

# Pre-Operations Report

**Operation Name: Little Rock Monument**  
**County: Linn**  
**Management Basin: Mad Creek, Rock Creek**

**Table 1. Operation Areas, Types and Acres**

Area	Type of Operation	Gross Acres	Net Acres
I	PC-M	247	228
II	PC-M	38	31
III	MC	97	91
Total		<b>382</b>	<b>350</b>

## **I. PHYSICAL DESCRIPTION OF OPERATION AREA:**

The operation is located within a temperate climate area. Typically the fall and winter seasons are wet. This area receives approximately 70 to 90 inches of rainfall per year. The operation is located within the *Tsuga heterophylla* Zone (Natural Vegetation of Oregon and Washington, Franklin & Dyrness, 1973). The elevations range from 2100 to 2700 feet with moderate slopes of 15 to 60%. Aspects are variable with several small streams dissecting the operation area.

The Akerson and Pechuck soil series are found within the operation area. The Akerson series is comprised of deep, well-drained, fine-textured colluvial soils developing from Miocene age andesite. Characteristically, these soils are granular to gravelly, dark brown clays with A to C horizons totaling about 50 inches. Rock volume ranges from 10 to 50 percent, depending on depth. This soil occurs on gentle to moderate slopes at elevations from 1000 to 2600 feet where annual precipitation ranges from 70 to 85 inches.

The Pechuck soil is a deep, well-drained, moderately fine-textured colluvial soil that developed from Miocene age andesite. In general, this soil is a gravelly loam to gravelly clay loam with varying amounts of rock from 10 percent in the A horizon to 80 percent in the C Horizon. It lies over Andesite bedrock which is at a depth generally greater than 50 inches. It occurs on moderate to precipitous slopes at elevations between 1500 to 3200 feet where annual precipitation ranges from 70 to 95 inches.

## **II. CURRENT STAND CONDITION:**

Area I is currently classified as Understory (UDS). The overstory consists mainly of Douglas-fir with some western hemlock. Most of this area has been thinned previously. This thinning opened the stand enough to enable an understory of western hemlock to seed in. Other tree species in the understory are western red cedar along with a few hardwoods. The remaining understory includes sword fern, vine maple, salal, Oregon grape, and other shrub and herbs/forbs species. Several root rot pockets are evident throughout the stand. In decay classes 1 and 2, there are 3 snags per acre in the 15-23 inch category and 1 snag that is at least 24 inches. In decay classes 3 through 5 there are 4 snags per acre in the 15-23 inch category and 9 that are 24 inches and larger. There are 280 cubic feet per acre of sound down wood all less than 24 inches. In decay classes 3 through 5 there are 6 pieces totaling 1,400 cubic feet larger than 24 inches and 1,320 cubic feet per acre of down wood 24 inches and smaller. (SLI, 2007)

Area II is currently classified as a UDS stand. Douglas-fir is the main overstory tree species with scattered western hemlock and a few western red cedar and red alder. Understory species include western hemlock with a shrub and herbs/forbs component of vine maple, sword fern, oxalis, Oregon grape, and others. Tree crowns in this stand were damaged by a severe wind storm about 40 years ago and it was thinned about 18-20 years ago. The stand responded favorably to the earlier thinning but is showing signs of crown closure.

Area III is also currently classified as a UDS stand. Douglas-fir is the main overstory tree with scattered western hemlock and a few western red cedar and red alder. Understory species include western hemlock with a shrub and herbs/forbs component of vine maple, sword fern, oxalis, Oregon grape, and others. Like the stand in Area II, the crowns in this stand were damaged by a severe wind storm about 40 years ago, but this stand was not subsequently thinned. The combination of damaged crowns and sustained over-stocked condition indicate that it will not respond well to a thinning.

