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December 9, 2010

Mary D. Nichols, Chairman
California Air Resources Board
1101 I Street - P.O. Box 2815
Sacramento, CA 95812

Re: Support for Proposed AB 32 Cap and Trade Regulation and Compliance-Grade Forest Project Protocol

Dear Chairman Nichols and Board Members,

We are writing on behalf of the California Forestry Association (CFA) regarding your notice of regulatory action to adopt cap-and-trade regulations which includes a proposal that offset credits can be used for compliance. We fully support the California Air Resources Board's (ARB) recognition that emission reductions from offset credits can be an effective mechanism to reduce the cost of compliance in a cap-and-trade program. In this regard, forest carbon offset credits have the triple net benefit of significant carbon sequestration from the atmosphere, avoidance of significant carbon emissions to the atmosphere, and achieving significant environmental co-benefits by permanently expanding forest inventories for over a century. In addition the protocol recognizes that sustainable harvesting of our forests provide long-term stable or increasing storage of carbon in both the forest and in the form of high quality long-term wood products our members produce.

As such, we would like to thank ARB staff for the manner in which they have handled an intensely complex process, and express our full support of the proposed rulemaking package including the proposed Forest Project Protocol, with the exception of a few adjustments associated with inconsistencies in the recognition and transfer of some early action carbon credits developed pursuant to the Climate Action Reserve (CAR) protocols. We have attached some bullet-points that outline most of these key issues. We will also submit additional comments with more detail about some highly technical translation inconsistencies from CAR (v 3.2) to the combined protocol and regulation language.

As you know, the CAR Board of Directors adopted their revised Forest Project Protocol (FPP 3.2) at their meeting on August 30th after a nearly three-year multi-stakeholder public-input process of creating this protocol. This process and adoption became the basis for your current proposed FFP, which we fully support.

The proposed ARB FPP also included a small but important adjustment to the methodology used to select project areas (please note the joint letter from CFA and the Pacific Forest Trust (PFT) dated September 8, 2010 proposing modification to Section 6.2.1 of FPP 3.2). We greatly appreciate ARB's recognition of this adjustment in your proposed regulatory action. CFA supports this simple adjustment that will help incentivize landowners to preserve mature forests via carbon projects.

We would also like to address a critical issue that appears to be the central focus of challenge from several organizations to the FPP rulemaking proposal, that being the use of evenaged forest management

(specifically CA's unique approach to clear-cutting) as a critical tool to maximizing forest carbon sequestration while fully protecting the ecological benefits of our forests as required by compliance with all state and federal environmental laws and regulations.

In this regard, the importance of foresters having the full array of silvicultural prescriptions, including planted native forests via even-aged prescriptions (including clearcuts),for which timber harvesting permits (THPs) have been developed by a Registered Professional Forester (RPF), implemented by a Licensed Timber Operator (LTO), after an exhaustive multi-disciplinary environmental review and permitting process equivalent to an Environmental Impact Report (EIR) under CEQA, has lead to California having the most powerful forest-related environmental protections of any state in the nation. Attached for your review are short papers entitled ***"****California Clearcuts – A Unique Approach to Evenaged Management"* and *"Managing California's Forests – The role of Scientific Silviculture****,"*** which briefly describes the range of management options RPFs evaluate, and includes a section outlining several of the most important environmental protection measures required by law.

Also attached for your review is the abstract of a scientific paper entitled ***"****To manage or Not to Manage: The Role of Silviculture in Sequestering Carbon in the Specter of Climate Change****,"*** which was published this year by USDA scientists at the PSW Silvicultural Lab at Redding, CA. Their paper looked at three long-term studies of planted native forests vs. adjacent unmanaged forests and found that **active forest management increased carbon sequestration by up to 400% and reduced risk of wildfire by up to 50% over unmanaged forests**. They also concluded "Manage stands are more resilient to wildfires or bark beetle infestation than unmanaged stands," and "Unmanaged stands are more sensitive to global climate change than managed stands in terms of carbon sequestration." Clearly, these planted, evenaged and actively managed forests are highly beneficial to both mitigate and adapt to the likely impacts of global climate change. The scientist's final comments in their abstract are, **"These findings suggest that if carbon sequestration and storage are goals, our forests should be managed more aggressively in the future."**

We believe ARB's proposed FPP is fully consistent with your objective to achieve conservative, high quality offsets that are additional, consistent with CEQA, and which create significant environmental co-benefits and we strongly support its adoption. Thank you for consideration of our position and supporting materials.

