National Alliance of Forest Owners

Investing in the Future of America's Forests

July 18, 2012

Climate Action Reserve
523 W. Sixth Street, Suite 428
Los Angeles, CA 90014

To Whom It May Concern:

Re: Forest Project Protocol Version 3.3

The National Alliance of Forest Owners (NAFO) appreciates the opportunity to provide comments on draft Version 3.3. of the Climate Action Reserve (CAR) Forest Project Protocol. NAFO's mission is to protect and enhance the economic and environmental values of private forests through targeted policy advocacy at the national and state level. At the time of this submission, NAFO's members represent 80 million acres of private forests in 47 states. NAFO was incorporated in March 2008 and has been working aggressively since then to sustain the ecological, economic, and social values of forests and to assure an abundance of healthy and productive forest resources for present and future generations. NAFO and its members are key stakeholders who contribute to the solutions that private forests and forest biomass bring to lowering greenhouse gas (GHG) emissions and, in turn, are keenly impacted by any controls or regulations on forest management measures required to qualify for carbon markets.

On your website, you describe the CAR as "a national offsets program focused on ensuring environmental integrity of GHG emissions reduction projects to create and support financial and environmental value in the U.S. carbon market." As we understand the CAR Forest Project Protocol 3.3, it appears designed to encourage custodial forest management, or conservation forests, designed to preserve the maximum amount of land in forest. CAR should recognize that this results in a Protocol version 3.3 providing very limited, if any, opportunities for working forests which are accountable for a financial return to their owners. While we recognize that it may not be prudent for the Protocol to reward forest owners with offsets for "business-as-usual" commercial forestry, the preference for conservation forests in the Protocol can create unintended carbon consequences. We bring your attention to the recent report by Lippke et al, "Life Cycle Impacts of Forest Management and Wood Utilization on Carbon Mitigation"[1]. This report demonstrates the important contribution of sustainably managed forests when considering the ongoing life cycle accumulation of carbon in both onsite and offsite carbon pools. (A subsequent report by a Society of American Foresters task force[2] corroborates the Lippke study.) To the extent that the Protocol incentivizes a shift from active forestry to custodial forestry, a very real carbon impact can occur as a result of awarding carbon offsets. We recommend that CAR carefully

[1] Lippke, et al. 2011. Life Cycle Impacts of Forest Management and Wood Utilization on Carbon Mitigation: Knowns and Unknowns. Carbon Management (2011) 2(3), 303–333

[2] Malmsheimer et al. 2011. Managing Forests because Carbon Matters: Integrating Energy, Products, and Land Management Policy. Journal of Forestry.

consider how future versions of the Protocol might avoid these consequences by removing the bias that favors conservation forests and also mobilizes the carbon benefits of active sustainable forestry. A beginning point might be to seek a reduction of prohibitive transaction costs and to remove non-carbon related objectives, such as seeking a return to pre-settlement species compositions.

NAFO believes that at least three elements of version 3.3 will prevent the Forest Project Protocol from achieving "financial and environmental value in the carbon market." The three critical roadblocks are: (1) there are no carbon or environmental reasons to ban the use of broadcast fertilization as specified in Section 2.1.2; (2) the 100 year time commitment in section 3.4 remains impractical for landowners; and (3) there are no carbon or environmental reasons to limit clearcut size to 40 acres or less. By removing these elements that lack a significant environmental or carbon-related basis, CAR would avoid being relegated to California and could significantly increase the likelihood of incentivizing quality forest carbon offset projects throughout the United States.

1. NAFO recommends removing the ban against broadcast fertilization under project eligibility and appropriately accounting for it in the calculation of the project baseline.

Under requirement 3 of Section 2.1.2. *Improved Forest Management*, the protocol states that a project is only eligible for the improved forest management project if it "does not employ broadcast fertilization." There is no carbon or environmental rationale for this requirement. In fact, in the CAR Protocol white paper, *Accounting for Carbon in Soils,* the authors convey that many studies show that fertilization can increase soil carbon. In addition to the studies mentioned in the Soil Carbon white paper, there are numerous other studies that support the finding that increased N-availability actually causes more litter deposition and larger forest floor accumulations[3]. Forest floors have been found to decompose proportionally at the same rate, whether big or small,[4] so if one conducts activities such as fertilization, then over multiple rotations there should be more soil organic matter built up in the ecosystem, which should result in increased productivity resulting in a beneficial positive feedback.

A recent analysis also found that fertilization of southern pine plantations has a substantial carbon benefit due to enhanced productivity and carbon sequestration in biomass. In fact, the benefit is roughly 20:1 relative to carbon emissions associated with the manufacturing, transport, and application of the fertilizer[5].

