Grass Seeding to Control Erosion after a Wildfire

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Though not the most successful method, grass seeding is the most commonly used treatment to control erosion after a wildfire. Grass seed is applied to burned sites from the ground or by air with the intention of increasing vegetative cover on the site during the first few critical years after a fire and by doing so, decrease or prevent erosion.

Grasses are particularly suited for this purpose because their extensive fibrous root systems increase water infiltration and hold soil in place. Grass seeding is able to treat large areas at a reasonably low cost per acre. Seeding treatments may not be needed as often as thought and successful grass establishment can actually displace native plant regeneration.

If you decide to seed grass, know that the success of this treatment is highly dependent on the timeliness of seed application, choice of seed, applicator skill, protection from grazing and luck in getting gentle rains to stimulate seed germination before wind or heavy rains blow or wash soil and seed away. Oftentimes, the most successful grass crops are where they are needed the least – at the bottom of the hill. There are three commonly used application methods:

- *Aerial seeding* of grasses, and occasionally legumes, is typically done over large areas where erosion hazard is high and the native plant seed bank is thought to be destroyed or severely depleted by fire. Seed is applied by fixed-wing aircraft or helicopter. In some situations, it is best to drop seed directly into dry ash before any rain falls, while in others seed is best applied after the first snow so that it will germinate in the spring.

  Both of these conditions, as well as applying straw mulch over seeded grass, can reduce loss of seed to rodents, increase available moisture for germination and growth, and protect seed from being washed or blown off site. Aerial applications of seed in a timely manner after a wildfire can be difficult, as well as expensive, as there are few aircraft operators in any given area and supply may not equal demand.

- *Broadcasting seed* from all-terrain vehicles or by hand is less expensive and is commonly done in localized areas of high-burn severity where quickly re-establishing plant cover is essential, such as in riparian areas and above lakes and reservoirs. Broadcast seeding delivers a more even application than aerial seeding.

- *Hydroseeding* is an application of a slurry of water, wood fiber, seed and fertilizer to treatment sites. Hydroseeding is best used on short, steep, highly erodible slopes that have been partially or completed denuded of vegetation. It is fairly expensive and often is reserved for areas close to roads, bridges, homes and other structures. Slope lengths of 100 to 200 feet can be treated. Small landowners will need to hire out this service – check listings in the Yellow Pages under "landscape contractors."

The type of grass seed mix you use will be partially dependent on your management goals. Commercial suppliers often have seed mixes for different purposes. The key is to get a mix that will grow well in your area and suit your

needs. For example, fast-growing annual or perennial non-native grasses and cereal grains are typically used for erosion control. If wildlife habitat is high on your list of priorities, then you should choose a mix that has wildlife value.

When applying the seed, make sure you sow in two directions to achieve uniform distribution across the site. Seed is often then covered with a thin layer of straw, not hay, to prevent it from being blown away in the wind. Straw mulch can also help with soil moisture retention and decrease the amount of seed that birds and rodents feed on. The best time to seed is late fall before winter rain or snow begins. If mulching, apply certified weed-free straw at a rate of one ton per acre and anchor by punching with shovels or crimping equipment. Note that a 74-pound bale of straw will cover about 800 square feet.

Visual monitoring should be done for several years after a wildfire. Temporary fencing may be necessary to keep grazing livestock and wildlife and/or vehicles off of burned areas and riparian zones during recovery periods. In some areas, elk grazing is as problematic as cattle grazing, and the use of the more costly high fences that exclude elk needs to be considered. Elimination of grazing for two years was judged to be very important for achieving hillslope stability.

Contact your local cooperative extension or natural resource conservation service office for recommendations of grass seed mixes and application rates that do best in your area.

For grass seed mix recommendations for the inland West, go to After the Burn: Assessing and Managing Your Forestland after a Wildfire – pgs. 66-67.

For more information on grass seeding to control erosion after a wildfire go to After the Burn: Assessing and Managing Your Forestland after a Wildfire – pgs. 65-69.