Areas II and III were inventoried under the same stand ID (12680) and were found to have 9 snags per acre in decay classes 1 and 2 in the 15-23 inch category. In decay classes 3 through 5 there are 4 snags per acre in the 15-23 inch category and 12 that are 24 inches and larger. There are 550 cubic feet per acre of sound down wood all less than 24 inches. In decay classes 3 through 5 there are 9 pieces totaling 1,600 cubic feet larger than 24 inches and 3,650 cubic feet per acre of down wood 24 inches and smaller. (SLI, 2005)

**Table 2. Stand Inventory Information**

Area	Prescription	Stand ID <sup>1</sup>	Species	Age	DBH	BA	TPA	SDI	Acres <sup>2</sup>
I	PC-M	12618	DF	75	18	235	122	55	228
		<b>Target <sup>3</sup></b>			<b>18</b>	<b>145</b>	<b>76</b>	<b>32</b>	
II	PC-M	12680	DF	80	16	267	174	66	31
		<b>Target <sup>3</sup></b>			<b>20</b>	<b>140</b>	<b>60</b>	<b>32</b>	
III	MC	12680	DF	80	16	267	174	66	91
		<b>Target <sup>3</sup></b>			<b>22</b>	<b>22</b>	<b>8</b>	<b>5</b>	

1 The source of stand inventory information for stand 12618 is 2007 SLI and for stand 12680, 2005 SLI for trees 8 inches or greater DBH.

2 The acres are based on GIS and exclude roads, streams buffers, reserve areas, etc.

3 The Target identifies expected stand characteristics (DBH, BA, TPA and SDI) after harvesting has been completed.

### III. DESIRED STAND CONDITION/VISION:

The Desired Future Condition (DFC) for Area I is Layered (LYR). The vision for Area I is an overstory of large Douglas-fir and western hemlock with a second story of smaller trees (western hemlock, western red cedar and hardwood). The third story will be saplings and brush. The ground layer will be composed of herbs with a substantial number of large, down logs. Currently several root rot pockets are evident throughout the stand. These will be maintained for down wood and snag recruitment areas. Snags and down wood of various sizes and decay classes will increase over time due to natural conditions or through recruitment during harvesting activities.

The DFC for Area II is CSC. Area II will keep its current structure classification of UDS initially and then move into the CSC structure as the Douglas-fir and western hemlock overstory trees grow and fully occupy the site.

The future vision for Area III is a mature fully stocked CSC stand of Douglas-fir and western red cedar.

**Table 3. Stand Structure Information**

Area	Stand ID	Current	Post Harvest <sup>1</sup>	Desired Future	Acres
I	12618	UDS	UDS	LYR	228
II	12680	UDS	UDS	CSC	31
III	12680	UDS	REG	CSC	91

1 The stand is expected to develop into this condition in the five to ten years after this operation is completed.

#### **IV. PROPOSED MANAGEMENT PRESCRIPTION:**

The primary objective for the proposed operation in Area I is to improve and enhance the layering of the stand. This will be accomplished by thinning out the overstory, allowing sunlight to stimulate the understory vegetation and maintain the vigor of mid-story hardwoods. Existing down wood will be supplemented with cull logs and logging debris.

The primary objective for the proposed operation in Areas II & III is to enhance stand volume production and value. For Area II this means improvement of the form and vigor of the residual trees and capturing stand mortality. For Area III it means harvesting a damaged over-stocked natural stand, establishing an intensively managed new stand while maintaining or developing some structural components important to habitat diversity.

In the short term, the harvest operations will maintain Areas I & II in Understory (UDS), and Area III will become Regeneration (REG)

The proposed management prescription for Area I is:

- Thin all trees greater than 8 inches DBH to: basal area of 145; TPA 76; ave DBH 18 inches; and SDI 32%.
- Reserve all hemlock, western red cedar and hardwoods from cutting.
- Western hemlock and western red cedar trees larger than 16 inches may be counted toward the overall basal area leave trees.
- Retain existing snags and down wood.
- In the years to come, this stand will receive further operations designed to continue enhancement of layering through recruitment of down wood and snags, creation of horizontal diversity through alternative thinning prescriptions, addition of understory cohorts, and promotion of continued growth of the overstory through periodic thinning.

The proposed management prescription for Area II is:

- Thin all trees greater than 8 inches DBH to: basal area of 140; TPA 60; ave DBH 20 inches; and SDI 32%.
- Retain existing snags and down wood.
- Reserve hardwoods from cutting.
- Reserve all old growth.

The proposed management prescription for Area III is:

- Harvest all trees greater than 8 inches DBH
- Retain 5-8 conifer green trees per acre.
- Retain all down wood and existing snags.
- Prepare the site for planting by piling and burning slash
- Treat competing vegetation with applications of herbicides.
- Douglas-fir and western red cedar will be planted.