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[3] Phelan, J and H.L. Allen. 2008. Have repeated applications of nitrogen and phosphorus to a loblolly pine (*Pinus taeda* L.) plantation changed stand productivity and soil nutrient supply? *Canadian Journal of Forest Research.* 38: 637-644; Legget, Z.H. and D.L. Kelting. 2006. Fertilizatioin effects on carbon pools in loblolly pine plantations on two upland sites. *Soil Science Society of America Journal* 70:279-286.

[4] Zerpa, J.L., Allen, H.L. Campbell, R.G. Phelan, J., Duzan, H. 2010. Influence of variable organic matter retention on nutrient availability in a 10-year-0ld loblolly pine plantation. *Forest Ecology and Management.* 259: 1480-1489; Liu, L. King, J.S., Booker, F.L, Giardina, C.P., Allen, H.L. 2008 Enhanced litter input rather than chances in litter chemistry drive soil carbon and nitrogen cycles under elevated CO2: a microcosm study. *Global Change Biology* 15: 441-453.

[5] 3Albaugh, T.J., Vance, E.D., Gaudreault, C. Fox, T.R., Allen, H.L., Stape, J.L, and R. A. Rubilar. 2012. Carbon emissions and sequestration from fertilization of pine in the southeastern United States. Forest Science (in press).

Any nitrous oxide emissions that result from N fertilization can be accounted for in the carbon accounting. Nitrous oxide emissions from N fertilizer application can be estimated using the method recognized by the IPCC. This should be included in both the baseline calculations (if fertilizer is used) and the project.[6]

2. NAFO recommends modifying the requirement to keep CRTs out of the atmosphere for 100 years.

Section 3.4 - *Minimum Time Commitment* requires monitoring and verification that registered CRTs are kept out of the atmosphere for 100 years with a penalty for voluntary early termination. 100 years is a time frame that is impractical for landowners and a penalty for early termination up to 50 years is enough of a barrier to prevent landowner participation. NAFO recommends an approach that allows recognition for meaningful carbon storage contributions that can be made on a shorter time frame.

Chapter 2 of the IPCC Special Report on Climate Change, Land Use, Land-Use Change and Forestry[7] explains an alternative approach to comparing activities that sequester carbon for different lengths of time by using an equivalency factor based on a policy determined length of time considered to be "permanent". The basic argument is that there is a benefit of temporary sequestration and it is based on the decay rate of CO2 in the atmosphere. This accounting method is most commonly referred to as ton-year accounting and has been discussed at length in the literature (Fearnside et al 2000; Lashof and Hare 1999; Moura-Costa and Wilson 2000; Maclaren 2000)[8]. The IPCC method provides a calculation that requires payback of CRTs depending on the point of termination. The earlier the termination, the more CRTs must be paid back.

For example, if a project keeps a ton of CO2 (one CRT) out of the atmosphere for 40 years, the net impact in CO2 reductions would be the integrated difference between a pulse of CO2 at year 1 minus a pulse at year 40, which would be, over a 100 year basis, 12.8 or 31.8% of full credit. Hence, if a Project Operator decides to terminate a project after 40 years, they would be required to pay back 68.8 CRTs for every 100 CRTs that were registered. If the Project Operator waits until 80 years or 100 years they would have less or no CRTs to pay back. Thus there is an incentive, matched by actual benefit to the atmosphere, to keep carbon out of the atmosphere.

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[6] 4 IPCC, 2006. Forest land. In: IPCC Good Practice Guidance for Land Use, Land-Use Change, and Forestry. The Intergovernmental Panel on Climate Change (IPCC), Institute for Global Environmental Strategies, Hayama, Kanagawa, Japan, pp. 3.23-3.68.

[7] IPCC. 2000. Chapter 2: Implications of Different Definitions and Generic Issues. In: Land Use, Land-Use Change and Forestry (R.T. Watson, I.R. Noble, B. Bolin, N.H. Ravindranath, D.J. Verado, and D.J. Dokken, Eds.) Cambridge University Press, U.K.

[8] Fearnside, Philip M., Daniel A. Lashof, and Pedro Moura-Costa. 2000. Accounting for time in mitigating global warming through land-use change and forestry. *Mitigation and Adaptation Strategies for Global Change.* 5: 239-270; Lashof, DA and B. Hare. 1999. The role of biotic stocks in stabilizing greenhouse gas concentrations at safe levels. *Environmental Science and Policy.* 2(2): 101-109; Maclaren, Piers J. 2000. *Trees in the Greenhouse: the role of forestry in mitigating the enhanced greenhouse effect.* Forest Research Bulletin No. 219. Rotorua, New Zealand; Moura-Costa, Pedro and Charlie Wilson. 2000. An equivalence factor between CO2 avoided emissions and sequestration- description and applications in forestry. *Mitigation and Adaptation Strategies for Global Change. 5: 51-60.*

The table below shows the different percentage of credits based on a 100 year basis.

