

## APPENDIX D PAST, PRESENT, FUTURE ACTIONS

Past, present and reasonably foreseeable future activities listed in this appendix are activities and natural events known to have already occurred, are currently occurring, or are likely to occur in the vicinity of the proposed Marshall Woods Restoration project and may contribute cumulative effects.

Cumulative effects result from incremental effects of actions, when added to other past, present, and reasonably foreseeable future actions, regardless of what agency or person undertakes such other actions. Cumulative effects can result from individually minor, but collectively significant, actions taking place over a period of time. The analysis for this project found no cumulatively significant issues.

The environmental analysis required under NEPA is forward-looking, in that it focuses on the potential impacts of the proposed action<sup>1</sup>. The past and present activities and natural events have contributed to creating the existing condition, as described in the affected environment sections of this environmental analysis. These activities, as well as reasonably foreseeable activities, may produce environmental effects on resources relevant to the proposal.

Because the proposal's direct and indirect effects vary in time and space depending on the resource or issue being considered, a specific cumulative effects analysis area and timeframe is defined for each resource in each specialist's report. Information is presented here in two different scales: the project area and the Middle Rattlesnake 6th code hydrological unit code (HUC) and the Marshall 7th code HUC which encompasses or is adjacent to proposed units. For most resources the cumulative effects analysis area is smaller than the 28,514 acres, representing the two HUCs. This is an area over two times the size of the 13,000-project area.

The listed events that are not specifically analyzed or mentioned in the resource effects analyses were considered to have no potential effect on the individual resource.

The projects and activities listed as reasonably foreseeable future activities were gleaned from the Forest's quarterly Schedule of Proposed Actions (SOPA) and from interviewing Forest program managers. There are no clearly defined future projects on NFS lands that are currently known other than projects for which decisions have already been issued but are not yet fully implemented.

These tables, though comprehensive, may have some unintended omissions due to lack of records or knowledge. The listing is intended to demonstrate that relevant past, present, and reasonably foreseeable future activities are identified and are considered in the analysis of cumulative effects. Also refer to Figure D-1. Marshall Woods Harvest History for HUCs and Figure D-2. Marshall Woods Harvest History for Project Area.

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<sup>1</sup> Council on Environmental Quality, Guidance on the Consideration of Past Actions in Cumulative Effects Analysis, June 24, 2005 Memorandum.

Marshall Woods Restoration Project EA  
Appendix D - Past, Present, Future Actions

**Table D-1. Cumulative Effects Summary by Ownership for Marshall Woods Project Area**

Actions on All Ownerships	Past	Present	Reasonably Foreseeable
Homesteads	A small community of about 20 homesteads, existed along Rattlesnake Creek near Spring Creek between 1900 and 1910. Development included a school, phone line, newspaper and mail delivery. The community was bought by Montana Power Co, in the early 1930s.		
Wildland Fire	Wildland fires were historically a major disturbance factor throughout history on the Missoula Ranger District. Within the two HUCs in the project area, fires occurred on about 14,794 acres.		It is reasonable to assume wildland fire may occur in the area in the future.
Wildland Fire Suppression	Beginning with the Fire Control Policy of 1935, the Forest Service procedure has been to suppress forest fires as quickly as possible.	Suppression of wildfires, as appropriate will continue. Managing fire for multiple objectives may be used on portions of the Missoula Ranger District (although not within the project area).	Suppression of wildland fires, as appropriate will continue. Wildland fire use may expand, where resource objectives can be met, in the future.
Prescribed Burning	Prescribed fire to improve big game winter range, reduce fuels and improve ecosystem health was implemented on 1,106 acres on Strawberry Ridge in 1997. About 569 acres were burned in 1998 in the West Spring Gulch EMB.		Application of prescribed fire on approximately 2,000 acres in 5 units will occur (Rattlesnake NRA Wildlife habitat Improvement and EMB EA, 1997)
Hunting, Trapping, Predator and Beaver Control	Hunting has been a popular use of National Forest System land and other ownerships. Some predator populations such as wolves and coyotes were reduced in numbers from the project area in the early part of the last century. Trapping of beavers and destruction of their dams occurred has occurred on all ownerships. In 2009, a Special Restriction was signed to prohibit predator (including but not limited to coyote, weasel, skunk, and civit cat) and all non-game wildlife (including but not limited to badger, raccoon, rabbit, and fox) trapping year-round in the Rattlesnake National Recreation Area and adjacent lands	Hunting and trapping will continue. A limited amount of coyote and beaver population control may be occurring.	Hunting and trapping will continue. A limited amount of coyote and beaver population control may take place in the future, particularly on and near private property.

