

# Forest Management

The purpose of Forest Management is to ensure healthy, productive forests for present and future use. The forest can be used by many different groups for a variety of purposes. Forest managers plan for the wise use of the forest and its resources. Some of the managers of the forest are concerned with wildlife, forest industry, recreation, wilderness, fire and insect control, and watershed. All of the managers must consider and plan for the use, improvement, protection, and regeneration of the forest.

In our case, logging companies must plan how to use the forest sustainably when they **harvest** trees. **Harvest** means “the removal of trees for a variety of uses.” Whereas a garden or a farm is planted, tended, and harvested in a one year cycle, a forest may take up to *100 years* to reach the harvesting stage. That means that if logging companies were to harvest all the trees at once, we all would have to wait 100 years to get more wood!

Sustainable use of the forest means that we harvest the forest at the rate it can **regenerate** (*the process of growing back what has been lost*) so that there always will be a forest to harvest for lumber, pulp or other use. Therefore, logging companies must be careful when deciding which harvesting or logging method they will use so that they don't harvest all the trees at once. Although there are many harvesting methods, we will look at three.

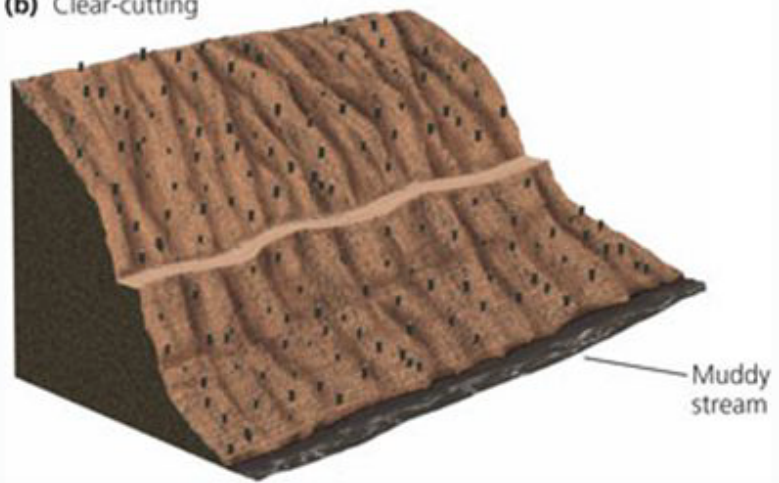
There are 3 major Harvesting methods:

## Clear Cutting

Clear cutting means to cut down every tree in a selected area in an efficient and quick manner.

Large machines cut the trees, remove branches, cut the logs into lengths and load them onto large trucks in the area. This can create considerable damage such as the destruction of entire areas and soil erosion.

(b) Clear-cutting

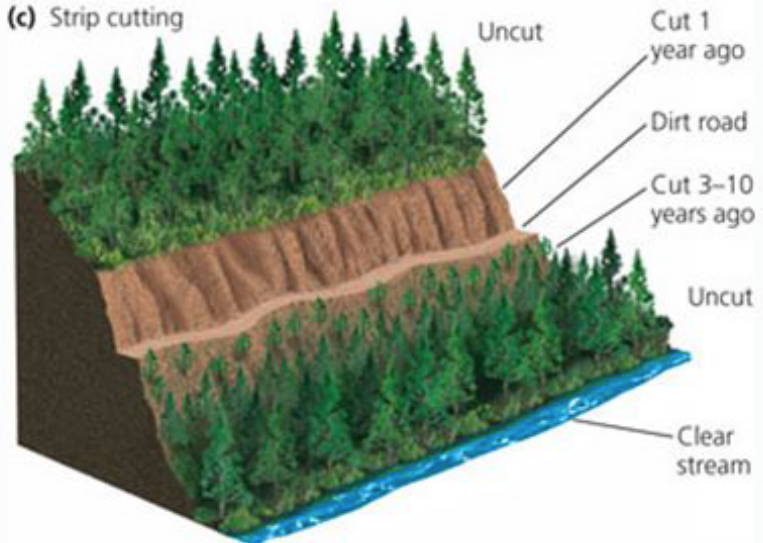


## Strip Cutting

Strip cutting means to harvest trees in narrow strips to minimize damage and try to allow for natural forest regeneration.

