Peter Principle Timber Sale

Final Decision, Decision Rationale (DR)

Environmental Assessment (EA) Number **DOI-BLM-OR-S040-2013-0003-EA**

November, 2014

United States Department of the Interior
Bureau of Land Management, Oregon State Office
Salem District, Cascades Resource Area

Willamette Meridian,
T. 12 S., R.2 E., Sections 21 and 29

Crabtree Creek 6th field and Upper McDowell Creek 7th field Watersheds
Linn County Oregon

Responsible Agency: USDI - Bureau of Land Management

Responsible Official: John Huston, Field Manager
Cascades Resource Area
1717 Fabry Road SE
Salem, OR 97306

BLM
Salem District

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BLM/OR/WA/AE-15/006+1632

1.0 Introduction

The Bureau of Land Management (BLM) completed the *Mighty Moose Thinning Environmental Assessment (EA) and Finding of No Significant Impact (FONSI)*. This EA, which is incorporated by reference in this document, concluded with a Finding of No Significant Impact (FONSI) dated May 2, 2014. The Cascades Resource Area, Salem District initiated planning and design for this project on September 17th, 2012 to conform and be consistent with the Salem District's 1995 Record of Decision and Resource Management Plan. The proposed action alternative analyzed approximately 1300 acres of thinning treatment in 35-62 year old forest stands. The BLM also published the *Peter Principle Determination of NEPA Adequacy* (DNA) on November 19th to address thinning prescriptions in portions of the Riparian Reserve Land Use Allocation (LUA).

This decision, the Peter Principle decision, selects 278 acres for harvest located in T. 12 S., R.2 E., Sections 21 and 29 (Appendix B, Map 1). The Peter Principle Timber Sale (TS) is the second timber sale analyzed in the Mighty Moose EA. The remaining proposed thinning acres documented in the EA will be addressed in a future decision.

The Peter Principle treatment area includes lands within Matrix and Riparian Reserve LUA. All units lie in the Crabtree Creek 6th field and Upper McDowell Creek 7th field Watersheds.

2.0 Decision

Based on the EA, the project record, the DNA, RMP management direction, and public input I have decided to implement the Peter Principle TS. The decision selects four units of the Proposed Action described in the EA (pp. 15-22). Namely, the Peter Principle TS will implement thinning in units 21A, 29A, 29B, and 29C (DR Appendix A, Table 1).

The decision incorporates the project design features described in the Mighty Moose EA (pp. 24-27). These design features incorporate site specific measures to avoid or minimize resource impacts.

The following details the decision, hereafter referred to as the "selected action".

<u>Timber Harvest:</u>

Harvest approximately 278 acres (DR Appendix A, Table 1) providing approximately 5 million board feet (MMbf) of timber. This harvest includes:

- Thinning 278 acres within the following 1995 RMP LUA:
  - 212 acres within Matrix LUA
  - 56 acres within the Riparian Reserve (RR) LUA
- Thinning 10 acres to a density of 12-14 green trees per acre (TPA) within the Matrix and Riparian Reserve LUA (DR Appendix B, Project Maps). There are 9 to 10 low density thinning areas (LDTA) of approximately 1 acre in size (See Peter Principle DNA: *DOI-BLM-OR-S040-2015-0001-DNA).*
- Clearing approximately 1 acre of vegetation for new road construction to access units in the timber sale (DR Table 2).

Logging Systems:

Approximately 68 percent (187 acres) of the area will be logged using ground based yarding systems. Approximately 32 percent (90 acres) will be logged with a skyline yarding system (Appendix B, Maps 2 and 3).

Road Work:

Road work will be completed as identified in the EA (Table 2, pp. 20-22) for the selected harvest units in sections 21 and 29. Appendix A (DR Table 2) in this decision displays the selected actions. Road work associated with the Peter Principle Timber Sale includes:

- Construct approximately 0.3 miles of new natural surface road to access thinning units. Roads will be closed and stabilized following project implementation.
- Renovate approximately 1.52 miles of existing road to the minimum standard necessary for hauling, including blading, spot rocking, brushing, curve alignment, and tree removal.
- Maintain approximately 21.55 miles of existing, usable road. Maintenance typically includes blading and shaping of the roadbed and ditches, repairing slide/slumps, road-side brushing, and adding surface rock; includes the installation of 2 new culvers and replacement of 4 existing culverts.
- Stabilize and Close all 0.3 miles of newly constructed natural surface roads and 0.69 miles of renovated road surfaces. Actions include:
    - Seeding with native plant species to establish effective ground cover prior to the wet season;
    - Reestablishing natural drainage patterns by removing all culverts, using water bars or other drainage features to prevent water erosion of exposed soil;
    - Blocking vehicle access, typically with earth/debris barricades.

Fuels Treatments:

Residual woody debris from logging on 16- 20 acres will be reduced after harvest operations. Woody debris that accumulates at logging landings will be piled and covered. In addition, fuels loads along property lines and roads will be piled and covered. After the fuels dry, the piles will be burned in compliance with the Oregon Smoke Management Plan.