Table 2-6: *Credit as a function of project duration.*[a]

Project Duration (yr)	Percentage of Full Credit
0	0.0
10	7.4
20	15.0
30	22.9
40	31.2
50	39.9
60	49.3
70	59.4
80	70.6
90	83.3
100	100.0

[a] Illustrates partial credit that would be received by projects that sequester carbon for various durations using the ton-year derived by analogy to 100-year Global Warming Potentials, as illustrated in Figure 2-4. [9]

This method was discussed and endorsed by the ANSI Forest Carbon Standards Committee though there was disagreement on the length of time required for full credit.[10] CAR should replace table 3.1 with the atmospherically relevant partial credit scale shown above.

3. NAFO recommends elimination of the size limit on clearcuts.

Section 3.11.4 - *Balancing Age and Habitat Practices* requires a limitation on harvesting stands no greater than 40 acres in size. This arbitrary requirement would significantly undermine participation in the CAR Protocol by most landowners due to the fact that this size limitation is inconsistent both with standard environmental mitigation measures

[9] From Section 2.3.6.3. Equivalent Time and Ton-year. *IPCC Special Report on Land-use, Land-use Change and Forestry. 2001.*

[10] "A Bi-National Forest Carbon Offset Standard: Report on a Development Process". Produced by American Forest & Paper Association, August 2011.

and the economics of harvesting in many regions of the United States. Additionally, this restriction has no impact in how carbon in forests is accounted for in forestry operations.

From an environmental perspective, a 40 acre clearcut limitation requires more road use than larger clearcut units. Fewer entries over a period of time will result in less soil disturbance helping to minimize sedimentation to streams and lessen risks of soil compaction.

We recognize that appropriate limits to clearcut size do provide environmental benefits as recognized by the leading certification programs. Presumably this is one of the reasons that the CAR Protocol requires participation in a forest certification program in section 3.11.1. As part of their criteria, these programs all provide reasonable limits on clearcut size based on sound silvicultural and sustainability principles. There is little likelihood of a landowner engaging in the added expense of certification and then compounding that expense with this artificial limit on clearcut size.

In addition, clearcutting as a harvest and regeneration method has sound silvicultural and ecological bases:

- It allows sunlight to reach the ground so newly planted seedlings quickly take root and regenerate the forest. As such, it's the system best suited to commercially important shade-intolerant species, including Douglas-fir in the western United States and loblolly pine in the southern United States. These tree species reach their full growth and yield potential only when grown in full sunlight.
- It provides habitat for animal species, some of which are of high conservation priority, that are associated with early successional plant communities[11]. Some plant species in these communities also are of high priority.
- It results in stands of even-aged trees that produce wood products with more uniform qualities.
- As noted above, it requires fewer roads and entries into the stand than partial harvesting systems, thus reducing the risk of sedimentation in streams.
- It is often more efficient, cost-effective and safer than partial harvesting systems.

Overall, the smaller the allowable clearcut size, the more roads need to be built and the more costly the silvicultural operation becomes. This arbitrary limitation discourages landowner participation, offers no additional environmental benefit, and adds nothing to the proper accounting of carbon stored as part of the protocol.

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[11] Dessecker, D. R., and D. G. McAuley. 2001. Importance of early successional habitat to ruffed grouse and American woodcock. *Wildlife Society Bulletin* 29(2):456-465; Dettmers, R. 2003. Status and conservation of shrubland birds in the northeastern US. *Forest Ecology and Management* 185: 81-93; Fuller, T. K., and S. DeStefano. 2003. Relative importance of early-successional forests and shrubland habitats to mammals in the northeastern United States. *Forest Ecology and Management* 185:75-79; Litvaitis, J. A. 2001. Importance of early successional habitats to mammals in eastern forests. Wildlife Society Bulletin 29(2):466-473; Litvaitis, J. A. 2003. Shrublands and early-successional forests: critical habitats dependent on disturbance in the northeastern United States. Forest Ecology and Management 185:1-4.

NAFO appreciates the opportunity to comment on the CAR Protocol. Our members look forward to working with CAR to help develop a Protocol that is feasible for all forest ownerships in all regions of the country.

Respectfully Submitted,
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