

**Committee on Agriculture
U.S. House of Representatives
Biographical Form**

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Chair, Council of Western State Foresters

Part I: Carbon Reduction Program Design

- 1) Members of Congress have introduced numerous bills to address the wide spectrum of climate change issues. Do you think Congress should enact a program that uses carbon taxes/fees, a cap-and-trade program, or a hybrid of these two approaches? Why?

Please respond in 600 words or less.

The Council of Western State Foresters does not have an official position on which approach would be best, but forests will be an important part of the solution whether it is carbon taxes/fees, a cap-and-trade program or a hybrid approach. Several state programs have already been initiated and sufficient flexibility should be maintained to allow individual state programs to continue to function.

- 2) Should the agriculture and forestry sectors be covered under a carbon reduction program? Why or why not?

Please respond in 300 words or less.

Yes, the roles as forests in mitigating climate change and the support for forest adaptation should be included in a carbon reduction program, but not as a capped sector.

Western forests – from the Douglas-fir and redwood forests of the Pacific Northwest – to the mixed-conifer and pine forests of the Intermountain, Columbia Basin, and Sierra Nevada Mountain regions – to the riparian forests of the Great Plains – are some of the most valuable and productive forests in the world. Western forests act as net sinks for carbon; annually removing a net 74.0 million metric tons in all non-soil pools – trees, standing dead and down wood, understory, forest floor, and wood products.

Given western forests' ability to remove and store carbon from the atmosphere, maintaining the area and performance of our forests as carbon sinks will not only be key to western regional efforts to reduce atmospheric carbon, but to any national and international efforts as well.

Climate change can be mitigated through reductions in forestland conversion; increased carbon sequestration and storage in forests and wood products; substituting wood products for non-renewable building materials and woody biomass for fossil fuels. Adaptation strategies are also an important way to address the effects of climate change on western forests.

While western forests need to be an important part of the solution to reducing atmospheric carbon they are also vulnerable to the risks of climate change. Forestry climate change strategies are most effective when they pro-actively

manage trees and forests to increase resistance and resilience, while reducing both the probability and the severity of catastrophic disturbances (wildfire, insects, and pests) that have the potential to cause negative ecological, economic and social impacts. Active management of forests also helps achieve sustainability, maintain productivity and creates green jobs.

- 3) If a cap-and-trade program is chosen, how should emission allowances be distributed? For example, should they be at no cost, auctioned, or a combination of both? How should Congress prioritize the distribution of available allowances? Should allowances for the agricultural and forestry sectors be allocated at no cost, if so, should there be a limit on the number of no-cost allowances?

Please respond in 600 words or less.

The Council of Western State Foresters does not have an official position on which approach would be best. Emission allowances could be donated to entities in the agriculture or forestry sectors (which are outside of the cap) for them to sell back into the capped sectors in order to raise money for complementary carbon sequestration activities on agriculture and forest land. Providing no cost access to allowances to be used by the agriculture and forestry sectors will be an important part of the cap-and-trade program.

- 4) Should a cap-and-trade program or a carbon tax/fee program be linked to existing or emerging U.S. regional or other carbon reduction programs (i.e. RGGI or individual state programs)? If so, which programs and why?

Please respond in 600 words or less.

The Council supports the broader inclusion of forestry that has been developed through the Western Climate Initiative (WCI) and the potential for forestry offsets. It is important to note that of all the sectors in the initial scope for the WCI, only trees and forests represent a potential carbon sink. The WCI is investigating the inclusion of forestry projects and protocols as an offset component of the cap-and-trade program.

In addition to working through/with WCI, the forest carbon working groups for Oregon, Washington, and California have been meeting to discuss the role of forests in a cap-and-trade program as well as coordinating and information sharing on this important issue. Developing a program that allows linkage to existing and emerging carbon reduction programs will facilitate the creation and enactment of a federal program. In developing a federal program, we recommend the evaluation and potential adaptation of existing and emerging program structures, standards, and protocols, so as to build on the diligent work that has been and continues to be done. These programs may include WCI, CCX, CCAR, RGGI, and CDM. Oregon, Washington, and California are coordinating efforts to conduct research, share information and develop rigorous, yet practical and

attainable approaches to quantifying, monitoring, verifying, and enforcing forestry contributions to carbon reduction. The work of this forest carbon working group and that of similarly rigorous existing and emerging programs should be considered in the development and design of a federal carbon reduction program.

