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Submitted electronically at: http://www.climateactionreserve.org/how/protocols/forest/revisions/

RE: Comments in Response to the Forest Project Protocol, Version 3.3, Draft for Public Review

These comments are submitted on behalf of the Center for Biological Diversity regarding the Forest Project Protocol, Version 3.3, released for public comment in June 2012 ("Forest Protocol"). We appreciate the Climate Action Reserve's ongoing efforts to address gaps and outstanding issues in the Forest Protocol, and the effort put into the development of this draft.

Our primary concern has always been that various shortcomings in the Forest Protocol would allow credits to be generated from projects employing business-as-usual practices. This would incentivize some of the most destructive forms of timber harvesting and industrial forest management. The Forest Protocol revisions include positive changes, such as implementing a general requirement for the accounting of soil carbon emissions, to address some of these shortcomings. The following comments are intended to specifically address the changes from the previous version.

1. Sustainable harvesting practices should apply across the project operator's landholdings.

The sustainable harvesting practices requirement would no longer apply to the entire landholdings of project operators, but would instead apply only to the project operator's landholdings within the assessment area. Forest Protocol at 21. This substantially weakens the requirement and greatly undermines assurances of environmental integrity of the overall forest management of the project operator.

The Forest Protocol does not require forest projects to account for changes in stocking levels, carbon stocks, and carbon emissions from the project operator's forest landholdings outside of the project area, and does not account for harvest leakage within the same land ownership. (Instead, the Forest Protocol applies a standardized 20% leakage discount to all forest projects.) Therefore, the project operator can increase harvest rates outside the project area, resulting in 100% leakage within the same ownership. With the most recent change in the sustainable harvesting practices provision, the project operator can accomplish the increased

harvest rates by increasing the use of forest clearcutting, so long as the clearcutting occurs outside the assessment area.

Sustainable harvesting practices requirements must apply to the project operator's entire ownership. Otherwise, the Forest Protocol will create a tremendous opportunity for project operators to game the system and effect 100% leakage by increasing harvesting within the same landholdings.

2. The sustainable harvesting requirement is overwhelmingly focused on stocking levels and fails to protect ecosystem values.

The sustainable harvesting practices provision includes three options, none of which include specific standards to protect ecosystem values other than stocking levels of trees. Forest Protocol at 21. The first option finds a forest project to demonstrate sustainable harvesting practices if it is certified under the Forest Stewardship Council, Sustainable Forestry Initiative, or Tree Farm System certification programs. However, these three programs have very different environmental criteria, and the Sustainable Forestry Initiative, which focuses entirely on forest stocking levels, contains virtually no environmental criteria. In this regard, SFI certification is essentially redundant with the Forest Protocol's requirements to maintain and increase carbon stocks and confers no protection for forest ecosystem and habitat values.

Similarly, the second option finds a forest project to demonstrate sustainable harvesting practices if it shows "adherence to a renewable long-term (50 years minimum) management plan that demonstrates harvest levels which can be permanently sustained over time and that is sanctioned and monitored by a state or federal agency." Presumably, in California, this is intended to apply to a timber operator that has filed a plan intended to demonstrate compliance with statutory requirements for maximum sustained production of timber products (a legal prerequisite for approval of timber harvest plans). However, such plans in California are concerned primarily with projected forest stocking levels and are not required to contain specific environmental protections.

3. The species diversity provision provides little protection for ecosystems and habitat.

The native species diversity provision requires that "*no single species' prevalence, measured as the percent of the basal area of all live trees in the Project Area, exceeds the percentage value of standing live carbon shown under the heading 'Composition of Native Species; in the Assessment Area data file maintained on the Reserve's website*." Forest Protocol at 23. This provision is evidently intended to prohibit a situation in which a single commercial tree species would comprise an inordinate and overwhelming proportion of the live tree biomass in the project area. However, the requirement does not apply at the stand level, and consequently would permit the project area to contain a high proportion of single-species plantations. As such, this provision provides little protection of existing ecological values in the project area, and allows projects to create and maintain substantial proportions of forest with low biological and habitat values.

Forest Projects are allowed to maintain as much as 40 percent of the forested acres in ages less than 20 years. Forest Protocol at 24. Under such a scenario, the basal area of the primary commercial tree species would be significantly suppressed by clearcutting, making it easier to comply with the species diversity requirements. That is, increasing the intensity of harvest—which will adversely affect diversity and wildlife habitat—could perversely improve the project's compliance with the diversity requirements as they are defined in the Forest Protocol.

4. The Lying Dead Wood provision fails to account for changes in this carbon pool

Improved Forest Management Projects and Avoided Conversion Projects are not required to account for the carbon impacts to shrubs and herbaceous plants, lying dead wood, or litter and duff carbon pools. Forest Protocol at 37. It is not clear precisely why these carbon pools can be assumed to be negligible, or why it can be assumed that changes due to management actions "are unlikely to have a significant effect on total quantified GHG…" Forest Protocol at 37.

