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Policy Recommendations to the California Climate Advisory Committee and the California Energy Commission to Incorporate the Forest Sector in Proposed Climate Change Strategies

Prepared by
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Over the past several years, California has taken the national lead in forest and climate policy issues. Among other accomplishments, the State has successfully undertaken efforts to identify, outline, and demonstrate how the forest sector plays a significant role in global climate change and how it could play a positive role in climate change mitigation policies. Specifically, the adoption of Senate Bill 812 and its corresponding forest protocols provide the essential tools to quantify and monitor forest landowner-level greenhouse gas (ghg) emissions and reductions in California's Climate Action Registry. In addition, the development of statewide forest carbon baseline and supply curves, through the coordinated effort of the California Department of Forestry and Fire Protection and the California Energy Commission, allow the state to quantify and monitor state level climate benefits and ghg emissions from the forest sector.

These collective state efforts provide climate policy opportunities for the California Climate Advisory Committee and the California Energy Commission to incorporate in its climate policy recommendations. Both the forest protocols and baseline/supply curves provide the critical building blocks of any climate policy that includes the forest sector, as they provide a standardized means to transparently quantify the climate impacts of California's forests at the macro and micro levels.

The solution to climate change will require a portfolio of policy approaches that involve multiple sectors. Given the unique role of the forest sector as both a source and reservoir of carbon dioxide emissions, California's forests can, and should, play a part in the state's climate change mitigation policy. Policies that facilitate conservation-based forest management practices and forestland conservation will achieve not only significant climate benefits in both the short and long-term, and help solve many other pressing public environmental and economic needs as well.

We urge the Committee and the CEC to capitalize on the leadership and progress that has already made with respect to California's forests and climate change policies and to incorporate the policy recommendations that follow in the final report to the legislature. We appreciate your consideration and the opportunity to submit these recommendations.

Background regarding forests and climate change:

The Forest Sector is a Part of the Global Warming Problem and Part of the Global Warming Solution

Forests play a unique and significant global climate role, as they can be a source of carbon dioxide (CO_2) emissions as well as a CO_2 reservoir. Through photosynthesis, forests naturally absorb CO_2 from the atmosphere and store it as carbon in their biomass (sequestration). However, when forests are disturbed through activities like deforestation, harvest or fire, their carbon stocks are released back into the atmosphere as CO_2 emissions both immediately and over time. On a global level, forests are the second largest source of anthropogenic CO_2 emissions, contributing roughly 20% of the world's total CO_2 emissions - largely due to forest loss.[1] Historically, the forest sector has been responsible for up to 40% of the world's CO_2 emissions.[2]

Forest loss, and associated ghg emissions, are occurring not only at the global level, but at the local level as well. The United States and California are experiencing private forest loss at increasing rates. According to National Research Council, the United States is in a period of accelerated forestland loss. Nationally, we lose roughly one million acres of forestland to non-forest uses each year[3]. California has lost more of its forestland in the mid-nineties than in the previous decade[4] and California's Fire Resources Assessment Program estimates that California loses roughly 40,000 acres of private forestland annually to non-forest uses. The U.S. Department of Agriculture predicts that an additional 20% of private non-industrial forestland in northern California will be lost to other uses by 2050.[5]

Wildfires in California also lead to forest loss and associated greenhouse gas emissions. CDF records show the five-year average of 533,836 acres burned for state protected lands only, which equates to annual CO_2 emission of 6.8 million tons.[6] Scientists anticipate that increasing temperatures due to global warming will increase the risk of large damaging wildfires – thus, emphasizing the need to manage forests to be more resistant to fire. Over the past two decades over 250,000 acres on average have burned annually. Though there is no clear trend yet identified there is an apparent increase in high fire years (i.e., total area burned greater than 500,000 acres) since 1985.[7]

Forest loss, whether global or local, means the loss of our forests' existing climate benefits (i.e., greenhouse gas emissions), as well as the loss of future additional climate

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[1] Millennium Ecosystem Assessment Synthesis Report (Pre-publication Final Draft Approved by MA Board on March 23, 2005)

[2] *id.*

[3] U.S. Department of Agriculture, Natural Resources Conservation Service. 1999. Summary Report 1997 National Resources Inventory (Revised December 2000)

[4] *id.*

[5] Alig, Ralph J. 2000 *Draft 2000 RPA Assessment: Summary of Findings From Area Change Analyses and Projections.* Corvallis, OR: USDA Forest Service.