Dimensions of forestry and carbon policy should:

- Promote management actions that improve resiliency and sustainability of forest ecosystems while providing for the economic, environmental, and social goods and services expected by the public.
- Recognize that many forest landowners actively manage their forests sustainably. As a result, these forests have provided sinks for atmospheric carbon and are more resilient and adaptable to climate change threats.
- Promote active approaches to reducing the severity of impacts of forest fires by implementing large scale, long-term forest health and fuel reduction programs in areas of high severity fire risk.
- Reduce the risk of adverse environmental outcomes through activities that increase the resilience of ecological systems to climate change and maintain ecosystem services.
- Reduce stresses that exacerbate climate change impacts to forests (e.g. overstocking, fire, insects, disease, air pollution, development and forest conversion).
- Optimize ecosystem goods and services and preserve options for future forest owners and land managers.

Forestry can be included in ways that support market-based solutions, including:

- Adopt an incentive-based framework through the development of carbon markets that provide the financial means and economic return to manage western forests as net sinks for atmospheric carbon and to ensure their resiliency to climate change threats.
- Develop common protocols, accounting mechanisms, registries and other tools to facilitate the development of carbon markets and a common language of exchange between those supplying reductions in atmospheric carbon from forests and those seeking to use these benefits as mitigation or offsets for greenhouse gas emissions.
- Make the rules of eligibility and participation in carbon markets simple, understandable and verify that “real tons” are accounted for by transaction.

5) If a cap-and-trade program is established, should an existing government agency regulate it or should a new agency be created? Please explain.

Please respond in 300 words or less.

The Council of Western State Foresters recommends that an agency with expertise in forestry have a consulting or lead role in development and oversight of forestry offsets. This is the approach being taken in Oregon - the Oregon Board of Forestry being the state Board with strategic vision over all forest policy matters affecting all forestlands (regardless of ownership) - should be the lead on developing standards and principles for forestry carbon offsets. While existing efforts may take the lead on developing and recommending these standards (e.g., the Western Climate Initiative) - when it comes down as a matter of policy for Oregon, the Board should validate, or if necessary, vet further those standards.

- 6) If a derivatives or futures market in carbon reduction arises in the wake of the creation of a cap-and-trade program, should the Commodity Futures Trading Commission (CFTC) continue its role as the regulator of this derivative carbon market, or should there be a different regulator? Please explain.

Please respond in 300 words or less.

The Council of Western State Foresters has not developed an official position on this topic.

- 7) Currently, derivatives of energy-based commodities can be traded through: a) highly structured instruments on regulated, transparent futures markets accessible to anybody and anyone; b) flexible instruments on lightly regulated, transparent derivative markets accessible to only major market participants, or; c) flexible instruments on unregulated, opaque over-the-counter markets accessible only to major market participants.

Should derivatives markets in carbon reduction arising in the wake of the creation of a cap-and-trade program also be permitted to develop under similar options as for energy-based commodities?

Please respond in 600 words or less.

The Council of Western State Foresters has not developed an official position on this topic.

- 8) Will enactment of a carbon reduction program have negative impacts for regions or populations whose welfare is of special interest to the agriculture community? Such groups could include: residents of rural areas; populations served by USDA nutrition programs; agricultural producers and forest landowners; or input, transportation, and processing sectors of agriculture and forest products.

Please respond in 600 words or less.

The Council recommends adopting carbon policies that are cost effective and practical in order to provide the broadest participation by individuals and communities. These should include policies that provide options for innovation and partnership, and increasing the use of forest products, woody biomass, and renewable energy from biomass thereby reducing GHG emissions. Examples include:

