

Global Warming and Forestry – 2009 Agenda Proposal to The Oregon Global Warming Commission (OGWC)

Background

Oregon forests represent opportunities and solutions for mitigation and adaptation relative to global warming. Moreover, Oregon's forests can sequester up to 50 % of the state's carbon emissions. Over the past several years, forests and carbon have been a focal point of policy work within the legislature, the forest sector and the Oregon Department of Forestry (ODF). Below are a few important statutory directives that have significance for recommendations to the GWC:

- *House Bill 2200 Forest Carbon* – passed in the 2001 session. The purpose of the bill is to: 1) affirm the Board of Forestry's role as the policy body to vet and perhaps adopt standards for forest carbon offsets, 2) clearly give the State Forester authority to market carbon offsets from state forestlands as well as on behalf of the Forest Resource Trust, and 3) position the Department as an aggregator of carbon offsets on behalf of willing non-federal forest landowners.
- *Senate Bill 1072 Forest Biomass* – passed in the 2005 session. The purpose of this bill was to address the potential of forest biomass for renewable energy production which includes a constructive woody biomass definition.
- *Senate Bill 838 Renewable Energy Portfolio Standard* – passed in the 2007 session reinforced the importance of forest/wood biomass, cogeneration and rational tax credits to invigorate renewable energy production from this renewable energy source.
- *House Bill 3543 Green House Gas reduction goals and establishing the Global Warming Commission* – passed in the 2007 session. This bill recognized that “Oregon forests play a significant role in sequestering atmospheric carbon, and losing this potential to sequester carbon will have a significant negative effect on the reduction of carbon levels in the atmosphere.” Therefore, preventing the conversion of Oregon's forest land base to other uses should be a baseline priority. HB3543 (SECTION 12. (1)(i)) also recognized that The Oregon Global Warming Commission shall track and evaluate: (i) 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;

Continuing in part with this body of work is the current effort of the Forest Carbon Stakeholder Workgroup (FCS) sanctioned by Governor Kulongoski and staffed by ODF. The purpose of the FCS is to forge recommendations for the inclusion of the role of forest carbon in the Western Climate Initiative (WCI) work. Land owners, forest managers, manufacturers, conservation groups and technical experts have been meeting regularly for most of 2008.

Recommendations to the GWC

For the purpose of the GWC, the Natural Resource Committee asked its Forestry subcommittee to engage interested stakeholders in a dialogue about global warming and forests. The following is a result of that meeting. (Forestry Subcommittee, Natural Resources Committee, Oregon Global Warming Commission, met July 7, 2008, 1 – 5pm, Oregon Department of Forestry Headquarters)

The purpose of the meeting was to hear from a diversity of sources in order to gain a broad perspective on the issues of forests and their relationship to global warming, and to solicit input on items that may form the basis for recommendations to the Global Warming Commission. Speakers were asked to address, “What efforts are occurring now that involve forests in global warming issues?” “Where are there gaps in these efforts?” “What are priority recommendations to the Commission?” Subcommittee co-chair Greg Miller from Weyerhaeuser Corporation moderated the meeting, and co-chair Marvin Brown from the Oregon Department of Forestry kept notes to develop this summary and draft recommendations.

1) The Big Picture: Relationship between Forests and Climate Change - Dean Hal Salwasser, from OSU College of Forestry, and Dr. Edie Sonne Hall, a forests and climate change expert from Weyerhaeuser Company

Both presenters underscored that forests at the global, regional and state level are significant for their capacity to store carbon. Converting forests to other land uses both creates additional greenhouse gas emissions, and lowers overall carbon storage in the terrestrial biosphere.

Recommendation: Preventing loss of forest land base keeping forests as forests (reduce forestland conversion) should be a baseline priority.

Description: Suggestions for enhancing forests’ role in mitigating global warming are as follows:

- There is a need to promote international, national and state policies that reverse global deforestation trends.
- Forest management practices that increase carbon storage potential and decrease greenhouse gas emissions should be better developed and promoted.
- Policies and economic models that accurately credit the value of carbon stored in forests and allow landowners to monetize that value should be created.
- The value of carbon storage in wood products and the value of substituting biomass fuels for fossil fuels need to be appropriately recognized.
- Anticipating the changes that global warming might cause to forest ecosystems is difficult to do with any degree of specificity and emphasis should be placed on managing for ecosystem resilience and adaptability.

