

IMPACTS OF CLIMATE CHANGE ON PNW TIMBER PRODUCTION

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Summary Points

- Timber producing forests are distributed among federal, state, and private owners, but most harvesting is on private lands.
- Climate change can affect timber production:
 1. Through *ecological* changes in growing conditions and disturbance regimes
 2. Through *economic* changes in timber prices
 3. Through *policy* changes in regulations and markets



Climate Impacts Group
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PNW FORESTS (WA, OR, ID)

- 73.6 million acres (29.7 million hectares)
- 58.8 million acres (80%) considered timberlands (capable of producing timber)
- 36% of timberland is privately owned (18% forest industry, 18% non-industrial private forests)¹
- 12.1 billion board feet (28.5 million cubic feet) softwood lumber produced in 2001
- 78% harvested timber from private lands
- In 2001, WA and OR maintained 14 direct jobs for every million board feet of timber harvested²

MANAGING IMPACTS DUE TO ECOLOGICAL CHANGES

Climate change may affect temperature and precipitation patterns, which in turn will affect snow pack levels, soil moisture, and



Second growth cedar to be manufactured into wood fencing, Olympic Peninsula, Washington, (Steve Jasmer, Tubafor Cedar Company)

natural disturbance regimes such as fire, insects, and wind throw.

In the Pacific Northwest both precipitation and temperature may increase, potentially causing reduced winter snow pack and changes in soil moisture levels (drier in summer months but potentially wetter in spring months).

Changing fire and insect disturbance regimes will

need to be monitored. Nursery stock should be chosen to withstand changes in soil moisture. Road planners should consider potential future wetter conditions in certain areas.

EFFECTS OF ECONOMIC CHANGES

Climate change may affect the price of timber by changing forest



Douglas-fir stand in Oregon (OSU)

Climate change will impact PNW forests through changes in environment, economics, and policy on local, state, national, and global scales.

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productivity around the world. Productivity will vary but is expected to yield a total increase in the harvestable timber supply. This increase may lower average timber prices (unless demand increases more rapidly than supply). Regions with higher costs of timber production may have decreasing economic benefits from timberlands.

In the Pacific Northwest forest productivity may increase in some areas and decrease in others, but higher costs of production will decrease economic benefits from timberlands.³

EFFECTS OF POLICY CHANGES

Climate change policies may affect management of

timberlands by introducing a new product (carbon) or introducing a new liability (greenhouse gas emissions).

Policies to cap or tax greenhouse gas emissions may increase carbon trading, which can affect forest industry in three ways: by paying landowners to store carbon in forests, by favoring wood products over more energy intensive substitute materials such as steel or concrete, and by increasing the favorability of renewable energy from biomass.

In 1997 Oregon passed the first state law limiting carbon dioxide emissions from new power plants (limit now at .675 lbs per kWh). Similarly, Washington just passed

House Bill 3141, which will require fossil fuel powered electric generation facilities to offset 20% of total carbon dioxide emissions through purchasing third party carbon credits or investing in carbon mitigation projects such as cogeneration.

Finally, forest certification standards such as AF&PA's Sustainable Forestry Initiative⁴ and Canada's Sustainable Forest Management⁵ have included carbon management in their latest standards.

¹ Warren, Debra D. 2003. Production, Prices, Employment, and Trade in Northwest Forest Industries, All Quarters 2001. Resource Bulletin. PNW-RB-239. USDA Forest Service.

² Alig, Ralph J., Andrew J. Plantinga, SoEun Ahn, and Jeffrey D. Kline. 2003. Land Use Changes Involving Forestry in the United States: 1952 to 1997, with Projections to 2050. PNW-GTR-587. USDA Forest Service.

³ Perez-Garcia, John, Linda A. Joyce, A. David McGuire, and Xiangming Xiao. 2002. Impacts of climate change on the global forest section. *Climatic Change* 54:439-461.

⁴ American Forest and Paper Association. 2002. *Sustainable Forestry Initiative Standard 2002-2004*.

⁵ Canadian Standards Association. 2002. *Sustainable Forest Management: Requirements and Guidelines*. Z809-02.

For More Information

For more information on the impacts of climate variability and change on Pacific Northwest forest resources, please contact the Climate Impacts Group.

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