- Develop projects and actions to cost effectively provide the greatest desired mitigation or adaptation benefits; encourage projects and actions that incorporate proven technologies and that are easy to understand and implement.
- Avoid unnecessary or hidden costs and penalties from climate policy compliance especially those that disproportionately burden small landowners and small businesses.
- Make the rules of eligibility and participation in climate strategies straightforward and understandable.
- Encourage research and development that supports efficient harvesting and conversion of forest biomass to renewable energy with low carbon or carbon positive footprints.
- Improve methods to ensure integrity of forestry related greenhouse gas measurement, reporting and monitoring.
- Promote applied research to address gaps in understanding and data while also providing enhanced tools for decision support.
- Encourage the use of forest products from sustainably managed western forests as substitutes for more carbon intensive products like steel and cement.
- Encourage appropriately scaled renewable energy from woody biomass including heat, power and biofuels (such as cellulosic ethanol) from sustainably managed western forests as a substitute for fossil fuels.
- Structure and implement forest health and fuels reduction programs and projects on public, tribal and private lands to facilitate the beneficial use of biomass for production of energy and biofuels.
- Where appropriate, develop large scale, long-term projects and use forest stewardship contracts that can support use of forest fuels and wood waste for biomass energy.

Finally, the definition of “renewable biomass” should be kept as broad as possible in order to allow biomass from naturally growing forests and federal lands to contribute renewable energy, and count towards federal renewable energy goals.

- 9) How might revenue generated under a carbon reduction program be best used to offset any negative impacts?

Please respond in 300 words or less.

Revenue streams, if they were made available, should be utilized to broaden incentives for landowners to implement forest carbon projects that contribute toward national emissions reductions. This could include increased opportunities for some project types, such as avoided deforestation, reforestation, restoration and hazardous fuels reduction, and innovative approaches to incentive program designed to increase landowner participation. The goal here would be broadening the beneficial aspects of the cap beyond the capped sectors by funding carbon storage practices in non-capped sectors, especially for practices that cannot demonstrate strict “additionality” requirements (see our response to question 22 for additionality). A portion of those funds could go for the activities and priorities described below.

Stewardship and Conservation Programs: Maintaining our forests as forests and promoting healthy, resilient forests are essential first-response strategies to address the effects of climate change on forest systems. Existing stewardship and conservation programs offer valuable tools to help private landowners and state and federal agencies to accomplish these goals, and should be adequately funded.

Planning Tools: Each State's Forest Resource Assessments, Strategies and State Wildlife Action Plans will identify near term opportunities to practice adaptive management for climate adaptation and target early responses to major stressors on forests from climate change. Improved funding and partner contributions will be necessary to identify and accomplish mitigation and adaptation options in these plans. The commitment of the federal lands sector is essential if these plans are to be effective and functional across the landscape.

Wildlife Habitat: Encouraging stronger landscape connectivity will be important to support adaptation for some forest species. Appropriate forest management practices can also help increase resiliency of individual species and natural systems at a landscape level.

Adaptation Science: Scientific uncertainty regarding forest adaptation could be substantially reduced by supporting further research, and by implementing techniques such as the use of expert science panels and rigorous inventory and monitoring systems.

Although the Council of Western State Foresters has not taken an official position in relation to carbon offsets on federal lands, management for healthy and resilient forest on federal lands needs to be fully funded. Revenue streams that can be obtained from forest carbon offset projects on federal lands or from the generation of capital from the sale of allowances under the cap should be available to invest in these activities.

- 10) Should businesses that are affected (either indirectly or directly) by higher overall costs due to a carbon reduction program receive transitional assistance?

Please respond in 300 words or less.

The Council of Western State Foresters has not developed an official position on this topic.

- 11) What role should public lands play in helping to sequester carbon and/or reduce greenhouse gas emissions?

Please respond in 300 words or less.

Climate change is currently impacting federal land's ability to provide ecosystem services and benefits for the American public. Carbon storage and

emission reductions should be part of the wide spectrum of objectives for management of federal lands, in addition to clean water, scenic beauty, outdoor recreation, fish and wildlife habitat, natural resource-based jobs, forest products and renewable energy. The critical forest health situation on federal lands in the west has the potential to amplify the threat from climate change and to increased fire incidence. There is a critical need for active forest management on federal lands across the west in order to achieve carbon sequestration and GHG emission reduction goals.

Federal lands can provide a platform for research and development that supports efficient harvesting and conversion of forest biomass to renewable energy with low carbon or carbon positive footprints. Activities on federal lands can help in developing protocols for forestry in carbon management and markets, and platforms innovation and learning in order to provide a strong science basis for what is known about forest, carbon and climate change.

Federal lands are and will continue to be an important part of the western landscape and need to be considered in broad adaptation and mitigation strategies. Consider all forestlands – federal, tribal, state, local, urban and private - within the scope of climate policies for western forests; however, specific policy mechanisms need to recognize the unique roles, purposes and management objectives for the various land ownership types.

