United States Department of Agriculture | Forest Service | Gallatin NF | PO 130 Bozeman, MT 59771

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2500 Watershed

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Subject: **Bangtail TMA Travel Plan and Road Decommissioning – Implementation Monitoring Review**

To: **Bozeman District Ranger**

On October 8, 2008 an Implementation Monitoring Review was held in the Bangtail Range to review Gallatin Travel Management Plan implementation with a focus on road decommissioning project work (2006-2008) and travel plan standards compliance. Review attendees included John Councilman, Brian McNeil, Lisa Stoeffler, Kimberly Schlenker, and Mark Story. This review is consistent with Appendix B of the Gallatin NF Travel Plan (FEIS Appendix B-12) which calls for an Implementation review team to evaluate if the Travel Plan goals, objectives, standards, and guidelines were implemented and effective and still valid. The Bangtail TMA was selected for this first Travel Management plan implementation review since the range has had extensive project road decommissioning and rehabilitation of existing non-system trails. In the Travel Plan the Bangtails were chosen to feature motorized recreation since the area is conducive to summer OHV use, and some backcountry road use. The Travel Management Plan Record of Decision (ROD) includes a decision to utilize portions of the existing road system with connectors to create loop opportunities for ATV's, motorcycles, and mountain bikes for the Bangtails Travel Management Area (TMA). The Bangtail Mountains Road Decommissioning Project EA was released on 3/06 with the Decision Notice and Finding of No Significant Impact (DN/FONSI) signed on 5/24/2006 (http://www.fs.fed.us/r1/gallatin/?page=projects/bangtail_mountains) Approximately 63 miles of roads and unauthorized trails were decommissioned between 2006 and 2008.

This monitoring review consisted of the following process:

1. Review and rate the Bangtail TMA decommissioning project work for application and effectiveness of the following:
   - Bangtail Road Decommissioning EA & DN Mitigation Measures
   - Bangtail Road Decommissioning EA & DN Monitoring Measures
   - Gallatin NF Travel Plan Goals, Objectives, Standards, and Guidelines

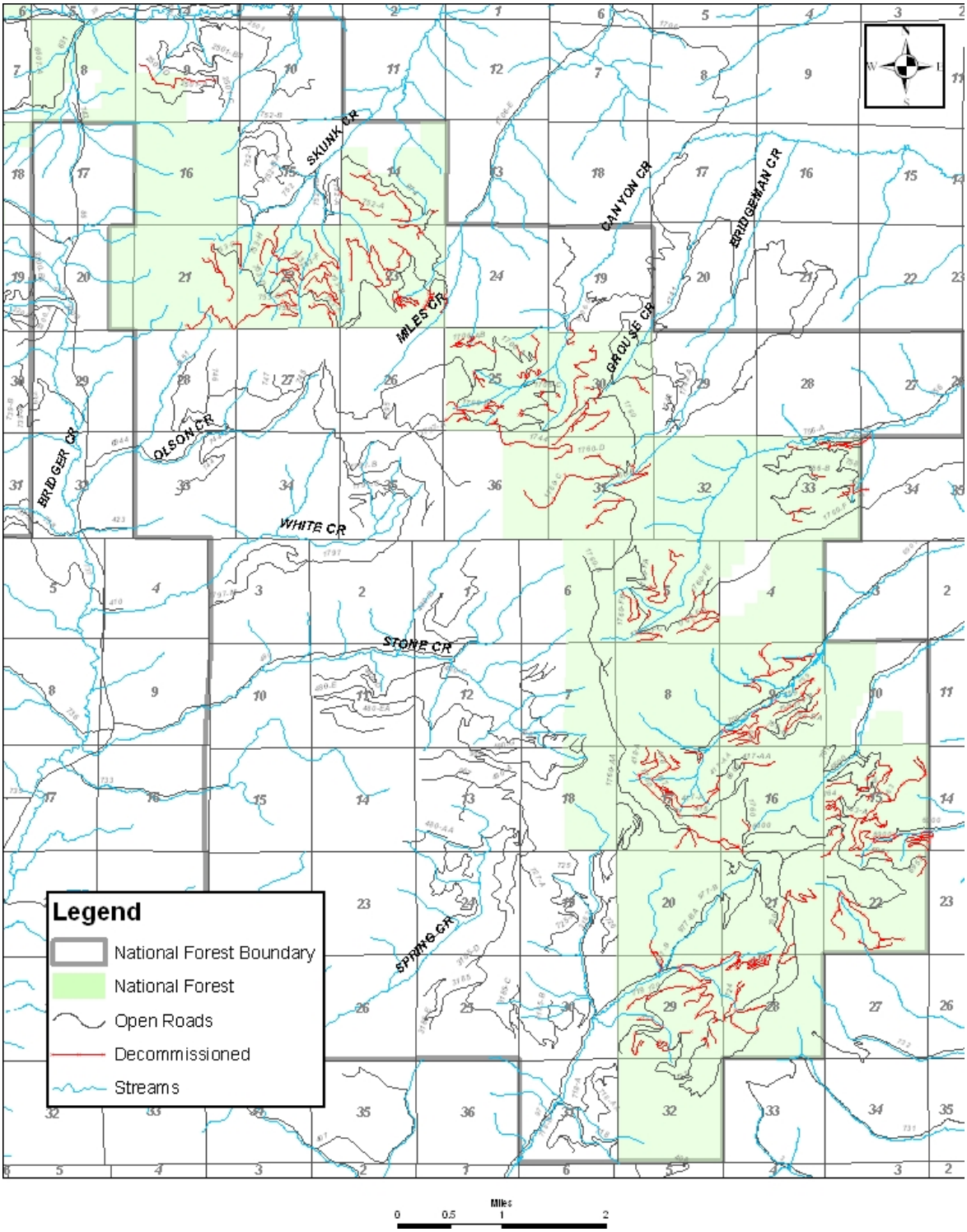
2. Provide information that will facilitate the completion of the Gallatin NF Road and Trail Projects EA.

