

Oregon Department of Forestry



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Overview

Forestry & Wood Products -- Carbon Storage

Uniquely Oregon! That has been Oregon's trademark. And that trademark holds when it comes to recognizing the important role forests and wood products play in the global carbon cycle. In the early 1990's, Oregon's two largest electrical power providers, Portland General Electric and PacifiCorp, both looked to the forest as one means of [offsetting carbon dioxide emissions](#) (pdf) from power generation. In 1999, these early efforts spurred further investigation that led to perhaps what is still the largest operational investment in forests as a means to offset carbon dioxide emissions – the \$1.5 million dollar resurrection of Oregon's Forest Resource Trust by the Klamath Cogeneration Project. The Klamath Cogeneration Project, which produces both electricity and steam from natural gas under one of the highest standards for reducing carbon dioxide emissions from power plants, is a public-private partnership owned by the City of Klamath Falls and operated by PacifiCorp Power Marketing; a non-regulated affiliate of PacifiCorp.



But these pioneering efforts only form the beginning. With passage of [House Bill 2200](#) by the 2001 Oregon State Legislature, Oregon can seize upon developing market opportunities for forestry carbon offsets so that any forest landowner that makes investments in healthy, productive forests can take advantage of this new commodity. House Bill 2200 recognizes that markets for forestry carbon offsets provide an incentive for forest landowners to manage for the full suite of environmental, social and economic values demanded by Oregonians. By recognizing the need to establish quality assurances for forestry carbon offsets and principals for their accounting, House Bill 2200 acts as a beacon and signals to forestry carbon offset purchasers and third-party verifiers that Oregon is preparing itself for credible business in this new sector. When actual markets develop, Oregon will be at the ready and first in line to sell its forestry ware.

Maintaining and enhancing the important role forests play in the carbon cycle is one of the seven international criteria for sustainable forestry that will be used in the Oregon Board of Forestry's update of its strategic plan for Oregon's forests – the 2003 [Forestry Program for Oregon](#).

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Conferences/Events/Training

This section is updated periodically as we come across events or training. Feel free to check back occasionally for updates.



Conversion Factors

Conversion Factors for Carbon Dioxide Emission Offsets

2,000 pounds carbon stored = 1 short ton of carbon stored

1 short ton of carbon stored = 0.9072 metric tons of carbon stored

1,000 pounds carbon stored = 0.454 metric tons of carbon stored

1 metric ton of carbon stored = 3.67 metric tons of carbon dioxide (CO₂) emission equivalent

1 metric ton of carbon stored = 1.102 short tons of carbon stored

1 metric ton of carbon stored = (3.67)*(1.102) = 4.044 short tons of carbon dioxide (CO₂) emission equivalent

1 hectare = 2.4711 acres

tonne = 1 metric ton

1 cubic foot = 0.028316 cubic meters

[Need another conversion factor?](#)



News Articles

- ["Oregon's Carbon Investment In Family Forestlands"](#) (pdf) an article appearing in *Northwest Woodlands*, Summer 2000, Volume 16, No. 3
- ["Is the Road Through Poznan Paved in Voluntary Carbon?"](#) By Ted Rose, The Katoomba Group's Ecosystem Marketplace (Voluntary and regional carbon reduction initiatives continue to save tropical rainforests by using them as carbon sinks)



Literature

- [A Guide to Monitoring Carbon Storage in Forestry and Agroforestry Projects](#) (pdf) Winrock International
- [Are Forests Carbon and Climate Change Related?](#) (pdf) Oregon Forest Resources Institute Fact Sheet
- [Carbon Sequestration - A Working Example in Oregon](#) (pdf)
An article by James F. Cathcart, Ph.D. reprinted with permission from the *Journal of Forestry* (vol.98, no.9, pp. 32-37) published by the Society of American Foresters.
- [Climate Change And Oregon](#) (pdf), U.S. EPA, Office of Policy, EPA 236-F-98-007u, September 1998. Global impacts to Oregon
- [Climate Change, Carbon, and Forests of the Northeast](#) (pdf) *Forest Guild*, Perschel et al, 2007
- [Forest Management Solutions for Mitigating Climate Change in the United States](#) (pdf) Malmshemer et al, 2008, *Journal of Forestry*. April/May 2008
- **Forests, Carbon and Climate Change: A Synthesis of Science Findings** - Oregon Forest Resources Institute, OSU College of Forestry, Oregon Department of Forestry
 - [Executive Summary](#) (pdf)
 - [Full Report](#) (pdf)
- [Forests, Carbon and Climate Change: Exploring the Role of Trees In Reducing Atmospheric Carbon](#) (pdf) Oregon Forest Resources Institute
- [Growing Carbon: A New Crop that Helps Agricultural Producers and the Climate, Too](#) (pdf)