Refinements to the Project since the EA was published

Project boundaries and acreage:

The EA analyzed 358 acres for the Peter Principle Timber Sale. The final acreage selected in the decision includes 215 acres in Matrix and 63 acres in Riparian Reserves. These draft boundaries and fixed-width buffers provided an area for analysis for the Interdisciplinary Team. Throughout the planning process, the boundaries were refined to reflect and address on-the-ground conditions, logging and economic feasibility, and resource needs. The final project area was determined using GPS and Geographic Information Systems data in 2013. The final timber sale unit area amounted to 278 acres (DR Appendix A, Table 1).

Special Habitat Enhancement:

The interdisciplinary team identified areas in the Peter Principle Timber Sale, within the Mighty Moose Planning area, where edges of special habitat areas (wet and mesic meadows) could be enhanced with low retention thinning to increase the size of the meadows and reduce conifer encroachment (EA Appendix A, Project Maps). Objectives of this action are consistent with the purpose and need of the project for the Riparian Reserve LUA, including: implementing treatments to increase species and structural diversity (EA pp. 10, 11, 16, 35, 86-87) and provide habitat for terrestrial species (EA pp. 10, 87). Consistent with the analysis, all wet areas and meadows were posted outside of the unit boundaries (EA p. 38). All streams were buffered where no harvest would take place within a minimum of 30 feet of any intermittent stream and 70 feet of any perennial stream; a canopy closure of 50% throughout the secondary shade zone would be maintained (EA p. 16).

After consideration of the actions included in the Mighty Moose EA, the interdisciplinary team found the proposed low density thinning areas adjacent to some of these meadows, wet areas, and within portions of the Riparian Reserve LUA do not change the EA's disclosures regarding direct, indirect or cumulative effects. The stands analyzed in the EA for low density thinning in Matrix and Late Successional Reserve are the same as the stands proposed for low density thinning in the Riparian Reserve in the Peter Principle Timber Sale (EA pp. 10, 30-33, Appendix B Stand Information, also see *DOI-BLM-OR-S040-2015-0001-DNA*).

3.0 Alternatives Considered

The EA analyzed the effects of the No Action and Proposed Action alternatives. No unresolved conflicts concerning alternative uses of available resources (section 102(2) (E) of NEPA) were identified. Complete descriptions of the two alternatives are contained in the EA, pp. 14 to 23. The project team considered other alternative actions, but did not analyze them in detail (EA Appendix C).

4.0 Decision Rationale

This decision rationale, based on the Decision Factors described in the Mighty Moose EA (p. 11), addresses the anticipated environmental effects, as well as the effectiveness of the selected actions in meeting the project objectives (EA p.11). The DR Table 1 presents the Decision Factors and comparison among alternatives.

The Selected Action:

- Best meets the Purpose and Need (EA pp 9-11) established for the project, as shown in Table 1.
- Complies with the Salem District's Record of Decision and Resource Management Plan (1995 ROD/RMP).
- Will not have significant impact on the affected elements of the environment (FONSI) beyond those already anticipated and addressed in the RMP FEIS.
- Is economically viable. This sale will produce revenue for Federal and local governments as well as provide economic benefits to the local economy in the form of employment and raw materials for industry.
- Meets the Aquatic Conservation Strategy Objectives (EA pp. 84-87).
- Facilitates development of late-successional habitat.

The No Action alternative was not selected because it does not meet the Purpose and Need directly, or delays the achievement of the Purpose and Need as shown in Table 1.

Table 1: Decision Factors and Comparison of Alternatives

Decision Factors and Project Objectives (EA p. 11)	**Comparison of Alternatives (EA pp. 14-23)**
<u>Matrix LUA (EA p. 10)</u> 1) Supply a sustainable source of forest commodities from the Matrix LUA to provide jobs and contribute to community stability (RMP pp. 1, 46-48) by developing economically viable timber sales accounting for unit volume, logging systems and transportation design. 2) Through silvicultural treatments, provide for the development and maintenance of ecologically valuable structural components such as down logs, snags, and large trees (RMP p. 20).	1) The **Selected Actions** will provide just over 5 million board feet of timber, providing needed jobs in the community, materials for mill operations and contribute to county revenues; each contributing to community stability. The prescriptions retain 48-80 trees per acre designed to increase growth rate following thinning. The residual stocking and improved growing conditions will ensure a sustainable, future source of commodities. The selected unit volumes, logging systems and transportation system provide an economical sale. As described in the EA (pp. 106-107) the project team dropped many units due to low volume or high operational costs. In addition, the team identified areas with stable roads (rocked, good drainage) for winter work, providing job opportunities through the winter. The **No Action Alternative** will neither provide commodities to the market place nor create job opportunities for local communities. This alternative will not meet the purpose and need for the project. 2) The **Selected Actions** will retain at least 90% of all existing snags; those felled will be left on-site as coarse woody debris. All large, old growth trees will be retained. Thinning will accelerate development of large tree structure for future large snags and down wood, and will facilitate species diversity. The project maintains habitat conditions for the northern spotted owl. Under the **No Action Alternative** current vegetation trends will continue with no silvicultural treatments to accelerate development of large tree structure or species diversity.

