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Why Do Forest Managers Use Clearcut Harvesting?

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Introduction

Forest managers have a variety of tree harvesting options. The final harvesting system selected may reflect management objectives, social and ecological considerations, and current and desired stand composition and characteristics. Clearcut harvesting is often used because it generally increases regeneration success and subsequent tree growth, and is a low-cost management option (SAF 2019). In many locations, clearcut harvest is the only feasible system for even-aged pine and other important timber species (Douglas fir, larch, aspen, yellow poplar, birch) due to their growth requirements (Burns and Honkala 1990a,b).

Concerns have been raised that using clearcut harvesting is destructive to the environment, causes habitat or biodiversity loss, and is visually unappealing. This fact sheet provides a brief overview of clearcut harvesting, notes important environmental consequences of clearcut harvest, and explains the difference between clearcut harvest and deforestation.

Clearcut Harvest

Clearcut harvesting removes practically all overstory trees in a forest stand in one management operation. Under sustainable forest management, that stand is regenerated (naturally or planted) within a few years after harvest and remains as forest, albeit starting as a young forest. Clearcut harvesting may resemble a stand-replacing natural disturbance. Across North America, most clearcut harvesting excludes the harvesting of trees in forested buffers along streams or water bodies and in patches in other parts of the harvested stand for a variety of reasons (e.g., protecting ecological or unique features). Such practices are often requirements of forest certification, best management practices, or forest practice policies and standards.

Clearcut harvesting is sometimes conflated with permanent forest loss or deforestation, but these terms (and concepts) are not interchangeable. Briefly, “deforestation” is the permanent conversion of forest to another land use, and is a concern due to myriad environmental consequences (FRA 2020). However, clearcut harvesting is compatible with sustainable forestry (SAF 2019), as has recently been demonstrated for the southeastern U.S. (Munro et al. 2022). Both landowners and those that procure timber from landowners are obligated under sustainable forestry guidelines not to contribute to deforestation. Further, forest landowners have a strong financial incentive to regenerate harvested stands to continue to realize income from their ownership.

Consequences of Clearcut Harvesting

Clearcut harvested stands quickly revegetate naturally or are replanted, consistent with expectations under third-party forest certification programs. Some desirable hardwood species, such as oaks, require overstory removal to become established and grow. In fact, the lack of forest harvest may be causing oak declines in the eastern U.S. (McShea et al. 2007).

Clearcut harvest enables herbaceous and low-growing woody plant cover growth that benefits numerous wildlife species (King and Schlossberg 2014; Swanson et al. 2014; Evans et al. 2021). Across some regions, early successional, or young, open canopy forest conditions are greatly reduced from what occurred with prior, natural disturbance patterns.

Economically and recreationally important game species such as elk, white-tailed deer, and northern bobwhite all use early successional forests and benefit from clearcut harvesting.



Photo caption: Trees regrowing after being clear cut for timber

Conclusions

Clearcut harvesting is a proven, widely used forest harvest method that has been employed sustainably for many decades. Clearcut harvesting is not the same as deforestation. Forest systems are dynamic, not static; therefore, it is not appropriate to look at harvested stands at one time (a “snapshot” of forest conditions). Harvested stands regenerate and become future, more mature forest stands. Clearcut harvesting, by providing economic returns to landowners, can actually help prevent deforestation. When clearcut harvesting is applied according to forestry best management practices across large landscapes and across time, such harvest contributes to landscape diversity and enhances ecosystem services, such as carbon storage and sequestration and wildlife habitat.

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