Soil Erosion Control After a Fire Event

The potential for soil erosion is an immediate and long-term consequence of wildfire. Vegetation such as grasses, shrubs, and trees that once stabilized the soil is often destroyed by fire. Under typical circumstances, roots help to stabilize soil and stems and leaves slow down water, giving it time to absorb or sink into the soil. These protective functions can be severely compromised or even eliminated by fires, leaving soil exposed on steep slopes to be washed into area creeks and rivers during a rain event. This can potentially have an adverse effect on water quality and the value and productivity of your property.

Fortunately, a number of measures can lower the soil erosion hazard, protect water quality and help restore your property's vegetation. The goal of these measures is to try to hold the soil in place until permanent vegetation is re-established, which may include covering the soil surface to protect it from washing away and reducing the amount and speed of overland water flow. Below are some tips and measures that may be beneficial in dealing with the threat of post wildfire erosion concerns.

1. **Evaluate Your Property—**Don't be too quick to remove fire damaged vegetation (unless trees or shrubs pose an imminent hazard to health and safety). Preservation of existing vegetation is critical, and many of the damaged and scorched native plants will re-sprout and come back. The fire may have created a hydrophobic (water-repellent) layer at the soil surface (see link 1 below for additional information on this topic). Determine where water and debris are likely to flow - paying particular attention to steep and barren slopes leading to waterways (drainage areas, creeks, and rivers). These are the areas to focus your erosion controls. Below are some erosion controls to consider for use on your property:
    - **Reseeding:** In many cases the existing vegetation may re-sprout and recover with normal rainfall, however if existing vegetation has been badly damaged, reseeding may help restore your landscape. See the links below for more information on this topic.
    - **Hydraulic mulching:** a mulching method that uses a slurry of shredded wood fiber that helps decrease runoff and increase water infiltration. Seed can be applied to the slurry.
    - **Wood or Straw Mulch:** a layer of mulch can reduce runoff and protect the soil from erosion.
    - **Fiber Rolls/Straw Wattles:** can be used to break up runoff flows on long slopes.

- **Erosion Control Blankets:** can be used as an aid to control erosion in critical areas such as slopes and channels and to assist in the establishment of vegetation.
- **Silt Fence:** help intercept and detain sediment from exposed soil areas
- **Rock Berms/Check Dams:** can be constructed of rock or fiber rolls and placed in small drainage ways to help reduce erosion in drainage areas
- **Contour Log Terraces:** Larger trees on the property that have been burned or cut down after the fire can be used as a barrier to runoff from heavy rainstorms.
- **Water bars:** can be installed across dirt roads and trails to redirect water and reduce erosion.

2. **Consider Hiring and/or Consulting With Experienced Contractors—** Preferably consult with contractors who are certified and have experience in soil erosion, sediment controls, and landscape restoration. They can help develop a plan for controlling erosion and the restoration of permanent vegetation.

3. **Consider Coordinating Efforts with Neighbors and Your Property Owners Association—** It may be beneficial and potentially more cost effective to come up with a common plan and coordinate with neighboring property owners.

4. **Contact Local Jurisdictions before Conducting Land Clearing Activities—**Permits or notifications may be required before conducting any improvements on your property. If fire breaks have been created on your property, you may also want to contact your local fire department to discuss your proposed work.

   You may contact LCRA at 1-800-776-5272, ext. 3597 for additional information.

For more information:

1) Details for Erosion and Sediment Controls After a Fire Event
2) What can landowners do to manage property after a wildfire: http://coastalbend.tamu.edu/Extension/Range%20Management/WidlfireMgmt/LandMgmt.pdf
3) You have just experienced a wildfire…now what? http://txforestservice.tamu.edu/main/article.aspx?id=10734