<u>Riparian Reserve LUA (EA p. 10)</u> 1) Apply commercial thinning treatments to reduce stocking levels and create stand heterogeneity intended to: increase species and structural diversity; develop late successional habitat characteristics; and provide future recruitment opportunities for large snags and coarse woody debris (RMP pp. 6, 10, 11).	The **Selected Actions** apply treatments in riparian areas exhibiting simple structural and species diversity. Riparian thinning will result in tree density variability, creating structural complexity. Thinning will increase growth rates and facilitate large tree development for terrestrial and aquatic habitat. Thinning will also increase growing space for understory vegetation development and species diversity. At the landscape level, connectivity for species such as the northern spotted owl is expected to improve as late-successional conditions develop in the Riparian Reserves. Streamside buffers will maintain stream shade, protecting water temperature and preventing sediment from entering any water ways. The selected treatments, existing conditions, and objectives are consistent with the RMP guidelines for treating Riparian Reserves. The selected actions will meet ACS objectives. The **No Action Alternative** will not reduce stocking or expedite stand structural or species diversity. Tree mortality would occur, creating snags and down wood, but development of large standing and down wood characteristic of late-successional habitat will occur over a longer time period. Species diversity will remain low until a disturbance such as fire or windthrow removes overstory trees, allowing light to reach the understory.

5.0 Compliance with Direction and Planning Updates

The BLM designed the Mighty Moose project, from which the Peter Principle timber sale is a component of, to comply with the *Salem District Record of Decision and Resource Management Plan* (1995 ROD/RMP). The analysis supporting this decision tiers to the *Final Salem District Proposed Resource Management Plan/Environmental Impact Statement* (USDI 1994). The 1995 ROD is also supported by and consistent with the *1994 Final Environmental Impact Statement on Management of Late-Successional and Old Growth related Species within the Range of the Northern Spotted Owl* and its associated *Record of Decision* (USDA/USDI 1994).

The Peter Principle TS is consistent with the *Record of Decision and Standards and Guidelines for Amendments to the Survey and Manage, Protection Buffer, and other Mitigation Measures Standards and Guidelines*, January 2001 (2001 ROD), as modified by the October 2006 US District Court provisions for certain exemptions (Peckman exemptions).

I reviewed the Peter Principle TS in consideration of the stipulated exemptions. Because the timber sale does not include regeneration harvest and includes thinning only in stands less than 80 years old, I determined that the project meets exemption A of the Peckman Exemption and may proceed to be offered for sale.

The project also complies with authorities described in the EA (pp. 12-13 and 82-84).

ESA Section 7 Consultation

US Fish and Wildlife Service (USFWS): The BLM submitted the Biological Assessment (BA) containing the Peter Principle thinning proposal for consultation with U.S. Fish and Wildlife Service (USFWS) as provided in Section 7 of the Endangered Species Act (ESA) of 1973 (16 U.S.C. 1536 (a)(2) and (a)(4) as amended) during the Fiscal Year 2014 consultation process. The Letter of Concurrence (LOC) (FWS reference #01EOFW00-2013-I-0187) concurred that the habitat modification activities described in the BA, including the Peter Principle project, are not likely to adversely affect spotted owls and will have no effect on Critical Habitat (LOC, p. 47, 73, 92). All applicable General Standards described in the Letter of Concurrence have been incorporated into the proposal (LOC pp. 17-19).

National Marine Fisheries Service (NMFS): Consultation with the National Marine Fisheries Service (NMFS) on effects of the Peter Principle Thinning Project on Upper Willamette River (UWR) Chinook salmon and winter steelhead trout is not required because the thinning sale will have no effect on these species or on essential fish habitat. The Proposed Action of tree harvest by thinning and associated road activities will have no effect, predominantly because of the long distances from project actions to listed fish habitat, and because of project design features that result in little to no impacts to aquatic habitats. Haul routes do not cross listed fish habitat except on paved roads with no mechanism for sediment delivery. Units in sections 21 and 29 (T.12S, R.2E) of the Bald Peter and McDowell Creek subbasins are greater than 2 miles upstream of steelhead habitat, and greater than 5 miles upstream of spring Chinook habitat.

Compliance with the Aquatic Conservation Strategy

The BLM reviewed the No Action and Proposed Action alternatives against the ACS objectives at the project scale. The No action Alternative does not retard or prevent the attainment of any of the nine ACS objectives because this alternative will maintain current conditions (EA pp. 84-87).

The Selected Actions do not retard or prevent the attainment of any of the nine ACS objectives. Over the long-term, the selected actions will aid in meeting ACS objectives by speeding the development of older forest characteristics in the Riparian Reserves. In addition, more open stands will allow for the growth of important riparian species in the understory. The Peter Principle Timber Sale promotes stand and species diversity and accelerates development of large tree structure (EA pp. 84-87).

