United States Department of Agriculture

Natural Resources Conservation Service

after the fire

Hand Raking

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CAUTION: After a fire many trees are weakened from burning around the base of the trunk. The trees can fall over or blow down without warning. Shallow-rooted trees can also fall. Therefore be extremely alert when around burned trees.

What is a hand raking?

Hand raking is a treatment performed by a crew of laborers using hand tools such as rakes, hoes, Pulaskis or McLeods to scarify or loosen the upper part of the soil profile. It can also be accomplished with light equipment such as an all terrain vehicle (ATV) pulling a harrow where there is sufficient access for the equipment and slopes are less than 30 percent.

When is hand raking used?

Hand Raking or light scarification is used on severely burned slopes with hydrophobic soil properties that will also be treated by mulching for erosion control, and may also include seeding to reestablish vegetation. It is primarily applicable to areas that are too small for efficient use of large machines, or are not accessible by machines due to slope steepness or presence of obstructions. The soil must be fairly loose to begin with such that it can be tilled with hand tools or a light harrow.

The primary use of this practice is to improve seedbed conditions immediately ahead of a seeding operation.

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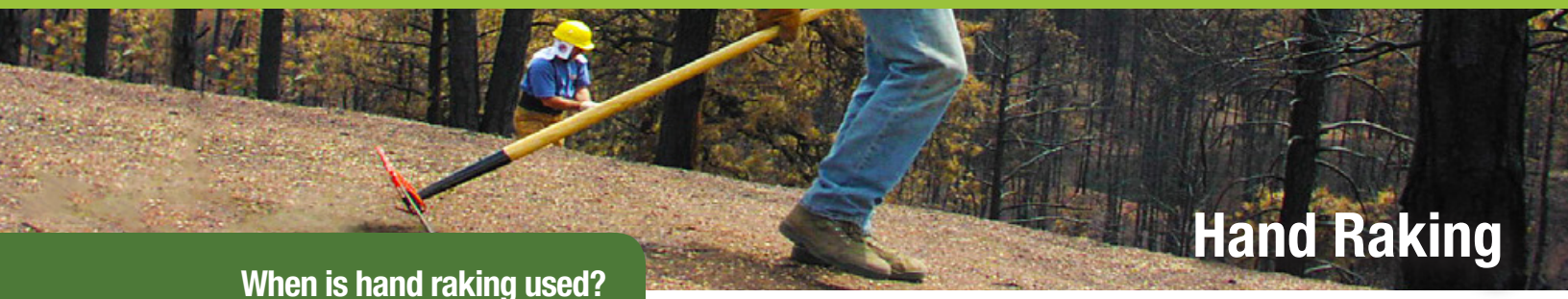

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When is hand raking used?

Hand raking does not till the soil deep enough to have any appreciable effect on infiltration of or reducing runoff. In cases where the fire has induced hydrophobic characteristics that exist only at or near the ground surface hand raking may have some benefit to reduce the hydrophobic effect by mixing affected soil with unaffected soil from deeper in the profile.

Hand raking increases the erodibility of the soil so it must be used in combination with erosion control treatments, such as mulching. Hand raking is not

How is hand raking performed?

Laborers outfitted with rakes, hoes, Pulaskis, or other rugged hand tools, and appropriate personal protective equipment, loosen and mix the soil to a depth of 2 to 4 inches over the areas to be treated. On slopes of less than 20% with few obstructions light scarification can be accomplished with an ATV pulling a tined harrow.

The entire slope may be raked to achieve the maximum effect. To reduce treatment costs on large areas hand raking can be accomplished in 8 foot wide strips spaced uniformly over the slope. A contour line is marked about 1/3 the way down the slope to establish a key line.

The strips are marked and raked parallel to this key line. The maximum recommended spacing between strips is shown below:

Slope gradient (percent)	Raked strip spacing (feet)
< 5%	160
5 - 10%	120
10 - 20%	60
20 - 30%	30

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