[6] This estimate is based on an average of 10 tons per acre fuel with a 30% moisture content, a 50% carbon content and a conversion factor of 3.666 for carbon to carbon dioxide,

[7] State of California Resources Agency, Department of Forestry and Fire Protection Fire and Resource Assessment Program. *The Changing California:* Forest and Range 2003 Assessment, October 2003

benefits that these forests could provide. It also means the concurrent loss of other invaluable public benefits provided by our forests - forest biodiversity, species habitat, water quality, snow pack protection, recreation and local timber economies.

The Forest Sector Can Be a Significant part of the State's Global Warming Solution:

While the forest sector is part of the climate change problem, it can and should be a part of the solution. California, in particular, has a natural competitive advantage because it hosts some of the greatest terrestrial carbon reservoirs in the world, its coastal redwood trees (Sequoia sempervirens). California's conifers, including its redwoods have the capacity to sequester up to and exceed 1000 tons of carbon per acre (as an older forest)[8] and are fire resistant.[9]

Through forest conservation, restoration and changes in management practices, CO_2 emitted from our forests can be minimized, existing forest carbon stocks can be maintained, and additional CO_2 emissions can be absorbed from the atmosphere and stored in our forests. These activities would create substantial climate benefits, with the potential to achieve over 900 million tons in CO_2 emission reductions over the next twenty years[10], compensating for the annual emissions of over 160 million cars. Such actions would also achieve additional public and environmental benefits, including the enhancement and protection of water supply and quality, biodiversity, and species habitat.

California Is A Leader of Forest Climate Policy and Research:

As a leader in environmental policies and solutions, California has already taken some fundamental steps to include the forest sector as an instrumental tool to effect climate change policies. Over the past few years, the California Energy Commission and Department of Forestry and Fire Protection, with other regional and local partners, have conducted extensive research to identify the existing baseline and future capacity of California's forests to sequester CO_2 and store carbon. This valuable information can and should serve as a basis to evaluate and develop future statewide policy efforts and goals to use the forest sector as a means to help address climate change in the short-term and the long-term.

In addition, the California legislature adopted legislation in 2002 to create a framework for landowner registration of forest carbon and CO_2 emissions in the California Climate Action Registry (the Registry). The Registry is a voluntary greenhouse gas registry

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[8] Turner, D.P. et al. 1995. Carbon sequestration by forests of the United States: current status and projections to the year 2040. Tellus 47B: 232; A carbon budget for forests of the coterminous United States. Ecological Applications 5(2):421.

[9] Rusell, William H. *Ecology and Management of Coast Redwood (sequoia sempervirens) Forests, Novermber 2000.* A presentation for the Conference on Restoration and Management of Coast Redwood Forests: Jackson Demonstration State Forest, Nov. 4 and 5, 2000.

[10] California Energy Commission Draft 2005 Integrated Energy Policy Report.

designed to encourage early reductions in greenhouse gas emissions. Last year, the Registry, through the efforts of a multi-stakeholder workgroup,[11] completed the corresponding protocols that guide the registration of forest activities, forest management, reforestation and conservation, to achieve forest-based greenhouse gas (ghg) emission reductions. They include prescriptive guidance to, among other things, establish project baselines and address potential leakage.[12] Their requirement of a conservation easement also protects against the potential reversibility of greenhouse gas emission reductions and provides an additional financial incentive to motivate forest landowners to undertake permanent forest projects. These protocols will serve a critical function in any climate policy that includes the forest sector, as they provide a standardized and transparent methodology to quantify forest-based emissions and GHG emission reductions at the landowner level.

These state level research efforts, legislation and policy protocols recognize the significant value of the forest sector in climate change solutions. They also present policy opportunities, as they are the critical building blocks of any future climate policy in California for forests.

[11] The multi-stakeholder workgroup included The Pacific Forest Trust, Mendocino Redwood Company, California Department of Forestry and Forest Protection, The Nature Conservancy, California Energy Commission, Winrock International, Hancock Natural Resources Group, and the California Climate Action Registry.

[12] The California Climate Action Registry's Forest Protocols can be accessed at www.climateregistry.org.