6.0 EA Public Review and Comments

The BLM solicited comments from affected tribal governments, adjacent landowners, interested publics, and state and local governments. The BLM made the Mighty Moose EA and FONSI available for review from May 7th to June 6th, 2014. The BLM received four comment letters/emails during the EA comment period. Appendix C of this decision record provides responses to substantive public comments relative to the Mighty Moose EA.

7.0 Conclusion

Review of Finding of no Significant Impact

I have determined that a modification to the Finding of No Significant Impact (FONSI, May 2014) for the Mighty Moose EA is not necessary because I have considered and concur with information in the EA and FONSI. I reviewed the comments on the EA and no information was provided in the comments that lead me to believe the analysis, data, or conclusions are in error or that the selected action needs to be altered. There are no significant new circumstances or facts relevant to the selected action or associated environmental effects that were not addressed in the EA.

Administrative Review Opportunities

The decision described in this document is a forest management decision and is subject to protest by the public. In accordance with Forest Management Regulations at 43 CFR 5003, protests of this decision may be made within 15 days of the publication of a notice of decision in a newspaper of general circulation. The notice for this decision will appear in the *Albany Democrat-Herald* newspaper on November 19th, 2014. The planned sale date is December 17th, 2014.

To protest this decision a person must submit a written protest to John Huston, Cascades Field Manager, 1717 Fabry Road, SE, Salem, Oregon 97306 by the close of business (4:30 p.m.) on December 5th, 2014. A protest electronically submitted (e.g. email, facsimile, or social media) will not be accepted as a protest. Only written, signed hard copies of protests delivered to the Salem District Office will be accepted.

The protest must clearly and concisely state the reasons why the decision is believed to be in error. Any objection to the project design or my decision to go forward with this project must be filed at this time in accordance with the protest process outlined above. If a timely protest is received, this decision will be reconsidered in light of the statements of reasons for the protest and other pertinent information available, and the BLM shall serve a decision in writing on the protesting party (43 CFR 5003.3).

Implementation

If no protest is received within 15 days after publication of the notice of decision, this decision will become final. For additional information, contact David Simons (503) 375-5612, Cascades Resource Area, Salem BLM, 1717 Fabry Road SE, Salem, Oregon 97306.

Approved by: _____ Date: 11/12/2014

John Huston
Cascades Resource Area Field Manager

Appendix A. Tables – Selected Actions

Table 1: Selected Thinning action by Land Use Allocation

EA Unit	Total Unit Acres	Thinning Acres by LUA and Yarding System				LDTA acres by LUA and Yarding System			
		Ground-Based Yarding		Skyline Yarding		Ground-Based Yarding		Skyline Yarding	
		Matrix	RR	Matrix	RR	Matrix	RR	Matrix	RR
21A	13	6	6	0	0	0	1	0	0
29A	241	111	34	74	14	2	4	0	2
29B	12	10	2	0	0	0	0	0	0
29C	12	11	0	0	0	1	0	0	0
Totals	**278**	**138**	**42**	**74**	**14**	**3**	**5**	**0**	**2**

Note: This table corrects the table in the Mighty Moose Environmental Analysis (EA) and lists only the actual acres that will be harvested through this Decision.

Abbreviations in Table
LUA – Land Use Allocation
RR – Riparian Reserve
LDTA – Low Density Thinning Area

Table 2. Selected Road Actions

Road ID		Temporary New Construction, Natural Surface	Maintenance	Renovation	Stabilize & Close	Associated Unit
EA	**DR**	**Miles**				**EA**
11-1E-21			10.34			21A
12-2E-7			0.16			21A
12-2E-20			0.26			21A
12-2E-20.1				0.36	0.14	21A
12-2E-29.2			1.27			29A
12-2E-29.5				0.52		29A
12-2E-29.6				0.01		29A
12-2E-29.7				0.02		29A
12-2E-29.8				0.02		29A
12-2E-29.9				0.03		29A
12-2E-29.10				0.04		29A
12-2E-29.11				0.06		29A
12-2E-29.12				0.01		29A
12-2E-29.13				0.13		29A
12-2E-29.14				0.14		29A
	12-2E-29.15			0.10	0.10	29A
	12-2E-29.16			0.10	0.10	29A
12-2E-30.1			0.90			29B
12-2E-30.3				0.11	0.05	29B
12-2E-31			5.25			21A
13-1E-1			3.34			29B
Spur 18		0.30			0.30	29A
*BLM Totals		**0.30**	**4.98**	**1.24**	**0.69**	
*Private Totals		**0.00**	**16.57**	**0.28**	**0.00**	
Total Miles of Road Used		**0.30**	**21.55**	**1.52**	**0.69**	

