Canadian Institute of Forestry/Institut forestier du Canada
"Voice of Forest Practitioners"

Position Statement

Resource Inventory

Background
Many forest management decisions are based on incomplete information on economic factors, social considerations, and ecological states. Natural resource inventories reflect the ecological state of current forest conditions. Providing more detailed information can make for better decisions although not necessarily easier decision-making. Living entities such as our forests change over time, sometimes quickly as a result of fire, sometimes slowly as a result of natural succession. In either case, our forest inventories need to reflect the current condition and we as professionals have an obligation to obtain and use the most accurate, precise and current information available. This obligation is defined in at least three sections of our code of ethics, including: forest stewardship, public understanding, and improving forestry practice.

Definition
Resource inventories generally refer to forest attributes such as tree species composition, crown closure, tree height, and age. Resource inventories also typically incorporate additional databases covering both biotic and abiotic features that can be represented in some spatial context. For purposes of this document, we can consider resource inventories to be a compilation of information on the composition and structure of forest ecosystems.

Forest inventories are the cornerstone of forest management. They provide the qualitative and quantitative data on the entity to be managed. With appropriate interpretation, they can offer a glimpse of forest and site productivity and forest responses to disturbance.

It is essential that forest resource inventories be soundly developed and properly maintained not only because of their complexity, but, more importantly, a number of significant management disciplines find them indispensable the decision making process. Attributes of good forest resource inventories include:

- They are built on the basis of need and questions to be answered are articulated before field information is collected,

- A sampling approach is employed that is scientifically sound, statistically tested, and robust enough to capture natural population variability, and surmount logistical difficulties within financial constraints,
- Inventories are thoroughly documented with respect to objectives, sampling approach, assumptions, collection methodology, analysis, biases and limitations, and metadata, and
- Inventories should be conceived to integrate information from various sources in a standardized format that allow consistent interpretation of diverse resource values in a total resource management context.

Position Statements

As decision-makers associated with natural resource issues, CIF-IFC members recognize the value of accessible, reliable, current and accurate inventory information. The following represents the position of the CIF-IFC on issues around forest resource inventory.

Inventories are Essential to Decision-Making

Many decisions associated with forest management involve the allocation or disposition of resources. Better decisions are made when an accurate representation of the resource is provided. Information associated with natural resources, and especially with living organisms requires periodic updating to reflect the natural processes of ingress, growth and mortality. Inventory information that documents the rates of these processes are crucial for predicting sustainable harvest levels and inventories must be periodically updated to gather this information.

Build Inventories on Sound Scientific Principles

It is rare, unrealistic, and expensive for forest inventories to capture the attributes of every member of the population; therefore some form of sampling is required. However, poorly developed inventory sampling programs can lead to unrealistic or inappropriate expectations from the land base. To avoid management errors based on a poor representation of the forest it is essential that the inventory sampling:

- Considers the variability of population attribute(s),
- Reports standard errors or confidence limits associated with estimates,
- Balances logistical and economic realities with statistical constraints and information needs, and
- Recognizes where biases have occurred and report their implications.

Assumptions and Metadata are as Important as Inventory Content

To avoid misinterpretation of data, assumptions and features associated with the data must be clearly defined. Assumptions may pertain to the sampling design, the analysis that the data is subject to, or even how the data was collected, compiled, or recorded.

Documentation associated with collection of data ensures that it can be interpreted appropriately. Documentation associated with the sampling design identifies biases and assumptions. Documentation associated with database attributes (*i.e.*, the metadata) defines the content, quality, condition, and other characteristics of the data.

Develop User Partnerships

Many governments, departments, agencies, and groups utilize the same resource inventories. However resource inventories are usually developed and created by a single agency. Efficiencies in resource inventory development can be realized by encouraging other inventory users to take part in the data collection, development, or database maintenance. Similarly, sharing resources and expertise among agencies can result in more comprehensive inventories. We recommended user involvement in the development, creation, and maintenance of forest resource inventories.

Make Public Information Readily Available

While some inventory information may be proprietary (*e.g.*, market information collected by companies), information collected by public agencies should be readily available to and accessible by the public. Readily available inventory information prevents or at least reduces speculation about the condition or state of our natural resources. It also increases the transparency of management decisions and increases public trust in decision-makers.

Value Historic Inventories

As inventory information ages, it degrades in value as a representation of current conditions, but it increases in value as a representation of a baseline or a previously defined condition. Previously collected inventory data provides valuable insight into the development (succession) of forest ecosystems under both managed and unmanaged regimes. Old or historic inventories have tremendous monitoring potential. Therefore the maintenance and complete documentation of historic inventories is essential to future use.

The CIF-IFC

The Canadian Institute of Forestry - Institut forestier du Canada is a national voice of forest practitioners. The Institute, formed in 1908, represents members who are foresters, forest technologists and technicians, educators, scientists and others with a professional interest in forestry. The Institute's mission is "*to provide national leadership in forestry, promote competence among forestry professionals, and foster public awareness of Canadian and international forestry issues".*

We are people with a professional interest in forestry, working in government, industry, academic and consulting fields. Our members use their education, training, and experience to help manage the forests of Canada and to make the Canadian public *aware of forestry.*

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