



## NORTH COAST RESOURCE MANAGEMENT

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Date: May 11, 2009

From: Mark D. Edwards, James D. Clark and Andrew Atkins - North Coast Resource Management

To: Climate Action Reserve

Re: Comments Regarding Updated Forest Project Protocol dated April 15, 2009

Dear CAR,

Please find following our comments regarding the current version of the Forest Protocol, and our suggested changes or revisions.

**Page 4, Section 2 – Forest-Based GHG Projects:** The protocol describes three types of forest projects; Reforestation, Improved Forest Management, and Avoided Conversion. Would it be possible to combine more than one project type into a combined Forest-Based GHG project? Or would each project type need to be separately registered with the Reserve? If each project type needed to be individually listed, costs would be greatly increased.

**Page 4, Section 2.1.1 - Reforestation:** This project type definition requires that “*there is no consideration of sawtimber harvest within the first 30 years*”. Typically, reforestation activities following “recent significant disturbance” such as wildfire or insect attack are associated with site preparation, salvage logging, or other silvicultural activities designed to capture ongoing mortality, or to enhance the growth rates of surviving trees. In fact, losses of growth or mortality are often not readily apparent, or they continue to become apparent for many years following the damaging event.

In the case of forests damaged by an event that “removed at least 20% of the above ground live biomass” there is also remaining live forest that will require ongoing maintenance and management to capture ongoing mortality or to enhance stand growing conditions. In a stand where 20% of the above-ground live biomass has been reduced by disturbance, but significant sawtimber sized trees remain, it seems impractical to limit the harvest of sawtimber. It could be possible to remove 20% of the biomass in a project area, but still retain full stocking, and thus no need to provide reforestation.

**Recommendation:** It seems to us that the notion of a reforestation project following a 20% reduction in biomass needs further clarification and guidance in the protocol.

When does a reforestation project become an Improved Forest Management project? If a reforestation project naturally becomes an Improved Forest Management projects once commercial harvest occurs (not necessarily sawtimber), then the 30-year limitation seems arbitrary. If an area is commercially viable in advance of the imposed 30-year limitation on harvest, then it seems that the project would transition to an Improved Forest Management project and be subject to all of the requirements of the protocol.

**Recommendation:** We recommend that the phrase “no consideration of sawtimber harvest” be deleted. The limitation should be in reference to commercial harvest, and not sawtimber harvest. It seems reasonable to include a limitation on commercial harvesting as long as the project is deemed a reforestation project; however, once the project area reaches commercial viability, the project has accomplished the reforestation aspect of the forest’s development.

**Page 4, Section 2.1.2 – Improved Forest Management:** The first sentence of this section talks about forest management practices for the Project in relation to established ‘common practice’. Common Practice is a defined term in the protocol. We assume that this general reference to ‘common practice’ is in regards to the calculation of the project baseline which may be calculated in reference to other controls, and not just the Common Practice control.

**Recommendation:** We recommend that the wording of this section be revised to more generally describe the notion of the project baseline, without specific reference to Common Practice.

**Page 6, Section 3.2 – Project Start Date:** The Protocol states that, *“Until 12 months after the adoption of the updated protocol, a Project Developer may list a project that has a project start date as early as 2001 if all the necessary information can be provided to meet the requirements of this protocol. Project baseline data for each consecutive year following the project start date must be reported to the Reserve and verified.”*

This clause references “adoption” of the updated protocol, but does not specify whether adoption is to be by CAR or CARB.

Once established, this baseline establishes the control point from which “additionality” is measured over as many years as that have passed since the project state date. It is not described in the Protocol how the GHG reduction credits derived from the “look back” period will be issued. We believe that since the difference between existing conditions and the baseline determines cumulative additionality; that it is reasonable that the look back credits all be treated as a one-time, current year event. That is, all the credits should be issued with the current vintage, and not issued as yearly vintages reflecting each year’s accumulation during the look-back period.

