

SUSTAINABILITY @ WEYERHAEUSER

HOW WE DO IT: Clearcutting



Clearcutting is a harvesting practice that removes most of the standing trees in a selected area at the same time. This practice can be a polarizing topic — in large part because of how the stand looks immediately after harvest — but the truth is that when done well clearcutting is the safest and fastest way to help our forests grow back quickly. So while it might look more disruptive in the short term, clearcutting is not a shortcut. It is an essential step in making sure our forests keep thriving on a continuous cycle of growing, harvesting and replanting.



KEY POINTS

- **Clearcutting is the preferred method for regenerating the species of trees we grow.**
We grow trees that reliably produce high-quality wood products, and the primary species we harvest in our forests are Douglas-fir and loblolly pine. Both species are shade intolerant, much like tomatoes in a garden, which means they need full sun to survive as young trees and reach their full growth as quickly as possible. Clearcutting mimics naturally occurring events such as fires or windstorms, creating openings in the forest and space for new trees to take root, mature and thrive. It is also a useful method for growing even-aged tree stands that produce wood with uniform qualities.
- **Clearcutting is efficient, cost effective and safer than other harvest methods.**
Managing harvest plans across large landscapes over many decades is a highly complex process, requiring careful planning and engineering to ensure we are able to deliver a steady supply of sustainable timber to the market. With our 120 years of experience and expertise in understanding how forests grow, aided by science and ongoing advancements in technology, harvesting has become increasingly safe and precise. It is much more efficient to harvest a focused area at one time with fewer trips into the forest. Not only does this method reduce soil disturbance and erosion, but it also reduces operating expenses and exposure to hazards for our people — all while cutting back on fuel use and shrinking our overall carbon footprint.
- **Clearcutting can be beneficial for supporting and creating diverse wildlife habitat.**
Open clearings in forests are good for wildlife species that need different stages of forest growth for food and other habitat components, known as landscape diversity. Open spaces receive more sunlight and create ideal growing conditions for sun-loving shrubs and grasses, which provide food and shelter for deer, elk,¹ birds,² small mammals and pollinators. After harvest, we follow best management practices by leaving standing dead trees, logs and scattered live trees for additional habitat features. We also protect buffers of trees along streams and other water bodies to safeguard land adjacent to water and maintain cool stream temperatures. These practices help provide pools and spawning beds for fish and reduce siltation. And for rare, threatened and endangered species, no matter where they are on our lands, we take additional special measures to protect their habitat.
- **Clearcutting is an overall low-disturbance harvest method.**
Clearcutting requires fewer roads and less-frequent activity on the land than other methods, resulting in fewer disturbances to soil and water, which are vital to forest regeneration, healthy ecosystems and surrounding communities. We have done extensive research on soil management and water quality protection, and we conduct careful analysis to identify locations that are environmentally sensitive to harvest and take appropriate conservation steps.

¹ ["Elk nutritional resources: Herbicides, herbivory and forest succession at Mount St. Helens,"](#) *Forest Ecology and Management* (2017)

² ["Bird community dynamics and vegetation relationships among stand establishment practices in intensively managed pine stands,"](#) *Forest Ecology and Management* (2012); ["Conservation and production responses vary by disturbance intensity in a long-term forest management experiment,"](#) *Ecological Applications* (2020)

KEY POINTS – *continued*

- **Clearcutting is temporary — we always regrow our forests.**

It is important to remember that we do not clearcut entire forests. Rather, we harvest smaller areas (called stands) within a forest and quickly regenerate these harvested areas, either through planting or planned natural regeneration. In fact, on average we harvest only 2 percent of our land base — spread out across our millions of acres in North America — each year. That means the other 98 percent of our forests are in various stages of growth and maturity, forming a mosaic of different ages and structures.

We also reforest 100 percent of the stands we harvest — the vast majority (more than 75 percent) within a year after harvest, and more than 95 percent within two years — to ensure another healthy forest will grow and thrive again. Our Sustainable Forestry Initiative® Forest Management certification requires every harvested stand to be regenerated within five years, and every year we plant about 130 to 150 million trees to meet society's needs for generations to come. Coming directly from our nursery system, these seedlings are matched to suit the specific conditions and needs of our growing regions, contributing to an outstanding survival rate of 85 to 90 percent (or higher). So clearcutting does not simply help us start the process of regeneration quickly; it also helps our new forests take root and reach maturity years sooner than other approaches.

- **Clearcutting is not the only method we use.**

In our northern hardwood region, we selectively harvest stands that contain good-quality, shade-tolerant species such as sugar maple. In other regions, thinning is used in overcrowded stands of trees. Removing selected trees reduces the competition for sunlight, water and nutrients, helping the remaining trees stay healthy and grow faster. Other approaches include shelterwood cutting, group selection and single tree harvesting. Yet regardless of the harvesting method, we follow strict laws and regulations to protect water and wildlife, and we are careful stewards of the biological diversity, recreational benefits and other ecosystem services our forests provide.