Needs: TBD

Funding Requests: TBD

Total request: TBD

2) How climate change issues relate to wildland fire occurrence – Dr. Elaine Oneil, Research Scientist, University of Washington, (reviewed research conducted by The Consortium for Research on Renewable Industrial Materials)

Data was presented showing that the inventory of standing wood fiber on federal forests continues to increase, while the acreage of these lands that burn annually also has increased and will continue to do so because of global warming. These fires are a source of significant greenhouse gas emissions. It was estimated that one 385,000 acre fire in Eastern Washington released the annual carbon emissions equivalent of 1,000,000 sport utility vehicles.

The Consortium's research concludes that significant greenhouse gas reduction benefits would be captured if, on these fire prone public lands:

- 1) Large volumes of fiber were removed through thinning; and
- 2) The removed fiber were converted to durable wood products that took the place of non-renewable building materials such as concrete and steel; and/or
- 3) The removed fiber was used as biomass fuel to replace non-renewable energy sources.

Overall, there is more global warming benefit to be gained by using wood for higher value wood products than for biofuels. More benefits could be gained by:

- 1) Promoting greater use of durable solid wood building materials;
- 2) Promoting longer rotations;
- 3) Conducting more intensive management to increase forest growth rates; and
- 4) Improving home building designs to substitute even greater quantities of wood for other materials that are currently used.

Note: Some meeting participants disputed the validity and conclusions of the research, citing among other things that the use of recycled non-wood building materials was not adequately recognized and that some of the economic analysis was not defensible.

Recommendation: Provide resources to focus efforts and attention on the critical needs of federal forestland management actions and their environmental, economic and social sustainability.

Needs: Develop and encourage in local and other collaborative processes that have a high probability of success for implementing short and long-term active management.

Funding Requests: 10 FTE for staff to manage such actions for federal forest lands - \$2,266,354 (submitted policy option packages for 2009-2011)

Recommendation: Reduce wildfire risks on private resource lands (west and east)

Needs: Pass Wildfire Reduction Act 2009 – provides resources “up front” to increase district capacity during fire season, and maintain or increase the capability to provide air attack resources and move-up resources during periods of highest threat for fire starts, and requires in an initial investment of General Funds with the objective of reducing the number of fires that escape to become large, costly fires.

Funding Request: 47.92 FTE – \$9,000,000 (submitted policy option packages for 2009-2011)

Needs: Protection Severity Suppression Resources – Provides fire season severity resources to address the most severe conditions of the fire season. This amount will not be in the department’s budget, but is the special appropriations request that will be included in the Governor’s budget.

Funding Request: \$8,146,150

Total funding request: \$19,412,504

3) The role of urban/community forests and green space in climate change mitigation – Scott Fogarty, Executive Director of Friends of Trees in Portland

In Oregon there are one million acres of trees within urban growth boundaries and another two million acres within one mile of these boundaries. Beyond the known benefits of carbon sequestration, urban trees absorb other air pollutants, generate oxygen, cool the air through evapo-transpiration, provide shade to reduce solar energy heating and thus reduce energy requirements for summer air conditioning and provide thermal insulation in winter to reduce the energy requirements of winter heating.

Portland Mayor-elect Sam Adams has proposed a “Gray to Green” five year, fifty million dollar initiative to promote urban tree planting (approximately 80,000 trees) and other urban ecosystem improvement projects. The State of Washington recently passed the Evergreen Cities Act to promote urban forests and their values, and Congress has proposed HR 5867 The Energy through Conservation Act that includes tree planting in conjunction with utility activities, as well as HR 6078 The Green Act to promote green building materials, renewable energy sources and green landscaping.

Surveys indicate tree canopy covers 24% of Portland’s surface area while the American Forests Association recommends 40% canopy cover.

Recommendations:

- 1) The role of urban forests be appropriately recognized in global warming deliberations;
- 2) Funding for urban tree planting and management be promoted;
- 3) Policy makers be fully informed on the role and importance of urban trees; and

- 4) Urban and Community Forestry interests be adequately represented on the Global Warming Commission.

Needs: Provide full-range landowner services. Reinvent the Private and Urban Forestry Programs to address the needs in urban growth boundaries and fill the gap between the existing Urban Forestry Program and the Private Forest program by helping landowners, cities and counties deal with forestry issues in the wildland/urban interface areas and improve efforts aimed at retaining forest values during the development.

Funding Requests: \$3,298,481 General funds, \$ 1,306,797 Other funds, (\$306,644) federal funds – 20.5 FTE (submitted policy option packages for 2009-2011)

Total funding: \$4,298,634

4) Oregon Department of Forestry's Biomass Working Group

The Work Group was formed to begin charting a more strategic approach to the utilization of forest biomass as a means to improve forest health. Membership includes forest and energy industry representatives, the Warm Springs Indian Tribe, legislators and Congressional staff, government agencies and others.

