



SOUTH CAROLINA FORESTRY COMMISSION

Bob Schowalter, State Forester

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January 14, 2002

Mr. John Greis
Mr. David Wear
Southern Forest Resource Assessment
USDA Forest Service
1720 Peachtree Road NW
Atlanta, GA 30309

Dear Sirs:

I appreciate the opportunity to provide comments on the draft Southern Forest Resource Assessment. This document provides a thorough overview of the status and trends in the Southern region, and addresses many of the concerns the public has about our industry.

I would like to provide some comments on the chapter entitled Aqua-4. This chapter addresses best management practices in the South. In the "Key Findings" section (page 1, bullet 7) and in section 5.4 "BMP Implementation in Southern States" (page 12, paragraph 2), reference is made to the BMP implementation monitoring procedures recommended by the SGSF in 1997. Six states are reported to have redesigned their programs to incorporate these recommendations. South Carolina is not among the states listed. I feel that South Carolina not only meets the intent of this protocol, but also exceeds it in several ways. I would ask that you review the attached document that directly compares the SCFC procedure for BMP monitoring to the SGSF protocol.

To make the SFRA more accurate, I would suggest making the following addition at the end of the first paragraph on page 12 of chapter Aqua-4: "For example, South Carolina's longstanding BMP monitoring program fully meets the intent of the SGSF protocols while allowing for a unique, nontraditional approach that emphasizes the identification of water quality impacts on monitored sites rather than just reporting BMP implementation."

Also in Aqua-4, on page 11, seven states that have completed more than one comprehensive BMP monitoring survey are listed, and South Carolina is not included in this list. To date, we have published results from four harvest monitoring and two site preparation monitoring surveys. An additional survey that

evaluates both harvesting and site preparation BMP compliance is ongoing. All of these surveys have been comprehensive, statewide, and statistically valid. South Carolina has been very aggressive in monitoring BMP implementation, and should be included in this list

Thank you for the considering these comments. Feel free to contact me if you would like further information.

Sincerely,

A handwritten signature in black ink, appearing to read "Bob". The letters are stylized and cursive.

Bob Schowalter
State Forester

cc: SGSF BMP protocol

Issue: How frequently should BMP implementation monitoring be conducted and reported?

Recommendation:

Statewide implementation monitoring should be conducted and reported at a minimum of every two years (biennially).

Current SCFC monitoring meets this recommendation. Sites are located and harvest monitoring is conducted during year 1. One year later, these sites are re-visited and site preparation monitoring is conducted. Sites are visited a third and final time after another year to determine rates of site stabilization, site preparation, etc. After the third site visit, the results of the survey are published.

Issue: What characteristics should a forestry site/operation exhibit in order to qualify as a BMP implementation monitoring site?

Recommendation:

1. No minimum area, but a site must be part of a normal, ongoing silvicultural operation, i.e., not in the process of conversion to another land use.

SCFC monitors sites 10 acres or more that are part of an ongoing silvicultural operation.

2. The presence of surface water features is not necessary for a site to be eligible for BMP implementation monitoring.

SCFC monitoring sites are located from the air, and are not selected based on the presence of surface water.

3. The most recent silvicultural activity on a site to which BMPs apply must not have been completed more than 2 years prior to implementation monitoring.

Sites selected for use in SCFC monitoring were conducted within the last year.

4. Sites for implementation monitoring may be located using aerial reconnaissance, severance tax records, notification logs, or other available sources of information. However, it is essential to achieve random, stratified random, or randomized cluster statistical design to obtain an unbiased sample.

Sites selected for use in SCFC monitoring are located via aerial reconnaissance. The number of sites to locate is based on the most recent commodity drain report. Sites are selected from the air within a given county, then the actual monitoring sites are selected (using random number generation in MS Excel) from that pool of candidate sites.

5. The sample size should be sufficient to achieve an estimate of implementation that is $\pm 5\%$ within the 95% confidence interval. *The sample size used in monitoring in SC is sufficient to achieve an estimate of implementation that is $\pm 5\%$ within the 95% confidence interval.*

6.

Issue: Which categories of practices should be evaluated for BMP implementation monitoring?

Recommendation:

All of the following practices should be evaluated: Harvesting, mechanical site preparation, forest roads, stream crossings, streamside management zones, firebreaks.

In the current SCFC monitoring scheme, all of the practices listed above are evaluated. In addition, we evaluate each site for compliance with BMPs relating to minor drainage, site productivity, and chemical site preparation.

Issue: How should BMP implementation monitoring be scored?