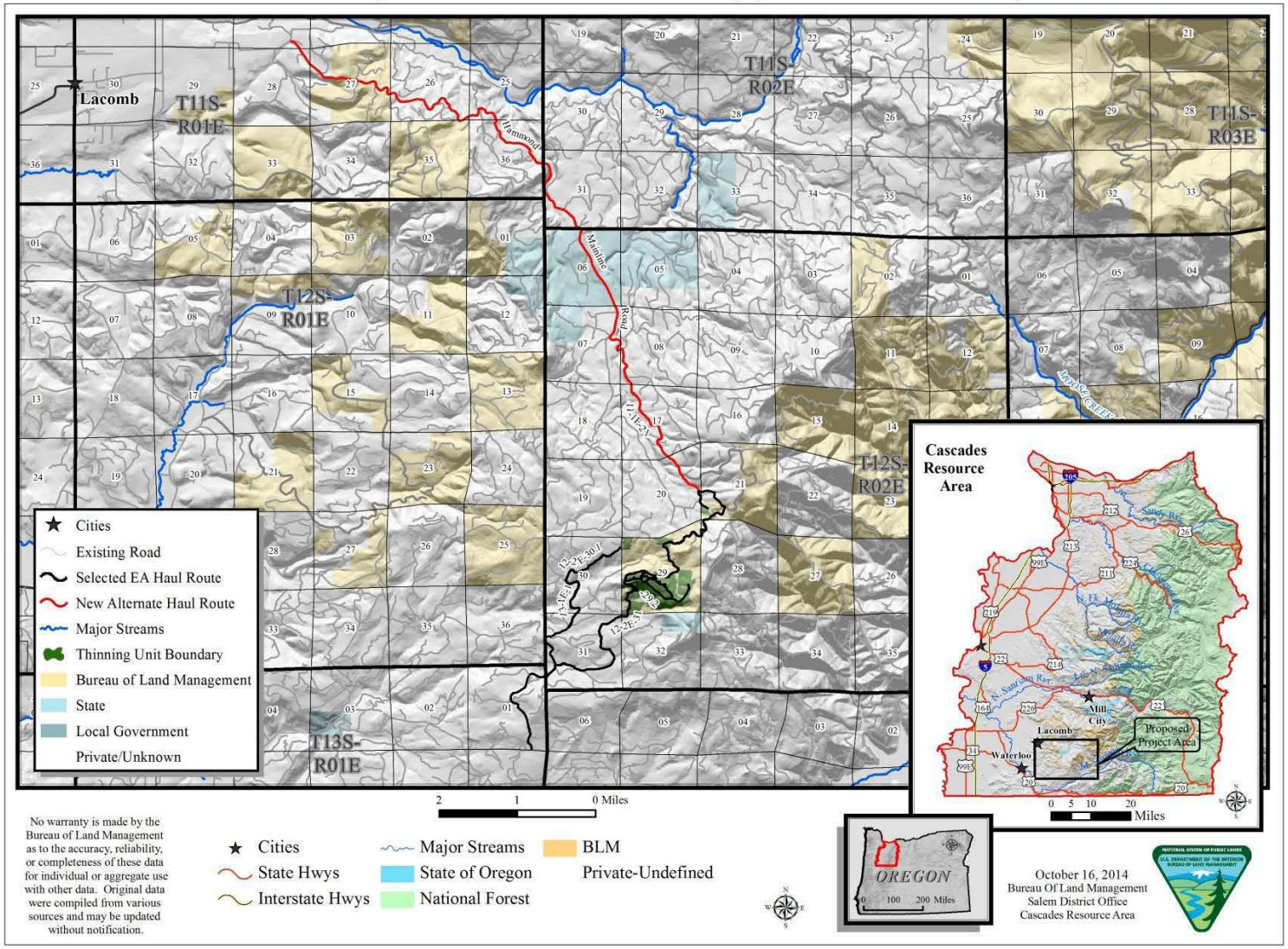
*These rows breakout BLM vs Private Ownership responsibilities for maintenance and renovation.

Note: This table finalizes the roads information in the Mighty Moose Environmental Analysis (EA). The road mileage numbers in the EA Appendix A, Table 2 are conceptual. This table shows the actual mileage analyzed after completing the final sale layout for the Peter Principle TS.

