

Rangeland Resources & Best Management Practices Review - Targhee NF

Allotments: East Beaver C&S Allotment **Forest/District:** Caribou-Targhee NF, Dubois RD

Date: 8/31/2005

Reviewers: Shane Jacobson (Nat. Res. Spec.), Walt Grows (Range), Scott McCoy (Range), Chris Baker (Range), Lee Leffert (Hydrology), Brad Higginson (Hydrology), Randy Tepler (Soils). Ranger Robert Mickelsen joined a portion of our office discussion

Grazing System: Deferred – Cattle use all 5 units; Sheep use units 1, 4, & 5. Rotate opposite direction each year. Typically spend approximately 20 -25 days in each unit. Approximately 480 to 500 sheep run on the allotment. The group focus primary on areas used by cattle

Unit(s) Reviewed:	On Date(s):	Off Date(s)
2 – Dairy Creek/Clay Unit (about 500-600 head came on 6/15, 800 on 6/23, and 200 on 7/1)	6/15	7/10-15
3 – Owens Bench	7/15	8/8
4 – (look at cattle use)	8/31	9/20

6TH Level HUBs: 170402140405 – Upper Beaver Creek **Streams Examined** Dairy Creek (E4 & C4 reaches), Telephone Creek
170402140406 – Lower Beaver Creek **and Stream Type:** (E5 & C5 reaches), Miners Creek, Owens Creek
170402140407 – Miners Creek (B5).

Geology: Mixed, alluvium and sedimentary

Community Types & Soils: Ecological Unit (EU) 1144 – ABLA/APBE2 Koffgo, unstable (15-60% slopes); EU 1145 – ARTRP4/FEID Monida – ARTRP4/FEID Zeebar complex (4-30% slopes); EU 1146 – ARTRP4/FEID Zeebar (4-20% slopes); EU 1147 – ARTRP/FEID Zeebar (30-50% slopes); EU 1149 - PSME/CARU, CARU Edgeway (15-40% slopes); EU 1576 – ABLA/ARCO9, ARCO9 Fitzwil – PIAL/ARTRP4 Fitzwil complex (4-25% slopes); other EUs include 1154, 1270, and 2606

Koffgo – Vitrandic Cryochrept – Loamy-skeletal, mixed, superactive

Monida – Argic Cryoborolls – Fine-loamy, mixed superactive

Zeebar Complex – Argic Cryoborolls - Loamy-skeletal, mixed, superactive

Edgeway – Vitrandic Cryoborolls - Loamy-skeletal, mixed, superactive

Fitzwil – Vitrandic Paleboralgs - Loamy-skeletal, mixed, active

Notes: 1,526 cattle graze the allotment. NEPA was completed for the allotment in 1996. With the decision, the District implemented the Revised Forest Plan (RFP) Standards and Guidelines (note: RFP was completed in 1997). Specific mitigation listed in the EA included the following:

1. “Riparian utilization levels will be 40% (by weight) on riparian species in key areas... four to six inch stubble height left along the greenline at the end of the grazing season may be substituted for the percent use.” This is consistent with current Revised Forest Plan (RFP) direction.
2. “Riparian woody plant utilization would be 20-30% of the current year’s growth.” This is consistent with current RFP direction.
3. “Maximum use on upland herbaceous vegetation will be 50% by dry weight and 35 % will be the maximum use on upland shrubs.” This is consistent with current RFP direction.
4. “The Clay Creek water development will be reconstructed”... “The aspen stand adjacent to the spring will be protected from excess livestock grazing.” This project has been completed and redone again since the NEPA decision.
5. “The spring in the Dugway Hollow aspen stand will [be] developed...” This spring has since gone dry. The District has considered moving a trough to Post Hollow instead.