In the years to come, the stands in Areas II & III will receive a series of thinnings designed to maximize volume and value, and promote stand health and vigor. It is expected that the stand structure will shift between CSC and UDS as the cutting cycles are implemented over time. Structural development to something more complex is not anticipated. This balance between CSC and UDS will persist until the stands are harvested.

**V. ESTIMATED TIMBER AND REVENUE OUTPUTS:**

**Table 4. Timber and Revenue**

Ownership		Sale Type	
BOF	CSL	Cash	Recovery
100%	%	<input type="checkbox"/>	X
Planned Quarter: 2			

	Conifer	Hardwood	Total
Net Volume (MBF)	6,905		
Stumpage Value (\$/MBF)	\$350		
Estimated Gross Value	\$2,416,750		\$2,416,750
		Project Costs:	25,900
		Estimated Net Value:	\$2,390,850

**VI. HARVESTING AND ACCESS CONSIDERATIONS:**

Good forest mainline and collector type roads access the sale area. The four main roads that will be used to haul out of the unit are: North Rock Creek and Monument Peak Mainlines; and Wagon and Christmas Tree Roads (collector types). These access roads have a crushed rock surface in good condition. The total mileage for the two mainline roads is 4.6. The two collector roads have a total mileage of 2.8. There are 3 new spur roads planned for the sale and one road to reopen (NRC 700). To allow winter use (log hauling and cable yarding), the two new roads on the southern boundary will be rocked with pit run surfacing. The new 800 ft extension of the WGN 200 road will not be rocked. It will be used for ground yarding with landings typically used only during dry periods of the year. This extension spur will need one temporary culvert or log fill in order to cross a small type N stream. Once logging is completed the crossing will be removed. Keeping with district policy, our logging settings planned for cable yarding will have all weather surfacing on the access roads. No roads will be constructed through or near a high landslide hazard location or across Type F streams. Roads in the sale without rock surfacing will be blocked and / or vacated.

Harvesting plans for this unit include the typical requirement of cable yarding when slopes are greater than about 40% and allowing the more economical ground yarding on the moderate slopes. This unit has no special harvesting concerns because all cable yarding will be of relatively short reach and uphill with good deflection. About half the unit is suitable for ground yarding and half for cable logging systems.

Projects

New road construction - rocked, 2 spurs = 2300 ft of road	\$17,000
New construction un-rocked 1 spur = 800 ft of road	\$ 2,400
Open NRC 700 road 1100 ft	\$ 2,000
Road brushing as needed in the area, 5 miles est.	<u>\$ 4,500</u>
Total	\$25,900

**Table 5. Transportation Planning Summary (Miles).**

Activity	Mainline	Collector	Rocked Spur	Dirt Spur
Construct	0	0	.44	.36
Improve	0	0	0	0
Maintain	4.6	2.8	.44	.36
Close/Block	0	0	0	.36
Vacate	0	0	0	0

**VII. AQUATIC RESOURCES AND WATER QUALITY:**

No listed fish streams are within or in close proximity to this operation. Seven small perennial non-fish bearing tributaries of Little Rock Creek flow south to north through much of the sale area. In the southwest portion of the sale there are three small perennial non-fish bearing tributaries of Rock Creek. The overstory vegetation along these streams consists of Douglas-fir, western hemlock and red alder. The understory vegetation includes vine maple, Oregon grape and ferns.

A buffer of at least 25 feet horizontal distance will be posted on either side of these streams. In the remaining portion of the Riparian Management Areas (RMAs) sufficient trees will be retained to comply with current standards.

## **VIII. WILDLIFE AND T&E SPECIES CONSIDERATIONS:**

While the sale is not located within any Northern Spotted Owl circles, the sale area was determined to be suitable habitat for this species. Surveys were completed six times during the 2007 survey season. A response from the Mad Creek owl occurred on the third visit in July. Three more surveys in August yielded no additional responses. The operation will be surveyed again in 2008.

The operation area was checked against District knowledge for any listed plant location. The operation area was also checked against the Oregon Natural Heritage Program's database of known listed plant locations. No listed plant records were identified within the operation area.

## **IX. SLOPE STABILITY AND GEOTECHNICAL ISSUES:**

This assessment is based on analysis of USGS 1:24,000 topographic maps.