Appendix B – Project Maps

Map 1: Peter Principle Project Area

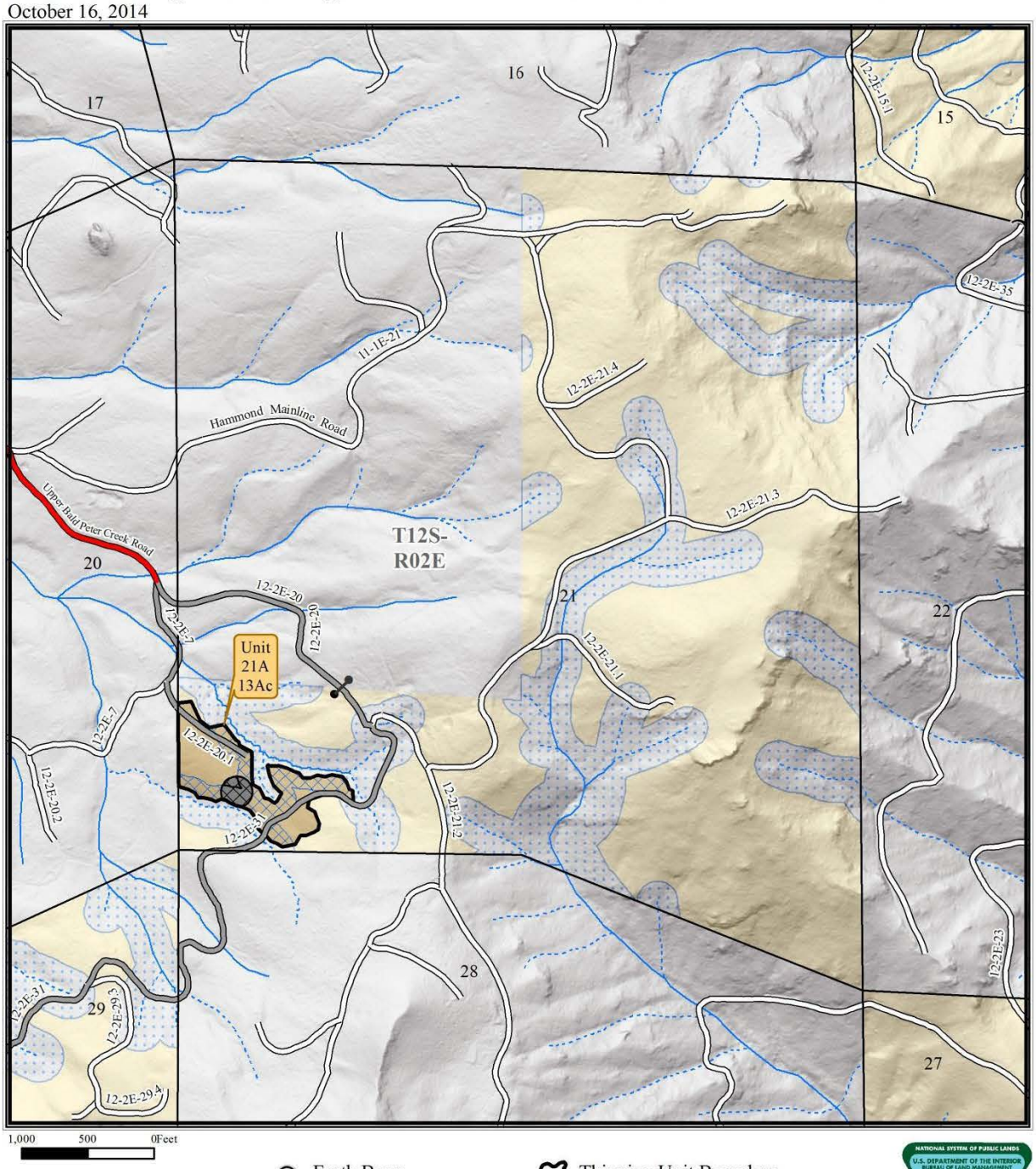
Peter Principle Decision Rationale Location Map (EA # OR-S040-2013-0003)



Map 2: Unit 21A

Peter Principle Thinning Decision Rationale EA # S040-2013-0003-EA

October 16, 2014



1,000 500 0Feet

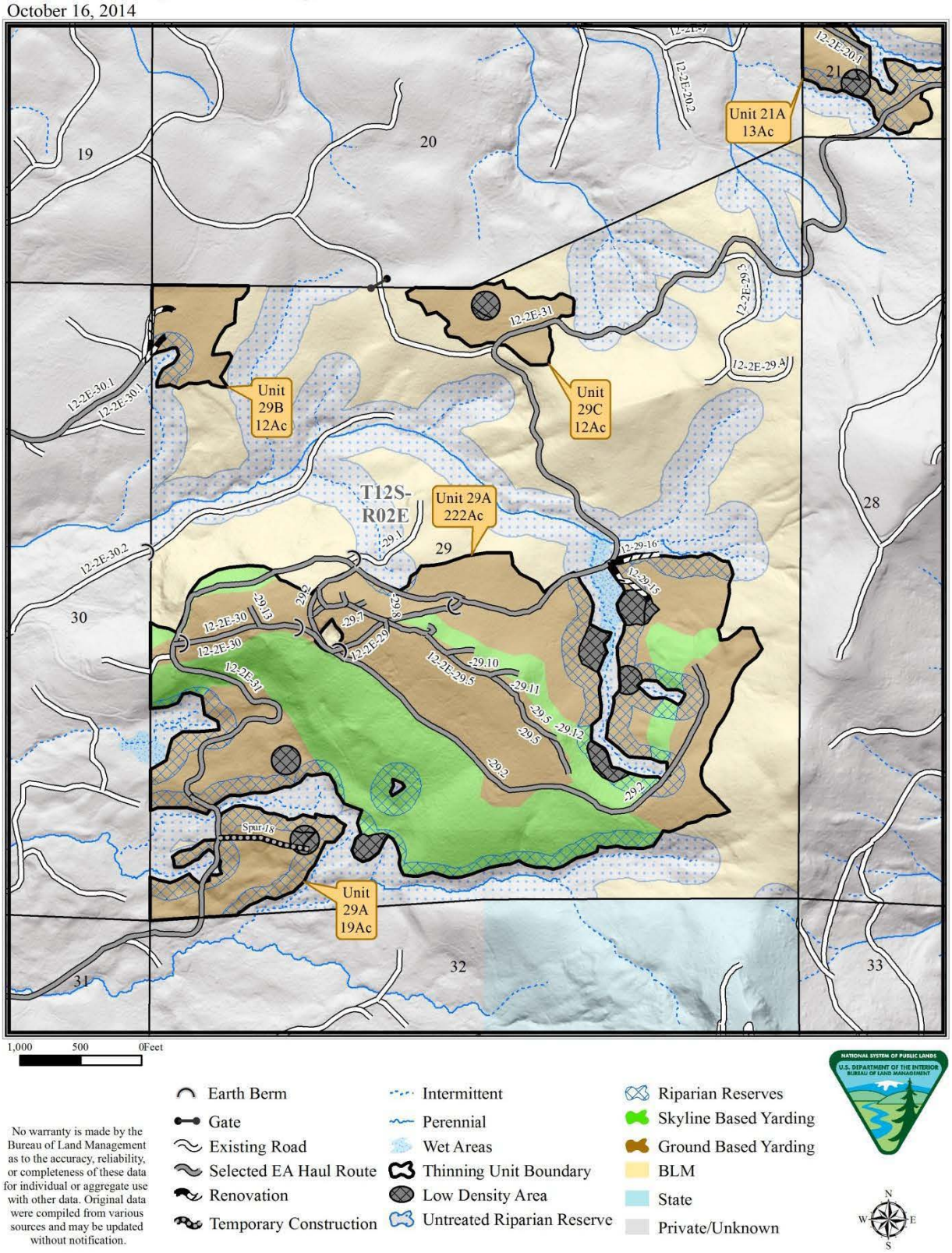
No warranty is made by the Bureau of Land Management as to the accuracy, reliability, or completeness of these data for individual or aggregate use with other data. Original data were compiled from various sources and may be updated without notification.

