

# SGPC Temporary Roads Monitoring Pilot Project



## **Introduction:**

The overarching goal of the Temporary Roads Monitoring Pilot Project is to explore how monitoring may be used to increase collaborative efficiency and trust so that more restoration work is accomplished on the ground. Through this project, the collaborative intends to develop shared understanding of temporary road restoration effectiveness and monitoring techniques, build capacity for agreement, and enhance volunteer engagement.

The group selected temporary roads for a pilot project because this is a controversial management topic that generates many comments during the NEPA process. Currently, there is a lack of knowledge on how temporary roads recover after obliteration. While implementation monitoring is completed during timber sale contracts, the Mt. Adams Ranger District does not monitor temporary road restoration. A data gap exists in how effective contract provisions are in restoring the temporary roadbeds.

This project will evaluate road restoration and recovery by monitoring the effectiveness of specifications in decompacting soils, preventing erosion, and establishing productive soils and revegetation. Since a large part of the collaborative process is value driven, we will incorporate value metrics into our surveys as well.

In order to tease out recovery variables, we will look at roads from different time scales, topographies, and types of sale. We will work with Forest Service personnel to choose a variety of roads representing newer and older roads, Eastside and Westside of the divide, Stewardship and Conventional Timber Sales, as well as identify the different specifications and implementation techniques from each site.

Funding for development and implementation of this pilot project is provided through National Forest Foundation Community Capacity and Land Stewardship Program grants.

## **Timeline:**

This protocol was tested in the fall of 2018 and changes were made to clarify chosen metrics as well as streamline the survey to meet the goals of the project. We will work with FS specialists to identify potential roads in spring 2019. Surveys are planned for the summer/fall. Compilation and summarizing the data will occur in the fall. We will work with specialists and the Monitoring Committee to identify how to score our surveys. In spring 2020, we plan to share the results with collaborative members and other groups with similar interests. We will work with the Forest Service to identify appropriate data storage locations such as the National BMP Monitoring Database.

## **Methods:**

Equipment needed includes:

- GPS unit to identify locations and take waypoints
- Cameras for taking photos of road conditions and stream crossings

- Measuring tape to help identify scale of potential erosion or wasting
- Compass to identify direction
- Depth Staff to measure erosion, ditches, vegetation, etc.

Volunteers will be trained in the protocol methods listed below.

### Photographs

Please take photos to provide context for the road descriptions and take notes in the photo log of each photo taken describing what is in the photo and from where the photo was taken (Waypoint #). Please write the # of the photo. If using cell phone, start the day with #1 and/or note Transect (eg. T1) and Question # (eg. 6.8) on photo in your Edit Photo/Markup menu.

Photos should be taken:

- At Road Surface Transects: 4 photos at each transect; see instructions below.
- At points of interest, e.g. of erosion and stream crossings
- Up/down streams at inlets and outlets of crossing structures

### Closure Parameters

- 1) Is there a road at the mapped location (or nearby)? Is the road still evident?
- 2) Is there an effective road closure structure (berm, ditch, etc.)? If present, has it been breached? Measure the height of the berm.
- 3) Is there evidence of regular use on the road? E.g. well established/worn surfacing with little/no vegetation, or dispersed use site(s)  
What kind of use: A) Foot Traffic; B) Mountain Bike / Horse; C) Dirt Bike / Motorcycle; D) Three- or Four-Wheel All-Terrain Vehicle (ATV); or E) Car / Jeep / Truck
- 4) If the road has regular use, is there a location along the road that large wood/trees have fallen across the road and naturally restricted access?

### Drainage Parameters

#### ANSWER DRAINAGE QUESTIONS (# 5 THRU 9) FOR EACH ROAD SECTION:

Section 1. From the BEGINNING of the road up until TRANSECT 1;

Section 2. From TRANSECT 1 up until TRANSECT 2;

Section 3. From TRANSECT 2 up until TRANSECT 3; and

Section 4. From TRANSECT 3 up until TRANSECT 4.

- 5) Does the roadbed match the natural contour of the slope? Is there evidence of cut & fill? If cut banks present, what is average height?
- 6) Is there evidence of erosion? Are there channels formed (gullies, rills) from running water? *Take a Photo of beginning and end.* For each gully or rill, please identify amount of erosion on roadbed: paced length, average depth, average width. Measure by pacing rills/gullies. Describe location, where they start and end.



Example of erosion (deep gully). Photo from MARD Road Decomm Monitoring Report.

- 7) If the road was waterbarred, does it appear effective at routing water off the road surface and reducing surface flows along inside ditches? (I.e. did you see erosion nearby?) Were they constructed all the way across the road surface to the cutslope? *Take a Photo of beginning and end.*
- 8) Are there fill failures or washouts forming? *Take a Photo of beginning and end.* Please identify each occurrence.
- 9) Are there stream crossings or ditch relief crossings? *Take a Photo of inlet and outlet.* Ditch relief crossings move water from one side of the road to the other. Identify if the pipe and the corresponding road fill was removed. Is there erosion or failure?



Example of culvert section and associated fill that was not fully removed. Photo from MARD Road Decomm Monitoring Report.

**Road Surface Condition TRANSECTS** - At four equidistant locations along the road (which will be pre-mapped with GPS), survey a **20 foot wide transect (or cross-section)** of the roadbed running

perpendicular to the road. The transect will be 10 feet on each side of the center point (10ft up and 10 ft down the road). The roadbed is approximately 20 feet wide, so this will be about a 20ft x 20ft square.

