

May 11, 2009

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

**Re: Comments on the Updated Forest Project Protocol Public Draft  
(April 15, 2009)**

The Pacific Forest Trust (PFT) is pleased to have the opportunity to comment on the current Public Draft of the proposed update to the Climate Action Reserve's Forest Project Protocol. PFT is a long-time advocate for incorporating the climate benefits of forests into policy and market frameworks to help solve our climate crisis. We believe that forests can be effectively conserved and managed to prevent emissions generated by on-going conversion and degradation of carbon stocks, and to sequester significant amounts of additional carbon dioxide. For the contributions of forests to be appropriately included in overall climate and market frameworks, rigorous accounting standards at both the sectoral and project levels are needed to build confidence that forest-based carbon reductions can be genuinely additional, permanent and verifiable, on par with carbon emissions reductions in other sectors.

We commend CAR's leadership in implementing the original Forest Project Protocol and in managing the process that has produced this updated version. Thank you and the whole Protocol work group for your dedicated efforts to craft a practical and effective accounting framework to harness the power of our forests to help heal the atmosphere.

**I. General**

Overall, we support the Updated Forest Project Protocol. In general, the new version ably incorporates lessons learned and could form the basis for broadly accepted a national standard. As this version is finalized for consideration by the CAR and the state Air Resources Boards, we ask that certain important refinements and corrections be made to the current draft Protocol to better ensure its accuracy, integrity and ready implementation. We also acknowledge that the framework created in this Protocol will benefit from on-going review and refinement as it is put to work not only in California but around the country.

**II. Specific Comments**

**Section 3.2 Project Start Date, p. 5**

To avoid confusion that increases the risks of project implementation for landowners and leads to added verification expenses, please provide further guidance for how to apply the Project Start Date criteria described for Improved Forest Management Projects that better addresses the situation of avoided depletion projects.

We also request further language providing guidance regarding the timing of the project inventory in relation to the Project Start date.

Six months is too short a time between Project Initiation and CAR listing: Each project developed under Version 3.0 will require a considerable investment of time and money by the forest entity in preparation for listing, often with the assistance of a limited pool of expert consultants. In addition, projects will often be sited in remote areas and/or areas that may not have access year round. Together, these create constraints on the time in which a project can be developed, even with the intent of doing so quickly. To facilitate participation, and not disadvantage family forest owners, PFT recommends a 12 month maximum period between the initiation of a project and its listing, instead of the proposed 6-month limit.

Finally, we have concerns about how the accounting for project termination and then the initiation of a new project on the same site will be handled. Absent clearly elucidated rules, there is the serious potential of gaming. In addition to providing clarifying language, an example would be useful.

**Section 3.3 Project Implementation Agreement, p. 6**  
**Appendix C Determination of the Buffer Pool Contribution for Forest Projects, pp. 65 - 71**

CAR has the opportunity with these Protocols to create a system to most credibly ensure the creation of long-term emissions reductions, and mitigate the risks to “permanence” through various methods, and we applaud the effort. The Project Implementation Agreement (PIA) is central to ensuring that emissions reductions registered with CAR do indeed endure for 100 years.

While a draft of the PIA was not distributed along with the Protocol draft, certain elements of it were presented at the CAR-ARB workshop of April 29. One of the elements is the requirement to replace obligated carbon reductions lost in the event of a voluntary early termination (i.e., when the termination not due to a significant natural disturbance), stipulating that the amount of replacement ton be calculated at a premium (i.e., more than one ton for each ton lost due to termination). We feel that the potential loss of registered reduction due to voluntary early project termination is critical to address to assure the longevity of carbon reductions and to build confidence in forest carbon reduction projects. We would like to voice our very strong support for placing a substantial premium on replacement tons required of project developers who choose to terminate a project before 100 years as a disincentive to volitional termination. Further, we recommend that the premium remain robust throughout the project as the risk of termination actually grows over the project term. Absent a serious penalty for voluntary termination, the Protocol’s requirement of maintaining reductions for 100 years is not meaningful.

Please see the separate letter signed by PFT and a group of leading attorneys and conservation organizations in which we voice our additional concerns and recommendations regarding the potential use of ordinary deed restrictions as a means to

reduce risks to permanence, including the illogical equation of the value of such deed restrictions with the enforceable provisions of conservation easements.

