

Grass or timber?

by Glenda Wallace

Think you'd rather fight a wildfire in the grass than in timber? A running grass fire can appear pretty tame when viewed against the backdrop of a crowning timber fire, with its 200-foot flame lengths and towering plumes of smoke.

Yet more firefighters are killed in grass fires than timber fires. One has only to think of the young men running up the grassy hillsides of Montana's Mann Gulch to understand some of the reasons why.

"There are three types of fires," says Shawna Hartman, information officer on the Black Cat Fire, which has blackened the golden hillsides from Frenchtown to nearly Missoula. "(1) Grass fire, (2) ground fire in the timber, and (3) a crown fire. Crown fires are pretty dangerous. The only way we fight a crown fire is by air. If it's gone to the crown, the firefighters pull back. Your grass fire, generally we use a lot of back burning on grass fires because they're moving so fast."

Hartman says most of "the black" obvious to motorists on Interstates 90 and 93 is a result of the wildfire, but that local crews did do some burnout operations around structures. This speaks to the advantages of a grassy terrain.

"Usually with grass fires, once it burns through, it's done," says Hartman. "It's good black. It won't burn again. It can be your safety zone. Everything in its path is done."

Not so with a timber fire. "It can burn through, but you have this log sitting there smoldering for weeks or until the snow falls," she explains, "so for mop-up crews, part of the process is to find all those logs and brush, the hotspots that have been smoldering and that can kick back-up again. With grass fires, you can find cow pies smoldering, and they can smolder for days."

Hartman refers to grass as one-hour fuel.

"In one hour, they can burn after a significant rain. Right now, we've had rain in the last couple days, but it's going to kick-up as soon as the first sun gets to those one-hour fuels. Now the big logs, the 100-hour fuels...first of all, they dry out the slowest and burn the longest. The rain didn't even dampen those fuels."

Hartman hails from the Midwest and knows of what she speaks. Several years ago, grass fires in Oklahoma and Texas destroyed homes, even when made out of brick. Firewise principles teach that it's "the little things" that destroy homes, such as debris on roofs and/or in nooks and crannies of decks and attached outbuildings—any place where a spark or ember could land and linger.

"Grass fires are fast fires, so you don't get the plumes of smoke quite as much with a timber fire, with their black ominous-looking clouds," says Hartman. "Usually, they're wind-driven. When you have a ground fire, when the fire is in the understory burning everything on the ground—we refer to it as the duff, the needles and dead things on the ground--it smolders around. Those fires aren't as affected by the winds. But when it gets into the ladder fuels, which is the brush and the small trees and it climbs

into the timber and crown, then the forest fire becomes a crown fire.”

She continues, “Most fires will change through fuel loads, and that is something noted in the firefighter briefings, because when fire hits grass it can take off. It’s noted because a fire can really jump in acreage. If it’s timber all the way to where they’re working, or it’s timber and it will hit grass, they need to know what to do.”

Citing the fatal Mann Gulch Fire of 1949 as an example, Hartman talks about slope on fire behavior.

“Fire goes uphill faster. It preheats the fuel right up above it. If the wind is pushing it uphill, the heat will move before the fire and dry out the fuels above it. If it’s creeping downhill, the air *will not* preheat downhill. And if you’re a firefighter with fire below you, that’s a Watch Out Situation.”

Though firefighters prepare for every contingency, Hartman admits there can be a difference in tools. “You might carry a chain saw for a timber fire, but if you know [the fire] is completely in grass.... Some of my favorite tools in Missouri were a leaf rake and a leaf blower. I laughed at them when they first gave me those tools. They said, ‘You aren’t going to need a Pulaski here, honey.’ You need this: a leaf blower and a rake. You can rake grass back into the fire.”

When working in timber, firefighters use the “heavier equipment, chainsaws, Pulaski’s with axes, the big McLeod with its rake and hoe,” she says, “so you can move the logs and limbs and dig deep into the fuel, the needles and duff.”

Water is also a key tool in fighting grass fires, but the water comes with the fire crews, rather than from the air. “Where it’s accessible,” Hartman explains, “engine crews will go up and run hose-lays and use the pumps on their trucks and be re-watered by the tenders.”

She continues, “A lot of times, we can also put down a line of foam, which we can make from the engines. We put it down right before the fire comes to the line, and if the fire is not raging, it will stop the grass fire. In timber, when you can’t get down to the bare soil, if you put water on top of the needles, the fire will creep under the line. It can happen with grass fires, particularly if you have a buildup of grasses over time.”

Though the hillsides are black today, those grasses will come back just as green next year, she said.

The fresh green grass will create an attractive contrast with the black of the burned forestlands next spring. “It’s very patchy. That’s what nice about it, the way it will come back. As it heals itself, the grass will turn green first and you’ll see that mosaic pattern.”

She concludes, “Fire is a natural cycle in the timber as well as the grass. If you have years and years of build-up in the prairie, it’s going to burn hotter and more intense than in those places where it has burned every year.”

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