
Obliteration of Temporary Roads, BMP 15.25

Objectives

- 1) To reduce sediment generated from temporary roads by obliterating them after use.

Site Description

This reconstructed segment is on Road 35051, which junctions with Road 18253, on the Plains Ranger District, Lolo NF, in Section 13, Township 21N, Range 27W. LSI classification is 10UA.

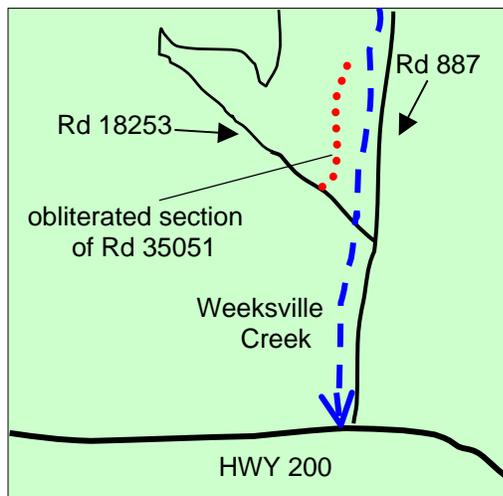


Figure 1

Narrative

As a mitigation measure for the Wee Teepee Timber Sale, temporary Road 35051 was obliterated in September 1999. Obliteration reduces long-term erosion and the amount of sediment transferred into a stream.

Obliteration comprised four-steps:

- 1) Drain dips, water belts and culverts are removed;
- 2) The cut and fillslopes are re-contoured and stabilized;
- 3) Disturbed soil is seeded and fertilized; and
- 4) Slash is spread over the area.

Reshaping the cut and fillslopes to their natural contours stabilizes the soil and restores the natural drainage pattern. Seeding and fertilizing help vegetation establish, increasing the interception of precipitation and allowing infiltration. Placing slash over the area provides shade for new seedlings, protects the soil surface, enhances nutrient cycling, and dissipates water energy.

Observations and Measurements

The monitoring area is approximately 100 feet from the stream. Grass has established, averaging 6 to 8 inches tall in most places (photos 1 & 2).



Photo 1

The road prism has been obliterated and a natural slope is restored. Slash of different sizes was scattered on the site: 70 percent is less than 3 inches thick, 25 percent is 2 to 4 inches, and the remaining 5 percent is 7 to 10 inches (photos 1 & 2). Erosion was not observed on site.



Photo 2

Effectiveness

Obliteration was effective. Grasses are filtering out sediment and dissipating water energy. Large woody debris has been effectively spread over the area. This practice has met the desired objectives of the BMP.

Obliteration of Temporary Roads, BMP 15.25

Objectives

- 1) To reduce sediment generated from temporary roads by obliterating them after use.

Site Description

The obliterated road site is located adjacent to Road 16625 in the Henry Creek drainage as part of the McHenry Fire Salvage Helo Timber Sale. The obliterated road is below skyline Unit 17, on the Plains Ranger District of the Lolo NF, in Section 2, Township 19N, Range 25W. LSI classification is 30QB.

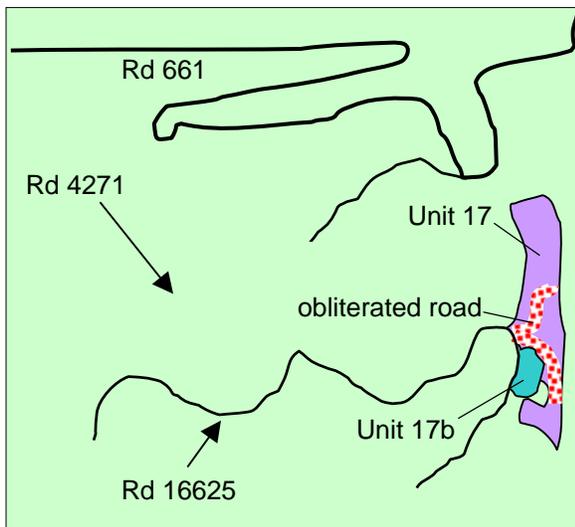


Figure 1

Narrative

The road was built for temporary access to units 17 and 17b. Mitigation under the McHenry Fire Salvage timber sale contract stipulated that the Unit 17 and 17B access road be obliterated after use.

In August of 1995, the temporary access road connecting to Road 16625 was obliterated. Obliteration included removal of the culverts, water bars and drain dips. In addition it included, reshaping the cut and

fill-slopes and travelway to their natural contour. Next, the soil was seeded and fertilized. Finally, slash was scattered over the site to prevent erosion and supply nutrients to the soil (photo 2).



Photo 1

Observations and Measurements

Re-vegetation has been successful. Grass growth ranges from 1 to 2 feet in height. The thick vegetation will serve as an effective sediment filter after obliteration (photo 3).

