

# POST FIRE RESTORATION

## “Dos” and “Don’ts”

USDA Natural Resources Conservation Service  
and the Mendocino Fire Recovery Information Group

### **DO’S:**

**DO** Gather as much information as possible from Cal Fire, local fire district officials, Natural Resources Conservation Service (NRCS), University of California Cooperative Extension (UCCE), Mendocino County Fire Safe Council (MCFSC), Inland/Coastal Mendocino Cooperative Weed Management Area (IMCWMA) and/or local fire restoration consultants, professional foresters, range managers and plant experts regarding reducing fire hazard and making your property fire safe when planning your property restoration.

**DO** Consult with the Natural Resources Conservation Service and University of California Cooperative Extension, private registered professional foresters (RPF), Certified Range Manger (CRM) and/or land restoration consultants before starting any large scale landscape, slope or soil restoration effort on areas damaged by wild fire. *Note: The Mendocino Fire Recovery Group (MFRIG) is a collective of agencies, non-profits and individuals that are concerned with the protection and recovery of Mendocino County’s natural resources. NRCS is a non-regulatory federal agency under the U. S. Department of Agriculture whose mission is to “Help People Help the Land”. All information provided or resource data collected on private properties by NRCS is kept confidential and only shared with the property owner or legal agent unless NRCS has written permission, by the property owner, to release the information to others.*

**DO** Evaluate and map out locations of existing subsurface drainage, culverts, crossings, irrigation and utility facilities on your property including: underground pipe drains, road culverts, irrigation systems, utilities, etc. Determine if these are still operable and/or degree of damage, if any. *Note: Many underground plastic culverts and irrigation lines may have melted, been destroyed in the fire or by the fire fighting effort.*

**DO** Install sediment control measures prior to the rainy season, such as straw wattles, mulching, plantings, slash, sediment traps and/or other properly designed and located sediment control measures, if necessary, and as directed by NRCS, a Certified Professional in Erosion and Sediment Control (CPESC) specialist or an RPF or CRM experienced in erosion control. *Note: Sediment control measures will help to prevent eroded and displaced soil from entering streams, roadside ditches and waterways, maintain road systems and help protect water quality and water supplies. Consult with licensed foresters, Rangeland managers, landscape contractors or other licensed contractors with erosion and sediment control experience for design and installation assistance, such as a Certified Professional in Erosion and Sediment Control (CPESC) specialist. If straw mulch is used it should be rice straw or weed free.*

**DO** Coordinate restoration efforts with neighbors and/or road & homeowner associations.

**DO Re-plant damaged landscapes** with drought tolerant, fire retardant native plants with re-sprouting ability. Use planting stock and/or collected/purchased seed that is native to the area and is from a locally collected source. On forested lands, conifer seedlings (redwood and Douglas fir) should be ordered in advance from forest nurseries that have collected seed from this seed zone (Consult with MFRIG website for a list of plants, nurseries, seed sources, and (oak) regeneration techniques, as well as review the four seed zones for conifers used in Mendocino County.

**DO Obtain any necessary permits** before cutting down trees, performing any major land grading activity, building retaining wall, constructing a permanent sediment or erosion control structure in a watercourse, or doing any work in a riparian area, wetland, stream course or other natural area. *Note: Permits and/or consultations may be needed from California Dept of Fish and Game, U.S. Fish & Wildlife Service, California Regional Water Quality Control Board, U.S. Army Corp of Engineers, and NOAA/National Marine Fisheries Service.*

**DO Monitor and maintain fire and fuel breaks** that may have been created by fire fighters on your property. Water bars/breaks should be provided and maintained on these fire control measures so that runoff water does not concentrate and cause erosion. *Consult with Cal Fire regarding maintenance assistance of fire and fuel breaks constructed by fire fighters on your property and review Cal Fire prescriptions on the website .*

**DO Monitor and maintain** all existing and planned erosion, sediment, and drainage control measures, including vegetative treatments, before, during and after all future rainfall events. The first year is critical for success. Correct deficiencies as soon as possible. *Note: One of the main reasons why recommended treatment practices fail following installation is the lack of long term maintenance by the landowner or responsible party.*

**DO Hire and/or consult with licensed foresters and contractors,** preferably ones that are certified and experienced in soil erosion and sediment control and/or native landscape restoration, for design and installation assistance of vegetative and/or structural measures needed to restore slopes, soils, proper drainage conditions, landscape and native plant community.

## **DON'TS:**

**DON'T Be too quick to remove fire damaged vegetation,** including trees that were not completely burned. Many of the damaged and scorched native plants will re-sprout and come back, including redwoods, and oak trees that were severely burned. *Note: Consider pruning first before removing the entire plant. Consult with professional foresters and NRCS for further advice.*

**DON'T Place loose debris, prunings, or discarded fire-damaged vegetation in gullies,** drainage swales or watercourses, over stream banks, etc. in an attempt to protect bare soil without first consulting with erosion control specialists. Piles of brush will prevent plants from re-establishing under dense brush piles and may dislodge if in contact with concentrated runoff or stream flows, causing other problems. *Note: Removed brush can sometimes be used as mulch if chipped or spread (or crushed) thinly over the critical soil areas.*

**DON'T Plant the out of county erosion control seed mixes or other non-local seed mix.** Many mixes are designed for rangeland applications and have non-native grasses and legumes that were not intended for forest or wild land fire damaged soil/slope restoration. Based on you long-term goals, don't plant an inappropriate mixes or other non-native, invasive plants or re-seeding grasses. For a list of invasive plants to avoid as well as a list of non-invasive/native plants that are safe to use, consult the MFRIG web site.

