

Burning slash piles; what's the best way to go about it? (by Peter Kolb)

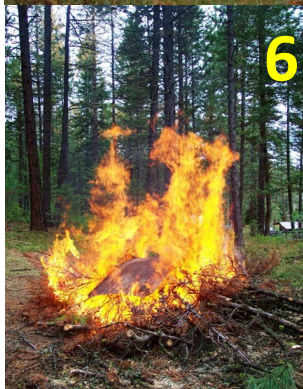
Woody debris generated by logging, thinning or fire hazard reduction usually ends up as something the landowner must deal with either directly or after the contractor has met the minimum fire hazard reduction rules of the state of Montana. Traditionally burning has been a common and preferred method, however, fire liability laws, smoke generation ordinances, and perhaps a landowner with limited fire experience might make this a questionable tool to use. It can be the least expensive, useful and for some (me included) a most enjoyable land management practice. There are some experiential tricks that can be useful to know for the best results.



Pile size is a constraint determined by who and what method of logging/thinning is used. When hand piling, it is most efficient to create numerous smaller piles than one large pile, since dragging debris can be time consuming and exhausting. Pictured on the left (1) is an average pile size that the branches from one 14-20 inch diameter ponderosa pine will create and an easy burn size that creates only a small soil scorch spot. Pictured on the right (2) is the average pile size generated by mechanical logging that uses whole tree harvesting and delimiting at a landing. It is often the size of a cabin. For either size it is very important that the pile is not densely packed so that aeration dries out the material. Larger logs can take up to a year to dry out whereas smaller branches and needles can dry out over several months depending on temperature and sun exposure. Compacted piles with soil and soil surface organic layers pushed into them may never dry resulting in poor combustion and thick acrid smoke when ignited (3).



The location of the pile is important as an efficiently burning pile generates significant heat. Smaller piles (4) should be at minimum 15-20 ft from green trees and larger piles 30-40 feet (5).



Overhanging branches and crowns are also a concern as the convection column of burning gases will reach 3-5 times as high as the slash pile is tall, and scorch tops or ignite dead branches or lichens (15). Smaller piles can be manipulated by placing a sheet of corrugated metal over the top (6) which prevents tall convection columns. Such a technique also can facilitate a cleaner burn by keeping heat in the pile—and also helps when trying to burn out stumps that may interfere with trails or lawns. Metal sheets should only be placed on the pile after a hot clean fire is established, which is indicated by a substantial flames and limited smoke production. Larger piles are much harder to manipulate in this way simply because of their size and the energy they release. In mountain valleys smoke from one smoldering fire can make life miserable for everyone. Typically there will always be some “start-up” smoke for the first 15-30 minutes, though



One actively burning a well constructed pile will produce next to no visible smoke until it burns down to a few remaining pieces.



Most fires will burn hollow, leaving a ring of debris(7,8,9). This material should be repiled to the center when there is still a deep bed of red hot coals. This should be done several times by hand during the course of a day for small piles (10) and every day over several days for large piles with a tractor (12). Once reduced to a bed of coals, a small pile might remain hot and smoldering for a day or two, and a larger pile for a week. If done well, only a flat bed of white ash and black charcoal pieces will remain (11). Burn sites from small piles can be very effective site preparation for tree seedling recruitment (13,14) and strategically placed and created to enhance natural regeneration. Larger burn pile sites are also good tree seeding recruitment sites but must have deep ash and the burned mineral surface scattered and turned or they will remain unproductive weed colonized scars that last 30+ years.



The utility of multiple piles is that they can be burned with little to no risk at the end of summer when rain or snow is (has) fallen, and open burning is still allowed. In spring I try to only burn fine debris piles as large diameter debris remains wet after winter and will produce lots of smoke as it slowly smolders, and potentially remain active into fire season. To best



start burn piles only use diesel fuel (sparingly) and never gasoline as it tends to explode. Crumpled newspaper placed under a clump of fine fuel concentration with a little diesel on it is a great ignition wick.

For safety a loose wool shirt is ideal as wool is fire and heat resistant (though cotton also works). I also wear a wool ball cap because the radiant heat from a fire can be intense and lowering my head allows the bill to shield my face. A hard hat is recommended when falling debris is a risk. Wear leather boots (not rubber or synthetic), leather gloves and only cotton or wool (including undergarments). Make certain you have a burn permit, and always watch the weather!