There are isolated high landslide hazard locations in Areas I and III and there are no high landslide hazard locations in Area II. The sale drains into Rock Creek and Little Rock Creek. The risk of landslides delivering directly from the sale to Little Rock Creek is low and to Rock Creek is low to moderate. Portions of the sale appear to be located on a large, deep-seated landslide landform.

The geotechnical specialist will be consulted if evidence of recent landslide activity is identified during sale layout.

## **X. RECREATION RESOURCES:**

There are no developed recreation facilities inside the timber sale boundary. Known recreational activities in the area are dispersed in nature and include: hunting, site seeing, mushroom gathering and horseback riding. The Santiam Horse Camp and Monument Peak Designated Trail System are to the north of the timber sale. While there are no developed trails in the sale boundary, horseback riders commonly ride the Wagon Road. Where the haul route and recreation access roads merge, informational and caution signs will be posted. Vehicles towing horse trailers commonly use the Monument Peak Mainline. Because of possible conflict, both operators and the visiting public will need to use caution on the Monument Peak Mainline and when using other roads in the sale area. Skid roads/spurs will be closed in order to deter illegal motorized off-road use, illegal fires and garbage dumping in this area.

**XI. CULTURAL RESOURCES:**

The District cultural resource inventory and pre-operation reconnaissance revealed no visible cultural resource features or artifacts. If discovery is made, the cultural resource will be protected and field staff will consult with the Cultural Resource Specialist in Salem.

**XII. SCENIC RESOURCES:**

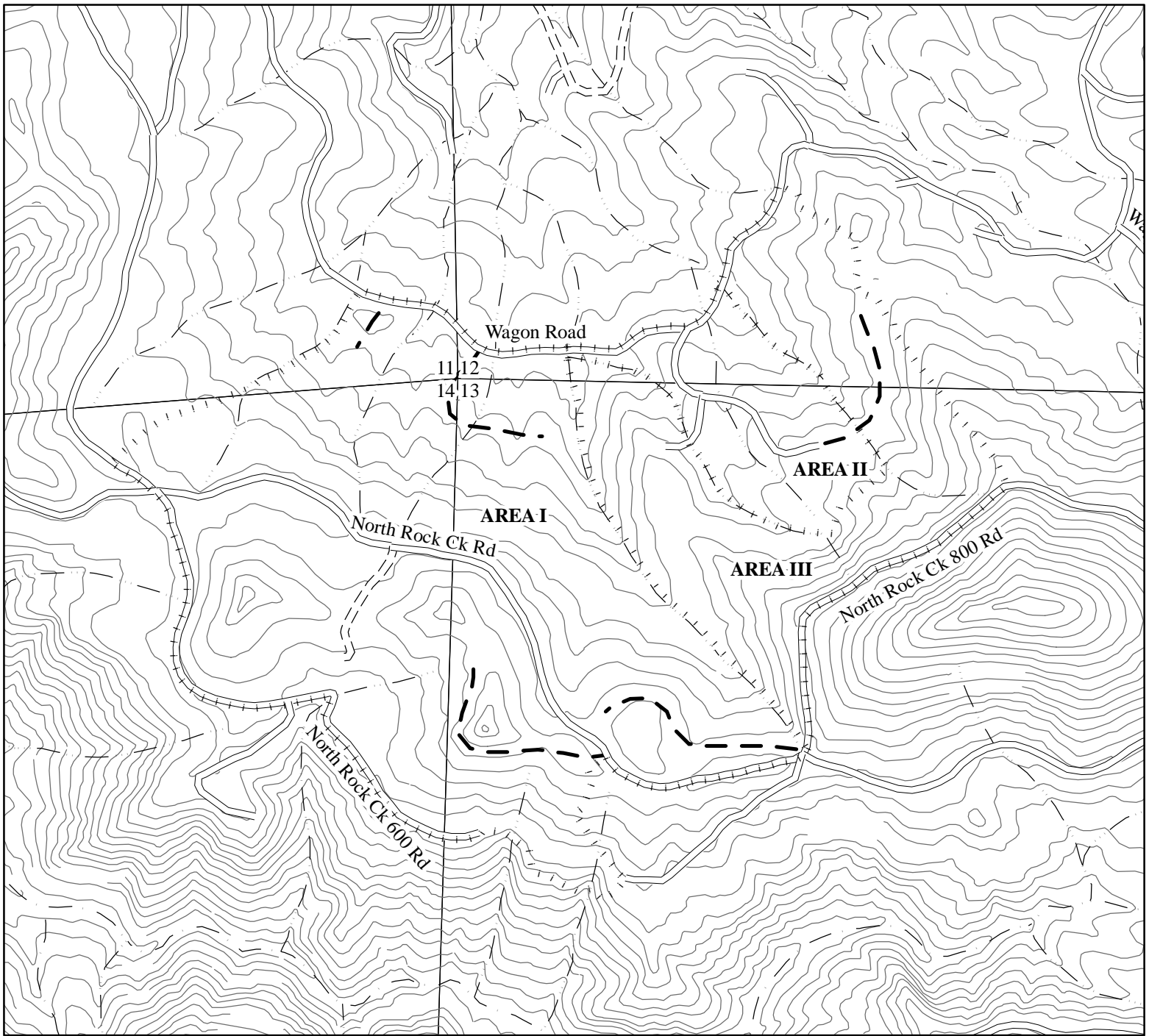
Areas II and III and a portion of Area I are over 3 miles away but visible from Highway 22. The Visual Classification is moderate sensitivity. No harvesting restrictions will be imposed.