Best regards,

David A. Bischel
President

Attachments

California Clearcuts – A Unique Approach to Evenaged Management

Existing Mandatory Protections Associated with California Clearcuts

In California, timber harvesting is subject to preparation of a CEQA compliant discretionary environmental permit that must be prepared by a licensed professional forester (RPF), conducted by a licensed timber operator (LTO), reviewed by a multi-disciplinary team of resource professionals and requires public comment prior to approval by the California Department of Forestry and Fire Protection (CAL FIRE).

In addition, timber stands harvested under any even-aged method (including clearcutting) must meet the following standards:

- ***Sustained Yield Mandatory*** - To assure the "continuous growing and harvesting of commercial forest tree species," each Timber Harvesting Plan (THP) must show that total harvest will not exceed total growth over the next 100 years.
- ***Minimum Harvest Age of 50-80 Years*** - Forests may not be harvested by clearcutting if stand age is less than 50 years (highly productive sites), 60 years (moderately productive), or 80 years (least productive sites).
- ***Size Limited to 20-30 Acres*** - Clearcuts with tractor operations are limited to 20 acres and helicopter/cable operations limited to 30 acres. Some limited exceptions are allowed up to 40 acres where environmental benefit can be shown. (By comparison, most states do not limit size - where there are limits, Oregon/Washington have 120 acres, with exceptions to 240 acres.)
- ***Mandatory Forest Retention Adjacent To Clearcuts*** - Forest areas adjacent to clearcuts must be at least as large as the clearcut being harvested. In addition, these adjacent areas may not be harvested until/unless trees planted after the original clearcut are at least 5 feet tall and/or 5 years of age, and total harvest levels must be sustainable across the landscape over 100 years.
- ***300 Ft. Stream Protection Zones*** - No clearcuts within 150 feet of each side of any fish-bearing stream (300 feet total protection zone).
- ***Replanting 300 Trees Per Acre*** - Clearcuts must be replanted, and harvest areas must contain at least 300 healthy seedlings/acre (minimum two years old) within 5 years after harvest. (Statewide, this means more than 5 trees are planted for each tree harvested.)
- ***Full CEQA Analysis& Impact Mitigation*** – All timber harvest activities must undergo a full environmental analysis of site specific impacts and cumulative impacts equivalent to an Environmental Impact Report (EIR) and each THP is reviewed by a multi-disciplinary team that includes CAL FIRE, Dept. of Fish & Game and State Water Quality Control Board staff. All significant environmental impacts must be avoided or mitigated to a level of insignificance.

Source: California Forest Practice Rules 2003. Title 14, California Code of Regulations, Chapters 4, 4.5, and 10.

MANAGING CALIFORNIA'S FORESTS – THE ROLE OF SCIENTIFIC SILVICULTURE

California's forests are dynamic and always changing. Natural forces such as fires, windstorms, insects and disease, as well as human impact, have all influenced the structure and development of the forests we see today.

Foresters have studied these natural forces and learned to imitate them. Management treatments are designed to maintain a healthy and productive forest that provides for the needs of Californians today and for future generations. This is called the science of **Silviculture**.

California's **Registered Professional Foresters (RPF)** evaluate a forest area or "stand" to determine the appropriate silvicultural treatment to maintain forest health and to provide sustainable forest products and environmental values for the long term.

