Canadian Institute of Forestry
Institut forestier du Canada

CLEARCUTTING

Topic: Clearcutting in Canada is cutting the majority of trees in a mature forest at one time, temporarily leaving the land without tall vegetation. This is followed by a period of regeneration.

Background: Clearcutting has been widely adopted across many regions of Canada. It is commonly used in even-aged silviculture systems as a method of regeneration, typically followed by planting and/or direct seeding (or natural regeneration when enough small trees are already growing on the site). As even-aged forests are usually regenerated after clearcutting, it is commonly justified as similar to natural disturbance agents. These disturbance agents include wildfire, violent storms or some insects, which kill all mature trees in a forest at one time. Clearcutting is usually carefully planned to emulate natural disturbance patterns on the landscape and structures such as leaving wildlife trees or residual patches uncut. Clearcutting is particularly appropriate to re-establish light-demanding trees such as pines, larches, and poplars.

Current Status: In most provinces with boreal forests on public land, clearcutting is the dominant form of harvest and is considered the first step in a silviculture system. This system includes regeneration, protection, and tending. Regeneration following clearcutting has been generally successful and provincial laws require meeting regeneration targets following planting or natural regeneration. Successful forest regeneration is required on crown lands in Canada (Natural Resources Canada, 2020). Clearcutting and even-aged forestry, forms a forest management system where stands can be harvested, re-established, grown, and then re-harvested in a long-term forest-level planning system for sustained yield of timber.

Key Considerations: Forest managers view clearcutting as an effective means of logging an even aged forest: less road development is needed and the openings create a needed fire break. Natural regeneration is assisted and artificial regeneration - preparing planting spots, planting seedlings, and vegetation control procedures are usually more efficient in clearcuts than partially harvested forests. In-block roads and disturbance areas are given soil aeration treatments and reclaimed back to forests. Clearcutting is part of a forest-level planning system where cutting a mature forest will create a young stand that contributes to landscape diversity of stand age classes within the larger forest. Many foresters are proud of their success in regenerating forests after clearcut logging. In some circumstances, however, such forests may follow a different path of stand redevelopment than what is found naturally after disturbances such as wildfire.

Negative reactions to clearcutting have several dimensions. Newly cut areas are unattractive and there are stumps and temporary soil disturbance from machine trails and in-block roads. Clearcutting old

Overview of cutblocks on the landscape (north of Takla Lake, British Columbia)

forests with trees several times older than any future forest planned for the site does not appear to recognize intrinsic values of old forests. There are concerns for the local disruption and loss of wildlife habitat when converting an old forest into a cleared area that will become a young forest. At the same time, this disturbance can offer opportunities for different

wildlife species that depend on the young open forest condition that clearcuts create – whippoorwill, bear, and moose to name a few.

For some, clearcutting can mean the loss of a favourite hiking, hunting, trapping or recreational area that they have known, used, and enjoyed. For others, forest harvesting is considered a mining operation which simply extracts a resource with little care for the land. Some believe that clearcuts will never regenerate.

Regenerated spruce balsam fir forest after clearcutting (New Brunswick)

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Options: In some forest types there are alternatives to clearcutting: For example, in the hardwood and white pine forests of eastern Canada partial harvest systems are commonly used. In these systems trees are selected for removal by trained silvicultural tree markers, with harvest occurring every 10-25 years. The goal is to emulate natural disturbance regimes, thereby creating conditions that will promote natural regeneration, and maintain healthy vigorous forest cover. In some parts of the boreal forest, mature trees are cut while at the same time avoiding damage of younger/small trees growing below the mature trees (CPRS – coupe avec protection de la régénération et des sols in Quebec and understory protection in western Canada). There are many different examples of partial-harvest silviculture that could be applied to Canadian forests (for example, BC silvicultural systems). Partial cut forests are particularly suited to scenic or recreation areas, or when local biodiversity concerns are paramount.

Clearcutting is well-suited to areas designated to sustain yield high production forest management systems where intensive silviculture methods are employed. In intensively managed forest tree species are controlled, their genetics and the density in regenerated plantations may be controlled. Such managed forests produce the highest timber yields. Clearcutting is suitable for regenerating trees intolerant of shade. Clearcutting is also appropriate if coupled with landscape-level management systems that create large blocks of even-aged forests similar to fire or large disturbances. Such areas will become large blocks of mature forest in the future.

Conclusions: In most forests of Canada clearcutting is an appropriate silviculture system to use. In addition, areas clearcut successfully regenerate back to young trees within a year or two after logging. There should be continued efforts made by foresters and governments to make the public aware that clearcutting is an effective tool and part of a system to sustain diversity and habitats for wildlife species. Clearcutting is particularly well-suited to the parts of the landscape zoned for intensive management. There are opportunities for partial cut harvesting in some forest types of Canada. Foresters are constantly evaluating opportunities to use partial harvest systems to promote shade loving trees (where appropriate), especially in areas of recreation, Indigenous and traditional use, biodiversity values, and environmental services.

References:

- Government of British Columbia. 2021. Silvicultural Systems.
- Natural Resources Canada, Canadian Forest Service. 2020. The State of Canada's Forests Annual Report 2020. Ottawa. 88 p.
- Wikipedia. 2018. Coupe avec protection de la régénération et des sols.
- Photos provided by: CIF-IFC Forest Advocacy Committee members

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