- Environmental Defense, USDA Natural Resources Conservation Service, USDA National Agroforestry Center, Soil and Water Conservation Society
- [Implications of Climate Change for Conservation, Restoration and Management of National Forest Lands](#) (pdf) Brown, Rick. 2008, Defenders of Wildlife
 - [Climate Change 2007: Synthesis Report](#) (pdf) Intergovernmental Panel on Climate Change (IPCC). This report, adopted section by section at IPCC Plenary XXVII (Valencia, Spain, 12-17 November 2007), represents the formally agreed statement of the IPCC concerning key findings and uncertainties contained in the Working Group contributions to the Fourth Assessment Report.
 - [Frequently Asked Questions](#) (pdf) - IPCC, 2007: *Climate Change 2007: The Physical Science Basis. Contribution of Working Group I to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change* [Solomon, S., D. Qin, M. Manning, Z. Chen, M. Marquis, K.B. Averyt, M. Tignor and H.L. Miller (eds.)]. Cambridge University Press, Cambridge, United Kingdom and New York, NY, USA.
 - [Oregon's Carbon Investment In Family Forestlands](#) (pdf) Article by James F. Cathcart, Ph.D. appearing in *Northwest Woodlands* Summer 2000, Volume 16, No. 3
 - [The Role for Sustainably Managed Forests in Climate Change Mitigation](#) (pdf) Ruddell et al, 2007, *Journal of Forestry*, September 2007
 - [Scorecard for Evaluating Forest Carbon Offset Project Quality](#) (pdf) Manomet Center for Conservation Sciences, #MCCS NCI 2008-1, November 2008
 - [Technical Guidelines Voluntary Reporting of Greenhouse Gases \(1605\(b\)\) Program](#) (pdf) Updated January 2007, U.S. Dept. of Energy
 - [Turn that Field or Brush Patch into a Forest](#) (pdf) Article by James F. Cathcart, Ph.D. appearing in *Northwest Woodlands*, Summer 2002, Volume 18, No 3
 - [Voluntary Carbon Standard Agriculture, Forestry and Other Land Use Protocol](#) (pdf)



Websites

- [American Carbon Registry](#) - the first private voluntary greenhouse gas registry in the U.S. and one of the largest in the U.S. voluntary and pre-compliance markets.
- [Australian Pollution Reduction Scheme](#)
- [California Climate Action Registry Forestry Protocols](#)
- [Carbon Calculator for Tree Planting Projects](#) - A new Tree Carbon Calculator has been developed by the US Forest Service Center for Urban Forest Research and approved by the California Climate Action Registry's Urban Forest Project Reporting Protocol for quantifying carbon dioxide (CO₂) sequestration from tree planting projects (courtesy of the Western Forest Leadership Coalition Update January 13, 2009).
- [Carbon Inventory Tools](#) - A toolbox full of basic calculation tools to help quantify forest carbon for planning or reporting. Tools developed by the USDA Forest Service Northern Research Station.
- [Carbon On-Line Estimator](#) (COLE) - A convenient way to customize the forest carbon yield tables developed for the Voluntary Reporting of Greenhouse Gases under Section 1605(b) of the Energy Policy Act of 1992. Developed by the National Council for Air and Stream Improvement and the USDA Forest Service.
- [Carbon Trading Primer](#) - A Primer for Forest Landowners -- National Commission on Science for Sustainable Forestry and the Warnell School of Forestry and Natural Resources.
- [The CarbonFix Standard](#) - A new international practical standard for the carbon accounting of forestation projects to facilitate forest projects in the voluntary market for carbon offsets. CarbonFix e. V., Stuttgart, Germany
- [CarbonTracker](#) - website found courtesy of *CLIM-FO-L (An Electronic Journal on Climate Change and Forestry)*, No. 3 (2007) CarbonTracker: A system to keep track of carbon dioxide uptake and release at the Earth's surface over time CarbonTracker is designed for policy makers, industry, scientists, and the public need CarbonTracker information to make informed decisions to limit greenhouse gas levels in the atmosphere. The website gives information on a system that calculates carbon dioxide uptake and release at the Earth's surface over time. It estimates the carbon dioxide exchange from an 'atmospheric point of view.'
- The [Climate Trust](#) is a non-profit organization that meet's Oregon's statutory requirements for developing carbon offsets through the monetary path approach to Oregon's carbon emission standard for non-regulated fossil fuel power plants. The Climate Trust also develops carbon offset projects for other emitters and works to promote innovative climate change solutions and sound offset policies.
- [Chicago Climate Exchange,® Inc. \(CCX®\)](#) is a self-regulatory exchange that administers the world's first multi-national and multi-sector marketplace for reducing and trading greenhouse gas emissions.
- [COMET-VR](#) - The **V**oluntary **R**eporting of **G**reenhouse **G**ases-**C**arb**O**n **M**anagement **E**valuation **T**ool (COMET-VR) tool is a decision support tool for agricultural producers, land managers, soil scientists and other agricultural interests. Developed by the U.S. Department of Agriculture, Natural Resource Conservation Service.