Forest and Climate Policy Recommendations:

The following list of recommendations reflects policy opportunities that California could adopt to promote and achieve forest climate benefits. These policies would achieve not only climate benefits, but also local environmental and economic benefits for California.

1) Establish A Greenhouse Gas Cap and Trade System that includes the crediting of forest-based greenhouse gas reductions

The state should consider the adoption of a state and/or regional greenhouse gas emission cap and trade system that incorporates forest-based offsets as a flexible mechanism to achieve a percentage of ghg reduction targets. Such a policy would be effective at the state and regional level and would include mandatory ghg reduction targets for sectors that are a significant source of human-induced ghg emissions for the state/region (e.g., energy, transportation etc.). A regional approach, consistent with the West Coast Governor's Initiative, could initially include Washington, Oregon and California. Pursuant to Governor Schwarzenegger's recent announcement of ghg emission reduction targets, the state could also implement its own cap and trade system by issuing emission reduction targets for sectors and/or counties. Entities who are regulated pursuant to this policy would be obligated to reduce their ghg emissions, but would also have some limited flexible mechanisms to reach mandatory targets.

Under this policy, the limited flexible mechanisms could include the purchase of forest-based ghg emission reductions from forest landowners to achieve a portion of a regulated entity's mandatory ghg targets. The California Climate Action Registry (the Registry) provides the essential protocols for the transparent registration and accounting of forest entity ghg emissions and forest-based ghg emission reductions. A policy that creates the framework for mandatory greenhouse gas emission reductions should incorporate the existing Registry framework and its forest-based emission reductions that are registered and certified through its process.

2) Establish targets to protect and increase the state's overall forest carbon stocks and implement voluntary landowner incentives to achieve such targets

California could establish state level voluntary targets for its forest sector to protect and achieve greater levels of forest carbon stocks to benefit the climate and achieve forest-based ghg emission reductions. The overall target could be established by legislation, executive order or agency regulation using the state's existing forest carbon baseline data and conversion rates as a reference for state-level progress.[13] The California Climate

[13] The California Energy Commission together with the Department of Forestry and Fire Protection are currently implementing practical research to refine the forest and rangeland carbon baselines.

Action Registry forest protocols could serve as the basis to validate progress at the landowner level.

To reach the state's overall forest sector targets, a variety of policy incentives could be introduced to reward forest landowners who protect and increase overall forest carbon stocks beyond legal requirements. These incentives can include, among other things, preferential funding, direct and indirect, through beneficial tax treatment and direct payments from bond funds.

3) Require a CEQA (California Environmental Quality Act) analysis, including an analysis of climate effects, for any proposed conversion of forestland to a non-forest use

Through action by the Resources Agency, California could require a CEQA review for all proposed conversions of forestland to a non-forest use, including a review of climate impacts. CEQA requires public agencies that approve or implement projects to assess potential significant environmental effects of proposed projects and to adopt mitigation measures to address any significant project effects. Regulatory guidelines adopted pursuant to CEQA (Appendix G) that identify environmental factors to assess do not explicitly identify forestlands or climate impacts – though air quality and agriculture are identified.

Amending this CEQA check list to include forestlands and climate impacts[14] in the analysis would ensure that public agencies would assess the climate impacts of all forestland conversions and encourage project proponents to consider the project's climate impacts in the design of the project. As a result, such a requirement would help minimize ghg emissions associated with forestland conversion – by minimizing the number of conversions that may have significant impacts, encouraging land use alternatives that have fewer associated ghg emissions or requiring compensatory mitigation, if a conversion would result in significant climate effects.

If mitigation is required as a result of the CEQA analysis, fees may be collected for the project's necessary climate impacts mitigation. The mitigation should include the acquisition of permanent forestland easements that dedicate forestland to permanent forest use (i.e., prevent conversion to another use) and achieve the appropriate climate benefits pursuant to the California Climate Action Registry's Forest Protocols.

4) Implement a Public Education Campaign Regarding Role of Forests in Climate Change

A fundamental step toward the generation of additional support for climate policies that include the forest sector is education. Few policy makers and members of the public understand the extent to which the forest sector contributes to climate change or how it

[14] The inclusion of climate impacts in a CEQA analysis is relevant to other sectors in addition to the forest sector.

can help solve the climate change problem in the short and long-term. The provision of education regarding these issues would raise this awareness and facilitate informed and comprehensive state climate policies that include the forest sector. The education campaign could include briefings by specialists to legislators and regulators, as well as legislative committee hearings. It could also include the development and distribution of printed materials for general public consumption, among other things.