### **3.5 Use of Native Species and Natural Forest Management, p.7**

There is a typo in the first bullet, which should be two bullets, not one. The second bullet would begin, “If and when commercial harvesting occurs . . .”

#### **3.5.1 Promotion and Maintenance of Native Species, p. 7 – 8**

##### **Table 3.1, p. 9**

Since the last draft this section has now become too general and requires more guidance on specifics to avoid confusion and a lengthy, expensive and risky verification process. Further, there are some omissions that need addressing.

For instance, a major goal is to assure that there is a natural distribution of species native to a particular forest type, but the guidance as to what that means and how to measure it is unclear. In addition, we should remember and explicitly note that some forest types are naturally dominated by a single species. The Protocol should not seek changes in composition that are unnecessary.

We are also concerned how “progress over time” will be demonstrated: What is an acceptable minimum rate of progress over 100 years? Progress should be measured at least each decade. Clear metrics are essential the potential of gaming and the potential for lengthy and expensive verification disputes. Neither result will build confidence and participation in CAR projects.

The section on Composition of Native Species in Table 3.1 is not written well and, if we understand it, we don’t see how this metric helps assure a natural distribution of species. We recommend adding a new appendix that lists each forest type and its respective species mix with the general natural range of distribution within it, allowing for ready look up.

In addition to assuring the desired species and age class distributions, a key indicator for forest “natural-ness” is the establishment and maintenance of dead, dying and structurally complex trees. Many commercial forests around U.S. are characterized by lack these features, which are key habitat elements. The evaluation form is insufficient in relation to dead wood and other key habitat structures and we urge CAR to strengthen this requirement. The evaluation only addresses the maintenance of standing dead wood (and is silent on down wood) and does not promote the increase in these structural components even if the starting values are insufficient to provide some minimum level of habitat value.

While California regulations may be sufficient to address the maintenance and restoration of these habitat structures over time, for owners in jurisdictions where there is no oversight of these structural elements, perhaps sufficiency in this regard can be verified through existing sustainable forestry certification programs that specifically address this

area. In addition, we recommend that CAR incorporate the use of structural classification systems such as the Wildlife Habitat Relationship database in the structural assessment. Regardless, the current standard proposed in the evaluation form is too vague and minimal.

### **3.5.2 Promotion of On-Site Standing Live Forest Carbon Stocks, p. 10**

We greatly appreciate the inclusion of a clear statement regarding the maintenance and/or increase in live tree carbon stocks. It is through the grow and longevity of trees that sequestration actually occurs.

As written currently, though, we now have three significant concerns:

1. As written, this standard is going to be evaluated on an annual basis when it should be considered over a longer period. Annual or periodic flux will be a given in an actively managed forest. Year to year variation must be evaluated in the long term project context. We believe that normal, planned management flux should be permitted so long as over the project lifetime the live tree carbon stocks don't diminish. This can best be evaluated in concert with the reinventory cycle.
2. There appears to be a broad allowance granted in item #2 for a persistent, long term decrease in the live tree pool. This broad allowance could become an unintended loop-hole to the standard stated in the section's first sentence. While the graphic seems to indicate a situation where live stocks have grown substantially above the baseline prior to their reduction to a lower level, the actual language of the circumstance suggests that the live tree stocks could in fact be reduced and maintained at a level beneath the baseline. The language should be revised to ensure that the live stocks grow to some degree above the baseline over time.
3. In circumstance #3, the third sentence says, "Additionally, the actual project stocks shall not be less than what was declared from modeling the project at the project's initiation." We believe comparison of actual project stocks to the modeled projection should not be the basis for evaluation of whether the live tree carbon standard is being met. There are numerous legitimate reasons actual stocks may vary from projections as the projection is simply a modeled representation of future results from project activities and actual results will vary based on periodic management decisions as well as normal variation between modeling and reality. The real point is whether the actual stocks are being sustained or, preferably growing over time, relative to the starting stocks and the baseline. As recommended above, that can be evaluated at each reinventory period. Any variance between actual project live tree stocks and those projected initially are accounted for in the actual crediting for emissions reductions which only occurs based on actual results in relationship to the baseline.