**XIII. OTHER RESOURCE CONSIDERATIONS:**

If no additional harvest costs are required, the rock pillar formation in Area I will be protected during harvest activities.

**XIV. LAND MANAGEMENT CLASSIFICATION SUMMARY:**

The Land Management Classification System has indicated focused and special stewardship for aquatic and riparian resources, focused stewardship for visual resources, and focused stewardship for wildlife habitat for this operation. See Section VII, Aquatic Resources and Water Quality for explanation about riparian resources. See Section XII, Scenic Resources for detailed information about the visual impacts. In 2003 the sale area was within a 1.2 mile radius of the Little Rock Northern Spotted Owl site. The site status was changed to historic in 2005 after owl surveyors heard no response in 2003, 2004 and 2005. See Section VIII, Wildlife and T&E Species Considerations for information about the most recent owl surveys.



**Legend**

- ▬▬▬▬ Sale Boundaries
- ▬▬▬▬ Surfaced Road
- ▬▬▬▬ Unsurfaced Road
- ▬•▬▬▬ New Road Construction
- ▬▬▬▬ Type F Stream
- ▬▬▬▬ Type N Stream
- ▬▬▬▬ Unknown Stream
- ▬•▬▬▬ State Forest Property Boundary
- ▬▬▬▬ 40 Foot Contours
- ▬▬▬▬ Common School Land