- 12) Should carbon prices be determined exclusively by market forces or should limits on carbon prices be established? Please explain.

Please respond in 600 words or less.

The Council of Western State Foresters has not developed an official position on this topic.

- 13) What, if any, lessons can be learned from the European Union's Emission Trading System (ETS) or any other carbon reduction program already underway or being developed? Do any international carbon reduction programs currently exist for agriculture and forestry?

Please respond in 600 words or less.

The Council of Western State Foresters does not have comments for this topic.

Part II: Carbon Reduction Program Administration and Implementation

The administration and implementation of an offset or allowance program will be a major topic during any potential climate change discussion. Please answer the following questions regarding the scale, scope, and limitations of any program as part of the larger carbon reduction debate.

- 14) What options or combination of options would be most effective for agriculture and forestry sectors in a carbon reduction program: a voluntary offset program, bonus allowances for selected agriculture and forestry activities, or agreed upon performance standards for segments of the agriculture and forestry sectors?

Please respond in 600 words or less.

We support the forestry sector participating voluntarily in any cap-and-trade program, through development of offset projects that can be sold to capped entities. The forestry sector includes many small private landowners, public lands and large industrial landowners. Therefore, there should be a broad suite of cost effective options for voluntary landowner/manager engagement. Provide flexibility by maintaining a high quality voluntary market for use by the sectors that are not covered by the regulation. The State Forestry Agencies are best positioned to assist with this forestry related activity.

- 15) Should the total number of offsets issued annually by the government be limited? If so, how much?

Please respond in 300 words or less.

The Council of Western State Foresters has not developed an official position on this topic.

- 16) How should Congress prioritize the distribution of available offsets (who gets them and how much)?

Please respond in 600 words or less.

The Council of Western State Foresters has not developed an official position on this topic.

- 17) What should the criteria be for measuring (quantification, verification, and monitoring) and accounting for the legitimacy of offsets under the program?

Please respond in 600 words or less.

Forestry sector emission reduction (or sink enhancement) is still evolving and is very complex. Establishing goals is complicated because of the difficulty of separating human and natural influences in greenhouse gas emissions from sources such as wildfires. The large number and diversity of forest landowners also adds complexity. However, the coordination of greenhouse gas inventories will help with legitimacy of offsets.

Greenhouse gas inventories attempt to characterize the flow of greenhouse gases into and out of the atmosphere from natural and human-induced sources. They are an important scientific method of measuring greenhouse gasses and assist with understanding the appropriate scope of cap and trade programs, economic incentives/disincentives and uncertainties that help prioritize research needs. Inventories are required for certain multi-government agreements, such as the

Kyoto Protocol, and while many have been completed (i.e. California) improvements are continuing.

A common set of guidance and methodologies for including both greenhouse gas emissions from and sequestration in western forests needs to be included in greenhouse gas inventories. Currently, some states and provinces include removals from forests and forest fire emissions while others do not. Developing common protocols, accounting mechanisms, registries and other tools will facilitate the development of carbon markets and a common language of exchange between those supplying reductions in atmospheric carbon from forests and those seeking to use these benefits as mitigation or offsets for greenhouse gas emissions. Also it will be important to make the rules of eligibility and participation in carbon markets simple, understandable and verify that “real tons” are accounted for by transaction.

Measurement systems should be simple and cost-effectiveness and have their foundation in normal professional forestry measurement systems that can be independently verified. Additional resources may be needed to improve existing forest inventory systems (FIA) for use in carbon accounting over time.

The goal of including all aspects of the forestry sector in greenhouse gas inventories should be to provide background trends in the status of the region’s forests as net sinks or sources of atmospheric carbon, as well as be inclusive of this sector’s human-induced emissions from development, manufacturing, transportation and use/disposal of wood products. If all aspects of forestry are included in greenhouse gas inventories, then all aspects of other comparable sectors such as agriculture and range should also be included.

18) What should be the criteria for assessing offset projects?

Please respond in 300 words or less.

