

POST-FIRE RESTORATION

Mendocino Fire Complex 2018



Photo Courtesy of Eric Hongisto



PREPARING FOR WINTER FOLLOWING FIRE

Lake County along with our neighboring communities have been significantly affected by the recent fires. Much of the land that burned is located in sensitive domestic water supply drainages or in areas of steep terrain susceptible to erosion. Burned watersheds erode in different ways, depending on soil type, climate, vegetation, burrowing and grazing animals, topography, and human activity.

Land owners and managers may be concerned about what might happen to fire damaged soils, slopes, and waters when the rains begin to fall. They may also wonder what can be done now to minimize the effects of erosion processes before any storm events. Still others are questioning whether or not to remove fire damaged or destroyed trees and other vegetation now or to wait.

Lake County, with the help of the State Of California Water Boards and other partners, will be assessing fire related damages to natural resources and watershed with land owners and managers in the coming weeks ahead. If you are concerned about the possibility of erosion, mudslides, flooding and/or other related rain impacts following the fire, then following the 10 Basic Rules below may help you prepare and safeguard your properties and families during storm and runoff events.

10 BASIC RULES

1. Keep it under cover. Protect existing plant cover and establish vegetative cover on all bare or disturbed soil and slopes around your home and other property improvements before the winter rains. Plant materials and different types of mulches can be used to protect soil and slopes from the impact of falling rain and storm water runoff. **Note: Seeding and/or mulching is not recommended in wild land areas**, only on disturbed soils on fire breaks, around structures, and alongside access roads and driveways. Grass and/or plantings should be native or non-invasive non-native plant materials.
2. Do not disturb soil and slopes during the rainy season. Slopes and soil are more susceptible to instability and erosion when vegetation is removed or disturbed and when soil becomes saturated.
3. Drainage facilities and/or potential runoff impacts on private roadways, long driveways and even fire breaks, especially in fire damaged areas, need to be evaluated. Runoff control treatments including protective release points may be needed to protect down slope areas from erosion, slope failure and flood hazards. Use the following the 4-D formula when dealing with drainage and runoff issues.
 - a. **D**ecrease volumes and/or velocity of runoff by providing velocity dissipation (rock or other prepared outlets) at culvert and drain outlets and breaking up large volumes of runoff coming from roof tops and landscape into smaller less erosive forms.
 - b. **D**etain runoff and meter over time or store for later use to lessen impact on saturated soil and slopes during peak storm events.

This factsheet has been modified from its original version provided by Yuba County Community Development and Services Agency in Response to the Cascade Fire 2017.

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10 BASIC RULES CONTINUED

- c. Dissipate runoff wherever concentrated flows come in contact with bare soil and/or steep slopes by installing practices (grass, mulch, rock aprons, etc.) that spread runoff and help reduce both erosive capacity of soil and runoff volumes. Install velocity dissipaters at all culvert and drain outlets to prevent soil erosion.
 - d. Divert runoff if all else fails. **Use this “D” with extreme caution.** It may be helpful to re-route runoff and drainage away from unstable slopes, eroded areas, unprotected soil, etc.
3. Monitor and maintain all existing and planned runoff, erosion and sediment control measures (including vegetative cover) before and throughout the rainy season. Correct deficiencies as soon as possible. In some areas, leaf litter may be a serious problem for roof, driveway and landscape drainage systems because of all the fire and heat damage done to the tree vegetation this year. Properly designed and installed trash racks, debris barriers, gutter guards and other similar devices will help to reduce maintenance and allow home and property drainage systems to function properly.
 4. Consult with a professional before using emergency/temporary practices such as sand bags, brush & slash, plastic sheeting, and hand dug drainage ditches, etc. For example: covering slopes with plastic sheeting or dumping brush into gullies or other eroded areas is almost always the wrong thing to do. An improperly designed and/or placed emergency practice can be worse than no practice at all. Additionally, emergency measures may cause new hazards or problems, and provide a false sense of security.
 5. Prune or remove high hazard fire damaged trees capable of falling on to living structures or roads before winter storms. **Note: Don't remove healthy or slightly damaged trees unnecessarily.** Tree root systems are still holding soil and slopes in place and tree cover is protecting soil from impact of falling rain as well as reducing winter runoff. Consult with Cal Fire and/or a registered professional forester for assistance.
 7. There is an increased threat of rock fall in some areas because of damage to vegetation and shallow rocky soils and slopes in affected watersheds. Debris barriers are effective in capturing smaller rocks but larger rocks will require more substantial measures. If there is a threat of large rocks releasing from slopes on your property or adjacent properties then seek professional assistance.
8. Get professional help with design and installation of any temporary or permanent practices to control runoff and/or prevent an erosion problem.
 9. Work with neighboring property owners when determining permanent solutions for drainage and runoff issues. Runoff normally extends beyond property lines. You may be liable for both controlled and uncontrolled releases of collected runoff onto down-slope neighboring properties if you decide not to be concerned with potential off-site impacts.
 10. Be prepared and don't stay in your home when it becomes unsafe. Have a home and neighborhood evacuation plan. Have an emergency plan for your pets and livestock as well. Stock pile emergency supplies including sandbags, a supply of sand, straw, etc. Pay close attention to weather forecasts, flash flood and storm warnings, water levels in nearby creeks, etc. throughout the winter. Evacuation plans should always include at least one alternative escape route and a list of important/emergency numbers, including numbers of neighboring property owners.

Roadway related problems, flooding, existing gullies and eroded areas, including stream bank erosion are all likely to appear or get worse this first winter following fire. Sediment levels in creeks and waterways are expected to rise, reducing channel capacities and increasing the likelihood of flooding on properties and downstream. **Note: If flooding and or mudslides occur and impact road surfaces do not attempt to drive over flowing water or mud.**

Some signs of impending danger from debris flows, landslides and severe erosion and/or imminent flooding include: an intense storm event (1-2" per hour), especially following previous rainfall that caused ground saturation; water flowing over the landscape where it hadn't appeared in previous winters; leaning or falling trees; tension cracks along the top edge of slopes and along driveways and roads; seeps and/or increased spring activity in slopes; severely disturbed and unprotected slope areas caused by firefighting effort or from recent activities to remove fire damage trees and/or other slope holding vegetation.

For more information, helpful publications, erosion and sediment control, drainage control and road maintenance guides and/or other best management practice information for your property you can visit:

UC Agriculture and Natural Resources Recovering from Wildfire "Landowner's Guide to Fire" webpage available at: http://ucanr.edu/sites/postfire/Landowners_Guide_to_Fire/

For more information contact:

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