# Selective Cuts versus Clear Cuts: Similarities, Differences and Lasting Effects

By Sam Mason

On the mornings that I have joined Tin Mountain's avian specialists in the Bear Paw Conservation Land to help with point counts, I have noticed that we cross through sections of forest where some trees have been left to grow while others have been cut. In these forests, giant Eastern Hemlocks with healthy crowns sprout high into the sky, while below, amongst an array of dry timber from the original cut, new groves of saplings begin their lives. I found this a bit odd, for while I'm familiar with clear cuts, I had never known of one that would leave specific species to continue to grow while cutting others down. That seems to go against the very nature of a *clear* cut. I soon found out that these were selective cuts, and each was done to help specific species of trees grow while simultaneously creating a more diverse forest habitat for birds. To learn more about selective cuts and gain a better understanding of how they differ from clear cuts, I spoke to Dan Stepanauskas, Tin Mountain's forest consultant.

## What Are Selective Cuts and Clear Cuts?

*An example of a selective cut in Bear Paw Wilderness.*

A selective cut or a patch cut, Stepanauskas explained, is a section of forest where specific species of timber are cut in order to create space for other species to grow. In doing this, a more diverse habitat is created, thus welcoming new species of birds and wildlife into the forest. Diversity in habitat refers to a variety in plant heights and plant species. Because not all bird species nest at the same height, having a range of trees is important. The idea of forest growth going from early herbaceous species to larger trees is known as succession. Though foresters often have their eyes set on what a cut may look like after a few decades, a new herbaceous plant community is often created in only a couple of years. Because of the gaps created in the canopy after a selective cut, herbaceous species and saplings rush to take

advantage of the new light and race to outgrow each other. This shrubby undergrowth on the forest floor is used by multiple species of birds and small mammals to forage, nest and seek protection from predators. By conducting these selective cuts, this sort of habitat is created, thus catering to a number of species.

A clear cut, on the other hand, is a section of forest that has been entirely cut in order to harvest timber. For anyone who hasn't walked through or even seen these two types of cuts, I can tell you that the difference is astounding. Clear cutting is the preferred timber extraction method for forestry companies due to its cheap nature and efficiency. Little to no consideration is given to wildlife during a clear cut, as profits from timber are the primary goal.

*An example of a clear cut*

*Photo credit: Tahreer Photography/Getty Images*

## Biggest Differences

With their juxtaposing goals and methods, it is easy to contrast clear cuts and selective cuts. Consequentially, this also makes them very hard to compare, beyond the fact that during each, timber is being cut. As for their differences, the biggest ones lie in how each cutting is executed and how these cuts leave the forest in the long run.

While foresters conducting patch cuts aim to have as light of a touch as possible, this is less of a worry for clear cuts. Logging operations utilize large mechanical machinery like grapple skidders that tend to leave more of a negative effect on forests than smaller scale operations. Heavy machinery can cause semi-permanent compaction of soils, thus stunting root growth and allowing for the winter freeze to penetrate deeper into the soil than usual. As a result, more carbon dioxide is released into the air. This is not to say that machinery used in selective cuts is any less harmful to the soil of the forest, but machinery used in patch cuts it often much smaller.

Perhaps the more dramatic difference between the two can be seen decades later, as the lasting effects of each form of cutting have significantly different ramifications. Once a clear cut has been done, it takes a very long time for that patch of land to return to anything close to what it once was. Four decades could go by before any sort of a forest is recognizable. Furthermore, clear cuts create a monoculture. In other words, all the trees that do grow back are more or less at the same canopy level and are the same age. This, instead of encouraging a diverse ecosystem of plants and animals like a selective cut does, only provides one type of forest stand. This lack of variation in plant life and forest structure fails to fulfill the needs of the community of wildlife that would otherwise be inhabiting this area.

## Why Selective Cuts Matter

Simply put, a diversified forest is a happy forest. This is not suggesting that a forest of North American Beech trees is unhealthy or unhappy, but a forest that holds many species of wildlife and plants welcomes more into its ecosystem and is more exciting to explore.

Selective cuts allow a forest to prosper, for prior to cutting, foresters examine the soil and moisture in the site and assess whether it is correct for the species of trees living there. If a species is growing on the wrong soil, meaning the chemistry and moisture levels are more favorable for one species than others, those trees are cut and the species living in their correct habitat are given the opportunity to thrive. Further, if the stocking of trees, or the density of trees at a site in terms of age and species, is too tight, selective cuts act as a great way to provide the forest with a bit more breathing room. These practices do not only benefit the timber on the site, but the forest ecosystem as a whole, for the cutting of select timber brings new waves of life for other species within the woods.