

## **The Western Newfoundland Model Forest Criteria and Indicators Working Group: A position paper**

### **PAST HISTORY OF LOCAL LEVEL INDICATORS IN THE WESTERN NEWFOUNDLAND MODEL FOREST**

In Phase II (1997-2001) of Canada's Model Forest program, four strategic network initiatives were introduced with the aim of increasing network cooperation on sustainable forest management issues. One of these initiatives was Local Level Indicators. This initiative was designed to take the Canadian Council of Forest Minister's Criteria and Indicators framework and use a "bottom up" approach that starts with indicators measured at the local level where the majority of significant actions are carried out. Not only can this approach provide a basis for demonstrating progress at different scales, it is also appealing to forest industry seeking forest certification – a requirement of which is to report on local level indicators.

The Western Newfoundland Model Forest (WNMF) made a great deal of progress toward the measurement of local level indicators during Phase II. Values and goals were identified in September of 1997 by Model Forest stakeholders based on the National Forest Strategy (1992) and the Framework for a Sustainable Development Strategy - Newfoundland and Labrador Round Table on the Environment and Economy (1996). Indicators and objectives were identified based on values and goals in October of 1997. A series of similar reports were produced with the help of a WNMF local level indicators working group in the following years, ending with a Draft State of the Forest Report in 2000. In addition, A Practical Guide to Using Local Level Indicators in Newfoundland and Labrador was produced in 1999.

The tools and documents mentioned above are excellent reference sources for any organization preparing to embark on a local level indicators process. They can also serve as a basis for standardized forest ecosystem plans at the district level for both the province and industry. Phase II doubtlessly provided the WNMF stakeholders with an increased understanding of the purpose of local level indicators. As of yet, however, the full value of local level indicators has yet to realized. A significant number of data gaps still exist with respect to the indicators included in the Draft State of the Forest Report. In addition, partners have expressed concern over the utility of several of the report's chosen

indicators. As such, the Draft State of the Forest Report has never made it out of the "draft" stage.

## **PRESENT SITUATION**

Phase III (2002-2007) of Canada's Model Forest Program brings with it a renewed interest in maintaining commitments to the Network relating to local level indicator reporting. The WNMF yet again outlined local level indicators as a priority and it was decided that the working group should re-establish itself. This group is referred to in the Phase III proposal under the theme of "Data Acquisition and Housing" under Objective 1 – *Using a balanced approach (equal consideration for ecological, social and economic values), develop sustainable forest management systems and tools and increase the capacity for partners to implement approaches within and beyond our boundaries.*

As of May 2002, the newly named Criteria and Indicators (C&I) working group has met four times. The approach has been to tackle indicators criterion-by-criterion beginning with Criterion 1. It was anticipated that data collection and compilation would be far more realistic with a smaller set of indicators. The group has identified four indicators (Figure 1) under Criterion 1 and has drafted an indicator profile for each. The discussions surrounding these four indicators have revealed several barriers to further progress. These barriers have resulted in a continuous re-evaluation of the utility of the group. A small component of each meeting has involved a discussion of the purpose of the group, the objectives of the group, and whether or not the work of the group is worth continuing. It is important to note that it is not the dynamics or capabilities of the group that is question here, rather it is the logistics of the process that is causing the barrier. These logistical hurdles are elaborated upon below.

Despite limited progress toward reporting on criteria and indicators, the opportunity to discuss indicators in a multi-stakeholder setting has unto itself a variety of benefits. The following sections will serve to outline in specific detail both the shortcomings and successes of the re-established C&I working group to date.

**Indicator 1.1 – Area and extent of forest type by working group and age class.**  
**Indicator 1.2 – Extent of fragmentation of land base.**  
**Indicator 1.3 – Proportion of each ecoregion in protected status.**  
**Indicator 1.4 – Area of forested land converted to non-forest use**

Figure 1. Chosen indicators for Criterion 1 – Conservation of Biological Diversity.

## SHORTCOMINGS

### The Nature of the Provincial Forest Inventory

Of the first four indicators chosen by the C&I working group for reporting, two of them rely on the provincial forest inventory. It is anticipated that other indicators under other criteria will share this reliance. Currently, the provincial forest inventory is comprehensively updated every 15 years with a re-interpretation of aerial photography. In between 15 year updates, any harvested land is classified in the GIS database as Disturbed Area (DA). There is no confirmation of stand attributes available for this portion of the land-base until an interpretation is performed at the end of the 15 year term. A 15- year cycle is too long for indicator purposes. It cannot contribute to the advancement of sustainable forest management as it inhibits the ability to attribute landscape changes to specific management actions.