**Recommendation:** Clarify by whom “adoption” is to be made. The protocol should specify that GHG reduction credits issued for Project Start Dates that occur more than six months before the start date be treated as a “one time” event, with credits issued in the year of verification.

**Page 6, Section 3.3 – Project Implementation Agreement:** The Protocol states, *“the conservation easement/deed restriction must be recorded no sooner than a year before the project start date as a demonstration that any limits to forest management defined in the conservation easement/deed restriction are intended to support the project activity. If the conservation easement was recorded more than one year prior to the start date, the limits described in the conservation easement must be considered as a legal restriction in the baseline analysis.”*

The language in this paragraph is difficult to understand and needs to be clarified. First, the clauses, *“no sooner than a year before the project start date”* and *“more than one year prior to the start date”* appear to reference the same reference point – but the terminology is confusing. It is also not clear what this clause is requiring - is it stating that conservation easements recorded less than one year before the project start date need not be considered when developing the Financial and Legal Reference?

It also is unclear from Section 3.3 when a Project Implementation Agreement is to be executed. In the case of recognized project start dates as early as 2001 a project implementation agreement could not have been executed prior to project initiation. Thus, project implementation agreements must be coincident with registration and verification, and not with project start date.

**Recommendation:** Clarify language in this Section with regard to timing of the Conservation Easement, and the timeframe for the execution of the Project Implementation Agreement.

**Page 7, Section 3.5: There appears to be a missing bullet point::** The first bullet point requires 1) certification under a nationally recognized, third party forest management certification program and 2) operation under a renewable long-term management plan that demonstrates harvest levels which may be permanently sustained over time, and that is sanctioned and monitored by a state or federal agency. We believe that these two points should be separated into two bullet points – as either will provide for “environmentally responsible long term forest management”. The wording of the first bullet point could be interpreted as requiring both a third-party certification, as well as a long-term management plan sanctioned and monitored by a state or federal agency. Creating three bullet points would be consistent with how the same information is presented in table 3.1.

Additionally, the protocol does not specify what sorts of long-term management plans are acceptable as meeting this requirement: for California these should include an SYP, Option “A”, NTMP, SYP, or a CFIP management plan.

**Recommendation #1:** Create a new bullet point for item (2) above, thereby allowing conformity with the protocol rules through either option (1) or option (2).

**Recommendation #2:** Create an appendix that clearly states which types of certifications, and which types of long-range management plans are acceptable for both State and Federal “sanction”.

**Page 7, Section 3.5.1: Promotion and Maintenance of Native Species:** Table 3.1 provides a means of evaluating if a project meets the criteria of natural forest management. Shouldn't the verifier be able to determine if the Forest project is meeting the natural forest management criteria at the time of verification, and most certainly after a series of field verifications? How is a long-term forest management plan administered by a third-party or state or federal agency going to provide any assurance that the standards of the Forest Project Protocol have been adhered to? If the protocol creates a standard, it should be the verifier's job to determine if the standard has been met. If the standards are so complex that they cannot be verified without third-party, state, or federal oversight, then I think that the revised protocol has not met its goal of improving the “efficiency and cost-effectiveness” of the protocol. Provisions such as these incorporate hidden costs into the protocol, which may reduce fees paid to CAR verifiers, but result in significant additional costs elsewhere.

**Recommendation:** Remove the requirement that third-party, state, or federal oversight of long-term forest management plans be required.

The protocol requires that the natural forest management requirement must be met for every 10,000 acres; however, if the project entity is relying on a long-term management plan that is sanctioned and monitored by a state agency (such as an Option A document), the plan will be demonstrating compliance at most likely a larger scale than 10,000 acres. The 10,000 acre requirement would seemingly require the entity to prepare several such long-term management plans, significantly increasing costs.

**Recommendation:** Allow natural forest management to be assessed at the project scale, by removing the 10,000 acre limitation.

The first bullet point on page 8 states “*Maintain the stocking of live native trees*”, but does not specify the unit of measure (Biomass, board feet, basal area?).

