

The benefits of mulch clearing
by Frank Vogler

Say you have a seriously overgrown field or lot, or a massive pile of tree crowns, or maybe a tangled snarl of beetle-killed pines — or any number of brushy, scrubby scenarios requiring a serious mechanical solution. Traditionally, this has meant you would embark on a tedious, destructive and expensive process — one that usually involved a permit and site plan, hours of inefficient hand work, a bull dozer and/or track hoe to rip and push vegetation, additional track-hoe hours for burning (if allowed), a dump truck for hauling stumps, and then? Well, you'd only be half way home.



Before and after: For Luba Sharapan and Erik Haagensen in Greene County, Tenn., forestry mulching created this west-facing knoll on their property.
photos by Frank Vogler

You'd have a muddy, topsoil-less swath ringed by expensive silt fencing and retention structures that would require constant maintenance. You might believe the best way to remedy the situation would be to spray everything with a noxious mixture of fertilizer, glue, liquid lime and

seed, at a cost of around \$2,000 per acre, with the hope that something will "come up." Maybe you can't afford to hydro-seed, so you decide to do it the old-fashioned way: on your own. After three or four tries, dozens of bales of straw, complaints from neighbors and perhaps a visit from local Department of the Environment and Natural Resources officials, you finally begin to see those delicately reassuring blades of grass poking through the straw-covered landscape. You breathe a sigh of relief — but then, it just doesn't rain, or it rains too much. It all begins to seem reminiscent of the ubiquitous pink bathtub ring in Dr. Seuss' *The Cat in the Hat Comes Back* ... only without Little Cat Z to pop out in the end and clean everything up.



Seeing the forest for the trees: [Forestry mulching preserves and builds the topsoil layer, doesn't involve burning or create brush piles and recycles the existing biomass.](#)

Why — with all the outpouring of human energy and interest in green building — has no truly thoughtful strategy for green clearing emerged? But it has. It's called forestry mastication, or in layman's terms, mulching. In fact, if you've traveled in parts of Buncombe, Madison and Henderson counties and noticed fresh carpets of mulch along the highway, you've witnessed the process.

Forestry mulching is accomplished with a variety of equipment, usually tracked, and specially fitted with rotary cutting drums that resemble giant rolling pins with teeth. Unlike chippers and tub grinders that involve additional removal and handling procedures and associated costs, these machines just drive around and eat. The idea is simple: Grind vegetation in place, flush with the ground, leaving a protective covering of mulch. The entire process happens in a single step, and topsoil is left virtually undisturbed.

In addition, the mulch layer retards future growth. As the mulch decays, soils receive nutrients from the returning biomass. It is the very essence of sustainability when compared to traditional methods. It can be done on steeper, more difficult terrain, as well as in delicate riparian zones that would preclude the use of traditional clearing methods altogether. When applied as a forestry practice, the process even resembles an accelerated version of succession, with under-story returned as food for more desirable but slower growing tree species. This application can literally transform logging cuts from unsightly wastelands to property improvements, greatly diminishing the possibility of erosion along the way. Likewise, when the practice concerns the protection of valuable resources like timber, wildlife and homes, mulching is of equal value.

Leon Knoz, wildfire/urban interface expert and Firewise Coordinator for the Smoky Mountain region of Tennessee, now recommends mulch clearing as the preferred method for fire-buffer creation.

Mulching is also the obvious choice for pasture restoration, as the ultimate goal is not just to clear the land and plant forage, but improve soil fertility. On this matter, regional agriculture guru **Joel Salatin** writes: "Wood wastes are, I believe, a poorly tapped resource in speeding up this building process. We piled wood chips on some grass and removed it a year later. Today, that spot still grows unbelievably lush grass and has earthworm castings two inches high."

In order to verify the results of Salatin's assertion, we conducted a slightly more controlled experiment of our own. We mulched an acre of south-facing former pasture covered with 18- to 20-foot closely spaced pines. Beside this area, we marked out a nearly identical acre and cleared it with a small bulldozer, taking special care to minimize the dislocation of topsoil. Two years later, the results are astonishing. Both areas are sparsely covered with grasses, clover and wild

strawberry; however, the mulched area boasts nearly two inches of rich black topsoil, the equivalent of many decades worth of leaf litter in a typical Appalachian forest. In addition, the pH level of the mulched site is higher, indicating lower soil acidity. The bulldozed acre has exactly zero topsoil, with bits of parched red earth still poking through despite having been limed, fertilized with compost and seeded in an effort to encourage re-growth and minimize erosion.



Half-way there: Sharapan and Haagensen look on as the site is cleared. Material is in "rough" phase.