- Earth Berm
- Gate
- Existing Road
- New Alternate Haul Route
- Selected EA Haul Route
- Intermittent
- Perennial
- Thinning Unit Boundary
- Low Density Area
- Untreated Riparian Reserve
- Riparian Reserves
- Ground Based Yarding
- BLM
- Private/Unknown

Map 3: Units 21A, 29A, 29B, and 29C

Peter Principle Thinning Decision Rationale EA # S040-2013-0003-EA

October 16, 2014



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Appendix C: Response to Public Comments Received on the Mighty Moose EA

The BLM received four comment letters during the comment period for the Mighty Moose EA. The BLM's responses address substantive comments/questions related to the Peter Principle Timber Sale. Many of the comments received were opinions, generic in nature, or do not pertain to the Peter Principle Timber Sale. These non-substantive comments will not be addressed except for points of clarification. Comments are in italics. The BLM response follows each comment.

Comment: *Thinning captures mortality and results in a long term reduction of dead wood. The EA does not disclose that logging will capture mortality, reducing recruitment of snags and down wood. The EA must show the need to treat riparian reserves.*

Response: The EA analysis tracked the riparian thinning issue, describing the need, anticipated effects and compliance with the RMP. The Mighty Moose thinning analysis concluded thinning will not result in long-term negative impacts to dead wood. As stated in the EA, stand history in the Mighty Moose project area, including the Peter Principle timber sale area, included clear-cutting, seeding, and thinning to even spacing. Consequently, the stands have high canopy cover, little understory development, low live crown rations, and lack vertical and species diversity. Desired vegetation characteristics required for proper Riparian Reserve function includes large trees, abundant and well-distributed mature and understory conifers, diverse shrub species, and large wood debris. The Riparian stands proposed for thinning lack these elements (EA 32-33, 35, 42).

In these stand conditions, the RMP provides guidance to enhance riparian reserve functions and conditions. The BLM developed the purpose and need for the Riparian Reserves LUA portion of the sale based on the guidance in the Salem RMP, NWFP, and the applicable watershed analyses (EA section 1.2.2), stating "Apply commercial thinning treatments to reduce stocking levels and create stand heterogeneity intended to: increase species and structural diversity; develop late-successional habitat characteristics; and provide future recruitment opportunities for large snags and coarse woody debris. The EA objectives and Selected Actions comply with the RMP recommendations to apply silvicultural practices to control stocking, reestablish and manage stands, and acquire desired vegetation characteristics for attaining ACS objectives (RMP, p. 11).

The Mighty Moose EA addressed the effects of thinning on future dead wood and compliance with the ACS objectives. The EA analysis disclosed that thinning reduces competition, increases growth rates and vigor, and will accelerate the development of larger trees needed for large standing and down wood (EA pp. 34-35, 42-43, 44-45). The analysis directly acknowledges that because thinning removes the smaller suppressed and intermediate trees, future tree mortality and snag creation would be reduced. However, the analysis (EA pp. 44, 50) also acknowledged that 60 percent of the stands in similar age class in the watershed will be left untreated. Hence, the project provides for suppression mortality and opportunities to accelerate large tree development lacking in these stands.

The ACS compliance review (EA pp. 84-87) found that the proposed actions are consistent with the objectives and directions.

