March of 2001, President Bush withdrew the United States from the negotiations process for implementing the Protocol, claiming the treaty was flawed because it failed to include developing countries. Japan, Russia, Canada, New Zealand and all countries of the European Union have ratified the Treaty. Even though the United States remains opposed to the Kyoto Protocol, it became international law in early 2005 after having been ratified by 55 percent of the signatories representing 55 percent of developed nations' carbon dioxide emissions.

Oregon's Role

Oregon took early steps to find innovative ways to reduce our emissions. The 1997 Legislature passed HB 3283, which streamlines the siting process for new gas-fired plants that agree to certain pollution control requirements. A new plant must offset a portion of its lifecycle CO2 emissions by either establishing its own CO2 reduction projects or contribute to The Climate Trust a non-profit organization established by the bill that invests in projects that reduce emissions. The Climate Trust has funded a number of projects in the forestry, transportation and renewable resources sectors. Although HB 3283 introduced the first mandatory and significant CO2 standard in the country, it addressed only new facilities, not existing ones.

The 1999 Legislature passed a net metering bill, HB 3219, which allows people or businesses with small solar or wind generators to feed excess energy back into the electrical grid, and also established standards to encourage the development of renewable energy in the state. In 2005 the Legislature passed energy efficiency standards for eleven appliances including commercial refrigerators and freezers.

Oregon Governor Ted Kulongoski, along with the governors of Washington and California announced in 2003 the West Coast Governors' Global Warming Initiative. The states are working together to develop and implement joint policy recommendations, such as providing electricity at truck stops along I-5 to reduce truck idling and collaborating on the purchase of hybrid vehicles.

The most recent example of the West Coast States' collaboration is the recent agreement between the Public Utilities Commissions of California, Washington, Oregon, and New Mexico, who agreed to jointly develop new carbon reduction policies. Earlier in 2006, the Oregon Environmental Quality Commission adopted the tailpipe emissions standards that had passed earlier in Washington and California. The new clean car standards will cut global warming pollution from new cars and trucks by an average of 22% by 2012 and by an average of 30% by 2016.

In addition, these states are working to develop and implement state-level policies because many of the most important measures require state legislative approval or rule making. Governor Kulongoski convened an Advisory Group on Global Warming to advise him on actions Oregon should take. The Advisory Group's recommendations were finalized and forwarded to the Governor in December 2004. The Oregon Strategy for Greenhouse Gas Reductions sets Oregon on the path to deep reductions in global warming pollution while rewarding us with all the health, economic and ecosystem benefits that come with climate protection. Recommended actions cover energy efficiency, transportation, renewable energy, recycling and other areas.

Most importantly the Strategy sets greenhouse gas reduction goals for Oregon to meet by 2050. They are:

1. By 2010, arrest the growth of Oregon's greenhouse gas emissions (including but not limited to CO₂) and begin to reduce them, making measurable progress toward meeting the existing benchmark for CO₂ not exceeding 1990 levels.
2. By 2020, achieve a 10 percent reduction below 1990 greenhouse gas levels.
3. By 2050, achieve a "climate stabilization" emissions level at least 75 percent below 1990 levels.

Legislative Priorities

The Governor's Office should aggressively pursue the joint strategies developed as part of the West Coast Governors' Global Warming Initiative. The Legislature and other decision makers should implement the recommendations of the Oregon Strategy for Greenhouse Gas Reductions. These recommendations include, but are not limited to, the following:

Clean Energy Agenda

Oregon has a significant opportunity to capitalize on our abundance of clean renewable energy resources, such as wind, solar, wave, and geothermal power to benefit our environment, our energy independence, and our economy. Developing these resources curbs global warming pollution and keeps money and jobs in our communities. The Legislature should adopt a renewable energy standard requiring that 25% of Oregon's electricity come from renewable energy sources by 2025, as well as other policies to increase investment in energy efficiency and renewable energy.

Renewable Fuels Package

Oregonians have an historic opportunity to move America closer to energy independence. Biofuels produced in Oregon for our cars and trucks create jobs, promote economic development in rural communities, reduce global warming pollution, and promote cleaner air. The Legislature should adopt a flexible fuel standard targeted toward local, in-state production to establish a stable market for farmers and entrepreneurs on the cutting edge of producing and marketing Oregon biofuels.

Implement Clean Cars Standards

Clean car standards will significantly reduce toxic air pollution, global warming gases, dependence on foreign oil and the dollars we send out of state for fuel.

The Legislature should provide funding for tailpipe emissions standards in the Department of Environmental Quality's budget proposal for 2009. The DEQ currently proposes funding through a fee ratification from auto dealers in the state. There is also a Department of Motor Vehicles registration denial which would prevent car owners from buying vehicles that don't meet our standards from other states and registering them in Oregon.

Conclusion

Global warming is real. More than 2,000 scientists from around the world have reached consensus that we are already changing the global climate. Global warming will have dramatic, negative impact on Oregonians. It is already impacting agriculture, forests and the economy, and poses a significant threat to our quality of life. Investments in energy efficiency, renewable sources of energy and alternative means of transportation combat global warming, clean our air and lessen our dependence on foreign oil. Many of the nation's top economists agree

that taking early action to combat global warming is good insurance, can help the economy, and should provide a net gain in jobs. The Kyoto Protocol is now international law without U.S. participation. The U.S. needs to behave responsibly, sign the Kyoto Protocol, and live up to our obligations to cut our use of fossil fuels.

Key Resources

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