**Recommendation:** Clarify the stocking reference in this bullet point.

Table 3.1 under the heading of “*Distribution of Age Classes/Sustainable Management*” requires that the entire forest entity ownership including lands outside of the project must prove sustainability through a third-party program, or state or federal program. This requirement seems out of place. GHG reductions, additionality, business as usual, common practice etc. are all measured on the basis of the forest project, and not the entire holdings of the entity. Why

should the natural forest management requirements be expanded to the entire entity ownership when the entity is only contracted with the Reserve for the project area? How will the verifier test this?

**Recommendation:** Remove the requirement that the entire ownership must be under a long-term forest management plan, if the entire property is not contained within the Project.

**Page10, Section 3.5.2 Promotion of On-Site Standing Live Forest Carbon Stocks:** The term “environmentally responsible management plan” is used in sub-section 2. The term environmentally responsible management plan is not provided in the glossary. The term is very subjective and who makes the decision as to what is environmentally responsible is also not defined? We believe that an NTMP, SYP, Option “A”, or CFIP management plan should apply as environmentally responsible documents in California?

**Recommendation:** Clarify, define or eliminate the term “environmentally responsible management plan.”

**Page 12, Section 5 - Defining a Forest Project’s GHG Assessment Boundary:**

“*Mobile combustion emissions*” is not referenced or defined in the glossary. Adding requirements to the protocol only adds to the fixed costs associated with initiating a project. Is it the intent of the “mobile combustion emissions” clause to have a forest landowner report their emissions related to the ongoing management practices associated with their property? And if so wouldn’t these emissions need to be counted by the entities performing the services? If a landowner has their roads graded by a contractor, does the landowner need to report the emissions associated with these actions against their net reductions? We would argue that those emissions are the responsibility of the contractor.

The workgroup should not need to be reminded that one of the reasons for drafting the new protocol was to make the new protocol more cost effective while simultaneously not sacrificing its integrity. The only improvement to the new draft protocol has made in regards to dealing with cost effectiveness that we can tell to this point is making large woody debris an optional pool, and the removal of the conservation easement requirement. The workgroup should be actively looking for ways to cut unnecessary costs associated with initiating a project from the protocol; not adding new ones in. Gross income minus expenses is equal to net revenue. Net revenue or perceived future net revenue will be the largest motivating factor influencing forest landowners to initiate a project. The workgroup needs to take a proactive approach to dealing with undue costs, because over-burdensome costs are the greatest risk to the protocol’s overall success.

**Recommendation:** Remove the requirement for project participants to report their mobile combustion emissions.

**Page 17, Section 6.2.1.1 – Improved Forest Management Baseline for Private Forest Lands:**

Under the heading “*Determining Common Practice on Similar Landscapes*”, the Common Practice average is defined as being based on live trees (roots, bole, branches, and leaves). The term ‘live tree carbon’ is used extensively in this section.

**Recommendation:** A definition of live tree carbon, or live tree biomass should be added to the glossary.

**Page 20, Section 6.2.1.1 – Improved Forest Management Baseline for Private Forest Lands:**

This section fails to recognize that all forestland management activities are not conducted purely for financial returns. The motivations of many restoration forestry activities are rooted in social or ecological values, which often occur at a financial loss to forestland owners.

**Recommendation:** Recognize that all land management activities are not motivated purely by financial returns.

**Page 23, Section 6.2.1.1 Improved Forest Management Baseline for Private Forest Lands:**

The description of the averaging of the modeling results for Steps 2 and 3 listed as Step 4 in the box is incorrect. Firstly Step 4 references Steps 1 and 2, and not Steps 2 and 3 as it should. Secondly, the baseline is determined by averaging the modeling results for the entire 100-year period which includes the modeling per Step 2 and the continuation of the modeling per Step 3. The average modeling result is not determined by averaging Step 2, averaging Step 3, and then averaging the two averages. The graph below Step 4 is incorrect without the clarification that the two averaged modeling results must be weighted by the portion of the 100-year planning period for which they were run. In the example shown, this looks to be around 20 years for Step 2, and 80 years for Step 3. The live tree carbon baseline should be described as the average of the modeling shown in the graph at the bottom of page 22. This would be consistent with how the financial and legal reference is calculated.

