



RESPONSES TO WRITTEN COMMENTS SUBMITTED IN RESPONSE TO THE REGISTRY'S FOREST PROTOCOLS

Letter 1 – *National Council for Air and Stream Improvement, Inc. (NCASI)*

Comment 1-1: The protocols are excessively complex. They will discourage participation as the cost of participating will be too great (e.g. soil, non CO₂ emissions in future years).

Response: The protocols are lengthy but the complexity and cost of actual measurement was given extensive consideration during development. For example, the required pools for reporting are based on what the Forest Workgroup (Workgroup) determined was a standard forest inventory system for most forest entities in California. Conversion factors for the Carbon (C) amount were extracted from a report prepared by Winrock International. Winrock's basic methodology is used internationally to calculate C in forest projects. The pools cited in the comment as too expensive to collect are optional and at the discretion of the forest entity.

Currently, "non CO₂" greenhouse gases are not required to be reported to the Registry. The Registry intends to consider available methodologies and approaches for the registration of other biological greenhouse gases in the future, though it is anticipated that only methane and nitrous oxide may be the only other gases relevant to forests.

Comment 1-2: A number of items in the protocols are specifically designed for California and will limit their usefulness on a national or international basis.

Response: The Workgroup is aware of other protocols being developed both nationally and internationally, and worked to craft the protocols in a way that was as compatible as possible with other programs. The commentor is correct that a number of items (i.e. species of trees and their conversion coefficients) are set to

California's conditions. However, the fundamental components of the protocols will likely be compatible with other and future programs.

Comment 1-3: NCASI recommends a methodology for calculating sequestered carbon in wood products that differs from that proposed in the Registry's protocols. The alternative proposal uses a 100 year time line that would reach back to 1900 as a starting point. The proposed alternative would even out the annual or periodic balance of decay being weighed against the periodic pool additions by harvesting forests.

Response: Since the Registry's program consists of an annual accounting of GHG data registry, it must account for actual carbon stocks that exist in wood products that result from a harvest on a year to year basis. The 100 year approach would not be fully consistent with the Registry's current program design. A crediting system could consider the approach recommended by NCASI.

Comment 1-3.1: In the wood products section the starting point for additionality is the first year of registration which by design creates a start-up effect. This is an undesirable feature.

Response: The Workgroup recognizes the difference in the methodological approach, and as a result has recommended that the wood products pool be considered optional (rather than required) at this time. Further examination will be conducted to determine what adjustments, if any, are necessary to return the wood products pool to a required pool.

Comment 1-4: Use of the term "green house gas reductions" has a high potential to convey an incorrect impression that carbon stock increases are immediately and directly convertible into emission reductions. The Registry should rely on the term "carbon stock increases" that would explain how carbon stock increases provide a basis for creating "emission offsets."

Use of the term "biological emissions" is inconsistent with established practice in carbon stock accounting and will cause confusion. Tracking carbon stock changes separately from emissions avoids double counting.

Response: The protocols use the terms biological carbon stocks, biological emissions and greenhouse gas reductions. There is established precedent for the use of these terms to describe changes in forest carbon stocks.

Comment 1-5: NCASI has developed GHG reporting tools for pulp and paper mills that are consistent with WRI/WBCSD protocols and internationally recognized. Tools for wood products facilities will be available soon.

Response: The Workgroup is aware of, and has reviewed, a number of accounting methods for calculating C in the wood product pool. The method proposed in the protocols is based on work done by Skog, Heath, Birdsey and others who are experts in this area. In response to this point the Forest Workgroup has recommended movement of the wood products accounting from the “required” classification to “optional” pools. The Registry will pursue further review and revision and return with additional recommendations for the board on this topic. It is the Forest Workgroup’s recommendation that the wood products pool be recognized early in the chain of custody as it is in fact a continued storage of carbon associated with the individual trees harvested.

Comment 1-6: The Registry’s draft Forest Sector Protocol allows two completely different approaches to entity-level reporting (with or without a biological baseline). Data developed using one approach will not be comparable with data that is developed using the other.

Response: The Forest Sector Protocol is consistent with the Registry’s enabling legislation (Senate Bills 1771 and 527) and its GRP, which explain that an entity baseline is optional, but strongly recommended. The actual calculation of GHG emissions does not differ whether one chooses to establish an entity baseline or not.

Comment 1-7: Section J of the Forest Sector Protocols assert that decreases in entity carbon stocks will be treated as emissions, and that increases in entity carbon stocks will not be treated as GHG reductions. This is not a balanced approach. It does not address additionality and permanence in a manner that is consistent, logical and equitable.

Response: The Registry only allows certified GHG reductions to result from a specific forest project activity, not from a change in C stocks over time at the entity level. Since an entity is not required to set an entity baseline, changes in C stocks over time may or may not be “real” reductions. Additional specificity and consideration of additionality, leakage, and permanence is necessary to determine the quality of certified reductions. Such concepts are discussed in the Forest Project Protocol, which was developed in accordance with legislation.

Comment 1-8: The protocols should discuss the implications of activity shifting leakage for conservation projects in rapidly developing regions. Significant market leakage beyond the control of the reporting entity is very likely for such projects.

Response: The Workgroup has included additional language discussing leakage in the protocols and has required project developers to quantify and report all on-site activity shifting leakage. The Registry plans to continue to gather data on

market leakage and off-site activity-shifting leakage to with the intent of incorporating an approach to these kinds of leakage over time.

Comment 1-9: The term “Reforestation Project” is used to describe projects in which forest cover is re-established on areas that have been out of tree cover for a minimum of ten years. The term “afforestation” would be more appropriate for projects of this kind because the word “reforestation” is very often used in the United States to describe forest regeneration efforts immediately following timber harvest.

Response: The Workgroup recognizes that the term reforestation is commonly used to reflect planting following harvest where even-aged management is utilized. However, the term is also used in the western states to indicate reclaiming areas historically bearing forests but lost for a period of time. In the forest protocols, reforestation is limited by statute to those areas where native species would result in natural forests. This means that the soils and other site conditions must be capable of supporting successful establishment of the native forest species (either hardwood or conifer). Furthermore, the protocols definition of reforestation is consistent with definitions used in the international arena.

Comment 1-10: The Registry needs to define the problem to be solved (or the objective to be achieved) through uncertainty analysis and other quality control efforts.