Rangeland Resources & Best Management Practices Review - Targhee NF

Changes in Management: The allotment currently has 8 permittees, but it used to be as high as 12. A permanent 75 head reduction took place in 2003. The allotment used to be managed under a rest-rotation grazing system. The cattle permittees used to have their stock divided into two separate herds of 750 animals each. Each herd would use only two units during their full grazing season. Two years ago however, the District implemented a deferred grazing system for the cattle. The permittees combined their herd into one (i.e. 1,500 head). The single herd now rotates across all five units within the allotment during the grazing season. The major change is that cattle now average only 20-25 days within each unit. This moderate intensity/short duration system has led to several soil and water improvements across the allotment.

Post Review Activities. The team agreed that current management is greatly improving conditions. With the new grazing system however, adjustments will be necessary to minimize impacts. One such adjustment was identified later in the grazing season (following the review) after adverse impacts were identified in Unit 1 (upper Dairy, Left Fork, & Calf Creeks) and portions of Unit 2 (lower Dairy Creek). Following the review, the lower (downstream) end of Unit 1 received heavy use and Unit 2 received additional use (cattle had already grazed and left Unit 2 during the review). Under the previous “split herd” grazing system, half of the herd (750 head) grazed Unit 1 last approximately every other year prior to going home for the season. This year (2005) was the first time Unit 1 was grazed by the combined herd (1,500 head). That is, 750 head had never been in this unit late except to be gathered and head home (which had sometimes been mid-Sept). Scott McCoy observed that the majority of cattle that were hanging on the Unit 1-2 fence were those cattle that had never grazed Unit 1 in the past. Therefore, the animals were pushing the fence in anticipation of heading home. The problem was compounded by early snows that pushed cattle down near the fence as well. As a result, livestock hung in the lower portion of Unit 1, pushed and trespassed the fenced on Dairy Creek, and distribution was not adequate across the unit. District personnel informed and worked with permittees to fix the problem. Following the grazing season though, localized impacts were evident in Unit 1 and 2.



Photo 1. Dairy Creek in Unit 2 after grazing. Under the grazing system, this area should not be grazed again until next year. Some trespass did happen following the review however (Photo 2).

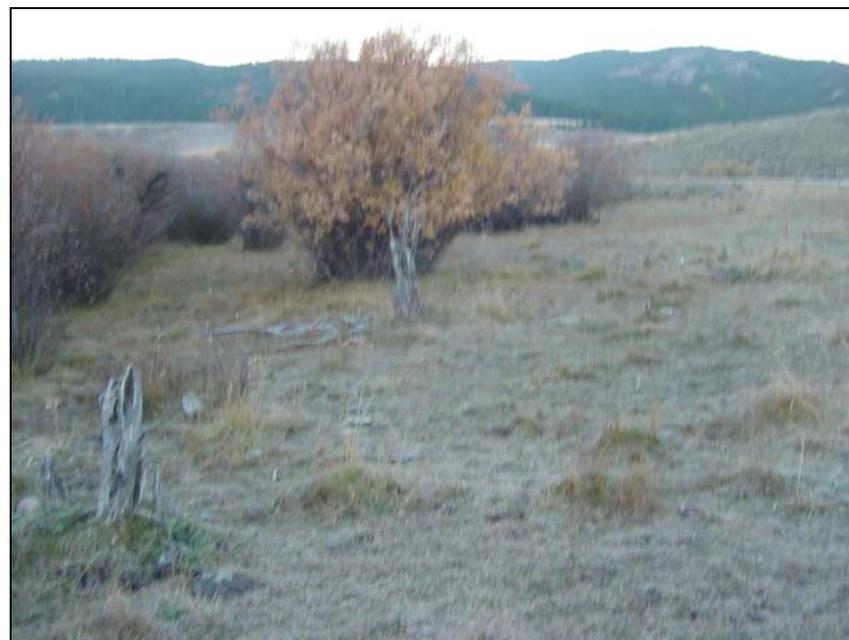


Photo 2. Dairy Creek (Unit 2) on 10/26/2005. Although photo is late in the fall, you can see that additional use did occur due to trespass cattle from Unit 1.