The application and effectiveness rating system consisted of the following measures:

Application
5- operation exceeds requirements of objective or measure
4- operation meets requirements of objective or measure
3- minor departure from measure, objective marginally met
2- major departure from measure, objective sporadically met
1- gross neglect of measure, objective not met

Effectiveness

5- improved conditions over pre-project condition
4- adequate protection of resources, effective
3- minor and temporary impacts on resources, moderately effective
2- major and temporary or minor and prolonged impacts on resources or only slightly effective
1- major and prolonged impacts on resources or not effective



Bangtail Range roads decomissioned in 2006, 2007, and 2008.

Evaluation Items	source	Applic	Effect	Comments
Bangtail Road Decommissioning EA & DN Mitigation Measures				
1. Conduct all work in a manner that is visually appealing and practical	Bangtail Rd Decom EA pg, 2-4, Bangtail DM pg. 1-5	4	4	short term visual impacts can be obtrusive in order to stop motorized use. Visual impacts are situational regarding surrounding area. Bangtails with clearcuts more compatible to heavy slash closing than areas with fewer roads and less historical harvest activity
2. Streamside Protection Act 124 Permits would be acquired. Some of the permit requirements include. * All in-stream work completed in an expeditious manner to avoid unnecessary impacts to the stream. * All construction activities performed in the stream and immediate vicinity conducted in a manner to reduce in-stream turbidity along with minimizing streambed disturbance. * All stream bank and adjacent areas disturbed by the construction activity would be protected with temporary erosion control measures. These areas would be reclaimed with long-term erosion control measures and revegetated immediately after construction.	Bangtail Rd Decom EA pg, 2-4, Bangtail DM pg. 1-5	4	3	124 permits were obtained for all culvert removals from DFWP. Post culvert channels were shaped and slashed heavily. Some culvert areas had rock placement in the new channel and/or coir bank reinforcement. All channel areas were heavily seeded. Bank revegetation has not been as dense as anticipated and several of the removed culvert locations are sediment sources longer than anticipated. The culvert areas are anticipated to re-vegetate into non-sediment source areas within 2-3 years.
3. Use native materials such as downed logs, slash, rock, and soil to close roads to motor vehicles.	Bangtail Rd Decom EA pg, 2-5, Bangtail DM pg. 1-5	4	4	slash most heavily used as large rock sources limited in Bangtails. large rocks should be the first choce of closure in many areas due to immobility. Fences should be considered for open areas to reduce motorized encroachment around treated areas.
4. Conduct weed suppression prior to the decommissioning work and schedule follow-up weed	Bangtail Rd Decom EA pg, 2-4, Bangtail	4	2	Weeds were pretreated in many Bangtail areas prior to treatment. Weed

