# INTRODUCTION TO FOREST MANAGEMENT

**FW 512**
**Confederation College**

## Definitions

- **Management**
- **Effective utilization and coordination of resources such as capital, plant, materials, and labour to achieve defined objectives with maximum efficiency.**
- **"Management" (from Old French ménagement "the art of conducting, directing", from Latin manu agere "to lead by the hand") characterises the process of leading and directing all or part of an organization, often a business, through the deployment and manipulation of resources**
- **is simply the act of getting people together to accomplish desired goals and objectives.**

## Definitions

- **FOREST MANAGEMENT**
- Generally, the practical application of scientific, economic and social principles to the administration and working of a forest to achieve specified management objectives
- Particularly, that branch of forestry concerned with the overall administrative, economic, legal and social aspects, and with the essentially scientific and technical aspects, especially silviculture, protection and forest regulation.

## Definitions

- **FOREST MANAGEMENT** (Bill's Version)
- **Whereas Biology is a "pure" science dealing with the study of life or living matter in all its forms;**
- **and Forestry is the "applied" science dealing with the growing of trees, stands of trees and forest ecosystems**
- **Forest Management is the "practical application" of forestry, economic and social principles to the management of "forests" to generate specific outputs and meet specific objectives.**

## Definitions

- **FOREST MANAGEMENT**
(Bill's Simplified Version)
- **Forest Management is the planning and implementation of activities in the forest to achieve specific objectives and specific outputs.**

- Regardless of the specific definition of Forest Management which is adopted, it is clear that when there are specific objectives relative to a tract of forest beyond that which would naturally occur over time due to natural processes then we have the seeds of forest management
- The forest ecosystem is mostly self sustaining and self adjusting without management; however, unlike other species, human interaction with the forest almost always involves some degree of management or manipulation

## Evolutionary Phases of Forest Management

- **Unregulated Exploitation**
  Resources are extracted at rates based on demands and needs
  Generally small scale operations; Pioneering Usually no government regulation, licensing, or collection of extraction fees.
  Example: Settler cutting logs for a cabin and barns
- **Regulated (Systematic) Exploitation**
  Extraction of resources basically limited by the demand and capacity of the industry rather than the production capacity of the forest. Usually coupled with a belief or paradigm where the resource seems limitless and the ethic is one of 'taming the land'. Usually the best quality timber and easiest operating conditions are targeted and other areas are bypassed. There is little recognition of the "other" values of the forest. Government licenses the operations and collects fees for the harvested timber. Allocation of timber licenses may be used as a development tool by government. No active reforestation.
  Example: The White Pine harvesting era in the Ottawa Valley.

## Evolutionary Phases of Forest Management

- **Wise Use**
  This phase of forest management is associated with the rise of the conservation movement. Timber harvesting is planned based on principles of sustained yield. Reforestation emerges as important. Goal is to sustain the extraction of timber 'in perpetuity'. Some recognition of the impact of forestry on other values but there is a definite supremacy to development and growth within limits.
  The model is the Normal Forest where management engages the entire forest and where age class structure is shaped to facilitate predictable long term timber supply.

## Evolutionary Phases of Forest Management

- **Integrated Resource Management**
  Recognition of the role of forest management in shaping forest conditions and its impact on wildlife, tourism, etc. Therefore protection of other values becomes a serious concern. Other values are scene as limits on the production of timber however.

  Example; the old Timber Management Planning Manual; Pre-95 forestry in Ontario.

## Evolutionary Phases of Forest Management

- **Ecosystem Management**
  Building on the platform of Integrated Resource Management, ecosystem management looks at the structure and functions of "forest ecosystems". The interconnectedness of ecosystem components is stressed and there is an attempt to model impacts and set objectives for "other" values such as habitat. Maintaining ecosystem function and moving towards natural models are key components. Classic forest models such as the Normal Forest start to lose prominence.

  example: Emulating Natural Fire Disturbance Patterns

## Evolutionary Phases of Forest Management

- Foresters have regarded sustainability in terms of sustained yield as of paramount importance for decades (centuries in Europe)
- Sustainable Development became a rallying cry for NGO's and Environmental Groups in the mid-80's particularly following the release of the Bruntland Report

## Brundtland Commission

The World Commission on Environment and Development (the Brundtland Commission) in its report *Our Common Future* (1987):

***Sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs. It contains within it two key concepts:***

## Brundtland Commission

**•The Bruntland Report stressed the over riding importance of meeting the needs of the world's poorest nations**

**•Also, for the first time, on such a world wide forum, there was the concept of limits on development rather than the classic economic notion of perpetual growth**

**•The Brundtland Commission Report set the stage for the Rio Earth Summit in 1992**

## The Rio Declaration on Environment and Development

**(Earth Summit 1992)**

**Three core concepts serve as important guides for SD public policy:**

1. Sustainable development recognizes that it is not just the traditional measures of economic welfare that matter. Quality of life and well-being are that are all part of the sustainable development equation.
2. An integrated approach to planning and decision-making is therefore needed to take into account these many factors.
3. This approach must embody a commitment to equity. Sustainable development needs not only to create wealth and conserve the environment, but to ensure the fair distribution of the costs and benefits of development among nations, between generations, and between the poor and the affluent.

