

Technical Workshop on the Refinement of the Montreal Process Criteria 4 and 5 Indicators

April 5 & 6, 2005

DoubleTree Hotel Atlanta Buckhead | Atlanta | Georgia

Sponsored by USDA Forest Service with the Roundtable on Sustainable Forests

WORKSHOP SUMMARY

BACKGROUND

In April 2005, the USDA Forest Service, with the assistance of a planning group from the Roundtable on Sustainable Forests (Roundtable), coordinated three technical workshops on the refinement of the indicators in the Montreal Process Criteria & Indicators (C&I) (<http://www.sustainableforests.net/criteria-indicators.php>) to obtain high quality input from a diverse set of forest stakeholders. Members of the planning group are listed in Attachment A. The first workshop, which focused on the indicators in Criteria 4 and 5, took place on April 5 and 6, 2005 in Atlanta, Georgia. The second workshop addressed the indicators in Criteria 6 and 7 and was held in Bloomington, Minnesota on April 13 and 14. The third and final workshop on the indicators in Criteria 1, 2 and 3, took place in Portland, Oregon on April 20 and 21. The order of the workshops, initially designed to address the indicators in Criteria 1 through 7 in sequential order, was modified based on participant availability. All of the PowerPoint presentations made at each workshop and other supporting documentation are available at the Meeting and Workshop Summary portion of the Roundtable's website, <http://www.sustainableforests.net/>.

The objective of the workshops was to provide specific recommendations for improving national level indicators to inform the U.S. position on the refinement of the Montreal Process Indicators. The results of the workshops were then to be reviewed for input by Roundtable participants at their May 2005 Workshop in Denver, Colorado, on the priority of the recommended refinements to be represented by U.S. delegations attending the Montreal Process Technical Advisory Committee (TAC) meeting in October 2005 and the Montreal Process Working Group meeting in February 2006.

Prior to each workshop participants were provided the following key documents, which later served as the basis for the discussion on each set of indicators:

- Excerpts from *Science Biodiversity and Sustainable Forestry*
- Excerpts from the *National Report on Sustainable Forests–2003*
- Excerpts from the *Montreal Process Technical Notes*
- Summary of *Results from the On-line Survey Stakeholder Consultation on Potential Refinements to the Montreal Process Criteria and Indicators*
- *Refining and Improving the Montreal Process Criteria and Indicators: A Summary of Comments and Suggestions.*

At each workshop participants were divided into breakout groups of 5–12 people to discuss a selection of indicators, organized by Criterion or sub-criterion. In each breakout group, experts on the set of indicators provided opening presentations and served as resources on substance during the discussion. Volunteer facilitators from USDA Forest Service regional offices helped participants to clarify their ideas for refining the indicators, aiming for agreement on final recommendations to present to other workshop participants, the Roundtable, and ultimately to inform the U.S. delegation's contribution to international process of improving and revising the Montreal Process indicators. Participants were directed to focus on developing recommendations for improving and refining indicator and rational language presented in the Montreal Process Technical Notes. They were asked to recommend refinements that would improve the utility of the indicators at

national, regional and state scales, while at the same time remaining cognizant of how their suggestions would be received in future international discussions. The recommendations developed by each breakout group were captured by the facilitator.

This summary presents the highlights of the opening plenary presentations and discussions on the refinement of the indicators in Criteria 4 and 5 held on April 5 and 6, 2005 at the DoubleTree Hotel Atlanta Buckhead in Atlanta, Georgia. The opening plenary session included an overview of the Montreal C&I and the refinement process, the state of the science and information on the indicators in Criteria 4 and 5, and an example of how the indicators were applied at a sub-national scale. The plenary session was followed by smaller group discussions to refine the indicators within each Criterion. All discussions were documented by USDA Forest Service staff attending the Technical Workshop. The agenda and participant list are available in the meeting and workshop summary section of the Roundtable's website, www.sustainableforests.net.

WELCOME AND INTRODUCTIONS

Susan Fox, USDA Forest Service, the regional lead assisting in the coordination of the Atlanta workshop, introduced Tom Darden, USDA Forest Service, Director, Region 8 who welcomed participants to the workshop and shared some brief opening remarks.

OVERVIEW OF THE INDICATOR REVISION PROCESS AND THE ROLE OF THE REFINEMENT WORKSHOPS

As the USDA Forest Service official responsible for coordinating stakeholder input for revising the Montreal Process indicators, Robert Hendricks provided the participants with an overview of the indicator revision process and the role of the workshops in advancing it. He noted that indicators for measuring the sustainable management of forests hold the promise of placing forest management issues into a framework that private and governmental economic leaders and the public will understand. As used in forest management, indicators provide a clue to something that might otherwise be undetectable. They quantify and simplify information, but also provide a communication tool whose meaning must be clear and compelling to a wide variety of readers.