suppression. Follow weed management practices in FSM 2080.	DM pg. 1-5			response has been sporadic with most treated areas having little or no weed encroachment but some locations a robust thistle respose and a few areas with hounds tounge encroachment. Ideally pretreatment should be done for up to 3 years prior to road treatments and up to 3 years later.
5. Occasionally, a live or dead tree would be pushed over or felled to facilitate the effective decommissioning of a road. These would be smaller intermediate or suppressed trees that do not contribute to the main canopy of the adjacent forest	Bangtail Rd Decom EA pg, 2-5, Bangtail DM pg. 6	4	4	trees were frequently used to slash in treated areas and very key for visual reinforcement of closure and organic enrichment. Conifer needles dry and fall off trees so 2nd year slash treatments visual effect much reduced over initial.
6. Rip road surfaces where it appears ripping would help restore hydrologic function. If road surfaces are not eroding and have grown in with grasses, trees, or brush they would not be ripped.	Bangtail Rd Decom EA pg, 2-5, Bangtail DM pg. 6	4	4	ripping or recontouring was done over about 30% of the treated roads with remaining areas drained and culverts removed.
7. Inspect each road length prior to beginning work to make sure no vehicles get trapped behind the decommissioning work.	Bangtail Rd Decom EA pg, 2-5, Bangtail DM pg. 6	3	4	in most situations it was obvious that no vehicles were behind the area to be treated. However systematic “searchs” were not conducted. No vehicles were trapped behind treatments.
8. For public safety, work areas would be signed disclosing the operation of heavy equipment.	Bangtail Rd Decom EA pg, 2-5, Bangtail DM pg. 6	3	4	no public recreationists were in treated areas and traffic was light. No treatment was done on heavily used roads so no signs were placed.
9. Conduct work during the drier months of the summer. Contract clauses restricting operations to drier days would be included in the contract.	Bangtail Rd Decom EA pg, 2-5, Bangtail DM pg. 6	4	4	This provision was intended to avoid higher streamflow periods for fish spawning concerns and goshawk nesting. Most treatments were done in very late July through September during dry periods.
10. Accomplish decommissioning through a contract using an	Bangtail Rd Decom EA pg,	4	4	Three different pieces of equipment were used. A

excavator or dozer to rip or recontour road surfaces, remove culverts and reshape stream banks.	2-6, Bangtail DM pg. 6			small dozer, small excavator and a larger excavator. The larger excavator seemed to be the most versatile but is slow to move around.
11. To reduce the potential for disturbance of nesting goshawks, schedule the use of heavy equipment after either August 1 or at least ½ mile away from potential nesting habitat.	Bangtail Rd Decom EA pg, 2-6, Bangtail DM pg. 6	4	4	In 2006 treatments included 1 week in late July. 2007 & 2008 treatments done in August/September. Change this mitigation measure to July 15 in future D6 contracts.
12. Coordinate road decommissioning with livestock permittees to eliminate conflicts with livestock and the potential for access problems to allotment improvements.	Bangtail Rd Decom EA pg, 2-6, Bangtail DM pg. 6	4	4	Permittees contacted during scoping process and individually during AMP coordination. A pond in Canyon Creek was made more difficult for cattle access after a section of recontouring. No access problems to allotment improvements noted.
13. Prior to pushing over any trees, they would be inspected for cavity nesting wildlife species.	Bangtail Rd Decom EA pg, 2-6, Bangtail DM pg. 6	3	4	Casual implementation of this mitigation measure but no cavity nesting birds or nests were observed in trees cut for slashing use.
14. No ground disturbance or use of heavy equipment would occur in wet areas such as seeps, springs or bogs.	Bangtail Rd Decom EA pg, 2-6, Bangtail DM pg. 6	4	4	Most of the treatment areas are dry and no seeps, springs, or bogs were impacted.
15. Included in the contract that would require the equipment operator to stop work if a cultural site is encountered.	Bangtail Rd Decom EA pg, 2-5, Bangtail DM pg. 6	4	4	Bangtail areas treated included no known cultural sites.
Bangtail Road Decommissioning EA & DN Monitoring Measures				
1. Inspect decommissioned or obliterated roads for weeds for 5 years and conduct weed suppression as needed.	Bangtail Rd Decom EA pg, 2-6, Bangtail DM pg. 5, 6	4	3	Bangtail retreatment areas have been frequently reviewed. Weeds in treated areas examined in 2007 and particularly in 2008. Sporadic weed encroachment has been more than anticipated and will require more weed treatments for up to 3 years.
2. Inspect contract work with certified contracting officer	Bangtail Rd Decom EA pg,	4	4	The contract work was frequently viewed by inspectors (not