Marshall Woods Restoration Project EA  
Appendix D - Past, Present, Future Actions

Actions on All Ownerships	Past	Present	Reasonably Foreseeable
	(Sawmill, Woods Gulch, and Danny O'Brien Gulch on Mount Jumbo). Furbearer (including but not limited to beaver, bobcat, fisher, marten, otter, mink, muskrat, fox, and wolverine) trapping is also prohibited in these areas as per State of Montana Trapping and Hunting regulations (Order No. F09-002-LOLO-D3). This order is rescinded by and included in Order No. F13-069-LOLO-D3.		
Firewood and Other Miscellaneous Forest Product Gathering	Firewood gathering has occurred in the area. Other products gathered in small quantities include post and poles, berries, and Christmas trees.	Gathering will continue.	Will continue. Higher than historic energy costs may increase the public's desire to obtain firewood but air quality concerns may also reduce reliance on this source of fuel in the future.
Trail Use	The 28,000-acre RNRA includes 73 miles of system trails, nearly all of which are multiple-use non-motorized trails. The first five miles of Trail 515 is groomed for x-country skiing.	Use will continue.	Use will continue.
Trail Management	Trail maintenance occurred. Unauthorized user-created trails have been decommissioned. Sawmill Gulch and Wallman trails have been re-routed to control erosion.	Will continue	Will continue
Driving	Driving, sightseeing, and wildlife viewing on open Forest and private roads have occurred.	Use will continue.	Use will continue.
Watershed Improvements	Since 1999, 4 culverts were replaced with bridges on upper Rattlesnake tributaries. New or updated fish screens were installed on 6 irrigation diversions. A fish ladder was installed in 2001 at the Rattlesnake main water supply dam. In 2002 a side channel was reconstructed and floodplain access was improved on Lower Rattlesnake Creek. In 2010 mainline construction on the Rattlesnake Valley Sewer Project was completed. In March, 2014, rehabilitated and developed a naturally appearing stable streambank (about 150 feet) to allow easy recreation access to Rattlesnake Creek next to Road 99 / Trail 515	This type of work will continue.	This type of work will continue.

Marshall Woods Restoration Project EA  
Appendix D - Past, Present, Future Actions

Actions on All Ownerships	Past	Present	Reasonably Foreseeable
	just south of the horse trailhead bridge (MP 0.395). This was originally proposed in the alternatives but was completed under a separate analysis and decision.		
Road Construction (Non-NFS lands)			City of Missoula plans to reconstruct Van Buren from Holly to Missoula Ave in 2015. There will be curb and sidewalk installation projects on Rattlesnake Drive from Lolo to Creek Crossing within the next 3 to 5 years (2018 – 2020).
Road Construction (NFS lands)	Within project area approximately 34 miles of road have been built on NFS land. The roads are in varying levels of use including roads that are closed and no longer drivable. The majority of roads built on federal lands were completed between 1960 and 1990.	None	Unlikely any new system roads will be built in the reasonably foreseeable future on NFS land.
Road Maintenance and BMPs	Roads on all ownerships have been maintained for use either by all users or for just the individual landowners. Roads used for the transport of forest products are generally maintained to meet Montana Best Management Practices (BMP), which includes: road work to improve surface drainage, stabilize slopes, and reduce erosion and stream sedimentation.	Will continue.	Will continue.
Road Maintenance (Non NFS lands)	In August 2014, a mudslide precipitated by heavy rains washed out the shoulder of a stretch of MT Hwy 200 at the bottom of Marshall Canyon Road.	Will likely continue.	Will likely continue.
Road Decommissioning/Conversion	Since about 2007 in the two HUCs, 0.6 miles of system road was converted to trail.	Will continue.	Will continue. Three road segments totaling 1.2 miles will be decommissioned (Sec. 31 DM, 2008)
Timber Harvest	Approximately 783 acres of timber were harvested on NFS land in the project area in the 1980s. Tables D-2 and D-4 detail the acres of timber harvest by decade and treatment type for the project area and for the two HUCs. Section 33 was acquired in 2010 by the Lolo	None	None

Marshall Woods Restoration Project EA  
Appendix D - Past, Present, Future Actions

