CCAR Forestry Protocols Meeting
April 10, 2008

Present: Nick Martin (on phone), Jayant Sathaye (on phone), Robert Hrubes, Bob
Rynearson, Mark Nechodom, Bruce Goines, Jeanne Panek, Tim Robards, Louis
Blumberg, Emily Russell-Roy, Katie Goslee, Ed Murphy, David Bishell, Gary
Rynearson, Eric Holst, Michelle Passero, John Nickerson

Invited Presenters: Bill Stewart (UC Berkeley)

Facilitation Discussion

The group discussed meeting process and the idea of securing a facilitator for the
meetings. The group decided that it would attempt to be 'self-policed', with a rotating
facilitator selected to ensure that the meeting was run close to the agenda and that all
meeting participants had an opportunity to contribute with no one party dominating the
discussion. No one member could provide this service more than once during the
process. David Bishel accepted the role for this meeting.

Minutes were approved to post on CCAR's website.

Designing Performance Standards – Jayant Sathaye

Jayant Sathaye from Lawrence Berkeley Laboratory presented a presentation related to
the methodology of developing performance standards for forestry projects.

Those above the performance standard are understood to have reductions. Those below
the performance standard are understood to not have additional carbon stores and would
have to increase stores in order to have additional carbon.

Key points of performance standards:
* Objective
* Ease of use

Jayant provided examples developing a performance standard in Mississippi. The
example he presented stratified the assessment area by site class and vegetation classes.
He spoke about the problems associated with increasing levels of stratification and
reducing standard errors. Key is to ensure the standard error remains solid through
stratification efforts. Plot intensification can be performed to improve standard errors.

Other important criteria in developing a performance standard include identifying the
proper metric, carbon pools, and developing appropriate levels of stratification.

Some elements of stratification he has considered included:
* Site class
* Even age versus uneven age

- Vegetation communities
- Ownership (public and private)

Stratification needs to be determined based on the ability to determine significant variation. Standard error for the whole state using FIA plots was stated to be quite good. Some initial investigations into breaking the data out into smaller units also looks good.

Jayant also spoke of using stratification efforts to increase quality of estimates of conversion in southern Mexico. Using an estimator that included proximity to roads improved estimate of conversion.

There was some comparison of the CCAR baseline (FPR) to the criteria Jayant provided. Jayant did agree that important factors include social and physical elements.

Bill Stewart's presentation of FIA data

Bill spoke about capabilities of FIA data for use to measure current and future carbon tons. Bill stated that structure of plots has changed which brings challenges to the ability to derive trends in volume/carbon trends. Plots have the ability to provide estimates for a point in time. Bill mentioned challenges with modeling associated with linking carbon pools to the FIA data.

There was a discussion about using a static number as a performance standard or using a trend (which is not available with the FIA data currently). Project submitters will need to know what the rules are with regards to decisions related to static or changing baselines (performance standards). One thought was to keep the performance standard static for each project at the time of the project's intiation for the life of the project. The performance standard itself would be modified on a periodic basis. Any project would use the defined performance standard at the point when their project began.

Ed raised an opposition to changing the performance standard upwards over time. Michelle raised a point that the Registry agreed to grandfather baselines for existing projects and related that to the current baseline discussion of a trend versus a static baseline. She urged the group to focus energies on other matters.

Tim Robards presentation on standardized Forest Practice Rules versus FIA data.

Tim described the results of looking at Option C standards in an uneven aged management context in mixed conifers compared to FIA data. He also presented various additional metrics, including stand density index, quadratic mean diameter, basal area, trees per acre as a way to help the group think through the comparison.

He described a stand that served as the basis for his study. The stand meets conditions that are found from all California lands that face the central valley. Tim described how he calculate a weighted average of basal area using the Option C rules based on the distribution of site class and acreages across the mixed conifers in the state. The

assumptions of using the Option C rules included having 1/15th of the lands at minimal retention levels at any one time, then growing and harvesting the forest on 15 year cycles. He derived an overall weighted estimate of 96 square feet of basal area using these assumptions, which can be translated to carbon. The 96 square feet represents the weighted average application of selection management across all site classes within mixed conifers, with the assumption of re-entry cycles every 15 years that harvest to the Option C minimums for a given site class.

