

File Code: 1940 Monitoring

Date: 10/05/15

To: Bozeman District Ranger

Subject: Millie Roadside Hazard Tree Removal Implementation Monitoring Review

On September 24, 2015 an Implementation Monitoring Review was held to evaluate the Millie Roadside Hazard Tree Removal Project on the Bozeman Ranger District. The project was completed in 2014. The monitoring review team included Lisa Stoeffler, Teri Seth, Bruce Roberts, Steve Martell, Colin Crook, Susan Lamont, Bev Dixon, Grant Morrison, and Dale White.

The objectives of the review were to:

- Evaluate the implementation and effectiveness of Decision Memo and Timber Contract mitigation measures and BMP's.
- Determine to what extent the project purpose and need were met.

The purpose and need for this project was to provide for the safety of road users and maintenance of the roads within the Millie Fire Perimeter. This involved approximately 15 miles of forest road. Project activities primarily included:

- felling and removal of dead and dying trees up to approximately 150 feet from the edge of the road that posed a hazard and met merchantability criteria (greater than six inches in diameter), and;
- felling and leaving in place trees smaller than six inches in diameter that posed a hazard to road users.

The process for this review consisted of identifying project Best Management Practices (BMP's) and mitigation measures, field review of the project area, rating mitigation measures and BMP's for application and effectiveness, and making recommendations for future similar projects.

EVALUATION PROTOCOL

BMP implementation and effectiveness was evaluated using a modified form of the Forestry BMP review protocol developed by the Montana DNRC. The application and effectiveness rating system consisted of the following scoring system:

Application	4 points. Operation meets requirements of objective or measure
	3 points. Minor departure from objective or measure, requirements mostly met
	2 points. Major departure from objective or measure, requirements marginally/barely met
	1 point. Gross neglect of objective or measure, requirements not met at all
Effectiveness	4 points. Adequate Protection of resources, effective
	3 points: Minor & temporary impacts on resources, moderately effective
	2 points: Major & temporary or minor & prolonged impacts on resources, slightly effective
	1 point: Major and prolonged impacts on resources, not effective

EVALUATION WORKSHEET

Evaluation Items - BMP's	Source	Applic	Effect	Comments
1) Dead and dying trees up to approximately 150 feet from the edge of the road that pose a hazard and meet merchantability criteria (greater than six inches in diameter), will be felled and removed.	DM	4	4	Leaving the <= 6" diameter trees (with the exception of those deemed to be hazards) provided a "feathering" of the harvest boundary that lessened the visual impact of the work.
2) Down woody material will be retained to accommodate wildlife needs and to help stabilize soil. A minimum of fifteen tons per acre of three-inch diameter or larger debris (if available) will be left, including tree tops in the treatment area which will help to provide filtration and retention of sediment.	DM	4	4	The volume of excess down woody material appears to have been adequate to stabilize soil in the areas examined.
3) Tops will be lopped and scattered to within 18" of the ground. The goal of this requirement is to obtain direct contact between the coarse woody debris and the ground surface with as much of the material as is possible.	DM	4	4	This mitigation measure was successful in creating direct contact between woody debris and the ground surface.
4) Wherever possible, the leading end of logs shall be suspended above the ground surface during yarding.	DM	4	4	A yarder with boom was utilized to meet this requirement.
5) Material at the landings could be piled, burned, chipped or removed.	DM	NA	NA	There were no landings or extra materials. Since the harvested trees had been denuded of needles and smaller branches by wildfire, the amount of excess material to dispose of was a fraction of that produced in a live tree harvest operation.
6) Piles shall be reasonably compact and free of soil to facilitate burning. Piles will not be less than six feet in height. Piles shall be of a size and location which will not impair road use or result in damage to residual timber. Piles shall be located at least 50 feet from residual timber. All objects which extend more than six feet in any direction from the pile profile will be cut off and returned to the windrow or pile. Slash will be piled within 30	Sale Contract	NA	NA	There was so little residual material that piling/burning was not necessary.

days of acceptance or by the end of normal operating season whichever comes first.				
7) Mechanized equipment will be required to stay on the roads, landings, turnouts or similar disturbed areas during removal of material from within roadside treatment areas.	DM	4	4	This requirement was met.
8) In order to prevent the spread of noxious weeds into the Sale Area, Purchaser shall be required to clean all "Off-Road Equipment" prior to entry on to the Sale Area.	Sale Contract	4	4	Because of the requirement that mechanized equipment stay on roads, landings, and turnouts there was no "off-road equipment." However, the yarder was required to be clean and was inspected by the sale administrator.
9) Roads will not be used during wet periods if such use will likely damage the road drainage features or surface.	DM	4	4	This requirement was met. The work schedule in the Orchid Gulch area was adjusted to ensure protection of the roads.
10) During project activity, roads in the activity area will be closed to the public to minimize risk of harm from felling, skidding and loading operations. This will be implemented through a closure order or signage depending on the site specific needs.	DM	4	3	The project occurred in a gated area closed by special order. A few mountain bikers and hikers went around the gate and entered the work area during the harvest operations.
11) Three heritage site areas are near the road. To ensure these sites are avoided, a 50 foot buffer will be placed around the sites.	DM	4	4	This requirement was met.
12) To prevent project related sediment from entering perennial stream channels, both sides of Spring Creek, Butte Creek and the unnamed perennial stream 1/3 mile west of Spring Creek will be buffered by a 120 foot no disturbance area.	DM	4	4	This buffer was effective in preventing sediment from reaching streams and, in this case, was probably more stringent than necessary due to the relatively low intensity of post-fire precipitation. Buffer width will always be site/situation specific and effectiveness will always depend heavily on the (probabilistic) nature of post-fire precipitation. Standing dead trees left in no-cut areas adjacent to streams will need to be monitored and managed over time.