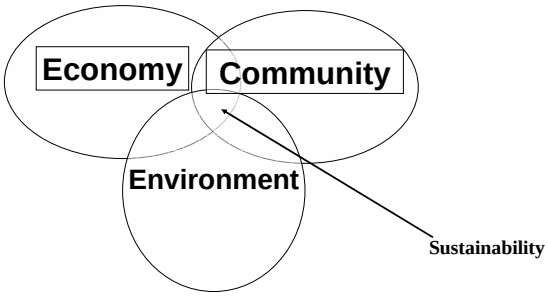
## Sustainable Forest Management

- On the heels of the Earth Summit and in with Sustainable Development at the forefront of everyone's mind, the latest iteration of forest management can be termed as Sustainable Forest Management wherein the principles of sustainable development are applied to the business of managing the forest.

## Sustainable Forest Management

- The management of forest ecosystems to maintain a healthy forest ecosystem which provides a continuous, predictable flow of benefits. Indicators of forest sustainability are incorporated into strategic decision-making and into the periodic assessments of both forest and socioeconomic conditions. Forest operations are conducted in a manner than conserves forest health and minimizes undesirable effects on the physical and social environments.

## Sustainability: The 3 Spheres




## Sustainable Forest Management

**"To keep every cog and wheel is the first precaution of intelligent tinkering."**

**Aldo Leopold (1887-1948)**

This concept of the paramount importance of maintaining all components of the ecosystem is a key principle of sustainable development as applied to forest ecosystems; hence the concern over rare, threatened and endangered species

## Sustainable Forest Management

Application of the precautionary principle is also a fundamental principle in sustainable forest management

***Where there are threats of serious or irreversible damage, lack of full scientific certainty shall not be used as a reason for postponing cost-effective measures to prevent environmental degradation***

## Reality Check

- While forest management has been evolving into sustainable forest management, governments in Canada have been divesting themselves of responsibilities for forest management
- *In my opinion …* Ideals and principles of Sustainable Forest Management and Ecosystem Management are really too altruistic to be fully embraced by multi-national corporations who have active management responsibilities; thus creating a tension between governments and industry in regards to these matters

## Reality Check

- While we are well into the era of talking about sustainable development, it is still not fully embraced in forestry operations
- Forest Management Planning attempts to show that it can anticipate the effects of forestry operations on all aspects of the ecosystem through modeling … and economics still limit on the ground actions to a standard below what is envisioned in legislation, policies and plans

## Reality Check

- While real progress continues to be made there is a point, where the administrative, and practical burdens placed on the system (by the ideals of the latest management philosophy) outweigh the systems ability to pay; this is where new policies cease to be put into action or only lip service is paid to them; especially now in the economic downturn of 2008 - ? this is clearly evident.

## Other Drivers

- Economic
  - Traditionally cyclic but has been disastrous slow down in Industry since 2006
  - Markets; few areas have markets for all available species
  - Traditional forest products are commodities and suppliers become price takers of a single market price for their product
  - High cost of capital for forestry initiatives

## Other Drivers

- Economic
  - Export markets to the US; softwood lumber tariffs / quotas, effect of pricing in US dollars, ignoring other world markets
  - Opportunities for bio-products, fuels, chemicals
  - Opportunities for value-added products
  - World competition
  - Ownership by multi-nationals

## Other Drivers

- Socio-political
  - First Nations were left out of the forest economy for generations; now asserting needs and desires; not necessarily compatible with current political structures
  - General public opinion has been greening and forestry has become a pariah in the minds of many; largely as a result of mis-information on the part of the environmental fraternity and a lack of engagement on the part of the forest industry

## Other Drivers

- Socio-political
  - Political power often not situated in centers of forest management activity; increasing urbanization of the population
  - Single industry communities
  - Ownership by multi-nationals
  - NGO's and environmental groups well organized and well funded have painted forestry as a sunset industry; internet allows for instant mobilization

## Other Drivers

- Socio-political
  - Demands for wilderness recreation increasing; demands for more parks and protected spaces
  - Internet allows for instant mobilization
  - Current free-market, capitalist systems do not have room for socialized industry and so development of more remote areas is limited
  - Tenure insecurity

## Other Drivers

- Environmental
  - Climate Change ~ How to adapt? When to adapt? If to adapt?
  - Western Pine Beetle
  - Declining wood supplies and age class gaps
  - Rare threatened and endangered species
  - Forest fragmentation
  - Fire Management