Figure 1- *Uneven-Age Forest Structure*

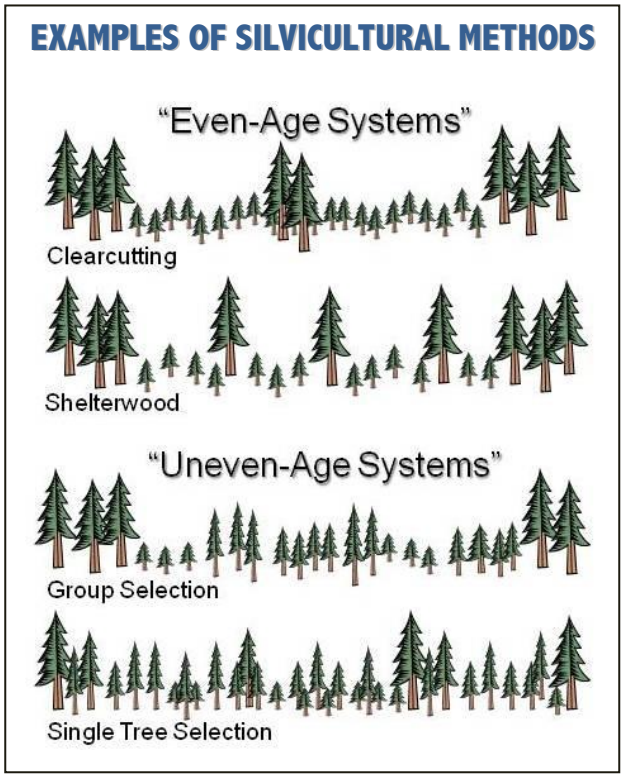
Figure 2 – *Even-Age Forest Structure*

Figure 3- *Replanted Clearcut with Variable Retention for Wildlife Habitat*

Figure 4- *Shelterwood Even-Age Regeneration*

Many natural forests have stands of trees with relatively **Even-Age** structure. This could have been the result of a natural event such as a fire or windstorm, or from a man-made disturbance such as logging or brush clearing. The full sunlight in the resulting opening is the favored environment for many tree species such as ponderosa pine and Douglas fir to thrive. The young trees that grow after the disturbance are either planted or "seeded in" from adjacent seed trees, thus resulting in a forest with trees of approximately the same age. The young trees grow and eventually begin to compete with each other for the limited light, water and nutrients in their environment. The trees will eventually be naturally thinned from insect attack, disease or wildfires, or RPFs can design a harvest to commercially thin the forest and use the trees for lumber, plywood, or paper and energy chips.

Some of California's forests have trees that grow well in the shade of larger trees, resulting in **Uneven-Age** structure. White fir and some hardwoods are examples. These trees often grow in forests with clumpy or uneven aged groups. They prefer full sunlight for optimum growth, but can wait in the shadows until an opening appears from the death of a larger tree by insects, disease, fire or a planned harvest. RPFs can design a harvest to create small opening that encourage trees to seed in and maintain this uneven structure over time. Frequent harvests are needed to maintain this structure and keep the forest thinned to maintain growth and health.



Conifer trees in California can live for hundreds of years, but as they age they become prone to disease and insects, and the forest stand's growth slows. Foresters plan **Thinnings** to maintain growth and health, but eventually the trees become mature and the decision to restart the cycle of growth must be made. The RPF must consider the potential for future disease, wildfire, harvest methods, and the impacts to wildlife, water quality and quantity and aesthetics when a regeneration harvest is planned. The RPF evaluates the existing age structure, either even-aged or uneven-aged, the mix of tree and brush species, wildlife and fisheries resources, present and future forest product needs, and the ownership objectives of the forest owner before choosing a regeneration strategy.

Even-age regeneration harvest such as **Clearcutting**, **Shelterwood and Variable Retention** provide rapid reforestation by replanting the desired species or mix of tree species adapted to the location. By harvesting all or most of the trees at one time, repeated disturbance in the forest is reduced, diseases can be treated, and slash (limbs and tops) from the harvested trees can be treated to reduce fuel for wildfire. The abrupt change from large trees to small trees is good for some wildlife, but others must move or adapt. This change can also be aesthetically displeasing to some people who view it as destructive rather than a part of the natural cycle of forest regeneration.

Uneven-age regeneration harvest such as **Individual Tree** or **Small Group** selection provide small openings where young trees are encouraged to reseed. Species mix and disease can be difficult to regulate, but this method requires less investment since planting is not required. The forest structure is more uniform over a large area which is good for some wildlife, but excludes others, especially those that require open conditions. Forest fire fuels are harder to control and "ladder fuels" develop which can allow a fire to travel from the ground to the tops of the trees. Uneven-aged forests are generally aesthetically acceptable but are difficult to establish in some forest types.

California's RPFs are entrusted with protecting all of the valuable products and values that we expect from our forests. Scientific silviculture is a key tool used to maintain forest health so that we can have healthy, sustainable forests for today and for the future.