Rangeland Resources & Best Management Practices Review - Targhee NF

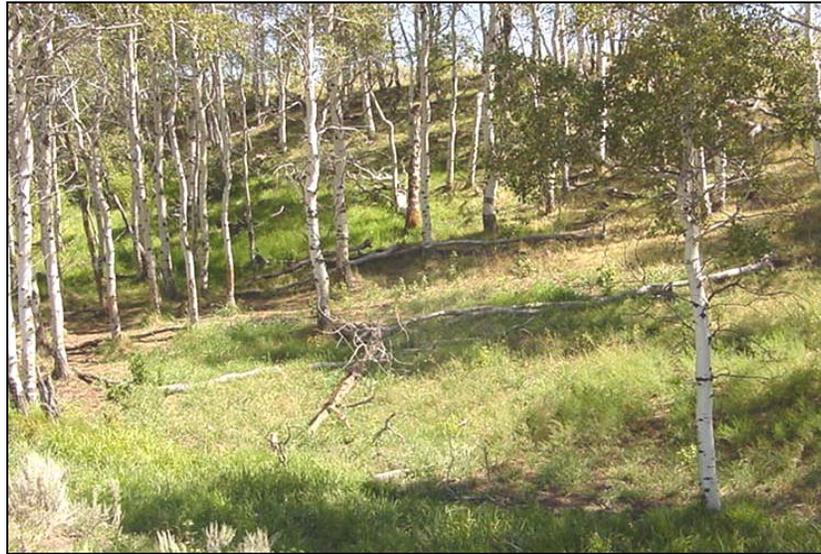


Photo 3. Telephone Creek area (Unit2). Improvement in a previously bare area (loafing zone). Aspen regeneration was observed in 2005; ground cover is increasing.



Photo 4. Telephone Creek in 2003. Note the excessive bank alteration along stream, the low stubble height along the stream, riparian utilization, and the lack of ground cover on the upland in the upper right hand side of photo.



Photo 5. Same location as Photo 4 in 2005 (following the grazing season). Improvements in vegetated cover in both the riparian and upland areas. Improved stream bank stability. (person is kneeling, not standing).

Rangeland Resources & Best Management Practices Review - Targhee NF



Photo 6. Miners Creek in 2003.



Photo 7. Miners Creek at confluence with Meadow Creek on 10/19/2005. Same general location as Photo 6, but not exact location.



Photo 8. Owens Creek in 2003.



Photo 9. Owens Creek in 2005; Same general area as Photo 8, but not exact location. Improved cover and increased vigor on woody plants.

Rangeland Resources & Best Management Practices Review - Targhee NF



Photo 10. Owens Creek just upstream of FSR 325. Slower improvements in streamside conditions were noted here. Moderate bank alteration was noted along Owens Creek. Streambank stability along observed reaches of Owens Creek were estimated at less than 80% stable, but the trend appears to be improving.



Photo 11. The group examined an identified watershed improvement need on Miners Creek located immediately upstream of the exclosure. A road/stream crossing (culvert) was removed in this area. The cattle crossed the stream on the road prior to removal of the pipe. The exclosure fence and habit of crossing at this location has resulted in excessive bank trampling in this localized area. The group discussed watershed improvement treatments to implement at this location. The District will add this location to its watershed improvement action plan. Willow planting and minor bank reshaping will be implemented to improve this area. Treatments should mimic the recovery that is taking place downstream of this location within the exclosure (see Photo 12). Willow planting with the District's tree spade was discussed.

Rangeland Resources & Best Management Practices Review - Targhee NF



Photo 12. Miners Creek immediately downstream of Photo 11. Willow recovery is taking place within the exclosure. The stream is entrenched in some areas, but streambank stability is improving with increased vegetation cover.