**LITTLE ROCK MONUMENT**

FY 09 AOP  
 NORTH CASCADE DISTRICT  
 ATTACHMENT A : TOPOGRAPHY

PORTIONS OF SECTIONS 11, 12, 13, & 14  
 T10S, R3E, W.M.  
 LINN COUNTY, OR

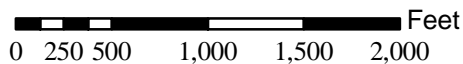
**3**

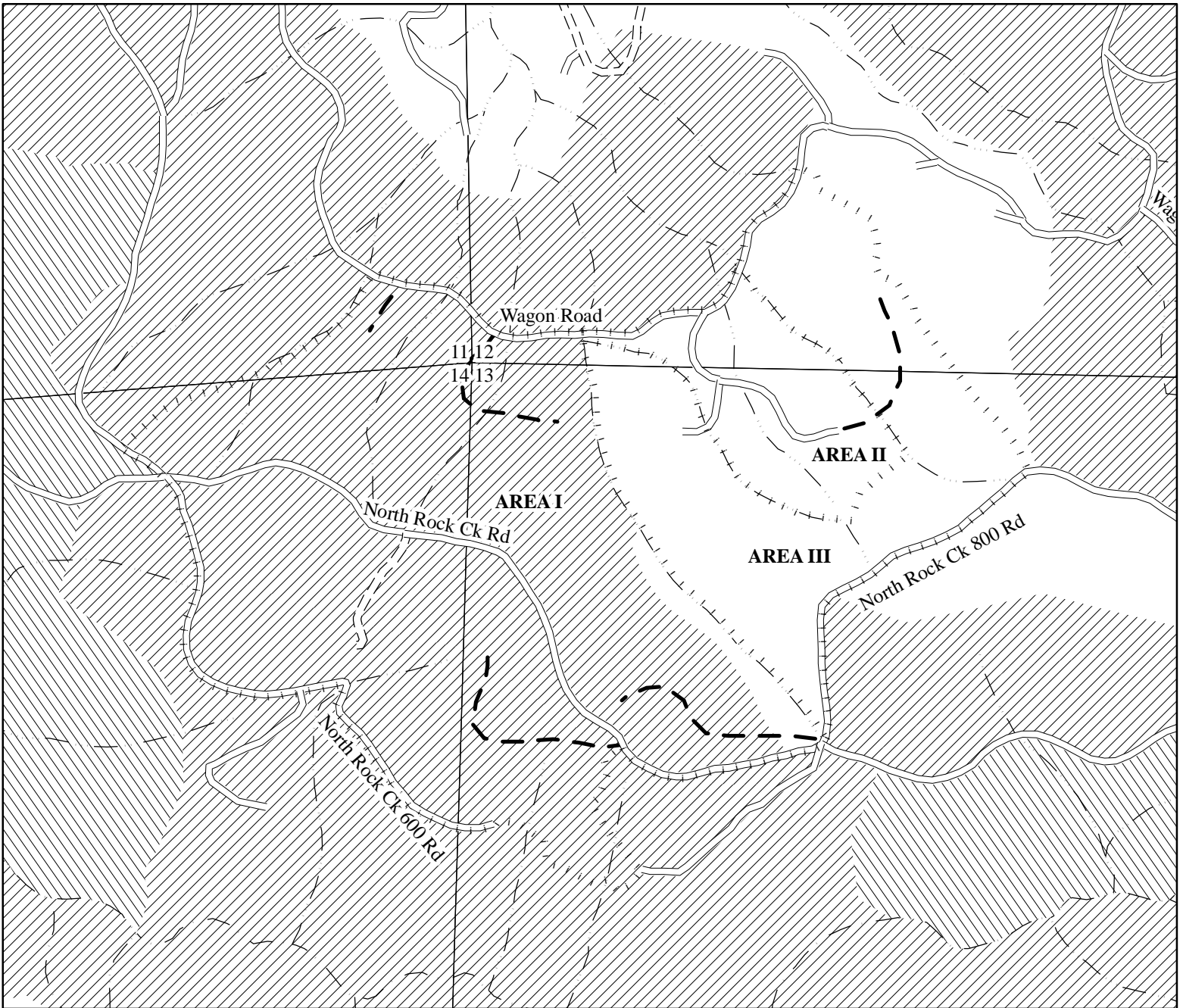
**APPROXIMATE NET ACRES**

AREA I : 228 (PC)  
 AREA II : 31 (PC)  
 AREA III : 91 (MC)

Scale  
 1:12,000  
 1 inch = 1000 feet

This product is for informational use and may not have been prepared for, or be suitable for legal, engineering, or surveying purposes.





# LITTLE ROCK MONUMENT

FY 09 AOP  
 NORTH CASCADE DISTRICT  
 ATTACHMENT B : DESIRED FUTURE CONDITION

PORTIONS OF SECTIONS 11, 12, 13, & 14  
 T10S, R3E, W.M.  
 LINN COUNTY, OR

# 3

### Legend

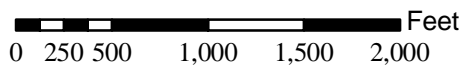
- □ □ □ Sale Boundaries
- ==== Surfaced Road
- == == Unsurfaced Road
- • — New Road Construction
- Type F Stream
- Type N Stream
- Unknown Stream
- //// LYR
- \\\\ OFS
- - - State Forest Property Boundary
- Common School Land