Approximately 65 percent of the slash scattered on the road is 6 to 10 inches thick, with the remainder being 6 inches or less. Large root wads and logs are also present on site.



Photo 2

Residual compaction remains on roughly 5 percent of the road prism that was not mechanically treated, but has not caused any noticeable erosion to date.



Photo 3

Effectiveness

This practice has been effective, and has met the desired objectives. The road prism was obliterated, breaking up 95 percent of the compaction, reducing erosion and allowing increased infiltration. Grass is abundant and providing a thick filter. An adequate amount of large woody debris was left on site to provide long-term nutrient cycling.

Obliteration of Temporary Roads, BMP 15.25

Objectives

- 1) To eliminate sediment generated by short-term roads by obliteration after use.

Site Description

The obliterated road site is a portion of Road 19205, off of Road 9962 on the Northside Timber Sale. It is located on the Missoula Ranger District of the Lolo NF, in Section 5, Township 14N, Range 19W. LSI classification is a combination of 15JA and 15JB.

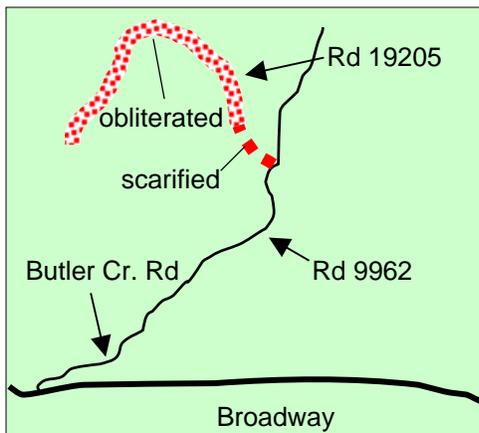


Figure 1

Narrative

Road 19205 was a short-term road used to access tractor harvest units 17, 18, and 18a. After harvest use, obliteration of road 19205 was appropriate because:

- 1) The stream crossing was designed for short-term use.
- 2) The road was designed and built to a low standard, not intended to be in place for more than three years.
- 3) Removing the road would lower the road density in the drainage and reduce sediment.
- 4) Obliterating the road would return it to natural productivity as soon as possible.

As a mitigation measure for the timber sale, one mile of Road 19205 was obliterated. The removal included: one culvert, a temporary bridge and several belt drains. A silt fence was installed before the bridge was put in to protect water quality during road construction. After the removal of the drainage structures, the road cut and fill-slopes were recontoured back to their natural shape (photo 1).



Photo 1

The area was then seeded and fertilized, and native vegetation was planted next to the stream crossing. Finally, slash was scattered over the site to protect the bare soil, add nutrients, and promote soil moisture storage. In addition slash-filter windrows were constructed adjacent to the stream.

Observations and Measurements

The site recovered rapidly. Grass is growing to a height of 2 to 12 inches (photo 2). Slash covers 40 percent of the total disturbed area, providing long-term nutrients.



Photo 2

Nearly 70 percent of the slash left on the site is 1 to 4 inches thick, with the remaining 30 percent 3 to 6 inches thick. Sedimentation and erosion are not apparent.

Effectiveness

Obliteration has proven effective. The site has re-vegetated with grass, and tree seedlings are starting to establish. An adequate amount of slash was spread over the recontoured road surface to prevent erosion and enhance nutrients. Reshaping and stabilizing the side slopes decreased erosion and sedimentation.

Stabilization of Fire-Suppression Related Watershed Damage, BMP 18.05

Objectives

- 1) To stabilize and rehabilitate areas with drainage patterns or surface conditions altered by fire suppression.

Site Description

This site is located above Foothills Road 5498, east of the Camp Creek crossing. It is on the Ninemile Ranger District, of the Lolo NF, Section 25, Township 17N, Range 24W. LSI classification is 15JB.

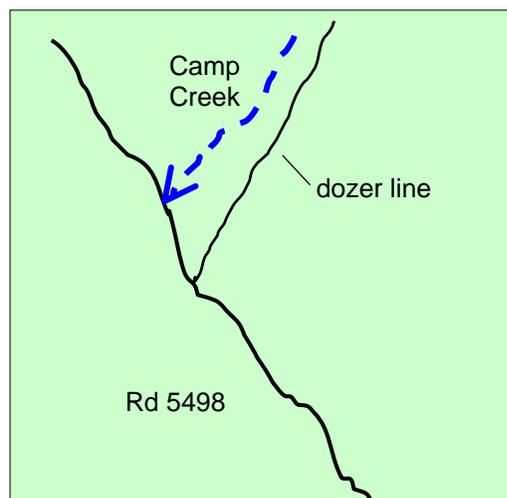


Figure 1

Narrative

A dozer fireline was constructed in the Camp Creek drainage as a firebreak for the Ninemile Complex Fire. Fireline construction can lead to erosion. Without mitigation, sediment production can pose a threat during snowmelt or heavy rain. Studies show that after wildfire, soil erosion can vary from 0.02 over 49 t ac⁻¹ yr⁻¹ (Megahan and Molitor, 1975; Noble and Lundeen, 1971; Robichaud and Brown, 1999). To prevent sediment production and erosion the dozer line was obliterated.