<p>13) To provide additional stream protection, the buffer width may be increased along Spring Creek below the main Storm Castle Road as determined by a fish biologist, hydrologist or designee. The determination will be based on burn severity, prevalence of rock substrate and topography</p>	DM	4	4	<p>Sale prep crew coordinated with fisheries biologist to establish additional buffer width. Buffers were effective in preventing sediment from reaching streams.</p>
<p>14) No harvest or disturbance will occur within wetland areas, including bogs and seeps. There are no known wetlands in the treatment area.</p>	DM	4	4	<p>This requirement was met.</p>
<p>15) Reseed bare soil created by the harvest activities with an approved native grass seed (certified noxious weed seed free).</p>	DM	NA	NA	<p>There were no significant bare soil areas created and thus no seeding was necessary.</p>
<p>16) Goshawk surveys will be used to verify presence of occupied nest(s) in suitable unburned stands near proposed roadside salvage. If an occupied nest is found, timing restrictions for harvest activity will be incorporated within 2,625 ft. of known occupied goshawk nest or suitable nesting habitat between April 1 – August 15 to mitigate impacts. If surveys are not conducted, no harvest activity will occur within ½ of suitable habitat (west end of burn perimeter) prior to August 15.</p>	DM	4	4	<p>Surveys were completed per the requirement. No goshawk nest were located.</p>
<p>17) Black backed woodpecker surveys will be used to verify presence of occupied nest(s) along Orchid Gulch Road (FSR #6985) because this area has been identified as the most suitable habitat. If no surveys are conducted, harvest activity will not begin prior to July 15 on FSR 6865. No known occupied nest trees will be felled prior to July 15.</p>	DM	4	4	<p>Surveys were completed per the requirement. No black backed woodpecker nests were located. Note: the habitat model which was used to target the survey area was developed in another region and proved inaccurate in the project area. In the end all areas within the project were surveyed for nests.</p>
<p>18) The purpose and need for this project was to provide for the safety of road users and maintenance of the roads within the Millie Fire Perimeter.</p>	DM	4	4	<p>The project reduced roadside hazard significantly over the majority of the road (i.e., all segments of the road not located within streamside buffers). Continued monitoring and maintenance will be required.</p>

PHOTOGRAPHS



Photo 1. Road 132 below Spring Creek, looking east.



Photo 2. Road 132 above Butte Creek, looking west.



Photo 3. Road 132 looking west near trailhead. Timber Butte can be seen in the distance (left center)



Photo 4. Road 132 below Spring Creek, looking west.

OBSERVATIONS AND CONCLUSIONS

The team found that all examined planning and implementation BMP and mitigation requirements were implemented (except where not applicable) and were effective. Notable observations included the following.

1. Leaving the ≤ 6 " diameter trees uncut (except those deemed to pose a hazard) provided a visual "feathering" of the harvest boundary that lessened the visual impact of the work.
2. The volume of excess down woody material (including tree tops) appears to have been adequate to stabilize soil in the areas examined.
3. Suspending the leading end of logs above the ground surface during yarding was effective in limiting the impacts of yarding on the soil surface. A yarder with boom was utilized to meet this requirement.
4. This streamside buffer requirements were effective in preventing sediment from reaching streams and, in this case, were probably more stringent than necessary due to the relatively low intensity of post-fire precipitation. Buffer width will always be site/situation specific and effectiveness will always depend heavily on post-fire precipitation, which is probabilistic.
5. The project has reduced roadside hazard significantly over the majority of the road (i.e., all segments of the road not located within streamside buffers). Continued monitoring and management of standing dead trees left within the streamside buffers adjacent to roads will be required.

RECOMMENDATIONS FOR FUTURE PROJECTS

1. Where appropriate leave smaller, non-hazardous trees to provide visual "feathering" of the harvest boundary.
2. Utilize excess down woody material (including tree tops lopped and scattered in place) to stabilize soil surface.
3. Wherever possible, require suspension of the leading end of logs during yarding to limit the impacts of yarding on the soil surface.
4. To minimize long term monitoring and management efforts associated with dead trees within streamside buffers adjacent to roads, consider cutting and leaving hazard trees within those buffers either through force account or as part of the timber harvest contract.

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