Heavy machinery is used, leaving sections between the strips uncut, especially among lakes and rivers to reduce soil and limit wind erosion.

(c) Strip cutting

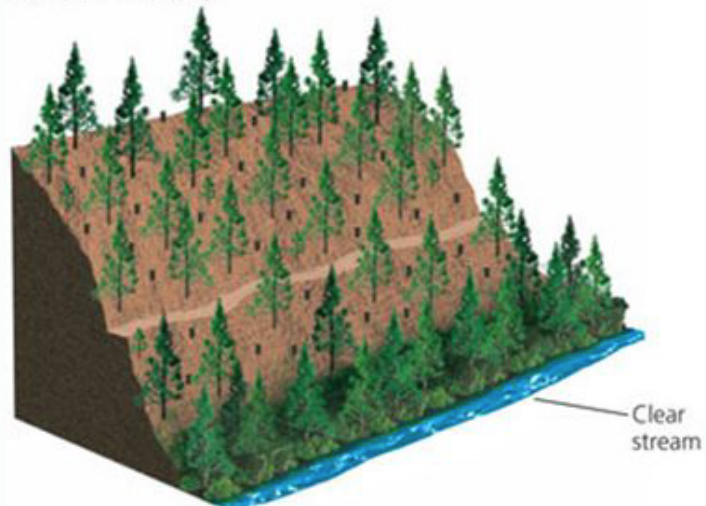


## Selective Cutting

Selective cutting means to go in and harvest only a limited amount of trees that meet a certain criteria. This usually happens in multi-species forests. Some examples of criteria are maturity, height, age, diseased, etc.

One or two operators use chain-saws to cut down the trees on own property, reducing the scarring of the land.

(a) Selective cutting



# Clear Cutting:

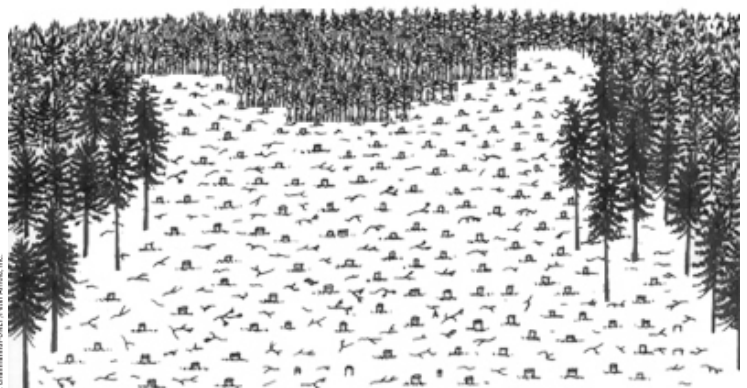
Clear cutting is a highly debated method of tree harvesting because of its visual effect on the landscape, as well as the environmental effects. For example, what happens to the animals that use the forest for their habitats?

(Pros) Advantages of clear-cutting:

- It is an efficient method of harvesting with higher profit.
- Can plan for a forest that controls pests and competing plants, improves seedbeds, and prevents soil problems.
- Allows faster growth for species of trees that grow better in full sunlight.
- Can reforest with fast-growing trees

(Cons) Disadvantages of clear-cutting:

- Increases water pollution, flooding and erosion on steep slopes.
- Flooding often lowers the chances of seedlings growing.
- Removing all large trees eliminates essential habitat for some wildlife.
- Forests that grow after are the same age, which are less resistant to harsh weather.
- No guarantee that the forest can be regenerated; environment looks bad.
- Reduces biodiversity (the range of different plants and animals)