### **5.2 Accounting for Secondary Effects, p. 13**

Among the emissions that must be accounted for as a Secondary Effect (i.e., GHG produced both directly and indirectly activities involved in a forest project) are those for mobile combustion and processing associated with wood products post harvest, including

transportation to the mill and along the value chain. We urge CAR to incorporate this missing element in accounting for Secondary Effects.

### **6.1.1 Reforestation Projects – Primary Effect – Estimating On-Site Baseline Carbon Stocks, p. 14**

The second sentence in second bullet strikes us as funny. It hadn't occurred to us that a project developer would assess the history of forest cover for a site any earlier than the last 200 years -- at longest. On this basis could a developer explain that the project area had been out of forest cover due to past glaciation but had previously been forested?

What is the intent of the third sentence in the fourth paragraph, which states, "Further, Reforestation Projects are only eligible if there is no consideration of sawtimber harvest within the first 30 years of the project"? Even under business as usual, this is unlikely to occur as few forest types can yield what is typically called sawtimber in 30 years. Please explain what this qualification is meant to accomplish and revise to make more meaningful as an element meant to establish the additionality of the project.

### **6.1.2 Reforestation – Secondary Effects, p. 16 – 17**

#### **Table 6.1**

It is unclear how the site prep – reforestation emissions associated with machinery use are to be incorporated into the overall leakage assessment as they are quantified in metric tons/acre and the Leakage Risk chart produces a percentage amount.

### **6.2.1.1 Improved Forest Management Baseline for Private Lands, p. 17 - 24**

The presentation of this complex set of rules for developing the IFM baseline is improving. Thank you! Some further clarifications and corrections will help further, as described below.

While we support production of flat lined, average baseline for its ease of use in accounting, but we note accounting implications of same in reference to risks to permanence. With averaged baseline, some carbon reduction tons will be booked earlier than otherwise and others later, so it is all the more important to ensure that the project actually lasts for its required lifetime or the overall accounting will be inaccurate. This makes the necessity of disincenting voluntary project "buy outs" (as potentially allowed under the new PIA) all the more important.

**Determining Common Practice on Similar Landscapes, p. 17:** However appealing it is to utilize a national database such as that of the FIA, and however credible it is for its current governmental uses, PFT and others question whether this dataset defensibly reflects common practice at the "assessment area" level. Are there sufficient datapoints within each assessment area and are they well distributed enough to capture current stocks? How ground-truthed are they? Is the data-set consistent enough across the U.S. to develop the common practice reference appropriately for ecologically logical assessment areas?

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We urge CAR to provide greater transparency as to which how the assessment areas are developed and how the mean stocks are calculated for each, with identification of the land and ownership classifications (eg., timberland vs. forestland; private vs. public; commercial timberland vs. other types, etc.) and plot data used as the basis for mean stocks calculations.

Further, we remain very concerned that the only that real effect of use of the “common practice” threshold as defined in the current draft is to minimize the climate benefits provided by landowners who have voluntarily made significant investments in growing and maintaining above high forest carbon stocks. Are we leaving no good deed unpunished by not permitting these forest owners to utilize the same baseline methodology as those with low stocks? We urge CAR to reconsider this approach and allow all forest owners to be evaluated similarly.

If the two distinct pathways to baseline development are maintained (one for projects with starting stocks above the Common Practice reference and one for those below), it would facilitate understanding if each were described separately. While this may lead to some repetition of steps, the current blended format is hard to track. For instance, Step 5 (p. 24) is only relevant to projects with lower starting stocks.

**Determination of High Stocking Reference, p. 19:** Do the same measurement standards apply for the prior 10 years as those used for determining current stock estimates? What if the landowner does not have records or did not use measurement standards that meet the Reserve’s required standards (e.g. only measured trees >8” dbh or had a high standard error at the 95% confidence level)? Guidance should be provided to clarify what are acceptable standards and methods for the “look back” inventory calculations.