Please identify the following:

**Take 4 Photos:** 1) looking up/out the road from the center of road (make sure to include the full transect (both edges)), 2) looking down/back the road 3) from right side (when facing up/out the road) looking across to left side and 4) from left side looking across to right side of transect.

10) Are there signs of ripping or scarification of the road (soil has been lifted and well fractured; lumpy, uneven or varied)?

Are there wheel tracks still visible/present?



Example of hummocky surface on a road immediately after scarification by an excavator bucket. Photo from MARD Road Decomm Monitoring Report.

11) Identify the road surface. Within the transect estimate the % of presence of BA): Bare soil; LI): Litter/duff and CR): Crushed rock; SL): Slash; VE): Vegetation? This may be greater than 100% because cover is a planar estimate and may be multiple levels.

12) Is there slash on the roadway? What is the predominant depth of slash in the transect? Include downed logs in your estimate.

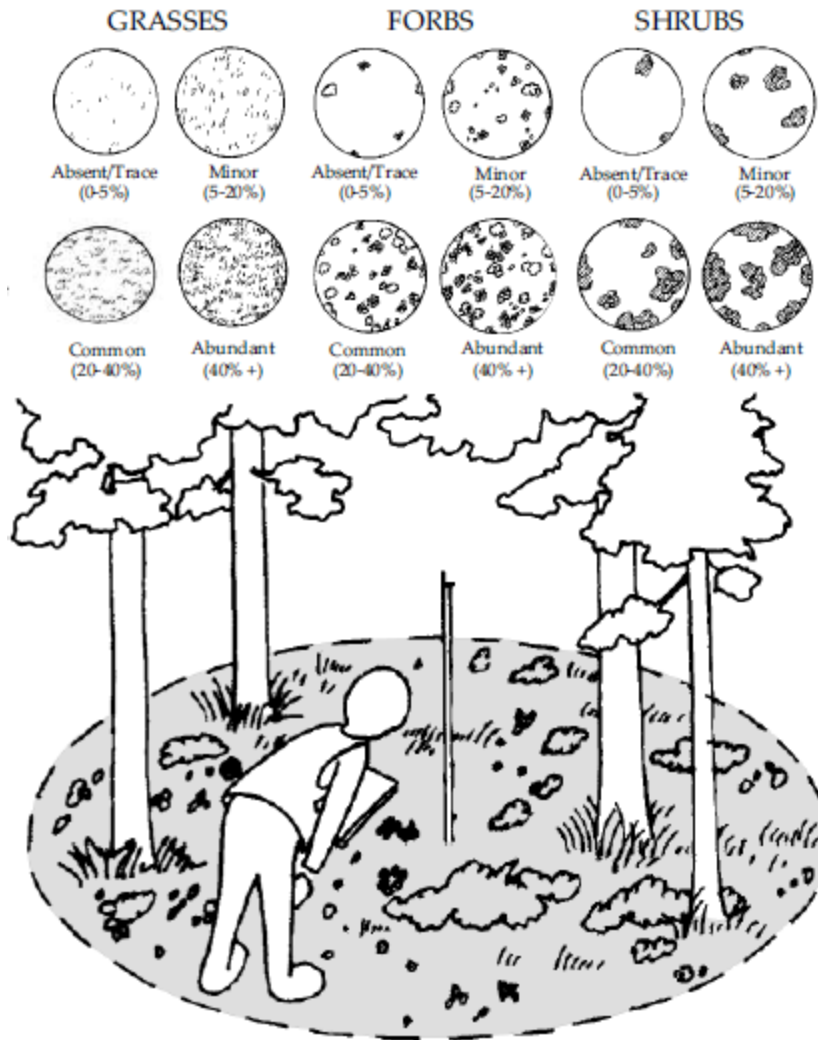
13) Does the road appear to have been seeded or mulched? Does there appear to be a thick cover of seeded grasses not present in off-road areas.

14) Is there vegetative cover?

- Estimate the % ground cover of revegetation for all vegetation (grasses, forbs, shrubs, and trees)  
TR): Absent/Trace (0-5%); MI): Minor (5-20%); CO): Common (20-40%); or AB): Abundant (40%+)

- How many different species are present?

Few (1-7 different plants); Moderate (8-15 different plants); and Many (16+ plants).



Example of vegetation cover that divides out Grasses, Shrubs, and Forbs (MSU Extension Service).

15) Are there seedlings present? What is the average height?

**Noxious weeds**

16) Are there noxious weeds present? If so, identify % presence of total road segment. What species? Species include: Knapweed, Houndstongue, Thistle, Mullein, and Tansy Ragwort. Common species are St. Johnswort, Oxeye Daisy, Common Hawkweed.

**Value Metrics** - At the end of the survey, please answer the qualitative questions listed below.

17) Does it look like you thought it would? Why or why not?

18) Do you like the way it looks/Do you think it was effective? Why or why not?

**Sources:**

Clackamas Stewardship Partners Community Multi Party Project

Montana State University Extension Service. Forest Stewardship Stand Analysis Plot Forms.

Mt Adams Ranger District. Road Decommission Monitoring Report. 1999

Redwoods National Inventory of Past Road Rehabilitation Sites

Region 5 Best Management Practices Effectiveness Program's Road Decommissioning Protocol

USDA Forest Service Technology & Development Program Road Decommissioning Website  
[https://www.fs.fed.us/t-d/programs/im/road\\_decomission/road\\_mon\\_methods.shtml](https://www.fs.fed.us/t-d/programs/im/road_decomission/road_mon_methods.shtml)