
Forest Management in British Columbia: An Overview

Let us think how long is ninety years. What has happened to stable countries in the last ninety years? ... Human habits have changed equally drastically. Wireless communication, the internal-combustion engine, the aeroplane, atomic fission and fusion, plastics and man-made fibres have been invented. ... The per capita use of lumber has dropped by over 50 per cent. Who shall say what further changes will affect the value of the crop by the end of the rotation the Licensee is now starting?

- H. R. MacMillan
(First chief forester of the British Columbia Forest Service and prominent forest industrialist. [1956 Sloan Commission¹](#))

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The Concept

Forest management can be described as ongoing iterations of five activities:

1. Define and understand the forest
2. Set goals
3. Plan activities
4. Implement activities
5. Assess results

Forest Management in British Columbia

The five activities provide a useful framework for describing the main elements and evolution of forest management in British Columbia.

Define and Understand the Forest

This includes basic rules of ownership and practices, inventory and research.

The British Columbia Forest Service (BCFS) is the main government agency responsible for stewardship of about 50 of the province's 59 million hectares of forest. The province relies on private sector investment to develop B.C.'s forests, creating jobs and revenue, while retaining public ownership to enable conservation measures consistent with public expectations.

The issuance of timber tenures under the *Forest Act* to private forest operators is the key vehicle that establishes rights to forest development and the generation of public revenues through the payment of stumpage. The two main types of long-term tenures issued are area-based tree farm licences (TFLs) and volume-based forest licences (FLs). In addition, short-term timber sale licences (TSLs) facilitate market-based pricing and value-added opportunities. Tenure holders must be compliant with the planning and practices requirements established by the provincial government.

The BCFS manages the forest inventory program for the province's publicly owned forests. The tenure holders are responsible for undertaking the forest inventories. The BCFS, tenure holders and other agencies also undertake inventories of non-timber values to support forest management.

The BCFS's research program contributes to the scientific basis for many aspects of forest management, including silviculture, growth and yield of managed forests, and conservation of soil, water and wildlife. The Canadian Forest Service and several universities also play major roles in research. The forest industry often collaborates on research with partners.

Set Goals

The goals of forest management, and the processes for setting goals, have evolved over the past century in British Columbia. The main goals highlighted below in **bold** include desired future forest conditions for values including timber, biodiversity and cultural heritage resources.

As the forest industry rapidly grew at the beginning of the 20th century, concerns were raised that future timber supplies could be depleted. A royal commission on timber and forestry made recommendations in 1910 that led to the introduction of new timber tenures in the *Forest Act* of 1912 and the establishment of the BCFS **to protect forests and regulate their use.**

By 1940, annual rates of harvest had increased substantially, much of the best timber had been allocated, and natural reforestation was not keeping pace with harvesting. A second royal commission recommended in 1945 that the province ensure a **sustained yield of timber.** The *Forest Act* was amended in 1947 to regulate harvests with allowable annual cuts (AACs) and help ensure an orderly transition from harvesting old-growth timber to long-term management of second-growth forests. Area-based tenures, later named TFLs, were granted in exchange for private sector commitments to invest in manufacturing facilities and provide long-term forest management, thereby supporting the province's goal of **economic development.**

Improved access and technological advancements led to increasing AACs as the land base economically suitable for forestry expanded, particularly in

the province's Interior. The increasing scope of industrial forestry in turn led to concerns about other forest values and uses, such as recreation, water, wildlife and fish. In 1976, another royal commission recommended an overhaul of timber tenures and policies, and led to the 1979 *Forest Act* and a new *Ministry of Forests Act*. To ensure **integrated resource management** that provides diverse public benefits, the BCFS now had to explicitly consider non-timber values in its decisions. A new planning process was introduced, new forest management units called timber supply areas (TSAs) were formed, a new process for determining AACs was established, and a strategic management system was initiated that included periodic publication of provincial information in forest and range resource analyses.

Many forest issues arose as public expectations increased in the 1980s. This led to yet another commission that made recommendations in 1991 on many issues including land use conflicts, AACs, and forest planning and practices.

In 1992, government initiated consensus-based land use planning processes, involving diverse public interests, **to reduce land use conflicts**. Today, land use plans have been approved or are nearing approval for 85% of British Columbia, providing long-term management goals and objectives for public lands. The plans also helped deliver the province's goal established in the early 1990s **to double protected areas to 12% by the year 2000**.

Also in the early 1990s, the province re-emphasized the goal of a sustained yield of timber with a new goal of **timely determinations of AACs**. The province's chief forester was legally required to make AAC determinations for TFLs and TSAs every 5 years, taking into account current understanding of the forests, current forest practices and any approved land use plans.

In response to widespread demands **to improve forest practices**, the *Forest Practices Code of British Columbia Act* came into force in 1995. The Code collected hundreds of varied requirements into one consistent legal framework for planning and practices that applied across the province. This resulted in improvements that were widely noted. However, its complex planning requirements and highly prescriptive approach to forest management led to significant increases in costs to both tenure holders and government.

In 2004, the results-based *Forest and Range Practices Act* (FRPA) replaced the Code. Among its several goals are **to encourage innovation** by reducing the prescriptive aspects of the Code, and **to reduce regulatory costs** by streamlining the planning process and other requirements while **maintaining high environmental standards**. Along with FRPA, legislation governing various resource professionals was amended or introduced **to increase reliance on the judgment of professionals** by clarifying standards of accountability.

Plan Activities

Forest planning typically includes identification of key issues, information and objectives; development and evaluation of scenarios; and selection of a preferred scenario that is fleshed out to make “the plan.” The evolution of forest planning in British Columbia reflected its goal-setting history.