**Determination of the Financial and Legal Reference, p. 20,** last sentence says: “If the current project’s live tree carbon stocks meet or exceed the Financial and Legal Reference, the project’s baseline of live tree carbon is considered to be the current live tree carbon plus all of the additional required pools.” This sentence seems to state current stocks are baseline if they are above the Financial and Legal reference, which is not the case based on later discussion. Perhaps the intent is current stocks are the starting point for modeling the baseline? Please clarify.

**Step 2, p. 22:** The description below the chart for this step is difficult to understand as written. If we are understanding it correctly, it might be more clear to say (changes underlined), “At the point the baseline modeling intersects the higher of the controls described above . . . the live tree carbon shall be modeled to at least maintain this value on average over the remainder of the 100 year project period.”

**Step 3, p. 23:** This is not described clearly in the box text (what does “modeling. . . conducted in the proximity of the control” mean in plainer English?)

**Step 4, p. 23:** The text at the top of the page above the box called Step 4 appears to refer to the Step 4 process and should be placed below the box to be consistent with how the formatting is for the other steps.

There appears to be a typo in the sentence following **numeral 2 on p. 23**. We believe it should read, “For projects with initial live tree carbon stocks that are below Common Practice . . . and ~~exceed~~ or must increase until the current stocks exceed the higher of . . .” Also, the last sentence states, “The baseline of live tree carbon stocks shall be considered static at the point the modeling of the baseline reaches the higher of the controls described above.” Does this mean the project developer should average the modeled baseline value above the control? Please clarify.

**Final Baseline Step, p. 24:** The example graph for the final baseline step does not show an “increasing trajectory” even though the text in the box immediately above it states that it should. Further, as the previous paragraph (“Completing the Baseline by Adding other Pools”) states that the wood products value to be added in to the baseline is simply the average wood products value over the 100-year period (i.e. a static value, not one that increases over time), why would the baseline be anything other than flat, as depicted?

#### **6.2.1.2 Improved Forest Management Baseline for Public Lands, p. 25**

The draft lacks a definition of what constitutes a public entity, which is already leading to confusion. Please add a definition that identifies that “Public Lands” refers only to land owned state agencies. Federal lands should not be included as an eligible land type for IFM or other projects at this time. County or municipal lands should be given guidance to follow the Private Lands baseline and/or be included in a definition of private lands.

#### **6.2.2 Improved Forest Management Baseline– Secondary Effects, p. 26**

First paragraph, last sentence: “Project developers must account for leakage by reviewing increases in harvest data for the entity.” We suggest that this would be better said as “review data for increases in harvest.”

**Leakage Risk Assessment for Improved Forest Management Projects flow chart, p. 27:** The second step described in the upper option under “Increasing Average Harvest Age of Commercial Species” is still unclear as how to apply. It reads as if one would multiply 2% times the number of years that the stand is past CMAI, but we understand from CAR that is not the intent. From our understanding of how this would be calculated this box should be reworded to say something like:

“In each year beyond the culmination of mean annual increment, multiply 2% by the current inventory. This is assumed to be the annual sustainable harvesting level that has been shifted elsewhere.”

#### **6.4 Quantifying total Net GHG Reductions, p. 31 - 35**

We like the addition of the statement: “The project modeling is a good faith estimate of projections at the project’s initiation and is not verified.” However, it seems most appropriate to verify the project modeling at project initiation but generally not subsequently. We suggest changing language to something like “... at project’s initiation

and is not verified after initial verification unless there is a material change in stocks or project activity.”

Apparent double penalty for confidence deductions: Should the formula for calculating quantified reductions each year include the application of confidence deductions since the confidence deduction is also applied as part of the buffer pool contribution?

Under description of “ $CD_y$ ” and “ $CD_{y-1}$ ” should refer to Appendix C, not Appendix A.

**Example of Annual Calculation Activities table, pg. 33:** Under project activity and baseline stocks, Dead Standing Carbon includes stumps. There is no other guidance or mention of stumps in the Protocol, so they should not be referenced here as it is not the intent to require measurement of stumps. However, stumps that meet the downed wood minimum size specs ( e.g. old growth redwood stumps) may be noted as eligible for measurement under the dead wood sampling specifications on page 53 table A.3.1

### **7. Ensuring Permanence of Credited Emissions Reductions, p. 36**

We support the use of a buffer pool to mitigate the risk of reversals due to natural disturbances. We note that the amount of required contributions to the buffer pool will need to reassessed regularly by CAR as experience grows.