*Note: If white ash is present, then resident seed from pre-existing native plants may no longer exist. White ash is an indicator that the fire burned very hot. Any resident seed bank in the soil was likely destroyed during the fire in these white ash areas. Re-seed these areas to native grasses and/or re-plant with native plants.*

**DON'T Use materials such as broken asphalt or concrete, inorganic debris or other objects** as an emergency or permanent erosion control measure, especially if these materials can come in contact with runoff water, natural drainages and stream courses. *Note: In some cases, rock and broken concrete can be used as velocity dissipaters and placed at the outlets of road culverts or other drains to protect the soil from erosion and washout, provided these dissipaters are designed by an appropriate professional.*

**DON'T Cover fire damaged slopes with plastic sheeting** in an attempt to prevent slope failure and protect bare or disturbed soil from next year's rainfall. Plastic sheeting will: increase runoff and the likelihood of erosion; retain moisture in the ground increasing the possibility of slope saturation and instability; and kills root systems of native plants trying to re-establish naturally. **Plastic sheeting is almost always the wrong thing to do.** *Note: Depending on site conditions, an alternative to plastic sheeting might be the use of hydro-mulch, a proper application of rice straw, or an erosion control blanket if recommended by a Certified Professional Erosion and Sediment Control (CPESC) or geo-technical consultant.*

**DON'T Control and concentrate future property drainage** and runoff without a proper drainage control design that considers proper drainage facility sizing, location and dispersal method. When ever possible, keep surface runoff in a natural "sheet" flow and incorporate practices such as vegetative cover to slow runoff and improve the water infiltration capacity of the soil. *Note: Consult with a professional forester or NRCS for general planning information on controlling drainage around your home and property before proceeding with drainage repairs and improvements following fire damage. For design and installation assistance contact a landscape contractor or certified specialist experienced in erosion and drainage control.*

**DON'T Use straw bales** (in whole bale form) as water diversion and detention devices or for sediment control in burn areas. Contrary to popular belief and experience, these devices require a great deal of maintenance and are not appropriate for most situations. Their design, location, and installation should only be done by a qualified contractor or forester certified in erosion and sediment control. Straw wattles and loose straw that is simply spread over bare and disturbed soil is much more effective in protecting soil than keeping it in bale form. *Note: Only rice or weed-free straw should be used to prevent the possibility of non-native grasses and weeds, contained in straw bales, from colonizing treatment areas.*

**DON'T Disturb the hydrophobic soil layer** that forms on some soils following fire on slopes susceptible to land sliding. Hydrophobicity is a natural phenomenon that actually gives the soil a water repellent ability that reduces infiltration and the capacity of the soil to hold water. The hydrophobic layer is normally found within 6 inches of the surface. In other areas, it may be advisable to break up this layer to aid in plant establishment and water infiltration, lessening the impacts of runoff and erosion. *For more information on soil hydrophobicity, see the MFRIG website.*

**DON'T Disturb potentially unstable slopes**, especially those in fault areas and/or with signs of previous movement or known historic instability. Disturbances such as grading, cutting, removing trees, root wads or other deep excavations will increase the likelihood of future slope failure. *Note: If these slope alterations are absolutely necessary, then consult with a registered geologist or geo-technical expert before slope disturbance/restoration activity.*

**DON'T Do what your neighbor's doing.** Every situation is unique. Your property may be different in many regards including soil type, slopes, drainage conditions, type and condition of plant cover, degree of fire damage, etc. Get expert advice and a site damage assessment, including treatment recommendations, from NRCS before proceeding with your property restoration efforts. *Note: Practices such as sandbags, plastic, straw bale basins and check dams, etc. are all temporary and require a great deal of maintenance. Furthermore, they are not appropriate for every situation and can actually make problems worse or create new ones.*

**DON'T Wait until the last minute** to plan, design and install erosion, sediment or drainage control practices that may be necessary to safeguard your home and property before next winter. *Note: The nature and extent of your restoration effort will depend on: degree of damage; time needed to get a site assessment; acquiring an appropriate plan and design; securing any necessary permits; lining up a contractor & doing the work.*

**In many cases, consider DON'T DO anything.** This may be the best solution on some properties. Doing nothing will allow nature and time to heal soil and vegetation damage naturally, especially in wild land and other natural areas. In fact, tampering with natural processes may very well delay natural recovery and re-establishment of pre-existing native cover.

This information sheet was developed by Rich Casale, District Conservationist/CPESC #3, USDA Natural Resources Conservation Service, Santa Cruz County, 2008 and adopted by Stephen Smith to Mendocino Lightning Fire. "The U.S. Department of Agriculture (USDA) prohibits discrimination in all its programs and activities on the basis of race, color, national origin, age, disability, and where applicable, sex, marital status, familial status, parental status, religion, sexual orientation, genetic information, political beliefs, reprisal, or because all or a part of an individual's income is derived from any public assistance program. (Not all prohibited bases apply to all programs.) Persons with disabilities who require alternative means for communication of program information (Braille, large print, audiotape, etc.) should contact USDA's TARGET Center at (202) 720-2600 (voice and TDD). To file a complaint of discrimination write to USDA, Director, Office of Civil Rights, 1400 Independence Avenue, S.W., Washington, D.C. 20250-9410 or call (800) 795-3272 (voice) or (202) 720-6382 (TDD). USDA is an equal opportunity provider and employer."

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