Response: The Workgroup discussed uncertainty at great length and concluded that unless some rigor existed for the calculation of carbon stocks, the credibility of the information contained in the Registry would be negatively impacted. With that in mind, the Workgroup chose a discount approach for accuracy to weigh uncertainty. The discount numbers chosen were based on the standards used in California as guidance for common business practices in forest inventories.

Comment 1-11.1 & 11.2: The protocols essentially pay no attention to quantifying uncertainty in biological baselines and project baselines. The logic for the difference between reporting uncertainty and inherent uncertainty is not apparent.

Response: The Workgroup chose not to provide discount rates for entity level baselines since these are used to indicate trends and are not used to set discrete levels of an increase or decrease in C stocks. The C stock change resulting from a forest project will be registered and subjected to significant certifier scrutiny.

The difference between reporting and inherent uncertainty is important when certifying emissions. Registry certifiers are concerned with the reporting uncertainty associated with reporting errors, not inherent scientific uncertainty associated with GHGs.

Comment 1-11.3: For the general purposes of the Registry, it may be most important to focus quality control efforts on producing statistically unbiased estimates of carbon stock changes.

Response: The Workgroup agrees and believes that the proposed protocols produce a statistically unbiased estimate of C stock changes. This is addressed in the inventory standards for installation, the discount factors, guidance for selection of models to be used, and certification of those actions. The Forest Certification Protocol provides additional directions for certifiers to a conduct a higher intensity review when the forest entity's results do not appear to meet the "common practices" approach.

Comment 1-11.4: Deductions for uncertainty are typically associated with trading, which is outside the Registry's scope. The Registry may wish to eliminate the weighted deduction tables and replace them with a requirement that a) describe the methods they use to develop baseline projections and measurement based estimates of carbon stocks, and b) characterize the uncertainty in both the baseline projections and the measurement based estimates.

Response: Forest entities must describe the methods used to determine their entity and project baseline projections and measurements. Since forest projects are eligible to produce GHG reductions, a higher level of precision and accuracy is required in the forest project carbon inventory. Thus, a sliding scale deduction table, based on level of confidence in estimates applies to projects. It is a flexible approach that allows participants some latitude in the number of sample plots, but allows more carbon stocks (and ultimately more reductions) to be counted with increased accuracy and precision. External programs or crediting entities may choose to provide other discounts to GHG reductions based on their own policy approaches to issues such as leakage, baselines and additionality.

Letter 2 – *Natural Resources Defense Council*

Comment 2-1: These comments are targeted at accounting and program design issues introduced by the choice of accepting project-based emission reduction reporting. Reporting emissions reductions rather than just emission introduces the very tricky issue of baselines, which are hypothetical constructs of emission in the absence of the project. Credible project reporting requires great clarity, agency oversight, and transparency.

Response: Entity baselines are strongly encouraged, though they are optional based on existing Registry policy and legislation. Project baselines are required as they are the basis for determining GHG emission reductions. The quantification of both entity and project baselines is determined by the use of actual (not theoretical) data collected from the forest entity. This data is

composed of forest inventory measurements conducted by Registered Professional Foresters and from State Board of Equalization Harvesting records. Quality assurance in part comes from the fact that a Forester in California must possess a license to conduct business.

The theoretical aspect of the protocols is the use of models to project growth, including projected baseline scenario growth. The ultimate control and check on this approach comes from annual reporting with the requirement that no data used may be over ten years old and that every five years the registrant must provide a new inventory based on monumented plots. Certification examines not only the mechanics of plot installation and measurement techniques, but reviews the models with regard to design, assumptions and accuracy of entries.

Models to be used in these protocols are also guided by an initial restriction to the use of those accepted after significant investigation by the California Department of Forestry and Fire Protection (CDF). Models accepted as credible for the prediction of growth and harvest over time is utilized by CDF in determining compliance with the State Forest Practice Act and Board of Forestry and Fire Protection Forest Practice Rules. These rules require that there be a long-term (100 year planning period) balance of growth and harvest on a forest ownership.

The proposed forest protocols require the use of industry stand forest inventories to determine C stocks. The guidance provided in the protocols is specific and transparent. That is, it is capable of being recreated by a certifier for the Registry. *All inventory practices used are commonly accepted practices for the forestry profession..*

All project data reported to the Registry will be transparent to the public and reported required data is certified by qualified third-party certifiers. The Registry's enacting legislation created the Registry as a non-profit entity, with obligations to report to the legislature on a regular basis.

Comment 2-2: The project baseline characterization should not just consider the FPRs as the standard for setting the baseline. It is the commentor's belief that SB 812 requires the current management strategy being used by a landowner as setting the basis of determining additionality. The FPRs would only be a valid baseline if the majority of California Forestlands were managed to the letter of the law. The 2003 CDF Fire and Resource Assessment Program report does not support this conclusion.

Response: The use of the California Forest Practice Rules for baseline determination applies only to conservation-based forest management projects. The use of the Rules as the baseline complies with the intent of the enacting legislation, Senate Bill 812. California loses, on average, 60,000 acres of

forestland to non-forest uses annually and the rate of conversion is increasing. The loss of California's forest land means the loss of its existing climate benefits, as well as other environmental co-benefits, and the loss of future climate benefits. In recognition of this real and increasing threat, the legislation intended to create a reasonable and practical baseline that would keep forests as forests and encourage forest landowners to undertake increased conservation efforts.

Certifiable GHG emissions reductions from conservation-based forest management projects must be in excess of the level required by the range of environmental law encompassed by the California Forest Practice Rules. The minimum standard under the state Forest Practice Rules includes not only a balancing of growth and harvest over time, but the maintenance of the beneficial uses of water, wildlife habitat consideration, endangered species acts compliance, aesthetic consideration, minimization of soil erosion, and restocking harvested areas. The combination of these standards sets a higher performance standard than that of any other state in the country. This has been studied by many and the fact a higher standard is set is the consistent conclusion. As such, it is consistent with legislative intent and reasonable to consider carbon stored in excess of this as "additional."