The proposed National Forest Inventory (NFI) has been suggested as a possible solution to this problem. The NFI's cost – as with the integrity of its use for indicators - greatly increases with an increase in the number of sample points. Depending on the number of plots available for measurement, the NFI could potentially be of great use for indicator data provision. The ability to meaningfully measure indicators is a key characteristic that should be considered when developing a NFI design.

Without the NFI, and with only the current forest inventory, Newfoundland and Labrador's forestry community will be hard pressed to find reliable and affordable indicator data for basic attribute measurement. This is a fundamental shortcoming of advancing the monitoring of SFM in Newfoundland and Labrador.

### **Partner's C&I Objectives and Associated Preferred Scales of Measurement**

For all indicators, regardless of data source, the C&I working group has had trouble reaching consensus on the most appropriate scale of measurement. In Newfoundland and Labrador, several possibilities exist (Figure 2).

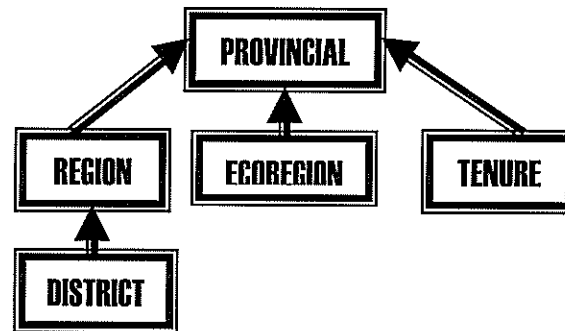


Figure 2. Possible spatial scales of indicator measurement and associated roll-up possibilities.

When the local level indicators initiative first began, the intent was to report on indicators at the district scale. The districts could then be “rolled up” to the provincial scale to satisfy national reporting commitments that have been made by the province. The districts, however, have been set up such that a district may contain anywhere from 1 to 3 land tenures. Two of the WNMf partners – and major stakeholders in the C&I working group – only see utility in the reporting of indicators for their tenure limits. These industry players are required to report on indicators if they wish to be registered to the CSA Standard. The Standard requires that indicators be developed for the “defined forest area (DFA)”. In the case of industry, the DFA is equivalent to their tenure limits. Reporting at the district level, while useful to the province, could require extensive data manipulation to satisfy the requirements of the companies. While indicator data at the tenure scale could still be “rolled up” to provide reliable provincial data, the province has committed to using C&I in their planning processes which occur at the district level and thus tenure-level data may not suffice.

For the satisfaction of all stakeholders, indicator data should be made available in a format that is easily transferred from one scale to another. This may be simple for some forms of data such as geo-referenced NFI plots. On the other

hand, results from a wildlife survey for an entire district will be difficult to divide up accurately according to the tenures present in that district. The C&I working group of the future may serve as a forum through which organizations can express to researchers and other organizations their preferred data formats prior to the commencement of research. This will help to ensure that collected data can be relevantly used for the purposes of C&I.

### **Research and Data Gaps**

Attempting to report on C&I tends to be an effective means of identifying research and data gaps. Although the C&I working group has only tackled one criterion thus far, several gaps are already apparent. The most pronounced need has been identified in a previous section – an inventory that can be used to accurately track change over a meaningful time frame.

The group has also encountered several gaps relating to wildlife data. The working group agreed that a fifth indicator would be desirable to ensure a full balance of each of the elements under Criterion 1. More specifically, the group did not feel that they had adequately addressed species diversity, and thus a species indicator was sought. Unfortunately, there is no commonly accepted indicator species or set of indicator species for the province (Doucet, personal communication). Existing data on wildlife populations has not been collected at a time-scale or spatial-scale appropriate for use as an indicator of forest ecosystem health. As such, data that is collected on appropriate wildlife species(‘) or communities and on a consistent and relevant time scale, is a definite gap.