We suggest including language that recognizes reversals do occur from time to time as a part of planned project activity (as noted in Section 3.5.2 and elsewhere). For example, planned timber harvests on small IFM project sites may cause reversals. Since these reversals are planned, including language that recognizes this and a requirement that developers of such projects accommodate for this situation by maintaining a reserve of unsold CRTs equal to or greater than the anticipated reversal amount.

#### **7.2.2 Compensating for Reversals, p. 36**

Only reversals due to significant natural disturbances should be allowed to compensate for loss through buffer pool withdrawal. We urge CAR to incorporate all voluntary reversals not planned as part of project activities (especially including voluntary early termination of projects) be treated on the same basis as reversals due to gross negligence.

### **9.3 Transparency**

We assume this section is intended to include the kind of summary level data currently required and not detailed inventory data. If not, this ought to be clarified since many landowners consider inventory data to be sensitive and proprietary.

## **Appendix A. Developing a Forest Project Carbon Inventory**

### **A.3 Onsite Forest Inventories**

#### **Table A.3.1. Minimum required sampling criteria for estimated pools, p. 53**

The last sentence in the description of the requirement under Lying Dead Biomass in Table A.3.1 is not consistent with the first two sentences. It suggests that material smaller than the specifications listed above shall be considered litter. But the specifications in the first two sentences both indicate that a maximum minimum (“not to



*be greater than*”) is required rather than a specific minimum. As such, it seems like the project developer can alter what may have been intended to be considered litter by lowering the minimum specifications applied.

### **Step 2 – Estimate Carbon in Live Trees from Sample Plots, p. 54**

It appears that the second sentence of second paragraph should state “*Appendix H*” rather than “*the references.*” Fifth sentence would be improved by stating, “The bole total cubic foot volume (VOL) is calculated first and then multiplied by the wood density value (pounds/cubic foot) for each species.”

We strongly recommend an appendix in place of Table A.3.2 in order to provide the equations for all species written out as is done in Table A.3.2 in order to ensure that all project developers are using the exact same equations as other project developers.

Functions listed in the references cited may be interpreted differently since there are different versions of Waddel and Hiserote (2005) in distribution.

### **Step 3 – Estimate Carbon in Standing Dead Biomass from Sample Plots, p. 56**

As currently written, a landowner must sample material to establish density values for standing dead biomass, while published density values (Harmon et al 2008) are available for use in lying dead. The published density values should apply to standing dead as well rather than requiring sampling.

The last sentence in Paragraph 1 should refer to Appendix G, not Appendix C.

**Steps 5-7** (as well as other steps), p. 58: These alternate between referring to “Table A[.5.4]” and “worksheet in Step 10.” Probably better to pick one and use it, or refer to “Table A.5.4 under Step 10.”

### **A. 4 Estimate Carbon in Wood Products, p. 58 - 62**

The accurate accounting of the long-term stores in harvested wood products (HWP) net of primary and secondary GHG effects is difficult if not impossible to ascertain with precision at the level of an individual project absent more comprehensive accounting for the forest sector overall and the flow of wood within the forest sector and across to other sectors.

At the project level, unlike on-site forest carbon stocks and flux, post harvest HWP flows out of the project owner’s control; end uses and losses vary widely along the chain of custody; and the ultimate destiny of the HWP is not subject to independent verification at this time. The best available data on which to base broad, general calculations such as those proposed in the current draft, including that used to create the 1605(b) tables, has relatively high uncertainty (Skog communication to the CAR Work Group 2009).

On the other hand, a credible Forest Project Protocol must acknowledge and account for the fact that when wood is harvested its carbon is not immediately emitted to the atmosphere. A significant portion is transferred into the reservoir of HWP. The

challenge is how to begin to conservatively quantify and account for HWP at the project level given the above constraints.

Ultimately the accounting challenge needs to be resolved as through a comprehensive system as described above, allowing forest owners to account for logs delivered to mills net of harvest and transportation based emissions. Losses and continued stores associated with primary and secondary processing, transportation, construction, biomass energy, other uses, landfills, recycling, etc., would be accounted for in their respective sectors. In fact, such an integrated approach to forest accounting would provide the basis for crediting the use of wood over more carbon intensive fuels and building materials in their respective sectors.