[Forest Climate Working Group](#) - A new coalition representing virtually all sectors of the forest community—the forest products industry, conservation and wildlife groups, foresters, private forest owners, academics, and carbon finance groups—today called upon Congress to include private working forests as a central part of federal climate change policy. The American Forest Foundation, along with The Trust for Public Land launched the diverse group a year ago. The group's website is hosted by the American Forest Foundation.

- [Forest Service Creates Climate Change Research and Development Website](#)
Website source courtesy of *Society of American Foresters, May 14, 2007 "E-Forester"* From the website: "As a land management agency, the USDA Forest Service has a unique responsibility to address questions about climate change mitigation and adaptation involving the many issues that challenge forest and rangeland owners, managers, and users. The agency's research and development focuses on questions about climate change impacts, such as the adaptation actions needed to increase resilience of forests and ranges to the effects of climate change; the potential of forests to mitigate atmospheric greenhouse gas concentration changes by storing additional carbon in living vegetation and forest products; and reducing fossil carbon use by increasing production of biofuels and substituting forest products for more greenhouse gas-intensive materials." To learn more, visit the [Forest Service](#) website.
- [Forests and climate change: A convenient truth](#) - This 17-minute video presentation, produced by Food and Agricultural Organization of the United Nations (FAO) and the Forestry Commission of the United Kingdom, shows how much forests can contribute to the mitigation of climate change, stressing the importance of reversing forest loss. Link courtesy of FAO INFOSYLVA 2009-01.
- [ForestTrends' Forest Carbon Portal](#) - Clearinghouse of information, feature stories, event listings, project details, 'how-to' guides, news, and market analysis on land-based carbon sequestration projects—from forest to farm, throughout the world. Information and resources are updated daily.
- [Greenhouse Emissions Management Consortium \(GEMCo\)](#)
The Greenhouse Emissions Management Consortium ("**GEMCo**") is a not-for-profit Canadian corporation formed by companies that wish to demonstrate industry leadership in developing voluntary and market-based approaches to greenhouse gas emissions management. Members include: **ATCO Electric, BC Gas, BC Hydro, Enbridge Consumers Gas and Pipelines, EPCOR Utilities Inc., Nova Scotia Power, Ontario Power Generation Inc., SaskPower, TransAlta Corporation, TransCanada Pipelines Ltd**
- [Oregon's Climate Change Portal](#) - Everything you wanted to know about how Oregon is addressing climate change.
- [Seattle City Light](#)
- [Taskforce on Adapting Forests to Climate Change](#)
- [Trexler Climate + Energy Services, Inc.](#) (TC+ES)
- [U.S. Department of Energy, Enhancing DOE's Voluntary Reporting of Greenhouse Gases \(1605\(b\)\) Program \(new reporting guidelines\)](#)
- **U. S. Forest Service**
 - [Climate Change Resource Center](#) (CCRC) - The Climate Change Resource Center is a reference Web site for resource managers and decisionmakers who need information and tools to address climate change in planning and project implementation on lands in the West. While some of the information is east-coast relevant, it is likely that the CCRC will eventually expand to include more eastern-relevant content.
 - [Ecosystem Services](#) - This website is a one-stop shop and portal for a universe of information and literature about ecosystem services, including carbon-relevant literature.
- [U. S. Global Change Research Program](#)
- [Winrock International, Forestry and Natural Resource Management](#)



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