Indicator 1.2 has also spurred much discussion within the group. Members agreed that to measure forest fragmentation meaningfully, one must know what one is measuring fragmentation in relation to. Forest fragmentation can simply be measured in terms of forest versus non-forest. Forest fragmentation can also be measured in relation to the habitat types of various wildlife species as in the case of the Fundy and Foothills Model Forest. Forest fragmentation can also be measured in relation to the natural fragmentation patterns of a landscape as in the case of the Prince Albert Model Forest. The utility of the first example is questionable. A lack of accurate wildlife habitat research tends to render the second option moot. The third option depends on an accurate knowledge of the natural pattern of landscape fragmentation which is presently unknown.

Computer software (e.g. FRAGSTATS) is available that works with forest inventories to produce measures of forest fragmentation. In Newfoundland and Labrador as noted earlier, however, the utility of the inventory is questioned, thus the functions of the software are also of questionable utility.

The preceding are examples of gaps that have been identified while dealing with only four indicators under Criterion 1. It is anticipated that the number of identified gaps will grow in conjunction with examination of the remaining 5 criteria.

### **Possible Dwindling Partner Interest in the Working Group**

Attendance at C&I working group meetings has often been scant. Key players are often absent from the discussions. It has also been difficult to schedule meetings, and meetings are frequently postponed several times due to lack of availability of working group members. One could place the blame on busy schedules. One could also speculate that the above factors are a product of insufficient interest and dwindling priority. When the working group becomes a group that is all but forced into discussions, it is hard not to question the value of the group.

### **SUCSESSES**

While the above shortcomings paint a rather bleak picture of progress toward the reporting of criteria and indicators, it is important to remember that working group participants have acquired a great deal of knowledge through participation in the working group. While the WNMF may not be the appropriate body to implement an indicator reporting program, it is a successful multi-stakeholder forum for the discussion of indicator issues that are, or could be, common to many partners. The WNMF C&I working group has learned a great deal that will put each individual partner in a better position to measure indicators than had the working group not existed. The following points outline lessons learned:

- It is important to focus on indicators over which the forestry community – and specifically, forest management activities – can have a direct impact.

- Reason(s) for reporting on indicators differ from organization to organization. As such, the choice of indicators and scales of measurement will also vary.
- Similarly, it is important to choose indicators and associated spatial scales of measurement that are meaningful to the organization that will be reporting on them.
- Indicator data should be made available in a format that is easily transferred from one scale to another
- Raising the awareness among relevant organizations of data needs for indicator purposes can help to ensure that future research is designed for the purposes of tracking change where possible.
- Indicator Profiles are a useful tool for ensuring that indicator data is not misinterpreted or used for purposes other than that for which it is intended.
- It is important to form linkages between strategies and field level activities wherever possible.
- Effective indicator reporting requires a "champion" who is willing to be responsible for gathering and compiling data.

## **CONCLUSION AND RECOMMENDATIONS**

The C&I working group has produced an array of practical tools and knowledge for use in indicator identification, monitoring and measurement in Newfoundland and Labrador. Group discussions have resulted in the identification of research and data gaps. Group members have gained a better understanding of the kinds of indicators that are and are not of value to each organization and to SFM. The group has also had the opportunity to more clearly comprehend the purpose, function and utility of indicator reporting.

The C&I working group, while successful in the above endeavours, does not appear to be the appropriate forum for taking indicators to the next level – data compilation, collection and reporting. Due to the nature of much of the data, the existing data gaps, and the differing mandates of the organizations around the table, this next step in the indicator process is best left to the individual organizations. Each organization will likely choose to overcome barriers in a unique fashion that is suited to their goals.

That said, recommendations consist of the following two options for new C&I directions in the new year (2003-2004).

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1. Maintain the C&I working group but change the focus of the group to research gap identification. Group members will still move through the CCFM framework criterion-by-criterion identifying desirable indicators. The end goal, however, will change from reporting on indicators to simply identification of desirable indicators and associated barriers to reporting in the form of research and data gaps. This group could then feed directly into the mandate of Partners in Adaptive Management (PAM) – a Newfoundland and Labrador Forest Research Advisory Committee (NeFRAC) working group. (PAM has already agreed to organize its identified research needs according to the CCFM C&I framework).
2. Dissolve the C&I working group but develop a framework for the incorporation of C&I considerations into the mandate of other groups and committees such as NeFRAC and/or PAM, the WNMFs Planning and Applied Science (PAS) Committee, and the WNMFs Knowledge and Science Transfer (KST) Committee. This incorporation of C&I into existing groups will be facilitated by the fact that many of the members of the C&I working group are also members of the other groups and committees.
3. Other recommendations as suggested by C&I Working Group members.