## Strip Cutting:

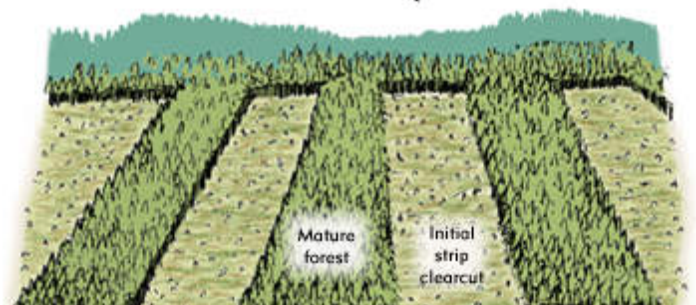
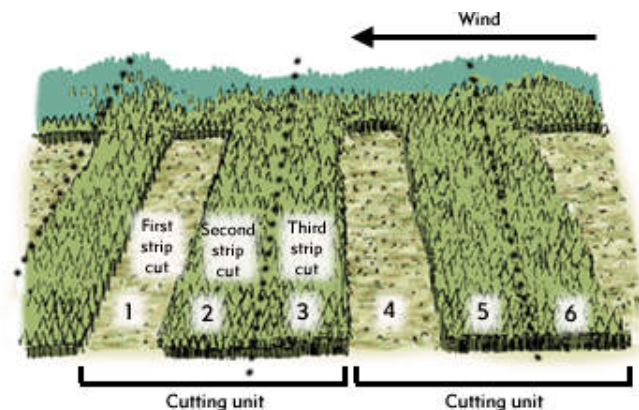
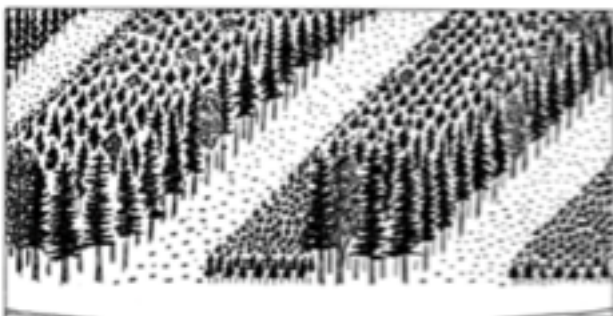
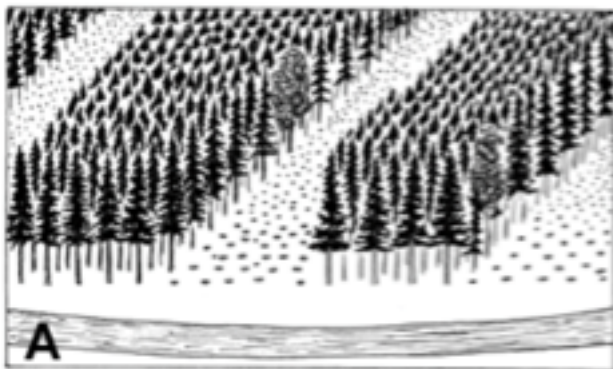
Strip cutting is a variation of clear-cutting, and has mostly been used in Canada with black spruce in the Boreal forest, and mixedwood types in northern Alberta. Although not as debated as clear-cutting, there are still major concerns associated with strip cutting.

### (Pros) Advantages of strip-cutting:

- This method leaves behind more habitats than clear-cutting.
- It allows for quicker forest regrowth.
- Allows *natural regeneration* within a few years because it reseeds on its own.
- The forest looks much healthier.
- Allows a more sustainable harvest without widespread destruction.

### (Cons) Disadvantages of strip-cutting:

- When the trees are cut, the seed source is lost.
- Bare strips still allow for soil erosion and soil thinning.
- Still destroys large sections of the ecosystem.
- Not as efficient as clear-cutting, and therefore more expensive.



## Selective Cutting:

The object of selective cutting is to reduce visual scarring and preserve species diversity in forests. While this method sounds like the answer to clear-cutting, it has some major disadvantages.

(Pros) Advantages of selective-cutting:

- Supports more wildlife by keeping their ecosystems intact
- They build up tolerance and resistance to disease and pests
- Carbon dioxide that is stored by the trees will regenerate (regrow) faster
- Helps the forest grow back faster
- Reduces fire hazards and minimizes soil erosion.

(Cons) Disadvantages of selective-cutting:

- Expensive and time-consuming
- Some species will not regenerate (regrow) as fast
- More exposure to weather damage such as ice, storms, and fires
- Lots of stumps and other tree debris left behind
- Removes genetically superior trees, whose seed is needed to keep forest healthy.