**Recommendation:** Clarify the above described workflow and examples.

Item #2 on Page 23 contains the following:

*2. For projects with initial live tree carbon stocks (metric tonnes per acre) that are below Common Practice, baseline modeling of standing live carbon stocks cannot go below the current live tree carbon stocks (metric tonnes per acre) **and exceed or increase** until the current stocks exceed the higher of:*

- a. The Legal Reference (should be Financial and Legal Reference)*
- b. The High Stocking Reference*

*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.*

The “**and exceed or increase**” language does not make sense. It seems that the live carbon stocks must increase until they meet or exceed the listed controls. This is especially confusing in light of the statement regarding the live carbon baseline being static once it reaches the higher of the controls.

The last statement on page 23 seems to contradict the description and graph under Step 5 on page 24. The only reason to model live tree carbon in proximity to the High Stocking Reference, Initial Carbon Stocks, or the Financial and Legal Reference is for the purpose of determining the contribution of wood products to the final baseline (assuming that the statement at the end of page 23 is correct, and the baseline of live tree carbon is static).

**Recommendation:** Clarify the language regarding the calculation of the project live tree carbon in proximity to the above referenced controls.

**Page 24, Section 6.2.1.1 Improved Forest Management Baseline for Private Forest Lands:**

Under Step 5, the graph depicts a modeled baseline of live tree carbon that is entirely above the line depicted as the average of the modeling. This is not mathematically possible.

The Final Baseline Step describes the final baseline as having an increasing trajectory due to the inclusion of the averaged annual estimate of harvested carbon production, but the graph at the bottom of the page shows a flat line for the final baseline as does the description in the text. These two descriptions do not agree. It seems that adding wood products as an average over the 100-year period unfairly reduces project GHG reductions during the early part of the period. For a project that was initiated in 2001 that has done nothing but grow over the last eight years, adding wood products as an average across the 100-year period does not reflect the reality that no wood products were created from 2001 to 2009. Since the wood products contribution to the baseline is created through a modeling exercise, it seems logical to add wood products as they are projected by the modeling. At a minimum, wood products during the period from project initiation to the present should be added based on empirical data based on harvest records.

**Recommendation:** Clarify how wood products are added to the live tree baseline in order to arrive at the project baseline. Wood products should be added as they occur throughout the 100-year modeling period, and wood products additions from project initiation to the present should have wood products added as they were harvested.

**Page 27, Section 6.2.2 Leakage Risk Assessment:**

The concept of leakage where the forest project does not include all entity lands is not included in this worksheet. This concept of leakage was previously included in earlier versions of the draft protocol. John Nickerson indicated at a landowner meeting recently that leakage is only

assessed at the forest project scale. The requirement in the natural forest management section that the entire entity must practice sustainable forestry hints at a concept of avoiding leakage, but does not address it directly.

**Recommendation:** Clarify that leakage is assessed at the project scale.

**Page 39, Section 8.2.2 Field Review:**

The rationale for Verifiers checking development areas in proximity to a project's area is not clearly defined or understood. Verification activities should be focused on the activities of the project, not the activities of the project's neighbors. Again this will add to overall project costs.

**Recommendation:** Remove or clearly define the clause "Check development activities in proximity to project area."

**Page 41 Glossary:**

The definition of 'Applicable Mean' and 'Common Practice' are very similar. Other than the glossary, the term "Applicable Mean" cannot be found in the revised protocol. Both of these definitions refer to standing live carbon, while the text on page 17 describes Common Practice as being based on live trees including roots, bole, branches and leaves, and not the standing live pool which is synonymous with above-ground.

The definition of 'Applicable Mean' should be removed from the glossary.

The 'Common Practice' definition should be revised to refer to live tree carbon as presented on page 17 of the protocol.