In the meanwhile, we believe the framework for HWP accounting at the project level presented in the current draft Protocol is an acceptable starting point, given the uncertainties associated with HWP calculations. We believe the methodology used arrives at a reasonable representation of the value of carbon stored in HWP over the course of a project. Further, we urge CAR to continue consulting with experts and stakeholders to incorporate new knowledge and systems into these calculations as they become available.

It would help readers of the Protocol to better understand the HWP accounting if the calculations were simply summarized in reference to how much live tree C is considered stored.

Mill efficiency needs to be more fully addressed, including clarification of the appropriate conversion rate data, separating out hardwoods and softwoods, primary and secondary processing. Further losses from debarking need to be addressed as they can be material.

**Last paragraph before Process 1, p. 59:** The means of calculating the 100-year average in-use percentage this needs to be described for transparency. This calculation should correspond to straight line average computed from annual values.

**Process 1: Determine Amount of carbon harvested and transferred to Wood Products Pool, p. 59**

Fourth paragraph, fourth sentence starts, “*The BOE....*” BOE is not included in the list of acronyms, and it is not applicable to projects outside of California. A suggested changes to consider is, “Tax statements or scaling bureau reports or similar verifiable documentation should be obtained to provide a summary of harvested volume by species delivered to the point of sale”.

**Process 4: Landfill Storage, p. 62**

While we continue to be uncomfortable with any calculation and reporting of possible landfill stores, if this remains in the Protocol the last sentence in this section would read more clearly as, “Guidance will be provided by the Reserve about how to track or report the resulting numbers.”

**Appendix B. Modeling Carbon Stocks, p. 63**

The last sentence refers to “a state forester”: does this mean *the* State Forester, or a forester in a state, or ? It is not clear why this person would make the finding, regardless. We believe it is sufficient for CAR require a project developer or other stakeholder to demonstrate that a model meets the listed qualifications.

**Appendix C. Determination of the Buffer Pool Contribution for Forest Projects, p. 65 - 71**

**2<sup>nd</sup> paragraph:** The changes to Buffer Pool contributions resulting from a reassessment should only apply to future years, and not be retroactive.

Table C, p. 65: In the Financial section, under Description, it should read, “Financial failure can lead to bankruptcy and/or alternative management decisions . . . “

**C. 3 Social Risk p. 67-68:** The last sentence on page 67 states an overall assessment value of 5% is assigned to social risks while tables on p. 68 and p. 71 show 2% . Please correct.

**Table C.4.1, p. 69** – Are the values for long term fire risk potential for each assessment area determined by CAR? Or are there references to sources for fire history perimeter maps that CAR can provide. Will there be a look up table provided, or is this up to each project developer to determine? If the latter, more guidance would be helpful.

**C.5 Accuracy of Carbon Stock Estimates, p. 70:** More guidance on or references for computing standard error on combined pools would be very helpful.

**C.6 Summarizing the Risk Analysis and Contribution to Buffer Pool, p. 71**

The overall default values are insufficient, in our opinion, to adequately mitigate the risks indicated. A minimum contribution of 10% should be established for all projects until there is greater data and project history from which to determine risk.

The formula at the bottom of the page is incorrect. It appears to calculate the reductions that would remain when the risk contribution is applied rather than just calculating the risk contribution, which is what is stated. We believe it is correct when stated as follows:

$(100\% - ((1 - \text{Financial Failure \%}) * (1 - \text{Illegal Forest Biomass Removal \%}) * (1 - \text{Conversion \%}) * (1 - \text{Over-Harvesting \%}) * (1 - \text{Social \%}) * (1 - \text{Wildfire \%}) * (1 - \text{Disease or Insect Outbreak \%}) * (1 - \text{Other Catastrophic Events \%}) * (1 - \text{Accuracy of Carbon Stocks Estimates}))) * (\text{Reductions accrued in Year X})$

**Appendix F. California Assessment Areas, p. 75:**

A shapefile of the assessment areas should be made available to project developers upon request to ensure accurate location of projects relative to assessment areas.