Table 5.1 on page 37 states: "*Lying dead wood is highly variable and it is therefore difficult to achieve accurate estimates. It also constitutes a minor portion of forest carbon. With required retention for Natural Forest Management (see below), it is a conservative programmatic measure not to include it. For Natural Forest Management criteria, the protocol requires recruitment and retention of dead material, including lying dead wood as a structural element. Minimum volume thresholds are stated to meet Natural Forest Management criteria. (See Section 3.11.2.)*" However, there is no source or justification provided for the statement that lying dead wood is a minor or negligible forest carbon pool. Also, there are no minimum volume thresholds in Section 3.11.2; the minimum thresholds have been eliminated in the current revision.

Furthermore, the statement that "the protocol requires recruitment and retention of dead material" is misleading, as it implies that projects are expected to recruit snags and down wood. In fact, the protocol requires only that "[t]he combination of standing dead and lying dead wood shall be retained at per acre values." Forest Protocol at 25. If snags and lying dead wood are reduced, three live trees must be retained for every missing dead tree. This is not recruitment of large snags and lying dead wood that are essential components of wildlife habitat. Instead, this is the identification of three live trees as eventual replacements when a snag or lying dead wood is removed. Lastly, the fact that the retention requirements are based on average per acre values for the Assessment Area means that if the project operator has greatly reduced snags and lying dead wood in harvests and site preparations in the adjacent forest areas, the project will be held to that lower standard.

5. The soil carbon calculations tend to minimize and obscure the impacts of high-intensity harvest.

The calculation of forest carbon impacts involves a number of assumptions and generalizations that have the effect of minimizing the differences among management scenarios and minimizing the reported impacts to soil carbon pools.

The values assigned in the Determination of Biomass Removal Index (Table 7) and Soil Disturbance Index (Table 8) appear to be somewhat arbitrary. (The removal of 10 – 50% of above-ground biomass is assigned a biomass removal index value of 0; the removal of 51 – 80% has an index value of 1. Less than 5% of mineral soil exposed during harvest is assigned a value of 0; 5 – 20% is assigned a 2; and 20-40% (twice as much) is assigned a 3.) And when these values are summed to calculate the "Harvest Intensity Class" and then applied to *Table 12: Estimated Net Carbon Loss*, the differences in net carbon losses among different harvest intensity classes are mostly small or non-existent, obscuring and negating the effects of more intensive harvesting.

It is not clear how "an ocular inspection" of the amount of "mineral soil (below the organic layer, including litter and duff) exposed due to harvest activities" is an adequate estimate of soil disturbance. There can be a high level of soil disturbance and compaction without displacing the cover of litter and duff. In addition, those impacts may not be fully evident until the next rainy season when the compaction leads to increased runoff.

In most soil orders, frequency of disturbance appears to have little or no impact on the net carbon loss. In fact, in almost all cases, the estimates for net carbon losses are generally just 20%, even under the most intensive disturbance at the highest frequencies. This points to the fact that the studies on which these data are based occurred in plots where harvesting resulted in large amounts of harvest debris, which contributed, to various degrees and over different timeframes, to the woody debris, litter and duff, and soil carbon pools. The findings of those studies are not applicable in scenarios with whole tree harvesting or where understory trees, shrubs, down wood, and litter are removed for biomass power, and it appears that the Biomass Removal Index as a component of the Harvesting Intensity Class Index is not capturing the effect of that removal.

The greatest factor in determining net carbon loss appears to be site preparation classes. These are very coarse categories, in which the difference between medium ("25% to 59% surface area disturbance below litter and duff due to ripping, grading, and raking, etc") and heavy (60% to 100%) means a doubling of the soil carbon emissions in most soil orders. It is remarkable that the level of disturbance as estimated in the Site Preparation Index has such a substantial impact on the estimated soil emission, when the impact of the level of disturbance as estimated in the Soil Disturbance Index does not.

Lastly, there is a counterintuitive trend that appears in a number of columns. In a number of cases (on a spodosol, for example), a high-intensity harvest with light treatment would result

in 10% net carbon loss under short frequency rotation, 33% loss under medium frequency, 31% under long frequency, and 10% under very long frequency.

6. Calculation of soil carbon does not account for temporal impacts.

The supporting guidance document defines the emissions from the soil carbon pool as the outstanding net emissions at the point of the next harvest event. "*Net carbon emissions are estimated as the difference between soil carbon stocks (CO2e) in the soil prior to the management activity and the soil carbon stocks (CO2e) in the soil immediately prior to the subsequent harvest event for each harvested stand*." Quantification Guidance for Use with Forest Carbon Projects, Step 2-2 at 16.

It is unclear how this calculation would work, since the project operator would obviously not know the timing or harvest levels of harvest actions decades in the future, and thus would be unable to provide the frequency of disturbance or site treatment factors necessary for the calculation. In any case, this approach fails to account for the temporal nature of soil carbon sequestration. In contrast to the Forest Protocol's treatment of tree growth, in which carbon credits are awarded only for growth that has occurred each year, the soil provision would essentially provide credit for potential sequestration and soil processes that may not occur for 50 years or more. Putting aside the fact that soil carbon sequestration decades in the future is highly speculative, this approach ignores the fact that the impacts depend on when and for how long carbon emissions contribute to atmospheric concentrations.

Conclusion

We appreciate the opportunity to comment on the proposed changes to the Forest Protocol and look forward to working with the Climate Action Reserve to address the gaps and outstanding issues, and strengthen protections for forest ecosystems and wildlife habitat.

Sincerely,

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