Tim described how stand density index can be used as a metric. He showed that Option C management as described above represents 42% of full density. He also showed how basal area can be associated with maximum stocking. He also looked at how Option C rules relate with maximum growth. Option C was at 35% of maximum growth. If you look at 55% of maximum growth, Option C is at 65%. The thought is that determining relationship to maximum growth could be an important metric for carbon.

On FIA data:

Option C was determined to be 64% of USFS basal area (from FIA data). Private lands, using Option C scenario were 81% of FIA data from within the mixed conifer area.

There was considerable discussion about using growth as a metric for a performance standard instead of standing stocks. The key points of the discussion included:

- It is important where the metric is established. A properly placed metric would consider the forest in a regulated condition with a portion of the growth at the apex of the curve and other stands at the beginning of the curve. This might result in a performance standard set at, say, 50% of maximum growth to account for variations in forest stands.
- Some felt growth was a better metric than standing stocks because those standing stocks could be static.

David asked the group how comfortable the group is with using FIA data as the basis of a baseline. Thoughts were shared about trending baselines or FIA data at a point in time. The decision points to the group:

- Static at a point in time versus trending
- Determination of assessment area
- Are we going to base the baseline on regulatory approach or universal data

The group engaged in considerable discussion about the merits of different baseline approaches. I included the points raised by individuals here:

Robert raised points that what we do needs to be linked to established international norms. He continued to state that what we are doing needs to be linked to common practice. Robert felt that the current method in CCAR is not linked to common practice.

Eric raised the point that the purpose of Tim's modeling effort was to compare where the Option C baseline approach fits with FIA in order to assess the two approaches. Michelle raised the point that disputes might be raised as to the quality of the baseline approach- she is not convinced that FIA data is strong enough to change the approach. Michelle favored an approach of developing a default table based on Option C management. Eric explained that that is exactly what Tim did and that in the comparison to FIA data that common practice is better described by FIA data. John stated that the one of the goals of Tim's study was to confirm whether FIA data could be used to derive a performance standard. Eric pointed out that this study revealed that Option C management is too low. Doug said some policy is needed to manage performance standards. John proposed keeping the maintaining the current baseline approach in the protocols provided a landowner included a conservation easement with their approach.

There was some discussion about the merits of a dual baseline approach. Disadvantages of options included confusion in the marketplace. Advantages included market options.

Result- No conclusions were drawn from the discussion.

Public Lands Baseline Subcommittee Discussion – Bruce, Caryl, Doug, Michelle, Mark

Bruce Goines presented the work the subcommittee related to public lands baseline approaches. Bruce pointed out that public lands are different which is the reason we formed a subcommittee to develop a specific module. Each entity operates under unique statutes, management plans, and policies. Some are managed for multiple use, some managed for aesthetics. Existing inventories are the result of funding and practices on the entity.

The proposal the subcommittee raised to the group was that each entity (BLM, National Parks, State Parks, USFS, etc) do a qualitative assessment of their inventory that was based on a 10 year historic review of activities. That would inform a projection forward based on the trends of management activities and budgets that would be the basis for the baseline. Any investments additional to the baselines that lead to increased carbon stocks would lead to additionality.

There was some discussion about the resolution of the assessment area, whether at the project level or the entity level. The developing Cuyamaca (State Parks) project was raised as an example. At the project level, the qualitative assessment would review what types of projects have occurred under the State Parks system related to reforestation after fire. If it could be demonstrated that reforestation after fire was not part of business as usual, then the project could be considered additional. There was a recognition that ultimately the qualitative assessment needed to support the quantitative analysis.

The discussion that followed focused on:
- identifying the assessment area for the qualitative analysis.

- Sales of carbon from public lands. There was some recognition that each public land is unique and would vary in sales strategy. Issues of competition with private lands were raised. Some alternatives to selling on the open market included the role public lands might have in providing insurance benefits to private lands and simply demonstrating a carbon benefit for the purpose of securing funding from legislative appropriations.
- Baseline similarities between public and private lands. Both incorporate qualitative assessments to assess practices which guide the quantitative direction.
- Problems with considering the performance standard on public lands as they would be compared against themselves.