The first step of fireline obliteration was to remove the water bars to restore natural slope function. The site was then ripped with an excavator to reduce surface compaction and accelerate infiltration. In addition, the site was seeded and fertilized. Following the seeding, slash was laid horizontally across the area to protect the bare soil from rainfall impact, to act as a sediment trap, and to dissipate overland flow. The slash consisted mainly of live trees and branches removed during fireline construction.



Photo 1

Observations and Measurements

Grass seeding is one of the fastest, least expensive, and most successful ways of revegetating a disturbed site. Grass encourages rapid water infiltration and enhances soil stability. The seeded grass established quickly and was thriving by the summer of 2001.

An adequate amount of slash was spread on the fire line to dissipate water energy and trap sediment. Approximately 75 percent of the area was covered with slash; 45 percent of the slash is 1 to 2 feet thick, 5 percent is 2 to 3 feet, and the rest consisted mostly of

trees smaller than 1 foot. Using smaller whole trees further slowed water, allowing greater infiltration.

Effectiveness

This practice is highly effective at reducing erosion. There are no signs of rilling or gullies, even following heavy rain. The grass is establishing, and the slash is successfully protecting the bare soil. There are no signs of sediment deposits on the road or in Camp Creek. Sediment is successfully being filtered out and water is soaking into the ground.

Stabilization of Fire-Suppression Related Watershed Damage, BMP 18.05

Objectives

- 1) To stabilize and rehabilitate areas with drainage patterns or surface conditions altered by fire suppression.

Site Description

This site is located on an overgrown, abandoned jammer road system, in the ephemeral draw on the north-west side of Road 18102, between Soldier Creek and the East Fork of Burnt Fork Creek. The site is on the Ninemile Ranger District of the Lolo NF, in Section 14, Township 17N, Range 24W. LSI classification is 30MC.

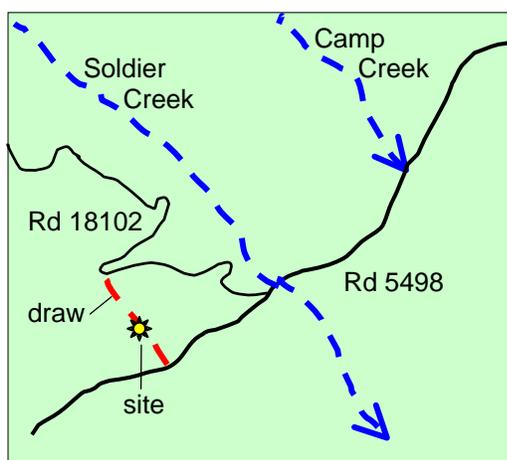


Figure 1

Narrative

Erosion concerns were high due to the damage caused by a high intensity fire that burned in the Upper Ninemile Creek drainage, including East Fork of Burnt Fork, Soldier, and Camp Creek drainages.

An extensive network of 40-year-old jammer roads was located in the Upper Ninemile Creek drainage. The monitoring site encompasses the jammer road system.

The jammer road system contained no draw crossing structures.

Fall rainstorms resulted in overland flows from the burned unprotected slopes, causing surface erosion in the upper portions of the ephemeral draw. A gully began to form at the upper end of the draw, increasing in width and depth as it continued down the drainage through each of the six-jammer road crossings.

To eliminate mass movement of soil during runoff, the fill in the draw was removed and the natural contour of the slope was restored (photo 1). In 1995, Best and others found that on burned hill slopes, from 80 to 90 percent of the erosion is a result of road fill failures and diversions at stream crossings.

To increase the effectiveness of pulling the fill from the draw, both sides of the road leading away from the draw were ripped and seeded. Slash was left on site by the process of ripping the vegetated jammer roads. This practice allows the slope to regain its natural drainage. Eliminating the road fill also restores the natural water flow pattern through the draw.



Photo 1

Observations and Measurements

The re-contoured crossing closely matches the natural slope of the draw. The road was ripped 8 to 12 inches deep, creating a surface which water can infiltrate. Slash diameters varied widely, with a 2-inch average. The slash will add nutrients to the soil and provide shade for vegetation. Through a combination of slash and vegetation, the jammer roads will stabilize. Because the fills have been removed from the draw, sedimentation will be minimized and the natural drainage system restored.

Effectiveness

This practice to date has proved to be effective at reducing the amount of sediment yielded from the jammer roads.



Photo 3