Options for including forestry should involve both adaption and mitigation components. The Council of Western State Foresters endorses full-carbon accounting with forest offset projects and use of performance standards. Policy should consider the following:

- Recognize that trees and forests store carbon in many above and below ground pools, in both living and dead material and continue to store carbon in harvested wood products.
- When reporting the carbon emission mitigation or offset benefits from conducting the forest offset project or action, account for the greenhouse gas emissions from conducting the forest project.
- When conducting voluntary forest offset projects or actions, if practical, require net greenhouse gas emissions and storage reporting for all affected

forestland controlled or owned by the reporting entity, either for mitigating or offsetting greenhouse gas emissions.

- Recognize and quantify the risk of reversal of carbon storage and provide adequate buffers (insurance) to possible future carbon project losses.
- When certifying project carbon, ensure that the certified carbon is additional, is appropriately quantified, accounts for leakage, and meets permanence requirements.
- Emphasize a clear performance standard for effective carbon offset policies for western forests.
- Ensure that the rules of eligibility and engagement with carbon markets, including measurement protocols, accounting mechanisms, registries and legal instruments, are simple, understandable, cost effective and practical.

19) How should Congress design a system for verifying offset projects?

Please respond in 300 words or less.

The verification system should be part of the rulemaking by the agency charged with implementing the new policy in conjunction with state forestry agencies. This allows modification and adaptation over time as we learn how to most effectively and efficiently meet the climate change goals. In designing a rigorous system for verifying offsets, we recommend that the agency that manages the carbon reduction program to review, evaluate, and consider adopting the structure and protocols of similarly rigorous existing and emerging carbon reduction programs.

20) Should Congress establish a standards-based approach with pre-calculated values or a project-based approach that measures field results for establishing eligible offsets under the program?

Please respond in 600 words or less.

Forestry projects can help achieve both climate change mitigation and adaptation, so providing flexibility through a menu of options that allows for the full life-cycle consideration of forest related projects is important. The benefits frequently go beyond the "measured field results" and cross sectors when product substitution and avoided emissions are considered.

The Council of Western State Foresters recommends a standards-based approach developed by forest project type category. The standard - in the right case - could adopt a pre-calculated values approach (i.e., look-up tables). A combination of all the approaches is needed and they should not be viewed as mutually exclusive.

Incentive programs should adopt different project design guidelines than offset markets, as long as they are still limited to supporting forest carbon activities with measurable climate benefits. This enhanced flexibility should be used to incubate innovative forest carbon activities and otherwise increase opportunities for landowners to participate. Incentive programs should explore lowering

compliance costs through a categorical approach, with standard carbon benefits assumed for specific practices and incentives provided accordingly.

21) What should be the relationship between offsets and allowances?

Please respond in 600 words or less.

Both marketable offsets and use of emission allowance auction revenues (from within the cap) are ways of incentivizing forest carbon sequestration projects. Offsets have higher standards due to their need to be equivalent to a capped emission reduction, while incentive systems that go beyond the cap can have more flexibility. The Council of Western State Foresters recommends providing the flexibility through incentives in addition to offsets.

22) Describe the most important factors in establishing the permanence and duration of offsets under the program, including contract length and flexibility?

Please respond in 300 words or less.

Forests will be adapting to climate change at the same time we will be relying on them for their role in climate change mitigation. Furthermore, the past and present conditions may not be good indicators of future "business as usual" conditions. Therefore, periodic assessment and monitoring of offset performance will be necessary. The following principles should help assure environmental integrity:

There is consensus on the first four factors below. Although additional factors such as leakage, equivalence, and sustainable may be important, the ability to use factual information to evaluate these factors is still under debate.

Additional: Forest projects should be required to meet a carbon additionality test. Methodologies should be developed for determining baselines that are quantifiable and matched to project type. Adopt policies for establishing baseline and additionality that recognize and give credit to forest landowners that have been voluntarily managing their forests as net sinks for atmospheric carbon.

Permanent: The term "permanent" for forest carbon offsets should mean removal and/or storage of the subject carbon from the atmosphere for at least 100 years. Forest carbon contracts should assign clear obligation for reversals. The potential to use multiple shorter contracts to reach the 100 years is desirable. Also, permanence should consider carbon stored in wood products.

Real and Quantifiable: All carbon pools expected to significantly change should be quantified and reported. Carbon pools include live and dead biomass, soils, and harvested wood products. Field measurements and estimates for forest-carbon projects and selected pools should be required to meet a specified benchmark for accuracy, to be reviewed and updated regularly over time using the best available scientific understanding.