The discussion evolved into a motion raised by Eric that it makes sense for public lands to have a different baseline than private lands. The motion was discussed thoroughly with the following key points:
- Potential risk with different approaches to baseline
- Even public lands for which Forest Practice Rules apply are different enough to create different baseline.
- Even certain public entities operate under different management plans and statutes.

Eric amended his motion to: Public lands require a separate baseline than private lands because public lands have different mandates, decision making authorities, and the fact that the performance standard approach being discussed on private lands creates problems since you can't compare yourself to yourself. Further, Eric had Bruce read the concept of the public lands baseline approach that the subcommittee put together which states public lands baselines would be established by documentation of carbon stocks with a historic review of at least 10 years prior to registration and projected within context of existing management plans, policies, programs and budgets. Projects that increased carbon stocks above this would be considered additional.

Caryl seconded Eric's motion. It went to a 5-point vote.

The results of the vote (using the 1 to 5 system, 1-strongly endorsing to 5- strongly against) went as follows:

1-	11
2-	1
3-	1
4-	0
5-	2

It was stated that the vote represents that the group wants public lands to participate and that public lands needs its own baseline approach (as a module).

It was recommended in the discussion that the subcommittee go back and address some of the details raised. Additionally, there was acknowledgement that some of the public

entities are not at the table. There was another recommendation that the 'missing' entities participate in the subcommittee. The next step for the subcommittee was identified as making the language 'protocol-ready' as a public lands module.

Avoided Conversion Baseline Subcommittee Report – Michelle Passero and John Nickerson

There are two ways the current protocols address baseline for avoided conversion projects.:
1. a county-wide conversion rate that serves as a risk rating.
2. a site-specific immediate threat, whereby a project submitter analyzes impacts of proposed conversion.

The current protocols guidance have problems with level of resolution associated with the 'risk rating' of conversion. Two suggestions were brought to the group:

- Improve risk rating to account for better resolution
- Identify impacts of conversion through use of remote sensing

It was discussed that combining the two approaches would enable the analysis to provide an estimate of carbon tons, instead of just risk alone.

Additionally, it was identified that further guidance was needed to assist project developers with how to quantify both baseline and project activity after the conversion took place (theoretically). It was discussed that emissions and sequestration will continue and need to be accounted for over the normal 100 year assessment period.

The group raised the following points:

- Securing improved risk ratings could be problematic. Follow up with researchers before setting improvement expectations too high.
- Make a recommendation to ARB to fund research to improve data
- Current CEQA analysis captures the impacts of conversion on carbon.
- Current approach using site-specific immediate threat still valid and would be retained in protocols.
- Agreed that further guidance was needed to assist project submitters with forest management activities after conversion analysis.

Michelle raised questions about the 5-year limitation and suggested that the language read that the project be started within 5 years.

The subcommittee (which increased to four individuals, with Caryl and Emily enlisting) agreed to:

- follow up with experts working on these issues to determine appropriateness of improvement.

- Bring back specific recommendations for consideration to larger group.

Oak Woodlands subcommittee – John Nickerson

John stated a baseline approach for oak woodlands management could follow the same direction as the performance standard approach being discussed for private lands, which is using FIA plots. Michelle suggested that this would become a unique project type.

John will bring back more detail to the approach at the next meeting.

Next Steps for Private Lands - Workgroup

More discussion was focused on using FIA data on private lands as the basis of a performance standard. Key discussion items included:

- FIA has strong statistical basis across the state
- What the elements of stratification might look like (vegetation region, policy overlays, ownership (public/private))
- Human resources available to perform analyses at USFS.

Ed presented a study that Sierra Pacific Industries did that compared custodial management with intensive management. Modeling his assumptions led to a carbon benefit over the long term. Ed suggested in the discussion it doesn't make sense to be constantly raising the performance standard because management activities that would increase stocks will take many years to show benefits.

Activities for the next meeting for the private lands subcommittee include:

- Responding to how the defined approach for public lands would work for private lands.
- Exploring how Forest Service technical support could assist in providing data from FIA data and regions:
  - Tree lists
  - Basal area
  - Carbon

Suggestions for presentations at the next meeting included:

- Mark to do a presentation on the FS thinking at the next meeting.
- Ed do a presentation on his study
- Somebody give a presentation on current stocks going forward. It is understood that it is not a performance standard.

The meeting adjourned at 4:14.