The Group drew upon a study conducted by the Oregon Forest Resources Institute. Findings included:

- 1) Approximately 4.25 million acres of Oregon forest have the potential to provide forest biomass by thinning stands currently at risk of significant ecosystem alteration because of extreme, uncharacteristic wildfire impacts.
- 2) The greatest opportunities exist in the regions of:
 - a. Jackson, Josephine and Douglas Counties;
 - b. Grant, Union, Wallowa and Baker Counties;
 - c. Crook, Deschutes, Jefferson and Wasco Counties.
- 3) Areas identified were on public and private land within units where harvesting is not statutorily or administratively excluded. Federal lands make up 72% of the total.
- 4) Thinning staged over a 20 year period could produce one million bone dry tons of woody biomass per year, plus merchantable sawtimber.

Recommendations relevant to Federal Actions:

- 1) Federal funding for land management, research, demonstration and the federal biomass transportation tax credit are all essential.
- 2) The federal biomass production tax credit should be increased to be on par with other renewable energy tax credits.

Recommended State Actions:

- 1) Create staffing to support community collaboration aimed towards developing biomass utilization systems in rural areas.
- 2) Funds needed for research and development.

- 3) Continue inter-agency biomass/federal lands collaboration as outlined under Senate Bill 1072 passed during the 2005 legislative session.
- 4) Develop incentives to off-set capital costs of biomass energy facilities.

Funding Requests: TBD

Total funding requests: TBD

5) Changes in plant and animal species and habitat distributions

There is broad consensus that global warming will cause to changes in forest ecosystems through changes in the spatial distribution of plant species. Species will migrate, adapt, reconfigure or disappear and there is little data or research to specifically predict what may happen or where it may occur.

HB3543 state that the GWC “will track and evaluate...changes in the mortality and distribution of tree and other plant species.” Therefore, there is a mandated obligation for the GWC to recommend to the legislature that the necessary resources be allocated to building the monitoring and analysis systems for tracking changes in species distributions. For any adaptation strategy to be properly developed we will need to know how our forests *actually* change as atmospheric CO₂ continues to increase. Computer modeling of future scenarios can not replace actual quantification of the amount and rate of change that occurs for individual species.

Recommendation: Commit substantial resources towards vegetative monitoring and analysis that is long term and collaborative among agencies and interests. With this information changes in species distribution can be quantified and trends projected.

Needs: Collaboration and integration with Oregon University System, State and Federal research organizations focused on natural resource systems, and the Climate Change Research Institute.

Funding Requests: Not less than 1 FTE

Total funding requests: Not less than 1 FTE

These five presentations were given at the July 7, 2008 meeting of the Natural Resources Subcommittee for forestry issues. There was also a presentation given on the progress made at that time by the Western Climate Initiative. Below are another set of recommendations regarding forestry and climate change issues.

More Recommendations

Cap and Trade

Within a cap and trade system carbon offset credits are fundamental element. Under **House Bill 2200** authority is given under SECTION 2. (1) *to* The State Forester *to* enter into agreements with nonfederal forest landowners as a means to market, register, transfer or sell forestry carbon offsets on behalf of the landowners to provide a stewardship incentive for nonfederal forestlands

SECTION 3. As a means of consistently reporting forestry carbon offsets created through the State Forester shall develop a forestry carbon offset accounting system for the registration, transfer or sale of forestry carbon offsets. The forestry carbon offset accounting system shall: (1) Use accepted principles and standards relating to the creation, measurement, accounting, marketing, verifying, registering, transferring and selling of carbon offsets used as mitigation for carbon dioxide emissions; and

SECTION 4. (1) The State Board of Forestry may develop administrative rules that define principles and standards relating to the creation, measurement, accounting, marketing, verifying, registering, transferring and selling of forestry carbon offsets from nonfederal forestlands.

- It will be necessary for the Legislature to provide resources for FTE to develop and manage an accurate and comprehensive carbon offset/credit/accounting system.

