



Streamline

Planning Consultants

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Conserve Your Soil – Stop the Mud

Do you have a mud problem on your lot? If you have bare soil on your land, the answer is yes. Much erosion goes unseen, even if you don't see mud on your site. Few people realize the U.S. loses an estimated 4 billion tons of topsoil per year. While soil erosion can be messy, it also damages and reduces the amount of precious topsoil you have. Muddy areas and eroded areas are prone to compaction, which results in less air, water, and nutrients available for plant growth. Less plant growth means more erosion. Compaction also means rather than entering the soil, water runs over the surface (runoff), causing more erosion. Erosion also causes sedimentation (pollution) of waterways and hurts aquatic wildlife. As a result, forty percent of all U.S. waters are not fishable or swimmable.



You can be your own restoration ecologist through several simple steps (see pictures on reverse): 1) Stop water from running



onto the uphill perimeter of the damaged site, diverting it to a vegetated area, using: *a.* a lined or mulched ditch, *b.* a mulched berm, *c.* a row of straw bales fit tightly together, or *d.* a row of sandbags; 2) Mulch the site with several inches of straw or an erosion control blanket; this absorbs raindrop impact and slows runoff; 3) Stop sediment-laden runoff by installing: *a.* silt fence, *b.* fiber rolls (straw wattle), *c.* gravel bags, or *d.* a straw bale barrier at the downhill side of the erosional site. To permanently restore the site, sow native erosion-control grass seed on the erosional area for permanent vegetative protection (see reverse). An erosion control blanket or mulch should be applied over the sown area.

Many failed erosion control sites can be seen along roads or on construction sites. Failure usually results from not following the guidelines set forth for a particular erosion or sediment control method. These guidelines can be found under section three of the CASQA Construction Handbook at: <http://www.cabmphandbooks.com/Construction.asp>. Erosion control seeding is often improperly applied or improperly maintained. Be sure to match the species of plants with your soil pH, soil fertility, micro-climate, and elevation. Seed establishment often requires soil preparation, as well as post-emergent watering. Finally, using a mix of plant species will ensure that niches are filled, different soil depths will be reached, and failure of one species won't cause failure of the whole soil restoration crop.

Erosion Control Products

United Rentals (Eureka) @ 442-9378

Mulches & a Few Erosion Control Products

Ace Hardware (McKinleyville) @ 839-1587; Miller Farms (McKinleyville) @ 839-1571; Mad River Gardens (Arcata) @ 822-7049; Pierson Garden Shop (Eureka) @ 441-2713; Fortuna Feed (Fortuna) @ 725-3333; Hohstadt Garden Center (Whitethorn) @ 986-7676

STREAMLINE PLANNING CONSULTANTS

www.streamlineplanning.net

1062 G St. Suite I, Arcata, CA 95521

Ph (707) 822-5785

Fax (707) 822-5786

The following pictures illustrate some lessons in erosion control. Figure 1 shows some highly erodible



Figure 1. Hoodoos in steep ash terrain.



Figure 2. Mulch and wattles on steep road cut.



Figure 3. Straw wattle application.

volcanic ash and silty soil plagued by rill erosion called “hoodoos.” Figure 2 portrays a nearby hillside covered with mulch that included glue and erosion control seed. On top of these measures, straw wattles have been employed every six feet to effectively reduce the slope length. This slope length reduction



Figure 4. Sandbag berm.

decreases the distance and speed water can run, which, in turn, reduces scour and helps water infiltrate. Figure 3 shows a close-up view of a straw wattle, with mulch covering the soil. In this extreme slope, rebar stakes were driven into the wattles and a cord was laced from the top of one stake, to the bottom of the next, and then back to the top of the next. This lacing pattern continues for the length of the wattle line. A close look shows some small grass sprouts germinating through the mulch. Figure 4 illustrates a sandbag berm which prevents water from overflowing a drain inlet. Figure 5 shows a rock-lined drainage ditch on the uphill side

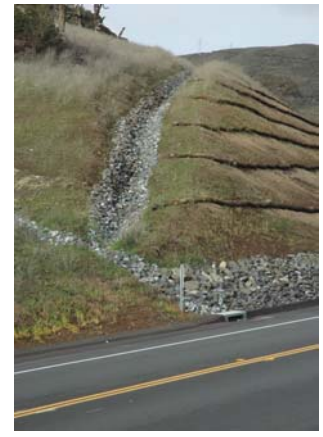


Figure 5. Lined ditch at top of slope.

of the restored hillside. This ditch directs water, flowing down the hill, away from the vulnerable hillside. All of these techniques can be adapted to a small, backyard scale.

Successful Planting

Before planting, research the requirements of the plants you wish to grow. Keep in mind elevation, moisture, nutrients, pH, and soil texture. Growing high nutrient-demanding plants in acidic topsoil ensures crop failure. Whether erosion control or landscape plantings, plants must be compatible with the soil in which they are grown. For eroded soils, infertile soils, or steep slopes that preclude amendment application, the best tactic is to grow plants that can handle these conditions such as *Nassella cernua* (Nodding Needlegrass), *Achnatherum lemmonii* (Lemmon’s Needlegrass), *Baccharis pilularis* (Coyote Bush), *Myrica californica* (Pacific Wax Myrtle), and *Rosa woodsii* (Wood’s Rose). Similarly, in the garden setting, peas need the least nutrients, with beans, radishes, and asparagus being examples of relatively low nitrogen users compared to other food crops.

Inversely, if plants are desired that need nutrients not sufficiently found in the soil, the soil must be altered. A simple pH and N,P,K (nitrogen, phosphorus, and potassium) kit can be purchased at a local nursery. Lime is typically needed to increase the pH to a level appropriate for the desired plants. After this, nutrients are usually required in the form of fertilizer or compost. Compost and mulch addition is good for both nutrient and moisture holding ability. If a slope needs fertilizer, jute netting can be applied over seed, after which fertilizer will be trapped in the netting upon application.

For more information contact Sam Polly @ 822-5785 or spolly@streamlineplanningconsultants.net