Timber was the predominant forest value up to the mid-1970s, so most forest plans focused on timber harvesting. The 1947 *Forest Act* set the stage for long-term area-based tenures, now called TFLs, and a requirement for TFL tenure holders to prepare five-year management plans that address long-term timber supply, a 20-year spatial harvesting plan and investments in forestry activities. These apply to less than 10% of the province’s forests.

Following the 1979 *Forest Act*, TFL management plans and a variety of other plans for local areas and specific sites evolved to provide integrated resource management of timber and other forest values, and opportunities for public review and comment.

Beginning in the 1990s, some plans have included more explicit efforts to balance environmental, economic and social goals to achieve sustainable forest management. Most TFL holders now prepare sustainable forest management plans (SFMPs) to support their application for forest certification, using indicators for resource values and targets to describe desired future forest conditions. These SFMPs are generally also submitted to the BCFS for approval to meet most of their management plan requirements.

Most of the province’s forests are in TSAs, for which a timber supply analysis every 5 years has been legally required since the early 1990s. The analysis provides a forecast for 200 years or more, taking into account existing land use goals and objectives. There is no legal requirement for long-term plans that address forestry activities and investments needed to achieve desired future forest conditions. That said, many forest tenure holders in TSAs now also voluntarily develop long-term SFMPs in support of forest certification, similar to TFL holders.

On private forest land, which accounts for about 5% of the province’s forests, planning is the owner’s responsibility. A management commitment is required for some of these lands to maintain a favourable tax classification.

The *Forest Practices Code of British Columbia Act* of 1995 required six levels of forestry plans. Among these, the 5-year forest development plan (FDP) was required to be consistent with legal objectives stemming from land use plans. Prescriptive content requirements, including the need to show the location of intended cutblocks and roads, hampered innovation and responsiveness to changing markets. The subjective approval test “that forest resources be adequately managed and conserved” led to disputes that

delayed approval and implementation of plans. FDPs were updated every one or two years, leading to significant transaction costs between industry and government as well as a short planning horizon. Although streamlining changes were made with respect to the number of required types of plans, the Code's overall approach to forest planning was viewed as too cumbersome and costly.

For major forest tenure holders, the *Forest and Range Practices Act* of 2004 requires two levels of plans, of which one – the forest stewardship plan (FSP) – is submitted for approval by the BCFS. The FSP identifies forest development units within which development can occur, and must provide measurable results or verifiable strategies consistent with government objectives for various forest values. Government objectives stem from a variety of sources. Some come from land use plans, others are provided or enabled in regulations, and others are grandparented from the Code. The FSP has a 5-year term that may be extended to 10 years. Other requirements include consultation with First Nations and providing an opportunity for review and comment by the public and other resource users. Tenure holders must also prepare site plans that identify intended roads, cutblocks and FSP strategies for the site. The site plans are not approved by government but must be available to the public on request.

Implement Activities

Forestry activities today, such as road building, timber harvesting, reforestation, silvicultural treatments and forest protection, have long-term implications for future forest conditions, often well beyond the next 50 or 100 years. Forestry activities need to be carried out by tenure holders and government in a manner that is consistent with completed plans, including land use plans, SFMPs, FSPs and site plans.

Under the *Forest Act*, the BCFS is responsible for issuing tenures, including long-term licence documents such as TFLs and shorter-term road permits and cutting permits, and for determining the stumpage price and other charges that tenure holders must pay. Most forest activities are implemented by tenure holders and contractors working for them. Fire suppression and management of insects and diseases have been the responsibility of the BCFS in partnership with tenure holders.

Before 1987, reforestation of harvested areas on public land was mostly funded by government and carried out by the BCFS and some tenure holders. Reforestation efforts lagged under this arrangement, so in 1987 reforestation was made a legal obligation to be funded and carried out by major tenure holders. The BCFS (now through BC Timber Sales) is legally required to reforest areas harvested under TSLs. Areas of public land where timber was burned by wildfire or killed by insects may be reforested by the BCFS, based on each situation's merits as an investment of public funds.

Similarly, other silvicultural treatments such as juvenile spacing, fertilizing, pruning and commercial thinning are based on their merits as an investment of public funds, and may be carried out by the BCFS or tenure holders.

Assess Results

Monitoring and assessing forest conditions relative to the desired future forest, and evaluating the effectiveness of management activities in achieving goals, supports a cycle of continuous improvement.

Each of the above activities can be assessed and adjusted based on the assessments. For example:

- Is available information adequate? Are tenure obligations clear?
- Are the goals clear and comprehensive?
- Are plans realistic and adequate for realizing the goals?
- Did implementation follow the plan and legal requirements?

Continuous improvement is a fundamental component of modern forest management. Government processes that contribute to continuous improvement include this report, the Ministry of Forests and Range's service plans, the Forest and Range Practices Advisory Council, the Forest and Range Evaluation Program, various adaptive management projects, the investigations and audits by the Forest Practices Board, and the BCFS compliance and enforcement program.

As discussed, many forest tenure holders in British Columbia either have or are actively pursuing independent third-party forest certification. This involves use of indicators, targets, monitoring and reporting on attainment of those targets. The tenure holder's performance is also periodically assessed through independent third-party audits.

Professional associations and academia, often in partnership with government and industry, provide numerous continuing education opportunities to help ensure that resource professionals are aware of their professional obligations, are appropriately qualified to perform key tasks, learn from actions taken and adapt to change.

Long-term forest management requires inter-generational learning and adaptation to broad changes such as changes in society's values regarding forest resources, changes in global demand for forest products and, increasingly, climate change.