Funding Requests: TBD

Total funding requests: TBD

Further Recommendations

Federal Forestland Advisory Committee

Of Oregon's 62 million acres, 30 million acres are forested. Of those acres, 60 percent are federal forestlands. East of the Cascades, 72 percent of Oregon's forestlands are federally-owned. Large segments of Oregon's federal forests are becoming progressively unhealthy and there is particular concern about the increasing risk of uncharacteristic wildfire; a situation exacerbated by climate change. Moreover, the infrastructure to address these problems is rapidly disappearing, particularly in Eastern Oregon. What happens on these lands is of vital importance to Oregonians and the Nation. **It is also clear that time is not on our side.** Unless decisive steps are taken soon, we risk accelerated loss of important habitat for animal and plant species, further

degradation of air and water quality, loss of aquatic species, including native fish, and continued decline in community well-being among other things.

The Governor and the State Legislature should create a Federal Forestland Liaison Program to support multi-agency efforts to improve forest health on federal forestlands. Federal forest managers lack adequate human resources to manage forest conditions to increase sustainability and adaptation to climate change in Oregon . This problem puts forestlands at a high risk of losing Carbon sequestration potential while increasing the burden and cost of fire suppression. Degraded federal forests threaten the health of adjacent nonfederal forests. ODF and other state agencies should assist federal land managers to design and implement treatments that will decrease the risk of catastrophic fire and insect/pathogen infestation. With increased capacity the state can provide technical assistance to accelerate the number of NEPA ready acres available for treatment and facilitate local partnerships involving state and local governments, tribes, citizens, and federal managers.

The Governor and Oregon Legislature should create and fund a **Federal Forestland Liaison Program** in the Department of Forestry that will:

- Coordinate involvement of other state agencies in the collaborative process so that the State of Oregon speaks with one voice
- Provide strategic technical assistance to the BLM and Forest Service where capacity is inadequate to implement forest health treatments
- Promote and encourage the formation of local collaborative partnerships to address forest health problems on federal forestlands
- Provide administrative support and manage funding dedicated to support local collaboration. This funding will be used for neutral facilitation and to support the ongoing efforts of local collaborative partnerships
- The Federal Forestland Liaison Program should be funded through legislative appropriations to the Department of Forestry (lead agency) and other agencies. In addition, the appropriation should include funds to hire neutral facilitators, support local collaborate processes, and engage independent scientific expertise when needed.

Improve institutional capacity for adaptation within an Adaptive Management Framework

- Improve information and analytical tools for assessment, strategic planning and tactical planning. The Adaptive Management framework must develop an information feedback process to inform, as necessary, policy adjustment choices, strategies, and regulatory system.
- Improve Data and Modeling Capabilities. Provide resources and personnel for state planning, monitoring, analysis and assessment including: vegetation mapping, change

detection, forest fuels treatment planning, post-fire assessment, track urban development in forested systems, and continue monitoring/analysis of changes in land use.

- Define climate and ecosystem indicators for tracking status and trends of the effects from climate change on forest ecosystems.
- Research to improve existing, and generate new, tree and forest biomass equations/formulas for estimating carbon storage and sequestration. Research must be carried out to create more reliable biomass estimating equations. These equations are essential for estimating standing biomass/carbon in forest ecosystems and carbon sequestration rates from projections of forest growth and yield. The current set of equations and formulas are incomplete for many species and geographical variations in productivity are not represented.
- Research must be undertaken to develop the capability to predict/model/estimate both the intended and unintended *economic*, *social*, and *ecological* impacts of carbon policy (e.g. corn and ag markets with biofuels). Logging residues and biomass for energy (cogen, not ethanol) will most likely play a key role. Very little information has been produced on how much logging slash is available and what the costs of extracting it for energy would be. There was work in the early 1970's, but really nothing since. As slash and wood waste move to energy quite a few analyses are showing that the prices for pulpwood and fuelwood converging which would have an impact on regional pulp markets and even primary processors (sawmills, veneer etc) as well as they provide the bulk of the input for pulp.
- Integrate and support existing (FIA, CVS, BLM, State Forest, other research) monitoring systems that provide continuous data collection and analysis that compares conditions at different monitoring intervals. Increase integration with FS, BLM on inventory design, analysis, and reporting to increase the amount and quality of information that can be integrated and to create information management partnerships that can leverage resources and analytical capabilities carried out at local to multiregional scales.
- Continue to provide resources for early detection and quantification of pest, pathogen, drought, (etc.) effects on forest ecosystems.

Manage forest lands for reduced risk of fire

- State fire prevention and resource management programs should work with other agencies and the private sector to reduce fuels in high value and high risk areas.
- Expand Landowner Assistance and fuels management in forest-urban interface
- Carbon offset/credit regularity framework will require resources and personnel to accurately map fire occurrence and provide quantitative measurements of residual biomass/carbon.
- Consider Incentives for landowners to manage forestlands for carbon sequestration.