The point is raised that the California Department of Forestry and Fire Protection's Resource Assessment Report indicates that there are areas of the state where growth exceeds harvest, and that consequently the areas where harvest exceeds growth do not necessarily support setting a baseline higher than the FPR standards. At the state level the report shows a decline in overall state inventory from the 1960's to approximately 1976. Then there is an incline in the positive balance of harvest and growth. That incline tends to increase in the 1980's and even more so after 1991. That incline is readily attributable to the initial implementation of the rules and increased standards for the balance of growth and harvest in the 1990's. Until the last decade there has been a constant decrease in the average stand age of California forests. In 1991 the FPRs were modified to require minimum stand age before harvest can occur. Concrete data is not yet available but current indications are that the average stand age is increasing as a direct result of those rule changes. Estimated per acre volume in the FRAP report indicates a lower level of stocking on industrial versus non-industrial timberlands. This is an indicator that industrial forestlands have historically been managed toward the minimum requirements of the FPRs. This is for private lands; a shift in national forest land management practices has resulted in a significant shift in the balance of growth exceeding harvest.

Comment 2-3: Conservation and reforestation projects should not be based on minimum compliance with the FPRs and other land use laws unless it can be shown the vast majority of forestlands are managed to that standard.

Response: The comment does not realize that there are no standards for either conservation or reforestation in the FPRs or other land use laws. Accordingly, the baselines for reforestation projects and conservation projects do not rely on the FPRs. Rather, conservation projects have two baseline approaches: 1) a process for developing a baseline based on a site specific immediate threat of conversion and 2) a *default table* of land use conversion trends by county. Reforestation projects must demonstrate that the project area has historically been under forest cover, but has been out of forest cover for a minimum time of ten years. The baseline characterization then assumes a similar trend in the future with an explanation of the practices and lack of law that would keep the area out of forest cover.

Comment 2-4: The protocol should adopt two rules that are used in other project assessment programs: 1) regular baseline re-evaluation; and 2) a maximum crediting period beyond which no further reductions can be reported.

Response: The California Climate Action Registry is not a crediting system for greenhouse gas reductions, and therefore there are no crediting time periods. The Registry does not *require* baseline readjustment over time, as it would be inconsistent with the enacting legislation. However, the protocol states that a forest entity may elect to readjust project baselines over time, as other programs may require such an adjustment.

The legislative rationale for the static project baseline, in part, is due the risk and disincentive associated with a changing baseline. A changing baseline could jeopardize transactions that involve the sale or transfer of reductions as the change could eliminate some or all reductions that were sold to another entity. In the case of reforestation or conservation projects, a changing baseline could remove any incentive to undertake such a project, since a change in the baseline could effectively eliminate the project's existing or future climate benefits..

Comment 2-5: Project baseline characterizations should be based on a reasonable projection of business-as-usual activity, and not on legal additionality or a static representation of current management practices. This approach is necessary for environmental integrity of claimed mission reduction. Weaker project baseline approaches will reduce the credibility of reported reductions and may reduce their economic value in emissions markets.

Response: Please see response to 2-2

Comment 2-6: Even given the flawed approach of legal additionality, the draft protocol does not discuss exactly how legal requirements would be translated into a greenhouse gas scenario. It would be truly remarkable if the laws and regulations did not contain considerable room for subjective

interpretation, especially as they were not designed for the purpose of greenhouse gas accounting. This issue should be examined in more detail if the legal additionality concept is retained.

Response: Please see explanation in comment 2-2 response. The Workgroup has examined the issue of quantifying the level of forest inventory (C stocks) required to be retained subsequent to harvest in some detail. The FPRs are separated into two classes of ownerships for determining growth and harvest.

Ownerships less than 50,000 acres of land are required to meet the leave standards prescribed in the individual silvicultural methods (even and uneven-aged management). In this area there are age standards under even aged management, and buffer strips between harvested areas. For uneven aged and intermediate management, such as the selection or commercial thinning harvest method basal area requirements are stated in the regulations. Additionally leave tree descriptions and distribution criteria are included. Application of yield tables with species and site class allow development of estimated amounts of wood volume (carbon mass) at given stand ages.

On ownerships greater than 50,000 acres in size, forest inventory information is required to be submitted to CDF with model design. The inventory data is closely examined as is the model for any manipulated outcomes (validation). This review is conducted by Licensed Foresters who are qualified experts in biometrics.

Comment 2-8: Leakage is essentially ignored in the protocols. Specific guidance should be provided for activity shifting leakage. The Registry should conduct a review of the existing literature on leakage assessment and develop default tables for market leakage effects.

Response: The project protocol requires the assessment and quantification of project activity-shifting leakage that occurs within an entity (i.e., on-site). Entities are required to assess activity-shifting leakage that occurs off-site. Since default tables are likely the most reasonable approach for quantifying activity-shifting leakage off-site and market leakage, the Registry plans to continue efforts in this area to develop a reasonable approach to these types of leakage.

Comment 2-9: Project monitoring and reporting must occur on an ongoing basis in order to be able to detect any loss of carbon stocks. In the event of a loss of carbon stocks then the reported reduction from the project must be correspondingly adjusted downward. An easement does not in itself guarantee that the carbon stocks associated with emission reduction claims are maintained over time.

Response: The Workgroup recognized these points and made several modifications to the protocol text to account for project monitoring. As with all the Registry protocols, annual reporting is required. Annual monitoring reports are also required. The protocols instruct that any losses in carbon must also be reflected in any calculate greenhouse gas reductions.

While a conservation easement will not guarantee against carbon loss due to natural disasters, it secures the land base and activities that lead to additional carbon gains.

Comment 2-10: Project baselines should not be adjusted to compensate for significant events that occur during project implementation. Significant events should be handled through insurance or other risk management approaches.

Response: In the Forest Project Protocol, project baselines are not adjusted for significant events. Rather, the project activity is adjusted for such events. However, forest entity baselines are adjusted for catastrophic events that result in a loss of 10% or more of the entity's C stocks.

Comment 2-11: The Registry and the State must take responsibility for the credibility of its own reporting system. As designed there is only dependence on the applicant and the certifier. There needs to be a spot or periodic check system by the Registry or State.

Response: The Registry and the State do take responsibility for the credibility of the data produced by all of the Registry's protocols. In the case of the forest protocols, the Registry approved growth models have been subjected to a rigorous CDF review and acceptance. Secondly, there is a provision for spot checks on both certifiers and reported GHG data by state agencies in their random and occasional site visits wherein they accompany the certifiers as they conduct the certification activities. .