Rangeland Resources & Best Management Practices Review - Targhee NF



Photo 13. Fence between Unit 1 and 2. High trampling and lack of ground cover.



Photo 14. Dairy Creek on Unit 1/2 fence. High trampling in localized area.



Photo 15. Left Fork (Unit 1). High localized trampling.

The mouth of Left Fork is a heavily used area (Photo 15); it is adjacent to the road, corrals, holding pasture (State lands) and it is very popular with recreationists and dispersed campers. Cattle are trailed across the area several times during the grazing season: 1) in the spring when some cattle are unloaded at the corral, 2) in the fall when the cattle are gathered into the holding pasture (the gate is just across road to south of where picture was taken), 3) when the cattle are moved from the holding pasture to the corral for sorting, and 4) when some of the cattle are trailed off the allotment. In addition, the area was used this year when sheep were shipped off the allotment in early September. So there is a lot of action at that site and if you would have went up stream a few hundred feet things look fine.

The impact shown in Photo 15 is very localized and the stream is in much better condition throughout its entire length. However, mitigation measures should be pursued as the opportunities arise.

Rangeland Resources & Best Management Practices Review - Targhee NF

Use the Following Rating Guide and Definitions to Score Each Practice

Implemented	Score
Exceeds objective of practice	5
Meets objective of practice	4
Minor departure from practice	3
Major departure from practice	2
Gross neglect of practice	1

Effective	Score
Improved protection of soil and water over pre-project conditions	5
Adequate protection of soil and water	4
Minor and temporary impacts on soil and water	3
Major and temporary, or minor and prolonged impacts on soil and water	2
Major and prolonged impacts on soil and water	1

Term	Definition
Adequate	Small amount of material eroded; material does not reach ephemeral draws, intermittent and perennial streams, or wetlands
Minor	Erosion and delivery of material to ephemeral draws but not intermittent and perennial streams, or wetlands
Major	Erosion and subsequent delivery of sediment to ephemeral draws, intermittent and perennial streams, or wetlands
Temporary	Impacts expected to last one year or less or no more than one runoff season
Prolonged	Impacts expected to last more than one year or one runoff season

Targhee National Forest Revised Forest Plan Standard and Guidelines

Element	Standards and Guidelines	Implemented	Effective	Notes																			
Soils Quality/Forested Ecosystems ¹	Strive to maintain fine organic matter (FOM) over at least 50% of the area. The preference is for FOM to be undisturbed, but if disturbed, it should be of sufficient quantity and quality to avoid detrimental nutrient cycle deficits. If the soil and potential natural community are not capable of producing FOM over 50% of the area, adjust minimum amounts to reflect potential soil and vegetation capability. (G)	N/A	N/A	Did not look at many forested ecosystems, but grazing does not appear to be influencing FOM levels in those areas.																			
Watershed, General	Not more than 30% of any of the principal watersheds and their subwatersheds should be in a hydrologically disturbed condition at any one time. (G)	N/A	N/A	N/A - Grazing activities are not resulting in excessive hydrologically disturbed areas.																			
Range – Upland Forage Utilization	Apply upland forage utilization levels to all allotments and/or management areas as shown below, unless determined otherwise through the IDT process. These guidelines apply to native and desirable non-native vegetation as recorded at the end of the growing season. (G) <table border="1" style="margin-left: 20px;"> <thead> <tr> <th rowspan="2"></th> <th colspan="2">Season-Long Grazing</th> <th colspan="2">Rotation Grazing</th> </tr> <tr> <th>Unsatisfact. Range</th> <th>Satisfact. Range</th> <th>Unsatisfact. Range</th> <th>Satisfact. Range</th> </tr> </thead> <tbody> <tr> <td>Grass Herb</td> <td>35%</td> <td>45%</td> <td>45%</td> <td>55%</td> </tr> <tr> <td>Shrubs</td> <td>25%</td> <td>35%</td> <td>35%</td> <td>35%</td> </tr> </tbody> </table>		Season-Long Grazing		Rotation Grazing		Unsatisfact. Range	Satisfact. Range	Unsatisfact. Range	Satisfact. Range	Grass Herb	35%	45%	45%	55%	Shrubs	25%	35%	35%	35%	4 – over the allotment 3 – localized area in lower portion of Unit 1	4 – over the majority of allotment 3 – localized area (Unit 1)	Dairy Creek unit is well within standards – light use observed. Upland herbaceous use in the Telephone Creek area was estimated at 15%. Upland use in the Owens Bench area was estimate at approximately 10%. Localized disturbance at Unit 1/2 fence near Dairy Creek – minor and temporary impact.
	Season-Long Grazing		Rotation Grazing																				
	Unsatisfact. Range	Satisfact. Range	Unsatisfact. Range	Satisfact. Range																			
Grass Herb	35%	45%	45%	55%																			
Shrubs	25%	35%	35%	35%																			
Range - Riparian Forage Utilization - Woody Plant Utilization	Not more than 30% use on riparian woody plant species (current year's growth) is allowed. 30% is the maximum allowed use as recorded at the end of the grazing period. (S)	5	5	Very light woody use was observed in Dairy Creek area. Use in the Telephone Creek area was within standards.																			