Verifiable: Third-party verification of reported amounts of carbon should be completed before they are registered for offset credits.

Consideration of how factors could be enforced is also important.

- 23) How should Congress address existing offset projects or credits established through a voluntary market or system (e.g., the Chicago Climate Exchange or an emission registry)?

Please respond in 600 words or less.

The Council of Western State Foresters has not developed an official position on this topic.

- 24) The terms "additionality" and "stackability" are often used when discussing the details of an offset program. How should producers and forest landowners who may have been early-actors and already undertaken activities that sequester carbon or reduce greenhouse gas emissions be treated? Should activities undertaken to reduce carbon emissions also be allowed to count towards other environmental market activities, such as water quality or wildlife habitat creation, therefore allowing landowners to "stack" credits?

Please respond in 600 words or less.

Forest offset projects can provide valuable co-benefits, including other ecosystem services. We are currently working with partners in state and federal agencies and organizations to address this topic. "Stackability" should be allowed which would allow simultaneous benefit from multiple government policies. Carbon offset project with co-benefits that has sold its carbon benefit should NOT be precluded from the future sale of the other co-benefits (e.g., water quality, biodiversity) in respective markets as they develop.

Projects should not be required to quantify co-benefits, but voluntary reporting could be advantageous for project developers. Also, recognize the contributions that our urban and community forests provide, not only in terms of carbon captured in plantings, but also the energy savings achieved in reduced heating and cooling needs when a tree is planted in the right location.

It will be important to adopt policies for establishing baseline and additionality that recognize and give credit to forest landowners that have been voluntarily managing their forests as net sinks for atmospheric carbon.

- 25) How should activities that may have been paid for in part by assistance from Federal or state government programs (i.e. cost share, technical assistance) be treated? How should those activities be treated if the practice was not specifically implemented to address carbon sequestration or greenhouse gas emission reduction?

Please respond in 300 words or less.

Federal or state financial cost-share assistance should not preclude the landowner from selling the carbon or other ecosystem service credits in their entirety. Frequently implementing a single project can achieve multiple environmental and social goals, and project developers often use funding from a variety of sources in

order to create a financially viable project. The more we can integrate (rather than separate or disqualify) carbon offset projects with objectives of other federal programs, the larger the impact. Meeting the requirements of the climate change related practice or standard should qualify the project, not the source of funding.

- 26) Should a producer be required to return revenue or be held liable if an offset project does not sequester carbon or reduce greenhouse gas emissions? How about in the event of a natural disaster or another event uncontrolled by the producer and/or landowner?

Please respond in 300 words or less.

A producer must recognize and quantify the risk of reversal of carbon storage and provide adequate buffers (insurance) to possible future carbon project losses. There is currently a considerable amount of discussion about what mechanisms could be put in place to provide these buffers or insurance, including concepts such as carbon banking and aggregating projects to share risk.

- 27) Should the protocols and procedures for the offset program be detailed in legislation, or should authority be delegated to the appropriate government agency to develop regulations? If so, which agency or agencies should be responsible for devising protocols and procedures?

Please respond in 300 words or less.

Protocols and procedures should be developed through regulation in appropriate government agencies. Although overall coordination and consistency by a lead agency is important, experts from different sectors (such as forestry or agriculture) should have the lead within their sector.

- 28) What are the obstacles faced by agricultural producers and landowners to implement practices and technologies?

Please respond in 600 words or less.

One of the obstacles will be the adoption of policies for establishing baseline and additionality that recognize and give credit to forest landowners that have been voluntarily managing their forests as net sinks for atmospheric carbon. Other obstacles include initial investment costs to modify practices or purchase new technologies, and the perceived potential for economic losses in the transition of moving away from business as usual. Finally, simple methods of measurement and verification will expand participation by landowners.

- 29) Do existing conservation and forestry programs provide sufficient incentives to encourage the adoption and implementation of practices that mitigate climate change impacts, sequester carbon and/or reduce greenhouse gas emissions? If not, what might Congress consider offering as additional financial incentives and technical assistance to speed up adoption/implementation?

Please respond in 300 words or less.