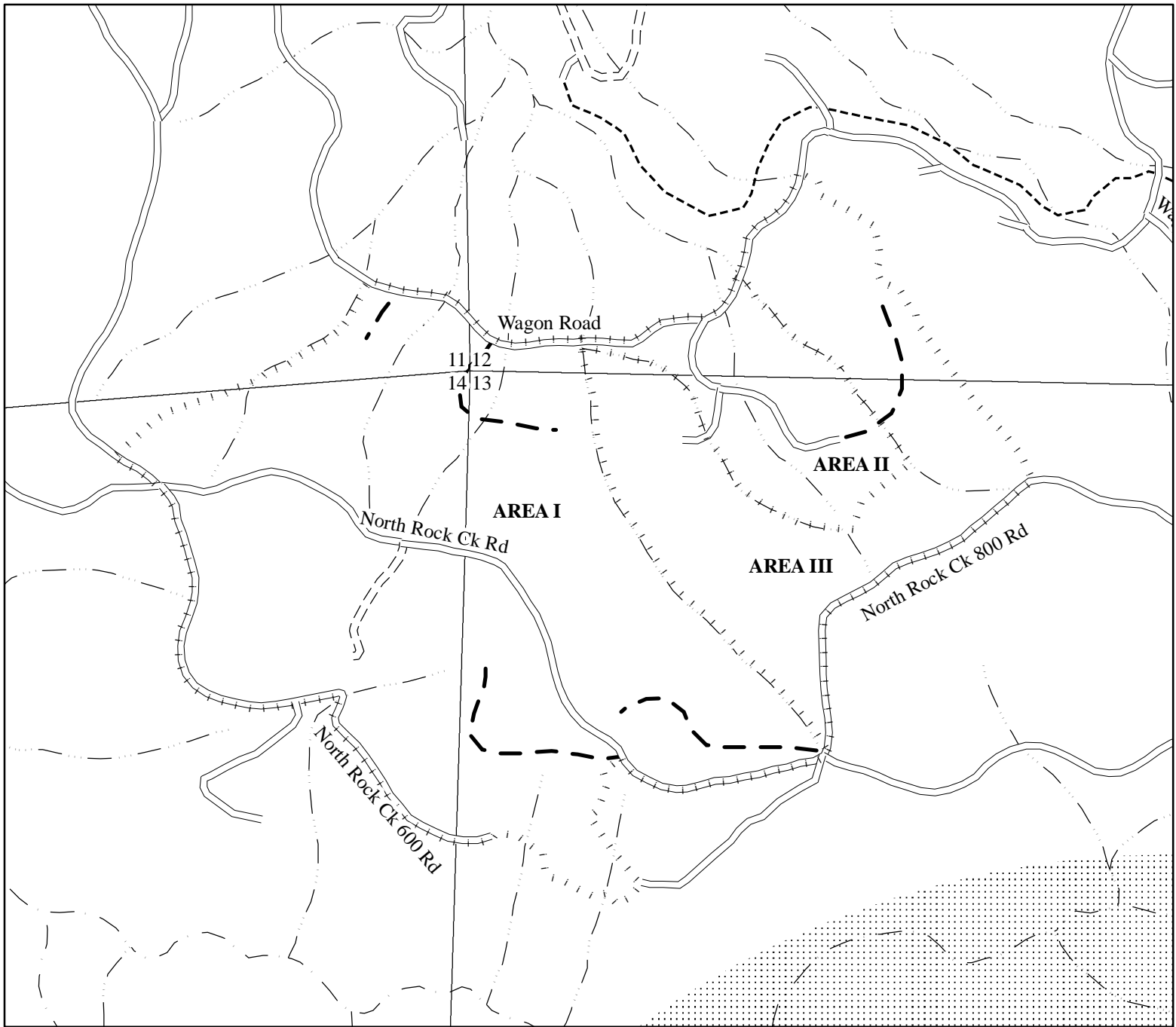
### APPROXIMATE NET ACRES

AREA I : 228 (PC)  
 AREA II : 31 (PC)  
 AREA III : 91 (MC)

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Scale  
 1:12,000  
 1 inch = 1000 feet





**Legend**

- ▤▤▤▤ Sale Boundaries
- ==== Surfaced Road
- == == Unsurfaced Road
- • — New Road Construction
- Type F Stream
- Type N Stream
- Unknown Stream
- Hiking Trail
- ▤▤▤▤ 1.2 Mile NSO Circle
- • — State Forest Property Boundary
- ▨ Common School Land

**LITTLE ROCK MONUMENT**

FY 09 AOP  
 NORTH CASCADE DISTRICT  
 ATTACHMENT C : KEY RESOURCES

PORTIONS OF SECTIONS 11, 12, 13, & 14  
 T10S, R3E, W.M.  
 LINN COUNTY, OR

**3**

**APPROXIMATE NET ACRES**

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 AREA II : 31 (PC)  
 AREA III : 91 (MC)

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