To Manage or Not to Manage: The Role of Silviculture in Sequestering Carbon in the Specter of Climate Change

Jianwei Zhang[1], Robert F. Powers[2], and Carl N. Skinner[3]

Abstract—Forests and the soils beneath them are a major sink for atmospheric CO_2 and play a significant role in offsetting CO_2 emissions by converting CO_2 into wood through photosynthesis and storing it for an extended period. However, forest fires counter carbon sequestration because pyrolysis converts organic C to CO and CO_2, releasing decades or centuries of bound C to the atmosphere as a pulse, exacerbating the greenhouse gas effect. With global warming, the probability of fire has increased. Silviculture is an important tool for reducing wildfire risk and enhancing long-term carbon sequestration and—through this—mitigating the effect of climate change. Using the data collected from three studies over the last several decades, we compared treatment effects (density manipulation, fertilization, vegetation control, and interactions among some of them) on tree growth and subsequently carbon accumulation, fire risks predicted with fire behavior simulations, and responses of stand to future climate changes modeled by a process-based model (3-PG). With these case studies, we found that (1) intensive management (vegetation control and fertilization) increased C sequestration 400 percent and decreased fire caused tree mortality 50 percent compared to control at age 21 (Whitmore Garden of Eden study). (2) Density manipulation and vegetation control increased C sequestration 30 percent and decreased fire caused tree mortality 50 percent compared to control at age 40 (Challenge Initial Spacing study). (3) Density manipulation increased C sequestration 9 percent and decreased fire caused tree mortality 40 percent compared to control at age 55 (Elliot Ranch LOGS study). In addition, bark beetles killed significantly more trees in the control (high density plots) than in the lower density plots. (4) The 3-PG model predicts that global warming impacts carbon sequestration more in unmanaged than managed stands. These findings suggest that if carbon sequestration and storage are goals, our forests should be managed more aggressively in the future.

In: Jain, Theresa B.; Graham, Russell T.; and Sandquist, Jonathan, tech. eds. 2010. Integrated management of carbon sequestration and biomass utilization opportunities in a changing climate: Proceedings of the 2009 National Silviculture Workshop; 2009 June 15-18; Boise, ID. Proceedings RMRS-P-61. Fort Collins, CO: U.S. Department of Agriculture, Forest Service, Rocky Mountain Research Station. 351 p.

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Introduction

Global climate is changing at an unprecedented rate. The latest assessment from the Intergovernmental Panel on Climate Change (IPCC 2007) states that the global average surface temperature has increased 0.74 °C from 1906 to 2005. By 2100, increases of 1.1-6.4 °C are projected over the 1990 level using different models with various scenarios. Warming trends are believed to be due to the anthropogenic increase of greenhouse gases (GHG), with an increase of 70 percent between 1970 and 2004. Carbon dioxide (CO_2) is one of the most important anthropogenic GHGs. Annual emissions grew by about 80 percent between 1970 and 2004. Not only have CO_2 and GHG concentration increased greatly since 1750, but the rate of increase far exceeds pre-industrial values determined from ice cores spanning many thousands of years (IPCC 2007).

Forests play a significant role in offsetting CO_2 emissions by converting CO_2 into organic C through photosynthesis. Much of the product of photosynthesis

Part V – U.S. Forest Projects Compliance Offset Protocol (and Staff Report) – Some Overview Issues

- After 12/31/2014 CAR projects must be re-verified and be brought up to ARB protocol standards. There is some inconsistencies with this requirement and Early Action Projects, especially around the limits on Commencement Date in the regulations which could prevent early action projects from being re-verified.

- All ARB offset projects must have a "Commencement Date" of 1/1/2007 or later. This is a significant problem for CAR reforestation projects which were allowed to have "Start Dates" back to 1/1/2001.

- The requirement for replacement of your verifier every 6 years is problematic especially give the cost and time involved in getting a verifier familiar which each forest offset project. Also calling for a site visit for every forest protocol offset verification report to receive credits is cost prohibitive and really unnecessary when you consider the re-inventory of all inventory plots every 12 years. An office review should suffice for annual offset verification with site visits every six years and required new inventory every 12 years.

- There is a requirement that in the forest projects the verifier must re-measure a minimum number of plots or 5% whichever is greater. The 5% requirement of larger projects is many times over that which is necessary to check the quality of the project effort as long as the plots are randomly chosen. This cost alone could prevent many landowners from participating.