



Road Restoration

What is being monitored and why is it being monitored?

We are monitoring recovery of wildlife habitat, vegetation, and soils on decommissioned roads. There has been considerable discussion about what level of restoration is needed to provide wildlife habitat and restore soil productivity on permanently closed roads. Also, weeds are established along many roads, and it is important to ensure that any restoration efforts do not help their spread. Accordingly, we are looking at the rates of re-vegetation of native plants and non-native noxious weeds, as well as soil development, under different levels of road decommissioning treatments including abandonment, decompacting the roadbed (ripped), and fully recontouring the road. Short-term temporary roads that are reclaimed after use are also being sampled. This is being undertaken in tandem with other monitoring efforts looking at the effects of roads on erosion, aquatic habitat, and economics which will give us a greater understanding of the effects of restoring roads on Forest Service lands in the Southwest Crown of the Continent region and beyond.

How are we monitoring?

We are using a series of permanent plots installed on roads and sampled before and after restoration treatments. We will compare vegetation and soil recovery on roads that are “ripped” or “recontoured” to roads with no treatment and reference conditions in adjacent forested areas. Remotely-triggered wildlife cameras are also placed on a subset of sampling sites to gauge how wildlife respond to the restoration treatments as well. Currently, 102 sites have been sampled, pre-treatment, across the SW Crown landscape. Twenty sites are planned for post-treatment data collection in the summer of 2016, as well as sampling additional temporary road sites.

Key Findings:

- We have collected baseline information to gauge the existing condition on roads and adjacent reference forest conditions, before any restoration treatments take place on 102 sites.
- We identified 13 different species of trees, and 33 species of shrubs or sub-shrubs growing on or adjacent to roads.
- Douglas fir was the most common tree species encountered on roads, and snowberry was the most common shrub species to recolonize a roadbed.
- Weeds were more prevalent on roads than adjacent forested areas, especially spotted knapweed. We found 12 different species of noxious weeds currently established along roads.
- The fillslope (downhill) portion of roads was typically more revegetated than the roadbed or cutslope (uphill) portion of a road. This is not surprising since the fillslope is not compacted and contains the original topsoil side-cast during the original road construction.
- In comparing soil development on roads to reference forest conditions, not surprisingly, open and overgrown roads had significantly less duff/litter depth and root-tight depth than reference sites.

How will this information be used?

This project will help the Forest Service determine the effectiveness of different road restoration treatment types and revegetation methods at reducing weed infestations and restoring vegetation, wildlife habitat, and soils. It will also help prioritize locations and methods for future restoration efforts.

Next steps: All plots will be measured pre-treatment and year 1, year 2, and year 5 post-treatment. Pre-treatment monitoring sites have been established in several project areas: Chilly James (Flathead NF); Colt Summit, Center Horse, Horseshoe West (Lolo NF), and the Blackfoot Travel Plan (Helena NF). In future years, these sites will be resampled and new sites established on temporary roads immediately before their construction.

Reports and Resources:

- Presentation from 2012 Southwestern Crown Collaborative CFLRP Adaptive Management Workshop: <http://www.swcrown.org/wp-content/uploads/2014/11/Roads-monitoring-Veg-and-Soils-Switalski.pdf>
- Southwestern Crown Collaborative webpage: <http://www.swcrown.org/>
- USFS Collaborative Forest Landscape Restoration Program: <http://www.fs.fed.us/restoration/CFLRP/>

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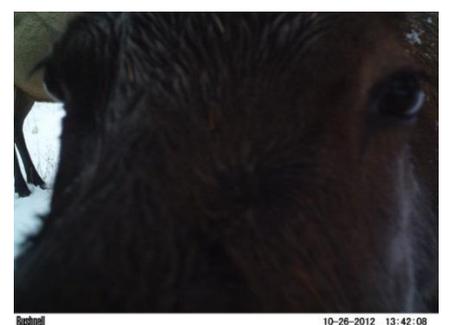
Partners:

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Sampling vegetation; keying out an unknown plant; and a two-track road on the Blackfoot Travel Plan area, Helena NF.



Images taken from wildlife cameras at a sampling site on the Lolo NF.