¹ Timber related guideline. Determine if this guideline is appropriate for the allotment.

Rangeland Resources & Best Management Practices Review - Targhee NF

Element	Standards and Guidelines	Implemented	Effective	Notes
Range - Riparian Forage Utilization – Riparian Vegetation Stubble Height Standard	<p>1. At the hydric green-line (HGL), there will be at least 4 inches of stubble height remaining on key species at the end of the grazing period, unless determined otherwise through the IDT process. This standard applies to key species of native and desirable non-native hydric vegetation. (S)</p> <p>2. Away from the HGL, at least 3 inches of stubble height will be left on the remainder of the key riparian species at the end of the grazing period, unless determined otherwise through the IDT process. (S)</p>	<p>5 during review</p> <p>2 - localized area in lower portion of Unit 1</p> <p>4 – upper part of unit 1</p>	<p>5 during review</p> <p>2 localized area (Unit 1)</p> <p>3-upper portion of unit 1.</p>	<p>Stubble height along Dairy Creek averaged 9-12 inches during review. The width/depth ratio is decreasing (improvement).</p> <p>Post review activities in Unit 1 produced impacts to streams in the lower portion of Unit 1 (unit fence to corrals). McCoy measured stubble height at 5 inches above the impacted area.</p>
Range – Allotment Management Planning (AMP)	Salt should be placed greater than a ¼ mile from water, or as far from water as practicable. Salting should be designed to avoid conflicts with aspen regeneration, conifer plantations, and system trails. (G)	4	4	All observed salting locations were well away from water.
Range – (AMP)	Allow no livestock grazing before seed set of the second growing season after prescribe or natural fires and rangeland planting or seeding. (G)	3	4	<p>The District implemented a “spike” treatment in the Owens Bench area in 1999. The area was not rest following the spike treatment, nor does it appear that it should have been (adequate ground cover remained after treatment). The treatment reduced sage brush cover from 45% to 18-20%. The District wants to consider additional treatments (prescribed burns and/or spike treatment).</p> <p>The Meadow Creek area was burn in 2000. The area was rested for 3 years. Grazing use in 2004 hit a little over 60% (slightly over standard). Use in 2005 was light (approx. 25%).</p>
Range – (AMP)	Permitees are allowed motorized access to maintain facilities. AMPs and AOIs will include direction that motorized access must be less than 2 vehicles per week (This permitted access is not included in the OROMTRD). (S)	4	4	No problems associated with motorized access were observed.