SUPPORTING RESEARCH

- From 2012 to 2019, we examined the influence of forest harvesting on an at-risk species, Oregon slender salamanders, as part of a collaborative research project with federal, private and university partners. After eight years of rigorous field research, analysis and peer review, researchers³ found that our long-standing practice of leaving coarse woody debris on clearcut harvest sites helps protect this species, which only occurs in the Oregon Cascades.
- In the 1990s, bird research⁴ conducted in part on Weyerhaeuser lands led to significant shifts in scientists' thinking about how working forests, specifically clearcuts and early successional forests, benefit neotropical migrant songbirds. The young forests that grew following a clearcut were found to support an abundance and diversity of breeding songbirds that later migrate and spend their nonbreeding season in Central and South America. This study led to the concept of working forests providing a "shifting mosaic" of forest structure types (i.e., young to mature forests) over time and across the landscape to provide habitat for a variety of wildlife species.
- Multiple studies⁵ have explored the short- and long-term impacts of harvesting practices on plant community dynamics and biodiversity, and we have found through our own research that our management activities ensure abundant and diverse plant communities after harvest and throughout the growth cycles of our forests.
- We have conducted studies⁶ to measure how much our harvesting practices release carbon in the forest soil — where around 50 percent of all forest carbon is stored — and found no significant impact on carbon levels from clearcutting.

³ "Experimental evidence indicates variable responses to forest disturbance and thermal refugia by two plethodontid salamanders," *Forest Ecology and Management* (2020)

⁴ "[Diversity and abundance of landbirds in a Northeastern industrial forest](#)," *The Journal of Wildlife Management* (1997)

⁵ "[Plant community responses to a gradient of site preparation intensities in pine plantations in the Coastal Plain of North Carolina](#)," *Forest Ecology and Management* (2011)

⁶ "[Soil Carbon Storage in Douglas-fir Forests of Western Oregon and Washington Before and After Modern Timber Harvesting Practices](#)," *Soil Science Society of America Journal* (2019)

SUPPORTING RESEARCH – *continued*

- One of the longest-running research projects⁷ to understand the efficacy of contemporary forest management practices in protecting water quality occurs in Washington's Deschutes River Watershed. Since 1974, Weyerhaeuser has measured streamflow, sediment, turbidity and water temperatures in the watershed and shown that the current riparian buffers we leave after harvest, along our road management practices, maintain water quality. Similarly, as part of a large, collaborative effort involving multiple state and federal agencies and several universities, we completed a long-term water quality study⁸ in Oregon's Trask River Watershed. That study examined the relationship between water quality criteria — such as sediment, temperature and turbidity — and timber harvest, road construction and log hauling. The research team found that our forest management practices ensure we meet Oregon's state water quality standards.

FREQUENTLY ASKED QUESTIONS

How can cutting down trees be sustainable?

Forestry is sustainable when we grow at least as much as we harvest — and we do. Each year, we cut an average of only 2 percent of our forests, and we plant about 130 to 150 million tree seedlings to replace the ones we cut. That means in any given year, the other 98 percent of our forests are in various stages of growth and maturity. We believe trees are one of the most sustainable, versatile resources on the planet, and we intend to make sure our forests last forever.

Is clearcutting the same as deforestation?

No. Deforestation happens when forests are permanently cleared and removed, but we manage our forests on a continuous cycle of growing, harvesting and replanting. We've been doing that for more than a century, often across multiple generations of forests, including on more than 400,000 acres of the original land Frederick Weyerhaeuser purchased in 1900 that we continue to manage today. More broadly, total forest area in the United States has increased around 6.2 percent since 1920.⁹ And though it may seem counterintuitive, one of the best ways to prevent deforestation and land conversion is to foster a strong wood products market that encourages continuous, fully sustainable forest management. The reality is that the vast majority of our forests stay as forests, and we intend to keep them growing for generations to come.

Isn't cutting trees bad for climate change?

As trees grow, they absorb carbon dioxide, release oxygen and store carbon. When we cut and convert trees into long-lived wood products, that carbon remains stored for the life of the product. And when we replant our forests, these new trees start removing more CO₂ and other greenhouse gases from the atmosphere. Together, sustainable forests and wood products are a dynamic duo and provide a much-needed natural climate solution.

But isn't clearcutting damaging to the environment?

We plan and execute our harvest operations carefully to ensure we safeguard the environmental health and productivity of our forests. We follow best practices, developed through years of research and partnerships, along with strict guidelines to minimize soil disturbance and protect streams and other bodies of water — including clean drinking water for nearby communities. Once we select the harvest unit, we carefully identify areas that need protection. We minimize road building as much as possible; if we need access to a harvest site, we carefully engineer roads to prevent erosion and protect fish habitat. We leave tree buffers along waterways and other sensitive areas to prevent sediment from entering streams, and we take special measures to protect rare, threatened and endangered species.

Doesn't clearcutting increase the risk of landslides?

Landslides are a common and naturally occurring geologic disturbance in forests with steep topography. We recognize that forests do play an important role in supporting overall soil stability on steep slopes by maintaining root strength and preventing the occurrence of shallow landslides. To reduce this risk, our team of professional geologists follows a rigorous geological evaluation process to ensure our forest management operations don't increase the likelihood of triggering landslides.

⁷ ["Stream temperature patterns over 35 years in a managed forest of Western Washington,"](#) *Journal of the American Water Resources Association* (2015)

⁸ ["Summer stream temperature changes following forest harvest in the headwaters of the Trask River watershed, Oregon Coast Range,"](#) *Ecohydrology* (2019)

⁹ "U.S. Forest Resource Facts and Historical Trends," USDA Forest Service (2014)