representatives.	2-6, Bangtail DM pg. 6			COR). Change wording of this mitigation measure to include inspectors.
3. Decommissioning work would be inspected for the first three years after the work is completed to assess the level of success with stopping vehicle use, reestablishment of hydrologic function and growth of seeded grasses.	Bangtail Rd Decom EA pg, 2-7, Bangtail DM pg. 6	4	5	Frequent inspection of treated areas in 2007 and 2008. Hydrologic function and growth of seeded grasses in most treatment locations exceeds pre-project locations.
Gallatin NF Travel Plan Goals, Objectives, Standards, and Guidelines				
1. Goal D. Obj. D-1. Close and rehabilitate existing roads that are in excess to administration, recreation, and access needs.	GNF Travel Plan FEIS pg. 1-11	4	4	Most treatment areas have been successfully closed except for some trespass areas in Jackson Creek and a few in Canyon Creek. The project has obliterated numerous excess roads.
2. Goal D. Obj. D-2. Close and rehabilitate existing non-system trails not otherwise designated for public travel.	GNF Travel Plan FEIS pg. 1-11	4	4	Numerous user made ATV and motorcycle routes were obliterated. In heavy use areas, particularly Jackson Ck, obliteration of user made trails will likely be a travel management need for several years.
3. Goal E. Water Quality, Riparian, Fisheries and Aquatic Life. Manage a road and trail system that fully supports the protection of water quality, and habitat for fish, riparian dependent species, and other aquatic organisms.	GNF Travel Plan FEIS pg. 1-13	4	3	Most of the treated areas have immediate sediment reduction due to improved drainage. The exception is at culvert crossings where revegetation is taking longer than anticipated. Hence the 3 rating for effectiveness. The accounting for this mitigation measure is done through sediment modeling.

4. Goal G. Threatened, Endangered, and Species of Special Management Designation. Manage human use of the Forest road and trail system that allows for the recovery of threatened and endangered species and maintains species of special management designation and their habitats.	GNF Travel Plan FEIS pg. 1-13	4	4	Species of special management designation in the Bangtails include lynx, and Yellowstone Cutthroat trout. mitigation for these species was consistently and effectively implemented
5. Goal H. Wildlife Provide high quality security habitat in areas important to wildlife reproduction (e.g. calving fawning, denning and nesting habitat) and wintering areas, including ungulate winter range.	GNF Travel Plan FEIS pg. 1-14	4	4	Security habitat substantially increased with much reduced road and trail density.
6. Goal 3. Provide a road and trail system that results in contributed sediment levels that maintains Yellowstone cutthroat trout habitat at 90% of its potential habitat capability.	GNF Travel Plan FEIS pg. II-15	4	3	See comments for item 3 above. Sediment levels are substantially decreased over pre-project conditions and the 3 rating for effectiveness will be a 4 in 2-3 years when all culvert removal areas are fully re-vegetated.

Several findings will be illustrated through photos taken in 2008 unless otherwise noted.

Ripped and heavily slashed road segment completed in 2007 in Canyon Creek. The heavy use of slash is designed to discourage motorized encroachment, add organic material to the road prism, retain more moisture for revegetion, and discourage weed encroachment. The amount of slash used depends on the situation and surroundings. This road segment is in a clearcut so the treatment esthetics are consistent with the surroundings. Road segments in less heavily managed area are more visually sensitive to heavy slash treatments.