Hendricks said that indicator lists, and especially single indicators, are not intended to provide a full picture of all relevant biological, social and economic trends. The indicators are intended to be used as a set, which will draw attention to phenomena or changes that may require further analyses and possible action. It is not feasible to have an indicator for every variable known to influence forest management. However, indicators will evolve as our knowledge about sustainable forests, access to and understanding of data improves.

Although many investments have been made based on the existing set of indicators, Hendricks said that everyone agrees they can be improved. He therefore directed participants to focus on what they viewed as the most important indicators for the U.S. to refine, drop, or add. He suggested that the participants look at the indicators as sets within each criterion or sub-criterion and then consider whether they are adequate and have the correct emphasis.

As a guideline, Hendricks suggested that “good” national indicators:

- Are relevant to key issues, policies, goals, or societal values.
- Provide a neutral description of what is—not what might be considered good or bad.
- Are easy to understand and meaningful to a variety of audiences.
- Are drawn from reliable data sources and founded in technical and scientific theory.
- Can be linked to economic models, forecasting, and information systems.
- Rely on data that are available from existing sources or possible to collect and are representative of environmental conditions, pressures on the environment, or society's responses.
- Have meaning at a national, state, or regional level; are national in scope and applicable to regional social, economic, and environmental issues.

Hendricks also suggested that participants consider the criteria for evaluating indicators found in Table 4 of *Science Biodiversity and Sustainable Forestry*:

- Relevance: The degree to which the indicator responds to the stressor of concern; e.g., timber harvesting as opposed to air pollution.
- Scientific Merit: Extent to which the indicator is supported by science.
- Ecological Breadth: The number of other ecosystem components (species, structures, and/or processes) that the indicator indicates.
- Practicality: The feasibility, including cost, time, and skill required, of measuring the indicator.
- Utility: Ability of decision makers to make decisions with the indicators.

THE LATEST SCIENCE ON THE INDICATORS: THE STATE OF THE FIELD

Criterion 4—Conservation and Maintenance of Soil and Water Resources

Ken Stolte, Research Ecologist with the USDA Forest Service, provided an overview of the status of the Montreal Process Indicators 18 – 25 in Criterion 4—*Conservation and maintenance of soil and water resources*. Some highlights of his presentation and the discussion following are presented below.

Stolte noted that since the beginning of the Montreal Process, the U.S. has had a great deal of input into the indicators. The indicators relate to key ecological processes in forest ecosystems, and therefore apply at the national, regional, and local scales.

He observed that Indicator 19—*Area and percent of forest land managed primarily for protective functions*—is an overarching indicator. If all lands were protective of function, then “all of the other indicators would be taken care of.” He suggested this was not a realistic scenario.

According to Stolte, the U.S. has good national-level data on the soil indicators; some information on water flow and timing, chemistry, and sedimentation; and less information on aquatic biological diversity or watershed protective areas. In addition, he suggested that it can be difficult to define “significant change,” especially across regions. Temporal or spatially significant statistical differences are often used to test differences.

One participant noted that the indicators in Criterion 4 seem to pertain to the status or condition of soil and water resources, and asked which indicators characterized the impact of pressures imposed on these resources. One participant observed that the indicators in Criterion 3—*Maintenance of forest ecosystem health and vitality* – did a better job assessing the pressures. Stolte explained that the data for the indicators in Criterion 4 were collected from the Forest Health Management (FHM) and Forest Inventory and Analysis (FIA) programs. He noted that there are external factors that affect these indicators that are not really addressed; they are addressed somewhat by Criterion 3, but there is a need to incorporate such factors.

Criterion 5—Maintenance of Forest Contribution to Global Carbon Cycles

Linda Heath, Research Forester for the USDA Forest Service Northeastern Research Station, described the status of Indicators 26 – 28 in Criterion 5—*Maintenance of forest contribution to global carbon cycles*. Highlights of her presentation and the comments following are presented below.

Heath observed that carbon—found in live wood, dead wood, removed wood, and soil—is the big connection between all of the indicators. She noted that greenhouse gas emissions and sinks have been measured for some time now, and carbon stocks in U.S. forests are increasing in general.

Heath explained that the U.S. has conducted annual inventories of greenhouse gas emissions and sinks since 1990, and follows the Intergovernmental Panel on Climate Change (IPCC) Revision Guidelines (2004–2006) for agriculture, forestry, and other land use. However, she said the U.S. needs to do better at addressing the following challenges:

- Using standard units of measurement (metric, English, or mixed);
- Measuring soil and below-ground carbon;
- Establishing clear definitions of forest and forest management;
- Covering the noncontiguous U.S. states and territories;
- Measuring gross changes in addition to net changes;
- Setting criteria for choosing between estimates reached using different approaches; and
- Quantifying noncarbon greenhouse gases.

