



UI Extension Forestry Information Series II

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Seeding Forest Roads, Skid Trails and Landings

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Clean water is one of Idaho's greatest natural resources. Many of our lakes, rivers, and streams, originate in forested areas. Forests assist nature in maintaining water quality by keeping soil in place, storing nutrients, and balancing water flows. They also help moderate stream water temperatures to support healthy fish populations. Idaho has state water quality standards that have been established and approved by the U.S. Environmental Protection Agency (EPA). These standards, required under the Clean Water Act (CWA) established in 1972, are designed to protect, restore, and preserve water quality in areas designated for specific beneficial uses (e.g. drinking water, swimming, recreation, fishing, salmon and trout habitat, etc.). Beneficial uses have been designated for each water body in Idaho. Best management practices (BMP's) have been established to keep pollutants out of streams and water bodies. One of the main water pollutants in Idaho waters is sediment. Sediment is any particulate matter that can be transported by fluid flow and which eventually is deposited as a layer of solid particles on the bed or bottom of a body of water.

Forest roads, skid trails, and landings are a primary source of sediment to these water bodies, especially during the first few years of their lives. Seeding these areas encourages the development of dense roots that bind the soil, holding it in place, no matter the weather. Seeding grasses and legumes controls soil erosion, creates forage for livestock and wildlife, and helps control weeds.

But successfully establishing this type of vegetation on these types of roads involves more than simply scattering the seed. Before seeding, study specific areas in which the vegetation must be established.

How deep are the soils? How steep is the site? What direction does the slope face? The answers to these questions all help you estimate the effective precipitation the site receives. A site may get 20 inches of rain per year, but on a steep, thin-soiled, south-facing exposure, much of this moisture [not just soil moisture - much of it evaporates before soaking into the soil] will evaporate, leaving little moisture for shallow rooted grass species.

After examining the site, choose the desired grass species best suited for the site. Usually a mix of overstory and understory grasses mixed with legumes is recommended. A typical seed mixture for a wetter site (over 25" effective precipitation) might include one or two varieties from each of the categories in Table 1. A typical seed mixture for a drier site (under 25" effective precipitation) might include 1 or 2 varieties from each of the categories in Table 2 (see page 2).

Seeding rates vary according to seed size, dryness of the site, and method of seed dispersal. Large seeds, dry sites, and broadcasting by hand or machine require more seed than small seeds, wet sites and drilling. Grass seed usually contains small percentages of crop seed, weed seed and inert materials and not all what remains germinates. What ever varieties of seed you choose, calculate seeding rates on the basis of "pure live seed", which is a measure of seed lot purity and germination percentage. Generally, 100-150 pure live seeds per square foot is a sufficient seeding density. This may require from 15 to 20 lbs. of seed/acre depending on the mix used (one mile of logging road 12 feet wide contains 1.5 acres). Contact your local University of Idaho Extension Office or Natural Resource Conservation Service office for specific seeding recommendations.

Table 1. Seed recommendation for sites with over 25% effective precipitation.		
Overstory (>50% of mix)	Understory (<50% of mix)	Legumes
slender wheatgrass	timothy	Alsike Clover
intermediate wheatgrass	hard fescue	white Dutch clover
pubescent wheatgrass	creeping red fescue	northern sweetvetch
mountain brome	Canada bluegrass	
meadow brome	redtop	
blue wildrye	tall fescue	
orchard grass	perennial ryegrass	

Table 2. Seed recommendation for sites with under 25% effective precipitation.		
Overstory (>50% of mix)	Understory (<50% of mix)	Legumes
crested wheatgrass	streambank wheatgrass	Lewis flax
intermediate wheatgrass	hard fescue	alfalfa
pubescent wheatgrass	big bluegrass	yellow sweet clover
tall wheatgrass	sheep fescue	small burnet
tall fescue	orchard grass	
bluebunch (or Snake River) wheatgrass		

Before seeding, make sure the seed will have direct contact with soil. It is best to seed just after road construction because there is freshly exposed soil. Try to leave a rough surface so seeds will have a place to lodge. This is especially important on steep slopes. You may even want to create “mini-terraces” to get grass seedlings started. It is important to control and slow down water that might flow through newly seeded area with a water bar, turnout, or other water control technique.

Seed can be spread manually by hand, broadcast mechanically (ex: “cyclone spreader”) or drilled (if you have a level, easily accessible seeding surface). The first two methods place the seed on the surface. Drilling places the seed at a controlled depth. You can also hire a professional who can use specialized equipment to seed in a mulch slurry (“hydromulch”) or using forced air (“air seed”). Regardless of which technique is used, seed either in the fall (6 weeks before freeze date) or in the early spring. If seeding in the spring, be careful not to compact wet soils. Seeding over snow is not recommended.

Fertilizing the site during seeding can be very beneficial, as many of these soils have had most of the topsoil removed, leaving a less fertile subsoil. If feasible,

replace the topsoil to provide a more fertile base. Test the soil for fertilizer or liming needs. Remove surface debris and spread the seed by hand or with a broadcast spreader. Generally, 250 lbs/acre of 16-20-0 fertilizer is adequate (this applies approximately 40 lbs actual N/ac).

Mulching with excelsior, clean straw, slurried wood fiber, or similar materials after spreading the seed can provide a better environment for seedling establishment and growth and helps to control erosion until after the vegetation is established. Also, once you have established the grass seeding, try to keep livestock off the site for at least a year so that the grass has ample opportunity to establish itself above and below ground.

Grass seed mixtures have been established for a variety of purposes. For more information on grass seeding, go to the new publication *Seeding Forest Roads, Skid Trails, and Landings in the Inland Northwest* at <http://www.cals.uidaho.edu/edComm/pdf/PNW/PNW628.pdf>