User made ATV route which was ripped in 2006 and slashed in 2007 with freshly cut branches to reduce motorized encroachment. In this segment the needles had fallen off by 2008 which allows more sunlight for revegetation. The slash treatment was successful in eliminating motorized encroachment.

Much of the Bangtails range has shallow soils with relatively slow re-vegetation response. This rehabilitated ATV user made trail in Jackson Creek was ripped in 2006 and re-slashed in 2007. By 2008 the revegetation was robust.

Recontouring with an excavator is more effective than ripping for road prism obliteration. The 2008 photos above and below are from 2007 treatments in Canyon Creek.

A total of 20 culverts were removed in the Bangtails. 18 of the culvert sites were rehabilitated with heavy slashing and rock placement. 2 sites were stabilized with coir. It can take 2-3 years, for revegetation to sufficiently re-establish to eliminate sediment production at the site. Skunk Creek site above.

Jackson Ck below crossing after culvert removal and channel stabilization.

Canyon Creek conversion from a road to an ATV trail via recontouring part of the road prism. On steeper cut slopes slash should not be placed parallel to the trail as it can roll onto the trail thereby causing ATV widening on the fill slope side. Uphill slash should be placed perpendicular to the trail to avoid rolling. An ARV pulled compactor/conditioner, like the type built by MTDC, could be purchased by the GNF and used to compact, condition, and maintain the trail tread for ATV use.

In Jackson Creek 8/2008 re-route of a section on the Bangtail Crest trail #504 has resulted in some encroachment motorcycle use in adjacent areas. The junction with the Jackson Creek road is in a open area where carsonite closure signs are not stopping all encroachment. The review team recommended construction of jack leg wooden fence on the east side of this section with periodic signs along the Jackson Creek road showing were motorized trail use is directed via the Travel Plan.

Weed encroachment in the Bangtails for treatments done in 2006 and 2007 has been sporadic. Thistle has been common in several recontoured areas. Hounds tongue has expanded on ripped roads in a few spots in Fletcher Creek and Skunk Creek. This discouraging effect of road treatment will required follow up weed treatments to eliminate the hounds tongue expansion.

Conclusions

1. The Bangtails road decommissioning project has met the primary goal of implementing the Gallatin NF Travel Plan, close excess and unauthorized roads and trails, and provide for motorized recreation opportunities.

2. Although visual impact of treatments is an important consideration in closing previously motorized use roads, treatments need to be sufficiently intensive to discourage and physically stop motorized encroachment of the treated areas while minimizing adverse visual effects.

3. Concerns about increasing erosion and sediment for road ripping and recontouring were overstated in the Bangtail Road Decommissioning EA. No ripped or recontoured areas were observed which were resulting in an erosion increase except for culvert removal areas which had varying degrees of revegetation success. Many of the culvert removal areas may take 2-3 years after treatment to eliminate the location as a sediment source.

4. In the Bangtails scheduling the treatment work from July 15 to September 30 provides sufficient protection for spawning Yellowstone Cutthroat trout and for goshawk nesting habitat.

5. A major goal of the Bangtail road decommissioning project was to reduce road sediment levels to comply with Gallatin NF 30% over natural sediment standards in the Travel Plan and to reduce instream fine sediment to levels that do not jeopardize Yellowstone Cutthroat trout. The Bangtail Mountains Road Decommissioning Project EA anticipated that Bangtail Creek sediment levels would be reduced from 44% over natural to 23% over natural, Jackson Creek from 43% >N to 25% >N, Perkins Creek from 30% >N to 18% >N, and Willow Creek from 45% >N to 21% >N. Sediment modeling, as per the EA and DM/FONSI, would indicate that the 63 miles of road decommissioning is sufficient to reach that goal and allow the remaining ATV connector trails to be built. Many of the roads sections were sufficiently stabilized and re-vegetated so that no treatment was necessary indicating that the pre-treatment sediment levels in the EA no action alternative were likely estimated to be too high. Conversely the EA did not include the user made ATV routes which were decommissioned. The project has achieved sufficient sediment reduction to allow the ATV connector construction but will require at least 2-3 more years before some crossings where culverts were pulled to fully re-vegetate.