Comment 2-12: Sufficient information must be made available so that the public can independently assess the validity of reported emission reductions. The use of aggregate data is woefully inadequate to allow the public to scrutinize items such as baseline characterization, leakage assessment, and other (?) key subjective assessments.

Response: Transparency is a key pillar of the Registry's program, and the Workgroup agrees with this comment. All forest project GHG data will be transparent and available to the public. Please refer to the sample CARROT reports on the Registry's website (www.climateregistry.org/protocols/industry).

Comment 2-13: The reduction adjustment greatly confuses the proper approach to project reporting by mixing up pre-implementation projections

of project reduction and actual monitored project results. The projected reductions estimate should only be included as part of the initial acceptance of the project into the registry.

Response: The revisions to the draft protocols should clarify that adjustments to projected greenhouse gas reductions should be made upon the results of ongoing monitoring.

Letter 3 – *Environmental Defense*

Comment 3-1: Redundancy among the four protocol documents if only one certification and one reporting protocol were used with the differences between entity and project level highlighted.

Response: The Workgroup consolidated the certification protocols into one Forest Certification Protocol to reduce redundancy. However, the Workgroup decided to keep the reporting (entity and project) documents separate due to the anticipated organizational structures of future additional protocol documents. .

Comment 3-2: The Registry should include in the protocols or in an accompanying document a framework for the protocols in terms of the role sequestration plays in California’s carbon footprint, how these protocols relate a discussion of key decisions and tradeoffs involved in the development of the protocols, and generally how those tradeoffs have been addressed in the protocols.

Response: The comment is a good suggestion that the Registry can follow-up on as the protocols mature. The California Energy Commission (CEC) and CDF have a variety of reports on their websites that would provide the commentor with most of the information sought. Both CEC and CDF have a number of reports prepared on California specific carbon or related issues (FRAP report, IEPR, Forest and Range Carbon Supply Curves, Forest Management and Riparian Management for Jackson Demonstration State Forest and Blodgett Experimental Forest, California Carbon Baselines by Region).

Comment 3-3: There are many aspect of these protocols that would benefit from some empirical testing, to see whether the protocols are “getting it right”, whether the level of rigor is justified, etc. Right now there seems to be no explicit plan for such a “field testing” of the protocol. It should be built into the process.

Response: The Workgroup asked a forest entity to establish a series of plots based on the protocol directions to evaluate if the methodology was workable and accurate. The outcome was successful. The quantification section is based on methodology that have been developed over time by both those in the forestry business (inventory) and those who work exclusively in the measurement of

carbon (coefficients). The Registry agrees that it would be useful to generate more empirical tests using the protocols, and is planning to implement several forest demonstration projects in accordance with the protocols.

Comment 3-4: The Registry should illustrate that they have considered how the variety of uncertainties involved in the reporting process is likely to affect the accuracy and precision of the final result, notwithstanding intensely rigorous quantification requirements at certain parts of the process. For example, the uncertainties introduced by baselines, additionality, leakage, and inherent uncertainties, may significantly undercut attempts at achieving small margins of error in other areas, and may throw into question the cost-benefit ration of such requirements. Right now the Registry makes no reference to its having considered these issues.

Response: As noted in the comment, the protocols suggest methodologies and discount rates utilized by the forestry profession in California as well as carbon conversion methodologies commonly used by those in the carbon measurement business. Minimum confidence standards and deductions are used to minimize uncertainties associated with the quantification of forest carbon stocks.

The approaches to baselines, additionality and leakage are policy issues, as there is inherent uncertainty in all of these components. To the extent applicable, the workgroup approached baselines and additionality in accordance with legislative intent. The Registry will continue its effort to develop a reasonable and credible approach to market leakage and off-site activity-shifting leakage.

Comment 3-5: It is very difficult to interpret the net effect of the protocols approach to additionality, based as it is on assuming that anything beyond legal requirements is addition (at lease in several cases). It could be that the majority of reduction reported are in fact not additional, either because of self-selection bias, or by “gaming” the rules. It is crucial that policy makers understand whether this is a danger, and what the implications are for the protocols’ credibility. There is no indication that the Registry has addressed this issue.

Response: Please refer to responses to comments 2-1 through 2-10 to address this point..

Comment 3-6: The Registry’s approach to leakage has missed an opportunity to seriously tackle this issue during the protocol development process, and has opened up a potentially large hole in the credibility of the reductions that might be registered. It is true that leakage is a vexing problem. But dealing with leakage is ultimately a policy rather than a technical challenge (much like additionality), because there is no technically right answer. So this could have been an opportunity for the

registry to really break new ground in how to think about leakage in other policy processes. By basically “punting” on leakage, however, the possibility at least exists that a significant fraction of the reductions registered under the protocols will not be “real” or will not stand up to future standards. As with additionality, policy makers need to understand the magnitude of this potential problem.

Response: Please refer to responses to comments 1-8, 2-8 through 2-10. The project protocol provides an approach to on-site activity-shifting leakage. The Registry will continue to work toward an approach to off-site activity-shifting leakage and market leakage, which is an undertaking that will require a broader effort and time. Implementation of the protocols, as they are written, can provide greater insights regarding feasible approaches to these types of leakage. At this time it is possible to review the state Forest Practice Data Base to determine if commercial or large non-industrial landowners are moving the amount harvested from one location in the state to another. This addresses offsite leakage within California. It is not viable to require landowners to report leakage outside the state boundaries if the protocols do not allow registering carbon stocks outside the state boundaries.

Comment 3-7: Permanence is perhaps the single most important issue facing the development of forestry base credit trading systems. The protocols don’t actually explicitly address the permanence issue at all. While entity baselines are required to go out 100 years, project developers are able to pick whatever “project length” they want.

Response: As mentioned earlier, the Registry is not a crediting system and therefore, it does not state what a “permanent” credit is. Rather, a regulatory program will make this judgment. The project protocol does expressly include a section on permanence. It explains that the duration or “permanence” of greenhouse gas reductions is reflected in ongoing reporting. The duration of greenhouse gas reductions is relative to the extent that the same quantity of greenhouse gas reductions is maintained from year to year in annual reporting.