Rangeland Resources & Best Management Practices Review - Targhee NF

Element	Standards and Guidelines	Implemented	Effective	Notes
Range – (AMP) and Fisheries & Other Aquatic Resources	<p>Within subwatersheds occupied by native cutthroat trout or designated as vital to meeting recovery goals, identify areas where livestock grazing is causing fisheries habitat conditions to fall below or retard the rate of recovery toward the values described in the “Expected values for healthy fish habitat conditions” (listed below). Include specific remedial actions in the AMP or AOI. Progress toward meeting these expected values should be monitored and grazing systems adjusted, as necessary. (G)</p> <p>Expected Values for Healthy Fish Habitat Conditions:</p> <ul style="list-style-type: none"> • Pool frequency – at least 1 pool per length of stream equal to 5-7 times the channel width. • Water Temp. – 13° C or less with a max daily average no greater than 9 in spawning habitats or 16° C with a max daily average no greater than 12 in adult holding habitats. • LWD – Greater than 20 pieces/mile. • Bank stability – Greater than 80% <p>Lower bank angle (non-forested systems) – Greater than 75% of banks with less than 90° angle. Width/depth ratio – suitable for Rosgen stream type.</p>	<p>5 – during the review</p> <p>2 - Unit 1 (lower portion).</p> <p>4 – upper part of unit 1</p>	<p>5 - during the review</p> <p>1 - Unit 1 (lower portion).</p> <p>3 - upper portion of unit 1.</p>	<p>Most streams in the area have experienced improvement with implementation of the new grazing system. Dairy Creek and Telephone Creek shows signs of width/depth ratio, bank stability, and residual cover (9-12 inch stubble height following grazing) improvements.</p> <p>Within the lower portion of Unit 1 (unit fence to corral), bank stability was decreased due to high bank trampling/alteration by livestock. The stream width/depth ratio was also increased due to high trampling.</p>
Aquatic Influence Zone (AIZ) – Range	Incorporate into AMPs, objectives for attainment of desired vegetation conditions for riparian plant community seral stage development and stream channel condition. (G)	4	4	
Aquatic Influence Zone (AIZ) – Range	<p>Proposed livestock watering facilities, corrals, and holding pastures within these lands are allowed only if appropriate mitigation measures are implemented to reduce negative effects. (S)</p> <p>Existing livestock watering facilities, corrals, and holding pastures within these lands are allowed at permit issuance only if mitigation measures are implemented to reduce negative effects. (G)</p>	4	4	<p>Mitigation was included in the NEPA decision:</p> <ul style="list-style-type: none"> • “The Clay Creek water development will be reconstructed”... “The aspen stand adjacent to the spring will be protected from excess livestock grazing.” This project has been completed and redone again since the NEPA decision. • “The spring in the Dugway Hollow aspen stand will [be] developed...” This spring has since gone dry. The District has considered moving a trough to Post Hollow instead.