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	<p>NF from The Nature Conservancy (TNC) through the Montana Legacy program. TNC retained the rights to the timber in this section. They completed some logging on 218 acres in this section in 2014.</p>		
<p>Fuel reduction work (Non-NFS lands)</p>	<p>Many small private land owners have taken measures to reduce fuels on their own land.</p>	<p>Will likely continue.</p>	<p>Will likely continue.</p>
<p>Noxious Weed Control</p>	<p>The State of Montana applies herbicides on State lands near or adjacent to the Lolo NF. These programs treat adjacent areas and roads, State roads, and highways within and around the Marshall Woods project area. Adjacent private landowners actively control weeds and some use herbicides. Methods include both aerial and ground application of herbicides.</p>	<p>Noxious weed control as outlined in the 2007 Integrated Weed Management on the Lolo National Forest Environmental Impact Statement and Record of Decision will take place in the project area.</p>	<p>Weed control is likely to continue.</p>
<p>Vegetation Treatment with Insecticide</p>	<p>Spring 2012 - Sprayed Carbaryl insecticide to prevent mountain pine beetle attacks on susceptible species along the main Rattlesnake Trail. Spraying occurred on about the first 3 miles of roadway extending no more than 300' from the edge of the road. Approximately 110 acres were be treated with about 50 trees per acre being treated. Treatment was conducted again in spring 2014 although it covered a smaller area.</p>		
<p>Land Ownership Transfer</p>	<p>Section 31 was acquired by the Lolo NF in 1999. Section 33 was acquired by the Lolo NF in 2010.</p>		<p>Lolo NF plans to purchase S ½ of Section 5 east of the Marshall Ski Area.</p>

**PROJECT AREA INFORMATION**

Tables D-2 and D-3 show information for within the 13,000-acre Marshall Woods Restoration Project area. All acres are approximate. One acre of land may have had multiple activities, including more than one harvest entry; therefore a straight percentage of the area that has had activities (vs. no activity) cannot be made with these figures.

**Table D-2. Past Timber Harvest Activity Acres on NFS Land Within the Project Area (does not include The Nature Conservancy’s harvest of section 33 in 2014).**

Harvest by Decade	Total Acres
1980	783
Sanitation (salvage)	751
Marshall	260
Marshall Ski Area #2	12
Raptor II	90
Name unknown	389
Shelterwood Establishment Cut (with or without leave trees) (EA/RH/NFH)	32
Marshall	32
<b>Grand Total</b>	<b>783</b>

**Table D-3. Past Site Prep for Planting Activity Acres on NFS Land in the Project Area (does not include The Nature Conservancy’s post-harvest slash treatment of section 33 in 2014).**

Activity by Decade	Total Acres
1940	401
Plant Trees	401
1980	839
Burning of Piled Material	524
Initiate Natural Regeneration	32
Piling of Fuels, Hand or Machine	283
1990	22
Burning of Piled Material	11
Piling of Fuels, Hand or Machine	11
2000	150
Burning of Piled Material	75
Piling of Fuels, Hand or Machine	75
<b>Grand Total</b>	<b>1,337</b>

**HUCS WITHIN OR ADJACENT TO THE PROJECT AREA**

Tables D-4 through D-6 show information for within the 28,514-acre watershed units (HUCs) within or adjacent to the Marshall Woods Restoration Project area. All acres are approximate. One acre of land may have had multiple activities, including more than one harvest entry; therefore a straight percentage of the area that has had activities (vs. no activity) cannot be made with these figures.

**Table D-4. Past Timber Harvest Activity Acres on NFS Land Within the two HUCs.**

Harvest by Decade	Total Acres
1980	783
Sanitation (salvage)	751
Shelterwood Establishment Cut (with or without leave trees) (EA/RH/NFH)	32
2000	201
Improvement Cut	201
<b>Grand Total</b>	<b>984</b>

**Table D-5. Past Site Prep for Planting Activity Acres on NFS Land Within the two HUCs.**

Activity by Decade	Total Acres
1940	403
Plant Trees	403
1980	555
Burning of Piled Material	524
Initiate Natural Regeneration	32
1990	11
Burning of Piled Material	11
2000	262
Burning of Piled Material	262
<b>Grand Total</b>	<b>1,232</b>

**Table D-6. Acres of Wildfire on NFS Land in the Project Area.by Decade (1910-2010)**

Year	Marshall 7th code HUC	Middle Rattlesnake 6th code HUC
1910	609	12,836
1930	33	--
1940	92	527
1980	--	132
2000	--	566
<b>Total</b>	<b>734</b>	<b>14,061</b>

Figure D-1. Marshall Woods Harvest History for HUCs