To be eligible to be reported to the Registry, all forest projects must include a perpetual conservation easement. As mentioned earlier, the perpetual easement permanently secures the forestland base, as well as the activities that lead to additional carbon stocks.

Comment 3-8: Sufficient information must be made available so that the public can independently assess the validity of reported emission reductions. To present only aggregate information severely degrades the usefulness of reported data.

Response: Refer to response 2-12.

Letter 4 – World Resources Institute

Comment 4-1: There does not appear to be a section where the entity is required to describe the project and its components.

Response: This is done in the project summary (see annex).

Comment 4-2: It is unclear where the description of on-site project effects such as planting or harvesting emission (both non-biological) are included.

Response: Non-biological emissions for forest entities are reported pursuant to the Registry's General Reporting Protocol. The project reporting protocol requires entity to identify the types/categories of non biological emissions that are associated with the project – allowing the link to be made between the projects and reported non biological emissions pursuant to the GRP. It is anticipated that non biological emissions related to forest projects will either decrease or be deminimis.

Comment 4-3: The draft protocol wording is confusing as to what aspect of a baseline is being spoken to. Recommend that early in the document you outline the 4 different qualifiers for baseline and then use them throughout the documents.

Response: The draft has been clarified to address this comment.

Comment 4-4: Using the FPRs to characterize projects will provide problems where an entity wishes to register a project and is already practicing forest management that surpasses existing regulations.

Response: Please refer to responses to comments 2-1 through 2-10 to address this point.

Comment 4-5: For the Conservation Project there is an inconsistency in the protocols as an entity is able to use either the land-use trend or a site specific approach. Mandating an applicant to use one approach first and then the second if it does not work would be better guidance. This reduces the opportunity for gaming.

Response: This is not an inconsistency. The Workgroup intentionally provides the project developer with a choice of two different project approaches with respect to Conservation projects. The project developer may choose to amortize the gain in C stocks over time or garner registration of all the C stock emission reduction at once. *The Workgroup recognizes that with the current discount rates the tables will most likely receive little use. However, by requiring demonstration of eminent threat on an individual project basis there is a greater assurance good choices will be made. This seems weak.*

Comment 4-6: The examples are rather confusing. Suggest that the first thing the examples should do is explain what the project is and the relevant regulation facing the project area. Currently, these examples do not outline the project until quite late in the document leaving the reader unsure what the examples are referring to.

Response: The Workgroup has improved the examples for greater clarity.

Comment 4-7: Conservation baseline characterization example. This example says CG would also demonstrate through a search of applicable laws and regulations that they are not required to protect the project area from development. This is illogical as if the land is protected by law then there would not be any development plans for the area anyway.

Response: Frequently areas in California are developed where an initial review of laws such as the Endangered Species Act, the Timberland Productivity Act, Coastal Zone Act, Porter-Colgne Water Quality Act, etc. would prohibit development. However, it may become possible for Lead and responsible agencies to move ahead with development approval if offsite or compensatory mitigations are included in a project alternative. In these cases the same vegetative class of land affected by development result in a net zero change. This type of decision making is contemplated in the protocols.

Comment 4-8: The additionality portion of the draft needs revision for clarity and reduction of redundancy.

Response: The Workgroup has considered this comment and made non-substantial changes to this section to provide greater clarity.

Comment 4-9: The project additionality section does not outline the limitations or implications of having a baseline characterization based only on existing regulations, and does not consider the existing practices of those projects that are already using forest management practices that exceed the existing regulations.

Response: Please refer to responses to comments 2-1 through 2-10 to address this point.

Comment 4-10: Footnote 11 This is hidden in the document, yet it is a very crucial piece of information as the baseline characterization being proposed will, in some instances, be different from that required by other programs. It needs to be given greater prominence in the document. Also I would reword this to say something along the lines of “This is also known as legal or regulatory additionality. The Registry’s baseline and additionality approach is designed only for California. The Registry is

considering how this approach can be applied for implementation nationwide.

Response: Several portions of the protocols have been edited to improve clarity, minimize redundancy, and to provide supplemental reasoning for making a choice.

Comment 4-11: Project additionality requirement-reforestation. Don't understand why the last sentence of the first paragraph is necessary and what it means. This sentence reads 'Monitoring of the project area over the project life to assess that, in fact, reforestation has occurred, would confirm the project's additionality'.

Response: The Workgroup considered this comment in making the editorial changes and improvements to the protocols.

Comment 4-12: Additionality analysis for reforestation project example. The first sentence is very long and needs to be rewritten. Last sentence beginning with "Through monitoring requirements...." Not sure why this is necessary as the entity will already be present the required information to the registry so it is not necessary to state this.

Response: The Workgroup edited and re-wrote several portions of the protocols to improve clarity, and minimize redundancy.

Comment 4-13: Assessing activity-shifting leakage etc. This section needs to firstly outline and define the types of leakage that the registry is wishing entities to consider. Also, the first sentence should be deleted.

Response: The Workgroup included additional language to clarify and explain activity shifting leakage.

Comment 4-14: Activity shifting, the definition is vague as how it applies to the landowner and their neighbors. The landowner should be accountable for a reduction in carbon stocks if the neighbor decides to harvest their ground.

Response: It is not clear how the Registry would hold one forest entity responsible for the actions of a neighboring forest entity where they have no control. The Registry hopes to continue this discussion with experts on leakage issues to help develop better accounting approaches to off-site activity shifting and market leakage.

Comment 4-15: A project landowner should be responsible for the actions of neighbors. Wording is provided to modify the section on "Activity Shifting Leakage" to achieve the objective.

Response: Please refer to the Response to question 4-14.

Comment 4-16: Assessment of market leakage. The example does not seem to match with the definition. The example that is given seems to be more appropriate for activity shifting.

Response: The Workgroup edited several portions of the protocols to improve clarity, and minimize redundancy.

Comment 4-17: The section on 'Other Effects' needs to clarify that biological emissions associated with harvesting and planting need to be reported while reporting of other non-biological emissions is optional. Is there wording that allows project effects to be split out at a later date if necessary? This is important for other programs that have different requirements than the registry.

Response: The Workgroup edited several portions of the protocols to improve clarity, and minimize redundancy.

Comment 4-18: Footnote 13, what happens if the two boundaries differ?