Rangeland Resources & Best Management Practices Review - Targhee NF

R1/R4 FSH 2509.22, Chapter10 - Soil and Water Conservation Practices

Practice	Objective and Implementation	Implemented	Effective	Notes
17.01 – Range Analysis, Allotment Management Plan, Grazing Permit System, and Permittee Operating Plan	<p>To maintain and protect soil and water resources through sustained forage production and managed multiple use of range forage.</p> <p><u>Implementation:</u></p> <ul style="list-style-type: none"> • Allotment is NEPA sufficient (if yes, give date) and AMP is sufficient (if yes, give date) • Preparation and approval of AMP • Revise AMP as needed • AOI prepared or revised (as needed) annually to adjust for current allotment conditions and trends and to incorporate special instructions • Permittee carries out the plan • Corrective action is taken if permittee does not comply with permit conditions designed to protect soil and water resources. 	4	4	<p>NEPA completed in 1996. Mitigation from EA is complete.</p> <p>Miners Creek Exclosure was constructed in 1999 and enlarged in 2000.</p>
17.02 – Controlling Livestock Numbers and Season of Use	<p>To maintain and protect soil and water resources through management of livestock numbers and season of use.</p> <p><u>Implementation:</u></p> <ul style="list-style-type: none"> • Proper stocking rates and season of use specified in the grazing permit. • Annual field checks are made to identify needed adjustments: range readiness evaluations, livestock counts, forage & browse utilization, and periodic assessments of rangelands (soil and veg. trends) • Permit is modified, cancelled, or suspended if needed. 	4 across the allotment; 3 in lower portion of Unit 1	4 across the allotment; 3 in lower portion of Unit 1	Grazing system was changed from rest-rotation to deferred in order to improve soil, water, and range conditions.
17.03 – Controlling Livestock Distribution	<p>To maintain and protect soil and water resources, including riparian areas through controlling livestock distribution.</p> <p><u>Implementation:</u></p> <p>Proper techniques are used to reduce the impact on sensitive or naturally overused areas. Techniques may include:</p> <ul style="list-style-type: none"> • Fence construction and use of seasonal or pasture system management • Water developments in areas that receive little use and closures of water developments when proper use is achieved. • Other Range improvements. • Riding & herding to shift livestock locations • Placing salt or supplements away from water in forage areas with light grazing use to attract livestock • Moving livestock when prescribed utilization levels are reached. • Goats and sheep – open herding, limited trailing, and use of new bed grounds nightly. <p>Direction is incorporated into the AMP and AOI. The AOI reflects current allotment conditions and vegetative trends.</p>	4 across the allotment; 3 in lower portion of Unit 1	4 across the allotment; 3 in lower portion of Unit 1	<p>The Clay Creek water development was reconstructed.</p> <p>Grazing system was changed from rest-rotation to deferred in order to improve soil, water, and range conditions.</p>

Rangeland Resources & Best Management Practices Review - Targhee NF

Practice	Objective and Implementation	Implemented	Effective	Notes
17.04 – Rangeland Improvements	<p>To maintain and protect soil and water resources the use of rangeland improvements.</p> <p><u>Implementation:</u> Improvements are recognized in the allotment planning process. Improvements are used to improve management and restore or improve forage quality, quantity, or availability. Improvements may include:</p> <ul style="list-style-type: none"> • Rest and/or deferment through rotation grazing, fencing, or lighter grazing use by changing the grazing season, kind, class, or permitted number of livestock. • Stream stabilization projects • Reseeding, fertilization, and/or other non-structural improvements • Water developments • ID teams provide consultation on improvements and they are constructed in manner that protects surface and ground water quality 	4	4	See comments above

R4 Soil Management Handbook, FSH 2509.18 – Chapter 2 – Soil Quality Monitoring

Practice	Objective and Implementation	Implemented	Effective	Notes
Detrimental Soil Disturbance ²	No more than 15% of an activity area should have detrimentally disturbed soil after the completion of all management activities. In other words, at least 85% of an activity area should be in a non-detrimentally disturbed condition.	4	4	
Effective Ground Cover	The minimum effective ground cover, following the cessation of disturbance in an activity area, should be sufficient to prevent detrimental erosion. Detrimental erosion includes erosion rates that cause long-term productivity losses from an activity area or soil losses that are beyond those acceptable for the activity area. Minimum amounts of ground cover necessary to protect a soil from erosion are a function of soil properties, slope gradient and length, and erosivity (precipitation factor).	4	4	

² Discuss the proper scale of the activity area (e.g. allotment, pasture, riparian areas). Activity Area is define in the handbooks as “an area impacted by a land management activity, excluding specified transportation facilities, dedicated trails, and mining excavations and dumps. Activity areas include such areas as: harvest units within timber sale areas and prescribed burn areas. Riparian and other environmentally sensitive areas may be monitored and evaluated as individual activity areas within larger management areas. It is recommended to describe the Activity Area for soil resources within planning and project implementation documents.”