5) Provide Research Funding for a) Permanent Research of the Impacts of Climate Change on California's Forests, b) Research of CO_2 Emissions Caused by Forestland Conversion and c) Research of Climate Mitigation Opportunities/Potential on Managed Forestlands Based on Increased Carbon Stocks Across The Landscape.

There are several key areas of research that the state should pursue regarding forest and climate issues/opportunities to effectively inform future forest climate policies. Ongoing research is needed to better understand the impacts that global warming will have on California's forests. Such a research program could be established through the state Resources Agency (e.g., Department of Fish and Game) to track the impacts of climate change on the state's forests and rangelands, including their wildlife, biodiversity, water resources and related ecosystems and how these systems adapt to it. This work would help identify strategies to identify, plan, manage or monitor critical forest areas on the basis of their vulnerability to the impacts of climate change.

As forest loss is a significant contributor to CO2 emissions on a global level and California is losing its forests at increasing rates, the state should dedicate funds to research the CO2 emissions that are caused (and will be caused) by forestland conversion in the state. This data would be helpful for both forest climate policy, as well as land use policy.

Additional research is also needed to assess and identify the climate impacts and opportunities associated with increasing overall forest carbon stocks across the landscape on managed forestlands. The state has already examined opportunities related to Afforestation/reforestion of rangelands and expanding riparian zones and extending rotations on managed lands, which is helpful. However, a significant number of forest landowners use uneven-aged management on their lands, which highlights the need to study forest carbon opportunities that are based on increased carbon stocks across the landscape.

The above research efforts could be funded through bonds or the general fund and appropriated to the relevant agencies within the Resources Agency of California.

6) Encourage Forest Management Policies that Minimize Catastrophic Wildfire and Promote Biomass Energy

- **Develop market-based incentives that provide private funding to minimize large damaging wildfires and maintain a working forest landscape.**

  Current state efforts to address wildfire risk involve public education, subsidized fuel hazard reduction projects, fire safe regulations, fire safe building standards for wildlands, and increased funding for fire suppression efforts. While these efforts have a positive effect on reducing large damaging fires and should continue, they rely almost entirely on public funds which may not be sustainable for the long-term given the state's budget shortfalls. Consequently, a policy that promotes a market-based approach to not only reduce wildfires, but provide landowners with the necessary value to maintain a working forest landscape, would be an effective long-term approach to this issue, as it would provide a private source of funds for the long-term.

- **Establish clear and consistent state policies for the sustainable management and development of biomass energy from forests that simultaneously minimize catastrophic fire risk.**

  These policies should focus on comprehensive resource management objectives and address ways to best utilize forest biomass for the purposes of:

  - reducing intensity of and losses from wildfires, especially within wildland-urban interface areas subject to significant loss of life and property, and reducing air emissions from wildfires,
  - reducing air and water quality impacts from disposal of agricultural, forest, and urban residues, including landfilling of wastes, land application of animal manures, and open-field burning of crop residues and prescribed fires,
  - reducing net atmospheric emissions of greenhouse gases, relative to fossil fuel-based energy, and mitigating other global climate change effects,
  - generating renewable electricity and fuels to
    - help meet renewable electricity goals specified under the state's Renewable Portfolio Standard (RPS) or the accelerated goals under the state's Energy Action Plan (EAP), and provide other renewable electricity where possible.
    - help meet or exceed state goals to increase use of non-petroleum transportation and other fuels and insulate the state from oil price and supply volatility, and reduce state dependence on imported

ethanol and other fuels and oxygenates in meeting MTBE phase out requirements.

The State can establish local and state government procurement and construction program to increase purchases of sustainable bioenergy and bio-based products from forests.

From: Susan Brown
To: Docket Optical System
Date: 8/1/2005 10:44:57 AM
Subject: California Farm Bureau Comments

Please docket these comments on global climate change in Docket 04-CCCA-1 and Docket 04-IEP-1B.

Susan Brown

CC: Brookelea Lutton; Debbie Jones; Kevin Kennedy; Peggy Falgoust