Response: Clarification was added to assure that other effects are specifically related to the affected project. .

Comment 4-19: Leakage mitigation through project design section. The definitions of activities shifting and market leakage are inconsistent with the definitions in other parts of the document.

Response: The Workgroup revised the protocols to address the comments pertaining to leakage received both during the public hearing and the written comments .

Comment 4-20: Land use conversion tables. A and B - Is it realistic to use that many significant figures in these assessments? Seems unlikely?

Response: These are actual numbers based on CDF records recording the number of acres of timberland converted on an annual basis from 1969 to 1998. The definition of timberland is land available for and capable of growing a crop of trees (short version). The workgroup agrees with the comment and is working on some alternative default values for consideration in the first revision (possibly October 2004).

In this review the Workgroup considers forestland as land that consists of areas with at least 10% canopy cover of native tree species. This includes a large acreage of hardwood mixed conifer and hardwood range land. *This information*

is available from FRAP and there is a possibility that with the change detection methodology just being finalized for the Southern portion of the state that we will be able to identify conversion acres (mostly development) for hardwood rangelands.

Comment 4-21: Land use conversion tables. Why are the total acres different between the tables? How acres are measured needs to be consistent between hardwood and softwoods.

Response: One set of numbers is for hardwood rangelands and the other is for softwoods. They are separate numbers for separate land classifications. Refer to response to comment 4-20.

Letter 5 – Georgia Pacific Corporation

Comment 5-1: This complex stage in the Registry’s development and the issuance of the proposal have been done in an accelerated fashion without proper involvement of different stakeholders who will be directly affected by this action or who have a reasonable interest on the issue.

Response: Significant opportunity has been provided both during the development of SB 812 and these draft protocols. The legislative process provided ample opportunity for stakeholders to raise their individual issues with regard to the statutory additions to the Registry’s responsibilities and authorities.

The development of the Forestry Protocols has been an eighteen month process. (See edits to the Exec summary for this section)

Comment 5-2: The comment period for the draft protocols was too short to provide meaningful involvement.

Response: Refer to response to comment 5-1. While not a large number of comments were received by the Registry during the public comment period, the comments received were very thoughtful, and have resulted in a number of improvements to the protocols.

Comment 5-3: The draft protocols exclude without justification the manufacturer’s of the biomass products on which the wood products pool is based. The proposed structure penalizes the manufacturer for its GHG emissions but provides no credit for their contribution to the carbon pool.

Response: In direct response to this comment and those of other wood products manufacturers’, the wood products pool has been changed from required to optional pool. The question of the interest of the wood manufacturer does appear to the workgroup to be one of the chain of custody of carbon value. These protocols unlike other industry specific protocols must give recognition to

the fact that the forest pool is unique among other industries being considered by the Registry. A tree does not simply grow and then disappear into the atmosphere. A great deal of the carbon storage benefit accrue from a tree remains when much of the mass is transferred into downstream forms (houses, furniture, paper, landfills) that retain the carbon in place for a number of years (3-100 estimated by Birdsey and Skogs).

Comment 5-4: Nothing in the enabling statutes invoked by the Registry seems to support either the granting to the “forest entity” the right of registration of credits or the prohibiting the manufacturer of these products from registering the credits.

Response: To accommodate the manufacturer’s point of view for the original adoption, the wood products pool is made optional. However, the information needs to be included so that the owner of the tree is aware that there is carbon stocks related to the tree after it has had value added by a manufacturer and is then sold to product consumers. Again, the Registry does not award credits but does register carbon stocks. The calculations provided in the draft protocols allow for a decay rate associated with the products made from the tree. The product carbon stock information will be available at the mill to which the tree is sold. The final log scale paid for the log by the mill is recorded. The workgroup has been made aware of other options for projects through these comments and will work to develop further guidance in this area through the summer. It is the objective of the workgroup to refine guidance for this pool sufficiently that it will again be a required pool.

Comment 5-5: Further, section 42801.1 (a) provides a definition for “Annual emissions results” indicating that in addition to annual emissions results, the participant may report data annually on emissions reductions from a project or other action, including the sequestration of stocks of carbon in the forest.

Response: Refer to response to comment 5-4. One project opportunity referred to previously would be the improvement of efficiencies gained in mill processing of a product. For example smaller saw kerfs would retain more of the original log in a solid wood product. This efficiency varies among mills and may be used to provide a further incentive to process wood with less waste.

Comment 5-6: Consequently, it becomes evident that the registry proposal fails to heed the mandate in section 42823(c) by which the registry “shall adopt procedures and protocols for the reporting and certification of GHG emission reduction resulting from a project or an action of the participant”. The registry has excluded the manufacturing as a valid participant in contradiction and disregard to the mandate the statute.

Response: Refer to response to comment 5-4. The protocols do not exclude the manufacturers from benefiting from GHG emission reduction projects. It simply provides the opportunity for the forest entity to record what is commonly accepted in current literature as the national average of the decay rate of trees made into wood products.

Comment 5-7: Likewise, the manufacturers of forest products are deprived of receiving one of the purposes of SB1771, Article 2 (e); to recognize, publicize and promote registrants making voluntary reductions.

Response: The comment is not specific enough for a response. It is not clear what deprivation the commentor believes the manufacturers are subject to.

Comment 5-8: These statements about interpretations on the enabling statutes are the result of a reality not to be forgotten on these proceedings. The wood products proposal is an afterthought. Such a situation raises the question about the appropriateness of asking the legislature to clarify the controversy about the registration of this element.

Response: The Workgroup has concluded that wood products are a part of the full life cycle of carbon in native forests and trees contained therein.

Comment 5-9: There are no scientific or economical reasons to deprive the manufacturers of the right to record in the registry. The market will take care of any real or perceived value added in the merchantable wood and reward the forest entities with adequate compensation.

Response: Refer to response to comment 5-4. The forest entity should register the base volume of wood delivered to a mill and use the national default tables to estimate that carbon stock. Obvious projects available to the manufacturers are ones that improve recovery from primary and secondary processing, as well as those that reduce decay rates of wood products placed on the market.

