



Oregon Department of Forestry's

Annotated History of Climate Change- Related Policy in Oregon

And the Board of Forestry

- A Decadal Overview -
2019 Update



- A Decadal Overview - *2019 Update*

- Document provides an overview of the history of climate change policy development in Oregon
- Oregon Department of Forestry has been involved Oregon's planning process related to climate change since 1990
- Includes significant legislation, task forces, agency reports, and Board of Forestry meetings



- A Decadal Overview - *2019 Update*

2003—Board of Forestry releases new Forestry Program For Oregon

Strategy G: Enhance carbon storage in Oregon's forests and forest products

- G.1. encourage maintaining and increasing Oregon's forestland base and promoting urban forests to enhance **carbon storage** and reduce greenhouse gases.
- G.2. encourage development of tools to predict how forest management and wildfire affect **carbon pools** and calculate the amount of carbon stored in these pools.
- G.3. promote increased public and forest landowner understanding of the potential contributions of trees and forests in **storing carbon**.
- G.4. promote the development of forestry **carbon-offset markets**, and provide landowners information about the market rules for the sale or exchange of carbon offsets.
- G.5. promote use and reuse of Oregon forest resources, avoiding the higher level of **carbon dioxide emissions** resulting from the manufacture of many wood product substitutes.
- G.6. work with forest landowners, other organizations, wood products manufacturers and retailers to develop local markets for wood products from Oregon forests.
- G.7. encourage greater consumer awareness of the environmental advantages of using renewable and recyclable Oregon forest products



2007 HB 3543

- Established the Global Warming Commission and the Oregon Climate Change Research Institute

Section 12: The Commission shall track and evaluate...

- The carbon sequestration potential of Oregon's forests
- Alternative methods of forest management that can increase carbon sequestration and reduce the loss of carbon sequestration to wildfire
- Changes in the mortality and distribution of tree and other plant species and
- the extent to which carbon is stored in tree-based building materials

AGENDA ITEM A

Attachment 3

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2010 Climate Change Adaptation Framework

Interagency effort that was managed through the Department of Land Conservation and Development.

The 2010 Adaptation Framework included:

- Short-term priority actions
 - 11 sections on climate risks, state capacity and needed actions
 - Recommendations on research priorities and implementing the framework
 - References, gaps and agency actions
- ✓ DLCD effort to update the Framework is currently underway



Climate Change Research Accomplishments

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The normal fire environment—Modeling environmental suitability for large forest wildfires using past, present, and future climate normals

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ABSTRACT

We modeled the normal fire environment for occurrence of large forest wildfires (>40 ha) for the Pacific Northwest Region of the United States. Large forest wildfire occurrence data from the recent climate normal period (1971–2000) was used as the response variable and fire season precipitation, maximum temperature, slope, and elevation were used as predictor variables. A projection of our model onto the 2001–2030 climate normal period showed strong agreement between model predictions and the area of forest burned by large wildfires from 2001 to 2015 (independent fire data). We then used downscaled climate projections for two greenhouse gas concentration scenarios and over 30 climate models to project changes in environmental suitability for large forest fires over the 21st century. Results indicated an increasing proportion of forested area with fire environments more suitable for the occurrence of large wildfires over the next century for all ecoregions but less pronounced for the Coast Range and Puget Lowlands. The largest increases occurred on federal lands, while private and state lands showed less. We calculated fire rotation periods for the recent historical and current climate and examined the relative differences between them and our modeled large wildfire suitability classes. By the end of the century, the models predicted shorter fire rotation periods, with cooler/moister forests experiencing larger magnitudes of change than warmer/drier forests. Modeling products, including a set of time series maps, can provide forest resource managers, fire protection agencies, and policy-makers empirical estimates of how much and where climate change might affect the geographic distribution of large wildfires and effect fire rotations.

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RESEARCH ARTICLE

Evidence of Tree Species' Range Shifts in a Complex Landscape

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Abstract

Climate change is expected to change the distribution of species. For long-lived, sessile species such as trees, tracking the warming climate depends on seedling colonization of newly favorable areas. We compare the distribution of seedlings and mature trees for all but the rarest tree species in California, Oregon and Washington, United States of America, a large, environmentally diverse region. Across 46 species, the mean annual temperature of the range of seedlings was 0.120°C colder than that of the range of trees (95% confidence interval from 0.096 to 0.144°C). The extremes of the seedling distributions also shifted towards colder temperature than those of mature trees, but the change was less pronounced. Although the mean elevation and mean latitude of the range of seedlings was higher than and north of those of the range of mature trees, elevational and latitudinal shifts run in opposite directions for the majority of the species, reflecting the lack of a direct biological relationship between species' distributions and those variables. The broad scale, environmental diversity and variety of disturbance regimes and land uses of the study area, the large number and exhaustive sampling of tree species, and the direct causal relationship between the temperature response and a warming climate, provide strong evidence to attribute the observed shifts to climate change.



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AGENDA ITEM A

Attachment 3

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2011—Board of Forestry releases update to the 2003 Forestry Program For Oregon

Goal G: Enhance carbon storage in Oregon's forests and forest products

1. Encourage increasing Oregon's forestland and promote expansion of urban forests
2. Promote increased public and forest landowner understanding of the potential contributions of forests, and forest products in sequestering and storing carbon.
3. Ensure carbon-offset and ecosystem service markets provide sources of revenue that does not discriminate against landowner participation from excessive regulations.
4. Encourage greater consumer awareness of the environmental advantages of using Oregon forest products and their use as substitutes for more energy intensive building materials.
5. Advocate for public and private forestland biomass to be considered on an equal basis with other renewable energy sources and as key component of Oregon's strategy for meeting state greenhouse gas reduction and renewable energy portfolio standard policy goals.
6. Continue to support research and develop policies and incentives that will drive the growth of the biomass/ bioenergy/ bio-based products industry in the state.
7. Promote research and innovation towards increasing energy efficiency and reducing the use of fossil fuels in the Oregon forest sector.



2011—Board of Forestry releases update to the 2003 Forestry Program For Oregon *continued...*

Goal C:

Protect and improve the productive capacity of Oregon's forests

Promote consideration of alternate climate change adaptation and mitigation scenarios when planning reforestation and vegetation management, particularly when managing species with specific climate and fire regimes.

Goal F:

Protect and improve the health and resiliency of Oregon's dynamic forest ecosystems, watersheds, and airsheds.

Promote integration of climate change assessment, mitigation and adaptation strategies into planning, decision-making, management, restoration, and public information efforts.



Board of Forestry Emerging Issues Workplan

2013 Board of Forestry

- Approved the Climate Change section of its Emerging Issues work plan.

2015 Board of Forestry

- Approved recommendations
- Closed out climate change section of the workplan



2019 Oregon Forest Ecosystem Carbon Report

- Provides current statewide estimates of carbon stocks and flux
- Seven ecoregions, five major ownerships, and forest types
- Carbon estimates calculated from field measurements taken on 9,439 inventory plots in Oregon 2001-2016.
- The USFS Forest Inventory and Analysis Program provides data as part of a long-term forest monitoring system.
- Funding was provided by the Governor's Office of Carbon Policy