Existing conservation and forestry programs have provided valuable incentives for sustainable forest management that contribute to the current ability of forests to provide carbon sinks. Future climate policy that recognizes both the role of forests in mitigation and the need for adaptation strategies would reinforce their important role, and provide additional revenue sources to support these efforts. Coordination between federal and state agencies along with additional investment in forestry programs that also contribute to climate change policy goals could speed adoption. Consider federal support for aggregation services for small forest landowners wishing to develop offset projects. Maintaining flexibility and program control at the state/local level will also help speed adoption.

Part III: Carbon Reduction Program Additional Thoughts

Please use the next 1000 words to provide additional comments on subjects which may not be have covered by the questionnaire, such as a low-carbon fuel standard, life-cycle analysis, leakage, or biofuel incentives.

Climate change policy needs to consider both adaptation and mitigation for the forestry sector, and be regionally relevant.

Development of Adaptation Strategies

Adaptation consists of a set of actions that are taken to avoid or minimize impacts from climate change. Even with substantial reductions in greenhouse gas emissions many climate related impacts are likely. Adaptation strategies are needed to cope with predicted changes and to increase the resilience of human and natural systems. Some states and local government entities in the U.S. have started assessing their vulnerabilities to climate impacts and are developing adaptation strategies. Regionally specific implementation strategies will continue to be important.

When developing adaptation strategies for western forests, policy-makers should consider how both managed and unmanaged forest systems will react to climate change over various time periods, and spatial scales. Healthy ecosystems are more resilient, better able to respond to and recover from disturbances, which may become more frequent and severe. Actively managing forests to increase their resistance and resilience to climate change threats while minimizing the amount of forest fragmentation and conversion will reduce the probability and severity of large catastrophic events (e.g. wildfire, insects, disease) that have the potential to cause negative ecological, social and economic impacts.

To address uncertainty, land managers can develop a general adaptation framework of science and policy for their area of interest that includes commitment to local management flexibility, and adaptive management policies to address unforeseen conditions from climate change. Proactive climate planning will reflect a range of sustainable management approaches. To maintain

resilience, some ecosystems may require aggressive treatment; others little or no treatment; and others may require reduction of current stressors that exacerbate climate change impacts to forests (e.g. overstocking, drought, fire, insects, disease).

Forest management that encourages a naturally diverse species mix will partition the climate change risks across multiple species. Reforestation after wildfire may require different species than were present on the site pre-fire to better match site-type changes due to climate effects. Genetic diversity of planting stock may require different mixes than traditionally prescribed by seed zone guidelines. Actions may need to be taken to preserve genetic legacies represented by rare or isolated populations of plants.

Responses to climate change will need to reflect local and regional differences in climate, ecosystems, and the social and economic settings. It may be more effective to avoid a range of undesirable future conditions rather than targeting a single desired future condition. In light of climate change, it may be necessary to revisit current assumptions about genetic diversity guidelines, restoration treatments, best management practices, and regeneration practices.

Effective adaptation strategies will promote proactive approaches to improving forest health and reduce the severity of negative impacts from resulting disturbances. These strategies will include reducing the risk from uncharacteristically severe wildfires; reducing adverse impacts from invasive species, pests, and diseases; and restoring and maintaining healthy watersheds and diverse and connected habitats. Monitoring effectiveness of mitigation and adaptation activities will be essential to our success. Given the magnitude and importance of our information and communication needs, collaborative efforts at local, state and regional scales should be explored.

Development of Mitigation Strategies

Mitigation comprises a set of actions that when implemented will result in a reduction of greenhouse gas emissions through both avoided emissions and increased carbon sequestration. Mitigation strategies are needed to identify and prioritize cost effective actions that can be taken to reduce GHG emissions. A broad range of mitigation strategies are available to ensure that forests continue to operate as carbon sinks. In the absence of mandatory federal climate change targets, state and regional entities have started the mitigation planning and protocol development that is estimated to meet the desired greenhouse gas reduction targets.

A broad range of sustainable forest activities that can contribute to mitigating climate change impacts should be applied for western forests. This approach can increase the flexibility and options for achieving greenhouse gas reductions while increasing landowner participation across the forest sector.