Comment 5-10: The implications of this proposal that deprives the manufacturers of the due credit for its products are ecological, economical and political. An important one is the consideration of volumetric or material sustainability, one of the different elements in forest sustainability. Traditionally, the balance of harvest v. growth has been considered the criterion for this material sustainability. The proposal changes this traditional balance, by providing an additional quantity of harvesting to equate the new balance equation.

Response: The proposed protocols do not characterize the wood products pool as providing an additional quantity of harvesting. They recognize the full carbon

storage value of a log harvested from the forest. Refer to response to comment 5-4.

Comment 5-11: We consider that the registration of both forest and product carbon sequestration should be extended to products of agricultural origin that may have limited but significant.

Response: The comment is noted and will be considered by the Registry.

Comment 5-12: Regardless if the action by the state of California could be in theory limited to the state, and many a commenter may or may not be considered “forest entities”, the fact is that the California experiment demonstrates that regulations from the state are frequently reflected beyond its boundaries affecting many other entities outside the state or even those without facilities in California. This is important in the consideration of who are the stakeholders on this issue and in the request for extension on the commenting period. California is too big and important a state to limit the stakeholders to a small circle.

Response: Significant opportunity has been provided both during the development of SB 812 and these draft protocols. The legislative process provided ample opportunity for stakeholders to raise their individual issues with regard to the statutory additions to the Registry’s responsibilities and authorities. The development of the Forestry Protocols has been a year-long process. In forming the Forestry Workgroup a wide variety of stakeholders were contacted and those with interest and time available participated. Additionally an expert review panel was established from a group of experts within California, from other states, and from Australia. Subsequent to the Expert Review Panel and open public meeting was held and appropriately given wide spread notice so interested parties outside of California would have the ability to participate. There was also a presentation of and acceptance of the draft protocols by the Registry Technical Advisory Committee. Finally, should the Registry adopt the draft protocols, there will be further modifications considered in upcoming Registry meetings. This same process has been used for the General Reporting Protocols and there is improvement as the Registry continues to move into previously uncharted waters.

Comment 5-13: There is a complete lack of chain of custody from harvesting to production output. The levels of inaccuracy are compounded along the way from the boles that are brought to the manufacturing site and there converted into useful products. As proposed, questionable assumptions in the material or volumetric conversion of wood fiber into products have been made. Proper tracking into the different categories of forest products is also ignored. This process will inevitably be less accurate in quantifying the product carbon pool or would require excessive costs that will discourage prospective registrants.

Response: The Workgroup has paid close attention to this concern and the concern that the 100 year not the national assessment approach should be used. The custody question was addressed earlier in responses to comments 5-4 through 5-6.

The issue of factors used is estimations appears to be on the assumption of 60% of the tree leaving the forest as boles (logs) and the question of mill efficiency which the workgroup assumed to be an initial 60%, but provides the registrant the opportunity to introduce information to support a higher percentage. The fact that 60% of the tree leaves the forest and 40% remains in limbs, twigs, needles, tops, and debris is upheld by a number of publications included in the references. The mill efficiency national average was selected after interviews with University of Montana staff and a consulting firm specializing in carbon accounting. Additionally, a California mill was interviewed to determine their recovery efficiency. The responses in all cases were lower than expected by the workgroup. To err on the conservative side was determined to be the preferred option. However, the ability to demonstrate higher mill efficiency was provided. This seemed to provide an acceptable compromise.

The selection of the recommended national base protocol (based on Birdsey and Skogs work) was made for a reason of better compatibility with the protocols as a whole. Using a 100 year time line on the approach proposed in the comment letter means reaching back in time to 1900 to determine what level of decay would equalize with products gained through harvest. The protocol recommended started with the project. The recommended protocol appears to provide a more realistic flux with harvest compared to decay rates over time for California. The rotation age of trees harvested in the state where the 100 year approach was developed is much shorter than the rotation age of trees harvested in the west on average.

Comment 5-14: Valuers or certifiers of these credits in the manner proposed, and in view of the chain of custody deficiencies indicated in the above, will be hard pressed to provide a proper verification when so many different estimation steps are staggering time. They could be open to all sorts of objections and added liabilities making the system unworkable by absenteeism.

Response: As an optional pool certification will not be required. Also, refer to response to comment 5-13.

Comment 5-15: The registry appears to have ignored other methods with more standing in longevity and peer scrutiny than the proposed approach. These alternatives were provided electronically to the Registry and members of the workgroup.

Response: Refer to responses to comment 5-13.

Comment 5-16: During the drafting process of the registry, some of its officials and members of the review committee, were alerted to such an alternative that more accurately and fairly allow the registration of the carbon credits by the manufacturer.

Response: Refer to response to comments 5-1 and 5-15.

Comment 5-17: While we support as valid the concept of registering product carbon sequestration in products in use, and for a wide variety of product categories including paper and wood products, we firmly object to the manner in which reporting and crediting have been arbitrarily assigned to the forest entity.

Response: Refer to response to comment 5-13.

Comment 5-18: We respectfully request the extension of the commenting period for 60 more days and the re-proposing of this flawed proposal, at least in its product carbon sequestration element and pertinent links with the forest sequestration reporting.

Response: The Registry will consider adoption of the draft forestry protocols on October 21, 2004 at the time and location publicly noticed.

Letter 6 – American Forest and Paper Association

Comment 6-1: AF&PA recommends that the Registry resolve issues associated with measuring and calculating carbon in woos products before attributing the carbon to a specific entity.

Response: This letter speaks to the same issues as the Georgia Pacific Corporation letter. Refer to response to comment 5-1 through 5-18.

Comment 6-2: AF&PA members have concerns with the mathematical approach proposed by the protocol calculating the carbon in wood products. The attached paper by Reid Miner of the NCASI thoroughly explains the methodology AF&PA member endorse.

Response: This letter speaks to the same issues as the Georgia Pacific Corporation letter. Refer to response to comment 5-1 through 5-18.

Comment 6-3: In addition to the comments contained in this letter, AF&PA members also endorse the comments compiled by the NCASI.

Response: The letter by NCASI was received. Refer to response to comments 1-1 through 1-14.

Letter 7 – *Fibre Box Association*

The comments in this letter are the same as those provided by NCASI and Georgia Pacific Corporation. Refer to responses to comments 1-1 through 1-4 and 5-1 through 5-14. An additional method (ISO/TR 14047) was attached to support using the 100 year timeline versus the National GHG inventory approach. This document was reviewed by workgroup members before preparing the final recommendation in the draft protocol.