A participant asked about the role of forest fires in the carbon mix. Fires are one of the processes which return carbon dioxide to the atmosphere. However, Heath said that instead of growth or contribution to carbon cycles, the indicators measure net growth/contribution, so discerning the specific role of forest fires in the carbon mix is difficult. She noted that this approach to reporting is consistent with that used under the United Nations Framework Convention on Climate Change (UNFCCC) which also uses net measurements. For indicators dealing with “contributions,” the participant asked if we could bring in some contributions that might be missed with net measurements. Heath said yes—as long as they are consistent with UNFCCC items.

In response to a question about the current understanding of carbon leakage, Heath explained that this concept under the Kyoto Protocol does not count wood harvested in other countries for use in the U.S. She said there is no leakage in the sense that we are working to include all managed lands in the U.S. However, leakage related to imports/exports comes down to an estimate of what the leakage is; countries need to decide who will take responsibility for emissions and sequestration.

Several participants inquired about data issues. When asked about the adequacy of FIA data on national parks, Heath said we usually do have acreage data and extrapolate data on these lands based on estimates of land nearby. In response to a comment that regional-scale information would be more useful to decision makers, Heath agreed. She said many indicators can be regionalized, but the problem is with data that can be split up in regions. Regarding a question about the U.S. investment in data—and the practice of working from existing data sources—Heath said there must be some change in forest-health monitoring to compile the data needed. She suggested that the collection of information on carbon could be funded by carbon credits. However, this is not being addressed by the federal government, and states are taking lead. In response to a question about developing national protocols for collecting data to assess the C&I, Heath said the U.S. is meeting many of the terrestrial data needs through FIA, but she commented that “we are not there for all indicators and information.”

It was noted that some people believe we cannot determine what is sustainable or not because we do not have a sustainability index. People want to hear about status and trends, but are less interested in global change because it is in the future.

Building a Common Language for Monitoring Forest Sustainability in the Northeastern Area

Terry Heyer, Watershed Forester for the USDA Forest Service Northeastern Area (Northeast Area), described a collaborative effort between the Northeast Area and 20 Northeast and Midwestern states to use the C&I framework as a basis for a set of base indicators to measure forest sustainability in the Northeast Area. Working together, the Northeast Area and states identified 18 base indicators for inventory and monitoring. Based on this reporting, the first regional assessment, [*Sustainability Assessment Highlights for the Northern United States*](#), was produced in 2003. Similar assessments will be produced every 5 years and used for federal and state strategic planning. Sustainability data, assessment reports and other information will be available on an online Sustainability Clearinghouse at <http://www.na.fs.fed.us/sustainability> by September 2005.

A working group comprised of USDA Forest Service staff and state forest resource planners evaluated and selected the base set of indicators using a scale of appropriateness, reliability, feasibility, ability to measure over time, ease of analysis and interpretation, and usefulness to audience. For Criterion 4 – *Conservation and maintenance of soil and water*- they established indicators on: soil quality in forested areas; area and percent of forest land adjacent to surface water and area of forested land by watershed; and water quality in forested lands. For Criterion 5 – *Maintenance of forest contribution to global carbon cycles* - the group selected an indicator on forest ecosystem biomass and forest ecosystem carbon pools.

Ms. Heyer shared some of the comments from The Upper Mississippi Regional Roundtable (March 2004) on the results of the first regional assessment of soil and water indicators and carbon sequestration. Comments focused on the accessibility of data; the scale and cost of data collection; and the importance of tracking changes over time and compatibility between regional and national data. Participants at the regional Roundtable also noted the importance of forest management in each of the C&I, especially for carbon sequestration.

In addition, Heyer expressed the hope that the region continues to utilize the indicators corresponding to the Montreal C&I so that data can be gathered at the regional level and applied nationally.

SUSTAINABLE WATER RESOURCES ROUNDTABLE

Ted Heintz, the Indicator Coordinator for the White House Council on Environmental Quality, provided a brief overview of the Sustainable Water Resources Roundtable (SWR Roundtable), which, he explained, is structured similarly to the Roundtable on Sustainable Forests. The SWR Roundtable started with conceptual framework to understand aquatic systems. And, while the SWR Roundtable's focus is on aquatic systems, water management is driven by land management, and forest management affects water across all ecosystems. In Heintz's view, the Montreal Process C&I do not need to cover all aspects of water because the SWR Roundtable is covering water indicators as well. Heintz also observed that forest management is not the only pressure affecting resources contained in forests or resources that flow through forests - other human and environmental factors impact water resources as well. Additional information about the SWR Roundtable is available at <http://water.usgs.gov/wicp/acwi/swrr/>.

INDICATOR REFINEMENTS

At the Atlanta workshop, participants were divided into two smaller breakout groups to discuss indicators in Criteria 4 and 5.

- Breakout Group: Criterion 4 - Indicators 18 – 25.
- Breakout Group: Criterion 5 - Indicators 26 – 28.

Participants and the facilitator for each group are listed in Attachment B.

The refinements developed by each group are available in tabular form at <http://www.sustainableforests.net/summaries.php>. Each table includes the original language from the Montreal Process TAC notes; the proposed refined language from the workshop; and the explanation for the change.

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