Forests and forest management can provide cost-effective methods for sequestering carbon and reducing greenhouse gas emissions. Effectively designed mitigation strategies will encourage sustainable management of forests to produce forest products along with an array of ecosystem benefits and services. Activities that mitigate include increased carbon sequestration, increased use of renewable fuels that offset fossil fuels, and reduced emissions from large scale events such as wildfire or insect outbreaks. The primary objective of any carbon mitigation or offset project will be to sequester carbon, but when developing mitigation projects for forests in the west or elsewhere, policy-makers should strive to optimize forest productivity and health, while balancing carbon sequestration with other ecosystem services. Adaptation and mitigation activities must complement each other. It will be important to assess potential tradeoffs between the two approaches and to seek strategies that achieve synergistic benefits.

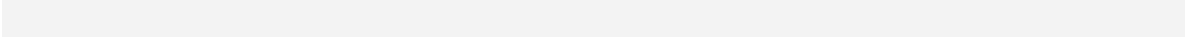
Key to mitigation strategies is avoiding deforestation and conversion of forests. Forest conservation helps protect genetic diversity, provides refuge, and facilitates species migration. To this end, we encourage any mitigation strategy, and adaptation strategy for that matter, to provide incentives for private landowners for “keeping forests as forests” and creating new forested landscapes in urban and suburban communities as this will reduce forest conversion and fragmentation which are responsible for large amounts of carbon emissions.

Further, mitigation strategies can and should also reduce greenhouse gas emissions through energy conservation and efficiency improvements, and promote the appropriate substitution of renewable for non-renewable energy sources. Mitigation actions should strive to manage forests sustainably and use wood products to store carbon and as a substitute for other materials with greater life-cycle carbon emissions such as concrete or steel. It is important to recognize in the short-term, forest management activities that reduce risk may reduce carbon stocks below current levels, in order to realize long-term benefits from healthier forests and larger trees. It will be critical to work with communities and across sectors so that mitigation projects are sustainable when considering potential climate change scenarios. And lastly, climate change mitigation projects provide important opportunities for innovation and adoption of new technology, especially when sustainability considerations are used to select the technology and project's scale.

In order for the broadest participation by different forest landowners, processes required to meet the requirements of a forestry offset program should be cost effective, and be integrated with existing forest practices programs to the extent possible.

The Council of Western State Foresters has the following comments in response to the table of forestry practices:

Forestry practices available as offsets may include forest management, avoided deforestation, reforestation, afforestation, urban forestry, and include incentives for use and substitution of forest products instead of higher energy intense products. At this time, the Council of Western State Foresters declines the opportunity to provide specific details on these and other forestry practices available as offsets as this discussion is still evolving in the western states. We recommend that criteria for offset projects be defined in the rulemaking process of a carbon reduction program, and that potential projects, including forestry practices, be considered based on the defined project criteria.



Please list specific types of <i>forestry practices</i> that should be available as offsets, and then use the terms provided to evaluate the practices.				
Type of Practice	Effectiveness at sequestering carbon or reducing GHG emissions (<i>Excellent, Good, Moderate</i>)	Ability to verify carbon sequestration or GHG emission reductions (<i>Excellent, Good, Moderate</i>)	Cost for agricultural producers and private forestland owners to implement (<i>High, Medium, Low</i>)	Capacity of agricultural producers and private forestland owners to implement immediately (<i>High, Medium, Low</i>)

Please list specific types of <i>practices associated with livestock operations (e.g. manure management, grazing/pastureland practices)</i> that should be available as offsets, and then use the terms provided to evaluate the practices.				
Type of Practice	Effectiveness at sequestering carbon or reducing GHG emissions (<i>Excellent, Good, Moderate</i>)	Ability to verify carbon sequestration or GHG emission reductions (<i>Excellent, Good, Moderate</i>)	Cost for agricultural producers and private forestland owners to implement (<i>High, Medium, Low</i>)	Capacity of agricultural producers and private forestland owners to implement immediately (<i>High, Medium, Low</i>)

Please list specific types of <i>crop production practices</i> that should be available as offsets, and then use the terms provided to evaluate the practices.				
Type of Practice	Effectiveness at sequestering carbon or reducing GHG emissions (<i>Excellent, Good, Moderate</i>)	Ability to verify carbon sequestration or GHG emission reductions (<i>Excellent, Good, Moderate</i>)	Cost for agricultural producers and private forestland owners to implement (<i>High, Medium, Low</i>)	Capacity of agricultural producers and private forestland owners to implement immediately (<i>High, Medium, Low</i>)