Recommendation:

An individual practice should be scored as Yes when applied as specified in the state's BMP manual. If a particular practice is not applicable, this should be noted as well. Any significant deviation from practice specifications should result in a No answer for BMP implementation. Categories and Overall scores should be expressed as a simple percentage of all applicable practices. For example, if 100 practices were applicable but only 90 were actually implemented correctly, then the score would be 90% for that category or site, as the case may be.

Currently, when practices are applied as specified in the BMP manual, they are scored as a Yes. Practices that are not applicable are noted as such, and practices not applied as specified in the BMP manual are scored as No. Discrete BMP categories (i.e., stream crossings, streamside management zones, etc.) are reported as the percentage of monitoring sites where these categories apply where they were applied correctly.

Individual practices are noted as Yes when the practice was applied as specified in the BMP manual, No when the practice was not applied or not applied as specified, and Not Applicable when the practice was not required on the site. Compliance for individual practices within a category is entered into a database but has not been reported in published documents. This data is collected and could easily be reported; however, the intent of BMPs is to protect water quality, and the method currently used to report compliance gives a clear picture of whether or not water quality is impacted.

The presence or absence of a water quality impact determines overall compliance for each tract. Simply put, any monitoring site where evidence of a likely water quality impact resulting from the silviculture operation is noted receives an inadequate rating. The magnitude of the impact is not quantified, but if evidence (sediment trails reaching a perennial or intermittent stream, algae blooms, stream obstruction, diversion of flow, etc.) of a water quality impact resulting from the forestry activity being evaluated is noted, it causes the site to fail. Failure to properly implement BMPs relating to site productivity, aesthetics, road usability, etc. will not cause a site to fail overall.

A No score for an individual practice means that the practice was not applied as specified in the BMP manual. A No score for a category of BMPs means that several individual practices within that category either were not applied or were applied incorrectly. An overall rating of inadequate means that some BMPs relating directly to water quality were not implemented, and that as a result water quality was likely impacted.

Issue: How should the risk to water quality resulting from failure to implement BMPs be evaluated and documented?

Recommendation:

Risk to water quality should be evaluated and significant risk documented. Significant risk should be attributed to non-implementation for a specific BMP or category of BMPs rather than an overall operation. The field evaluation of significant risk should be based on existing conditions that have resulted, or very likely will result, in the measurable and/or significant degradation of water quality (physical, chemical, or biological), i.e., a water quality standards violation. Each state should define significant risk in the context of water quality standards and forest landscape characteristics.

Key site conditions often associated with significant risk include, but are not limited to: steep topography and highly erodible soils. Forestry operations conducted under one or more of these conditions without proper implementation of certain BMPs may have a high potential to result in significant risk to water quality. Some examples of forestry activities where significant risks have been identified are equipment operation in close proximity to surface waters, stream crossing, logging slash disposal, and intensive mechanical site preparation.

Significant risk should be considered as a situation of set of conditions that can be remedied or otherwise mitigated. If impacts have already occurred but water quality is no longer threatened, the situation would no longer be considered a risk. In addition, failure to implement BMPs that results in risks to site productivity, road usability, or other site values should not be considered a significant risk in the context of implementation monitoring. Significant risk should be directly and exclusively related to water quality impairment.

Risk is incorporated in the current monitoring scheme. The numbers reported for categories of BMPs and overall compliance document the risk to water quality. For example, in the last published report of BMP compliance in South Carolina, compliance for the category of BMPs relating to road stream crossings was reported as 86.7%. This indicates that the road stream crossings were not designed, constructed, and maintained according to BMPs on 13.3% of the monitoring sites with road stream crossings present. Since road stream crossings are, by their direct connection to perennial and intermittent streams, a high-risk activity, this implies that 13.3% of the time BMPs were not implemented properly, and that there was a risk to water quality.

*Under the current SCFC monitoring scheme, water quality impacts resulting from the activities being monitored are documented, whether or not the impact is still occurring. By following the SGSF protocol, impacts to water quality that occurred but are not currently a threat to water quality are dismissed. This approach dismisses the actual impacts of the forestry operation on water quality. While there is value in reporting the risk that **may** be present as the result of an operation, it is more important to document the **actual** impacts resulting from the activities being monitored.*

The SGSF protocol also recommends that the field evaluation of significant risk should be based on conditions that have or will likely result in a significant and/or measurable degradation of water quality or a water quality standards violation. Many of the impacts that can occur during a silviculture operation are not severe enough to result in a significant water quality impact. The current SCFC monitoring scheme sets a higher standard than the 1997 protocol by documenting any likely water quality problems, regardless of the magnitude of the impact.