Comment: *There is a lack of CWD in Late Successional Reserves (LSR) and RR's; recommend leaving at least two green reserve trees per acre which are incidentally felled on site for CWD.*

Creating CWD in LSR and RR land use allocations depends on a number of factors such as the quantity and quality of existing material and current tree diameters. Typically, many of the stands planned for treatment do not have enough CWD to meet RMP or Late-Successional Reserve

Assessment standards (EA p. 45). However, most of the stands planned for treatment are younger stands that have smaller average stand diameters (<20 inches dbh) (EA Appendix B, pp. 103-104). In most cases, it is preferable to delay much of the CWD creation until the residential stand grows and reaches a larger average diameter, sometime in the future life of the stand (EA p. 42). The Cascade Resource Area typically implements CWD creation as a project design feature within LSR sales (EA, p. 45, see also Crab Race EA p. 37, *OR-S040-2011-0002*). Within RR and LSR, some of the reserve trees that are incidentally felled to facilitate logging and all of the snags felled are left for CWD (EA p. 24-27). None of the reserve trees incidentally felled are sold to the timber sale purchaser for their benefit. All reserve trees incidentally felled are evaluated by the contract Administrator and either left on site, or sold to the purchaser for the benefit of the government.

The Peter Principle TS does not include the thinning of lands within the LSR LUA, however the Mighty Moose EA includes an analysis of thinning approximately 258 acres of LSR (EA p. 17), which will be included in a another timber sale and addressed in a separate decision.

Comment: *Thirty foot buffers along intermittent streams are not enough and a 35inch DBH harvest diameter limit is too high to protect future snags.*

As stated in the EA approximately 90% of the Riparian Reserves will not be treated. Untreated stands will provide for small diameter snags and denser growing conditions across the landscape. The intent of thinning in the identified stands is to accelerate the development of larger trees and increase diversity, conditions lacking in this landscape.

Each stream will have a Stream Protection Zone (SPZ) - a zone with no activity. The project team analyzed a minimum buffer width of 30 feet. The analysis determined that with a minimum distance of 30 feet the SPZ adequately protects both terrestrial and aquatic resources. The wildlife analysis (EA pp. 44, 46, 50) concluded thinning will enhance and facilitate development of late-successional habitat. Similarly, the hydrology (EA pp. 61-66) and fisheries (EA pp. 72-74) analyses concluded thinning will not affect hydrology, water quality, or channel morphology; hence, there will be no effects to fish species.

However, actual SPZs vary depending on topographic and vegetative site characteristics. Canopy cover will be retained to at least 50% on average in the secondary shade zone. The silviculture prescription for riparian areas retains the dominant and co-dominant trees (EA p. 16); the prescription is a thinning from below approach. While the prescription includes a diameter limit of 35 inches, this does not equate to the project proposing to take all trees up to 35 inches. Dominant and co-dominant trees were marked for retention of various sizes, including those less than 35 inches. The trees will be marked based on preferred densities of remaining dominant and co-dominant trees as shown in the Silviculture prescription (EA Appendix B, pp. 103-104). The 35 inch limit applies to Matrix LUA as well, and was designed to ensure that all legacy trees will be protected.

Comment: *A question regarding the difference between variable thinning in Matrix and riparian reserves.*

Response: A variable thinning prescription is proposed for both Matrix and Riparian Reserve LUAs. In Matrix, variability will be accomplished through tree spacing by diameter class (the larger the tree the larger the spacing), retaining hardwoods and large remnant trees, and creating low density thinning areas. In Riparian Reserves variability will be accomplished through untreated areas, retention of hardwoods and the largest trees, and 25-75% variability in tree spacing, including low density areas.

Both prescriptions result in stand variation across the units and project area. However, the variability created on Matrix will result in greater harvest volume than the prescriptions for Riparian Reserves in most places.

Comment: *What will the buffers be around the small seasonal ponds and talus slopes in units 29A and 9.*

Response: All wet areas less than one acre will be protected by excluding the area, delineated by the extent of wet area vegetation, from all activity. All talus slopes are excluded from the treatment area.

Comment: *Please describe Survey and Manage categories B and F.*

Response: The Survey and Manage EIS defines categories of species. Category B refers to species that are not practical to survey and F refers to species with unknown persistence and status.

Comment: *What is the correct EA reference under ACS #1 page 84.*

Response: The EA incorrectly stated sections 3.3.1 and 3.3.5. The correct reference is EA sections 3.1 and 3.2.

Comment: *There is a discrepancy of disclosed untreated riparian reserve acres in the EA.*

Response: The ACS objectives review cited both 3,660 and 4,128 acres of untreated Riparian Reserve. The correct number is 3,660 Riparian Reserve acres not treated and 468 acres of treatment for a total of 4,128 acres of Riparian Reserve.

Comment: *Low density thinning areas need to be larger to provide for greater benefit of early seral habitat for big game.*

Response: The BLM agrees with the comment that larger "gaps" results in greater persistence of early seral habitat. However, the EA identified and assessed for approximately ½ to 1 acre in size. Larger areas (over 2 acres) for low density will be addressed in future projects.