6. Lack of signing in 2006 and 2007 at critical treatment junctions probably resulted in more encroachments and user made trails around treated areas than would have occurred if at least carsonite signs had been set up at key closure and/or use change areas. In 2008 concurrent signing and treatment was useful to reduce treatment encroachment and also to reduce encroachment in previously treated areas.

7. Weed establishment in road decommissioning areas was sporadic with about 10% of the treatment areas affected. In a few spots in Fleshman creek and Skunk Creek hounds tongue were invading treated areas thereby increasing the weed treatment workload for several years.

8. The GNF roads and stream GIS coverage layers were inaccurate in several places. Actual road density is about 20% higher than the GIS roads layer coverage and about 20% of the stream layer did not show sufficient sinuosity. This required extensive GIS editing in project preparation but is likely representative of several other heavily roaded areas on the GNF.

Recommendations

1. More intensive treatment of culvert removal stabilization and revegetation is appropriate for future decommissioning projects. Increased use of coir material, erosion blankets, silt fences, straw mulch, and rock augmentation of the new stream channels is needed to reduce the sediment generated via culvert removal. This is particularly important where culverts are removed in road segments immediately tributary to streams with fish.

2. Open meadow areas which contain roads to be decommissioned are very difficult to close. Jack leg wooden fences are recommended for key meadow treatment areas to visually reinforce closures.

3. Many of the motorized closure violations and encroachments of treated areas in 2006 and 2007 appeared to be largely due to lack of signing to inform motorized users of the intended routes. It is highly recommended that treatment area junctions with motorized travel areas have placement of carsonite or other closure/traffic direction signs at the time of decommissioning. Placement of map signs at portals (such as the Jackson Creek and Olson Creek roads at the Forest Boundary) could be very useful in informing public recreationists about the areas and routes available for motorized use and which areas, roads, and trails are closed.

4. All of the 20 culverts removed from the Bangtails in 2006-2008 were buried in the working areas. Some of the culverts could have been re-used or recycled. In future projects plan for culvert re-use or recycling where possible and check for potential culvert recycle opportunities.

5. Many of the future road decommissioning projects on the GNF may have similar contract requirements, particularly with completion of the roads and trails EA. To the extent possible, use IDIQ (Indefinite Design Indefinite Quantity) contract formats or other contract efficiency measures to reduce the extensive yearly contract preparation and contracting workload.

6. Weed encroachment into treated areas poses an increasing constraint to decommissioning of GNF roads. Future GNF road decommissioning projects should be more aggressive in following weed management practices in FSM 2080, in the Gallatin NF Weed EIS mitigation measures, and in the Gallatin NF Roads and Trails EA when completed.

- To the extent plan able and possible, areas to be decommissioned should be inventoried for weeds and treated up to 3 years prior to decommissioning in order to minimize noxious weeds which could be stimulated from the decommissioning.

- It is important to understand the vulnerability and exposure of road decommissioning treatment areas to weed expansion.

- For treatment areas where weeds are increased, persist in weed treatments as long as necessary – generally up to 3 years but in severe infestations up to 6-8 years.

- To the extent possible and practical, in heavily weed infested areas, minimize the length or road segments that are ripped or recontoured. Often only a relatively short length of segment needs to be treated to effectively close a road (around 200 to 500 feet with the remained road sections drained and culverts removed). Shortened treated segments are particularly applicable in heavy timber and/or steep side slopes where motorized encroachment around the closure is difficult.

7. Change the mitigation measure for scheduling the use of heavy equipment after either August 1 or at least ½ mile away from potential goshawk nesting habitat to after July 15.

8. Change the mitigation measures for inspection of contract work to include inspectors as well as certified contracting officer representatives.

9. Future Travel Plan project implementation reviews, per Appendix B-12, on a 1 per year basis are encouraged in order to continue to refine treatment methods and mitigations for GNF Travel Plan implementation. The implementation reviews are a convenient way of sharing updated treatment method and mitigation methods.

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