The Financial and Legal Reference should be defined in the glossary.

The High Stocking Reference should be defined in the glossary.

'Live tree carbon' should be defined in the glossary. Page 26 includes a reference to 'standing live tree carbon'. This should be changed to 'live tree carbon'.

**Page 52, Appendix A:**

Appendix G does not contain all of the references indicated in the protocol.

**Page 55, Appendix A:**

Example A.3 should show DBH in inches, and total height in feet as described on page 54 and in table A.3.2.

**Page 62, Appendix A:**



Table A.5.4 still lists optional pools as requiring justification, and does not match table A.2 on page 50.

**Page 63, Appendix B B.1:**

The reference should include total height and diameter as the means of calculating biomass as the new equations for biomass utilize both diameter and height.

FORSEE should be included as an approved model. FORSEE contains the CRYPTOS and CACTOS growth models with a windows front end. The FORSEE model has been substantially financed by CAL FIRE, and tested by Dr. Bruce Krumland, one of the original authors of CRYPTOS.

The CRYPTOS Emulator was the name of a CRYPTOS front end used to obtain approval of an Option A document in the late 1990s. The front end has subsequently been revised and is now referred to by its author as Visual CRYPTOS. Visual CRYPTOS was used to obtain approval of an Option A in 2006.

**Recommendation:** Add FORSEE to the list of approved models, and change the name of the ‘CRYPTOS Emulator’ to ‘Visual CRYPTOS’.

**Page 70, Appendix C.5 Accuracy of Carbon Stock Estimates:**

These accuracy standards are very tight, and result in increased costs primarily for small landowners who don't benefit from economies of scale associated with stratification. A 30,000 acre property could require the same number of plots as a 3,000 acre property in order to obtain the same level of accuracy. As a comparison, a small project that is estimating a 10,000 Mg reduction with a 5% reduction for inventory accuracy has the potential to overestimate or underestimate the true reduction by 500 Mg, whereas a larger project that is claiming a 1,000,000 Mg reduction has the potential to have an error of plus or minus 50,000 Mg. It is clear that larger projects have a greater potential to create a ‘significant’ overestimate of GHG reductions. We believe that the accuracy standards should be scaled to match project size, or the level of GHG reductions claimed by the project.

What we are really arguing for is that the protocol be designed to include smaller landowners, and not drive them away based on costs of implementation.

**Page 76, Appendix F:**

Forests can occur in a wide range of native species composition levels from pure stands of one species to many species. The likelihood of stands occurring with a species composition where any one species exists at more than 80% increases as stand size decreases. Certainly at the landscape level it is unlikely that natural stands would occur with species composition in excess of 80% for a single species. What is the scientific basis for the 80% species composition

criterion? Perhaps this species composition threshold should be evaluated at some minimum stand size.

In terms of species composition, it may be necessary to plant a nurse crop such as ponderosa pine in order to successfully reforest a given site with Douglas-fir. The long term goal is to reoccupy the site with native species, at natural levels, but in order to do so other native species must be planted at temporarily high levels that exceed natural levels.

**Recommendation:** Eliminate the “Composition of Native Species Threshold” contained in Appendix F.

**General comments on verification and the issuance of CRTs by the Reserve:**

It seems that the verification of CRTs could be handled differently based on the level of management activity that had occurred since the last field verification. In cases where there has been no harvesting, natural disturbance, nor disease since the last field verification, and the carbon inventory is within the age requirements of the protocol, it should be sufficient to issue CRTs based on the short term growth predictions of the project modeling with field verification every 6 to 10 years, or once a new carbon inventory has been provided. If the verifier conducts a field verification the first year that the project is submitted to the Reserve, and no harvesting or other reversal occurs the next year, and the cruise is up to date, what would the verifier be field checking in the second year? Sufficient time would not have passed to measure with sufficient accuracy whether the project timberstands have grown per the modeling, and the level of field checking included in any field verification does not allow for the collection of sufficient data with which to draw any conclusions about whether or not the modeling is accurate.