It doesn't take a soil scientist to clearly see that these results are applicable not only to agricultural pursuits, but also to the region's, at times, damaging and controversial practice: development. According to the National Resources Inventory — the governing body that tracks soil conditions — millions of cubic yards of precious topsoil find their way from our ancient mountains to the sea every decade.

So why are traditional clearing methods still being used in situations where forestry mulching offers a clearly superior outcome? Is it more expensive than conventional practices, like organic foods or sustainably harvested wood products? The answer is no. Remember the practice takes place in a single step, tailored to the specific needs of the landowner, such as pasture applications or right-of-ways where Mother Nature, livestock and/or required mechanical

practices like bush hogging finish the job at little or no additional cost. Or the mulch can be left finely and evenly ground for a neat, finished look appropriate for real-estate presentations or equestrian activities. In either case, it costs less than traditional clearing, requires few if any permits and no immediate maintenance. Furthermore, it can be done in adverse weather conditions that would leave other equipment track deep in the mud. Mulching equipment literally makes its own tractable footing as it goes.

The reason forestry mulching is only now gaining a foothold is its relative newness. Industry expert **Dennis Goldbach**, operations VP at Fecon Industries (manufacturer of the popular Bull Hog mulching head), points out that the technology didn't arrive until the mid-1990s from Germany, where it was developed for agricultural applications. "The original machines were PTO-driven cutters for tractors and relatively weak compared to modern hydraulically powered units," which are capable of pushing more than 150 gallons of fluid through a closed hydraulic system in a mere minute.

Even now, the emergent nature of the technology is its only real weakness. Without industry standards or well-defined protocols, the field is something of a wild frontier. Visit Internet mulching chat rooms (if you're that bored), and you'll read hotly debated opinions surrounding topics like hydraulic cooling, tooth ware, head balancing and track performance. Many have entered the field in recent years, only to find they did not have the patience or budget to match the requisite maintenance demands and intensive nature of the equipment. In our current economic climate, some would-be providers have been unable to weather the learning process. Nonetheless, mulching is gaining a remarkable foothold in the land-management and forestry industries and will no doubt become commonplace.

For most, this is more than they care to know. They simply want the best product with the least possible damage to their bank accounts and their property. Many converts to mulching are the region's numerous transplants and second-home buyers. They may be skeptical of traditional practices and have the time and resources to investigate alternatives.

Potters **Erik Haagensen** and **Luba Sharapan**, owners of MudFire Clayworks in Atlanta, Ga., recently decided to have their property mulched as part of the site prep for their modest mountain getaway. They wanted to be able to position their house to take advantage of the dramatic mountain views without burning, creating erosion problems or pulling unnecessary permits. At the end of their rain-soaked visit, 90 percent of their target area was rough-mulched, and Haagensen gave the nod to put in one more day with a Fecon FTX 140 steel-tracked mulcher.

"We were excited to build on our new hilltop, but more than a little sickened at the thought of letting loose the dozers, leaving a big naked scar and creating a runoff nightmare," says Haagensen. "It was amazing how quickly V & V opened up our building site and viewscape with their mulching equipment. They left select hardwoods standing that'll spring up quick without having to compete with all the weed trees and invasives that were taken down."

He continues, "The mulch is thick, springy and smells wonderful. We like walking on it and thinking of how its feeding the soil and getting it ready for the fruit trees and vegetable gardens we'll plant in a few years. We feel very lucky to have learned about mulching as an alternative to traditional clearing methods. It allowed us to enhance and sustain the natural habitat and not destroy it, so we could feel good minimizing our impact while building."

Mulch Clearing

- Single-step process
- Seldom requires permitting
- Preserves and builds topsoil layer
- Low ground pressure
- Creates natural erosion control
- Workable in wet and snowy weather
- No burning, chipping or hauling
- No windrows or brush piles
- Recycles biomass

- Extremely selective
- Visually appealing
- Sustainable
- Less expensive

Traditional Clearing

- Multi-step process
- Requires permitting and site plan
- Damages and dislocates topsoil layer
- High ground pressure (compaction)
- Requires additional erosion control (silt fencing and catch basins)
- Highly weather dependent
- Often necessitates burning and/or chipping and hauling
- Leaves windrows and brush piles
- Discards biomass
- Damages nearby trees and vegetation
- Unsightly scarred appearance
- Unsustainable
- More expensive

[Frank Vogler is a partner in V & V Land Management and Resource Recovery LLC, promoting sustainable land-management practices in the Southeast. He believes that one of the biggest impacts you will have upon future generations are the decisions you make with regard to your land.]