Letter 8 – *Weyerhaeuser*

Comment 8-1: We suggest that consideration be given to accepting third party certification of adherence to these requirements as adequate proof of maintenance of BAU levels of carbon stocks on sustainable managed lands.

Response: The protocols use third party verification of carbon stocks.

Comment 8-2: Suggest reviewing a paper on permanence titled “Inter-trading permanent emissions credits and rented temporary carbon emissions offsets: some issues and alternatives. It may provide insights as to the nature of the information that such a trading system would need and want to be able to qualify through a state or national registry.

Response: The paper has been reviewed and considered in development of possible amendments to the protocols.

Comment 8-3: Procedures already existing in other states for the protection of proprietary information should be utilized by the Registry for California’s Forest Protocols.

Response: The procedures proposed in the draft protocols are similar to those found in other states.

Comment 8-4: The requirement for a conservation easement on land in order to register carbon stocks is a disincentive for Registry participation. It would be better to leave this to the trading program. As is it places a significant addition of risk on landowners for future property value losses.

Response: The conservation easement is a requirement of SB 812 and is required to be included in the draft protocols. This issue would need to be taken to the legislature for consideration.

Comment 8-5: Rather than using set confidence intervals and discount rates to address uncertainty we suggest that the level of certainty for each measured pool be declared upon submission of an application. Market dynamics will then set the value in relation to the certainty.

Response: The protocols contain set confidence limits and discount tables to provide the public a level of comfort that certainty is being addressed in an open and transparent manner.

Comment 8-6: The question of the ownership of carbon stocks for wood products was raised during the public hearing. Registry staff clarified that it was not the intent of the draft protocols to address or resolve this issue initially.

Response: The Workgroup has modified language in the draft protocols to make this point more identifiable.

Letter 9 –SGS

Comment 9-1: Who owns carbon stocks if land is owned by one party and the trees by another party.

Response: The protocols state that the ownership of the carbon goes with the ownership of the trees.

Comment 9-2: The protocols either require recording lying dead wood or encourage recording wood products. This is normally only done when carbon prices are high.

Response: The point was considered but the two pools were retained in the draft protocols. In some forest types in California dead wood and wood products can be more significant than considered in the comment.

Comment 9-3: Reasons for taking an average value for the baseline could be better explained; perhaps with a graphic showing that fixing a baseline at a particular point in time could be either advantageous or disadvantageous.

Response: The baseline statements in the draft protocols have been revised to clarify this
As well as points raised in other comments.

Comment 9-4: The mill efficiency rate of 85% is unreasonably high.

Response: The mill efficiency rate has been modified to a 60% beginning point and the ability to raise the recovery rate if supporting documentation is submitted.

Comment 9-5: Re-measurement of inventory plots by certifiers will be costly and may discourage participation. Options would be 1) observe installation of some plots, 2) use internal QA/QC violations as check points for certifiers.

Response: Forest certifiers must directly sample a representative sample of a forest entity's sample plots in years 1 and 5 of a five year cycle.

Comment 9-6: Some graphics to model baselines would be helpful. Absent fire, grasslands will tend to become dominated by trees.

Response: Additional graphics were included in the protocols. The baseline is established on existing conditions not future conditions.

Comment 9-7: The draft protocols create a situation where simply exceeding legal limits provides additionality. Are standards legislatively set? It is necessary to check projects to ensure that they remain additional to business as usual.

Response: The forest stocking standards are set by the Forest Practice Act and the Board of Forestry and Fire Protection has adopted regulation setting the current stocking standards significantly higher than the statutory minimums. The protocols provide for checks to ensure projects exceed business as usual.

Comment 9-8: The draft protocols approach the topic of leakage in a responsible manner. Also, to be considered there may be non transferable values accrued on one piece of land and not another.

Response: The Workgroup had considered this comment.

Comment 9-9: Issuing a low risk pre-screening opinion may compromise the certifier at a later date.

Response: The prescreening is not designed to indicate approval. It is simply to indicate that a project description does match what is intending by SB 812 in project descriptions.

Comment 9-10: How are carbon stocks in the baseline to be calculated.

Response: The protocols dictate different project baselines for different types of forest projects; 1) baselines for reforestation projects are the carbon that exists on the project site before site preparation and planting begins, 2) baselines for conservation projects are the level of carbon the would exist if the alternate land use were applied, and 3) baselines for forest management projects are the level

of carbon stocks that would exist if the project were aggressively harvested under the Forest Practice Rules.

Comment 9-11: The Registry should consider establishing an overall pool that could be used to support projects that fall short of stated objective due to uncontrollable circumstances such as significant disturbances (carbon bank as risk insurance by state).

Response: The Workgroup considered this suggestion.

Letter 10: First Environment

The comments in this letter are similar to those provided by NCASI and Georgia Pacific Corporation. Refer to responses to comments 1-1 through 1-4 and 5-1 through 5-14. An additional method (ISO/TR 14047) was attached to support using the 100 year timeline versus the National GHG inventory approach. This document was reviewed by workgroup members before preparing the final recommendation in the draft protocol.

Letter 11: WRI – Florence Daviet – 10/08/04

Comment 11-1: The first is general clarity of the document -- occasionally I thought there were sections that could be clearer, some words are used without clear definitions and some work on this aspect would be helpful as well as some rewording in the section on additionality, which is a little confusing at times, though much better than previously. I'm not certain how much time is left, and whether making comments on such issues is productive for you guys at this point or not.

Response: A great deal of review has been done since the June review by the Registry. All areas specifically mentioned in comments have been modified for clarity where the Workgroup found room for improvement.

Comment 11-2: I do not know much about forestry regulations in California, I am not good judge of that -- however, I think it could be clearer and tighter that: a) people need to be extremely transparent about which regulations and interpretations, etc., they are using or ignoring, and b) this approach has limitations in terms of trying to get credits in an international market.

Response: This comment was received by others and the protocols were modified to clearly make all information transparent to the public. The Registry Forestry Protocols are not established for trading credits. The Registry is a voluntary effort to register GHG emissions and emissions reductions. For

Forestry C is the major GHG covered by the accounting methodology. These protocols are an initial set that may be revised as experience in application warrants upon review.