Pop Rocks Thinning Decision Record

Box of Rocks Commercial Thinning and Density Management
Environmental Assessment
DOI-BLM-OR-R050-2010-0015-EA

Bureau of Land Management
Swiftwater Field Office, Roseburg District

Background

The Box of Rocks Commercial Thinning and Density Management Environmental Assessment (EA), of which Pop Rocks Thinning is a component, proposed to apply uniform and variable density thinning to approximately 1,650 acres in the General Forest Management Area, Connectivity/Diversity Block, Riparian Reserve, and Late-Successional Reserve land use allocations.

The analysis was conducted and the project designed to conform to management direction from the 1995 Roseburg District *Record of Decision and Resource Management Plan* (ROD/RMP) as amended prior to December 30, 2008.

Additional Information

Survey and Manage

In ruling on Conservation Northwest *et al.* v. Mark E. Rey *et al.* on December 12, 2009, Judge Coughenour in the U.S. District Court for Western Washington set aside the 2007 Record of Decision eliminating the Survey and Manage mitigation measures, but deferred issuing a remedy until further proceedings. Judge Coughenour did not issue a remedy or injunction at that time.

The plaintiffs and Federal Agencies entered into settlement negotiations in April 2010, and the Court filed approval of the resulting Settlement Agreement on July 6, 2011. The Defendant-Intervenor subsequently appealed the 2011 Settlement Agreement. On April 25, 2013, the Ninth Circuit Court of Appeals invalidated the 2011 Survey and Manage Settlement Agreement and remanded the case back to the District Court. On February 18, 2014, the District Court vacated the 2007 RODs which returned the BLM to the status quo in existence prior to the 2007 RODs, which includes the use of the Pechman exemptions.

The Pechman Order dated October 11, 2006 directs: "Defendants shall not authorize, allow, or permit to continue any logging or other ground-disturbing activities on projects to which the 2004 ROD applied unless such activities are in compliance with the 2001 ROD (as the 2001 ROD was amended or modified as of March 21, 2004), except that this order will not apply to:

a. Thinning projects in stands younger than 80 years old;
b. Replacing culverts on roads that are in use and part of the road system, and removing culverts if the road is temporary or to be decommissioned;

c. Riparian and stream improvement projects where the riparian work is riparian planting, obtaining material for placing in-stream, and road or trail decommissioning; and where the stream improvement work is the placement of large wood, channel and floodplain reconstruction, or removal of channel diversions; and
d. The portions of project involving hazardous fuel treatments where prescribed fire is applied. Any portion of a hazardous fuel treatment project involving commercial logging will remain subject to the survey and management requirements except for thinning of stands younger than 80 years old under subparagraph (a) of this paragraph."

Forest stands that will be treated are 40 to 55 years old (EA, p. 30). All new road construction, whether located within or outside of unit boundaries, is sited in stands less than 80 years old. Consequently, this project complies with Pechman exemption "a."

Carbon Release and Sequestration

In May of 2011, a study on the effects of thinning and biomass utilization on carbon release and storage was published by Oregon State University.[1] The conclusions of the Box of Rocks Commercial Thinning and Density Management EA were reviewed against findings of the study. Among the findings of the study were:

- Forest carbon pools always immediately decreased as a result of thinning, with reductions increasing as a function of heavier thinning.
- After thinning, carbon pools remain lower throughout a 50-year period.
- Carbon pool estimates for thinned stands remained lower even after accounting for carbon transferred to wood products.

The findings of the EA are consistent with published findings that carbon pools immediately decline following thinning, and remain lower 50 years after thinning (Table 3-11 p. 80). Under No Action, the carbon pool in standing live trees grows from current balance of 157,130 tonnes to 600,135 tonnes. By comparison, under Alternative Two carbon in standing live trees is immediately reduced to 108,756 tonnes post-harvest, and 50 years after thinning is 428,374 tonnes, approximately 29 percent less than under No Action.

The EA (p. 81) also notes that Smith et al. (2006)[2] calculated that 13.5 percent of gross saw log carbon and 14.8 percent of gross pulpwood carbon will be immediately released into the atmosphere at harvest. This is consistent with the finding that not all carbon from harvested timber is transferred into wood and paper products.

[1] Clark, J., J. Sessions, O. Krankina, T. Maness. 2011. Impacts of Thinning on Carbon Stores in the PNW: A Plot Level Analysis. College of Forestry, Oregon State University. Corvallis, OR.
[2] Smith, J.E., L.S. Heath, K.E. Skog, and R.A. Birdsey. 2006. Methods for calculating forest ecosystem and harvested carbon with standard estimates for forest types of the United States. Gen. Tech. Rep. NE-343. Newtown Square, PA: U.S. Department of Agriculture, Forest Service, Northeastern Research Station. 216 p

Decision

It is my decision to authorize the Pop Rocks Thinning project, continuing implementation of Alternative Two described in the Box of Rocks Commercial Thinning and Density Management EA (pp. 15-26). The project design features described in the EA (pp. 15-26 and 65) will be incorporated into timber sale contract stipulations. Nine units (207 acres) will be treated in the Late-Successional Reserves land use allocation in Section 31, T. 24 S., R. 1 W.; Sections 5, 6 and 7; T. 25 S. R 1 W. and Section 1, T. 25 S., R. 2 W., Willamette Meridian (see attached maps). Total harvest volume is approximately 3,334 thousand board feet. Unit numbers and corresponding EA designations are displayed in Table 1. Implementation is expected to take about three years.

Table 1: Pop Rocks Timber Sale Units

Sale Unit	EA Unit Designation	Unit Acres	Harvest Method
Unit 1	25-1-7E	32	Cable
Unit 2	25-1-5E	25	Cable
Unit 3	25-1-5A	30	Cable
Unit 4	25-1-7I	25	Cable/Ground-Based
Unit 5	25-2-1E	27	Cable/Ground-Based
Unit 6	25-1-7K	25	Cable
Unit 7	25-1-6D	17	Cable
Unit 8	25-1-6B	9	Cable
Unit 9	24-1-31C	17	Cable

The attached maps show access to the units will be primarily on existing roads, supplemented by construction of three to four road segments. Spur 1 (0.06 miles) and Spur 2 (0.08 miles) will be constructed and/or renovated and used during the dry season, then decommissioned. Spur 3 (0.11 miles) will be constructed and surfaced with rock during dry operating conditions, and retained for future access. Approximately 0.03 miles of optional spur road (Spur 1-1) may be constructed and decommissioned after use. Approximately two acres will be cleared for the road rights-of-way. Road numbers and corresponding EA designations are displayed in Table 2.

Table 2: Pop Rocks Timber Sale Road Construction

Sale Road Number	EA Road Designation	Road Miles	Road Prescription
Spur 1 (Unit 6)	PRS-1	0.06	Construct/Decommission
Spur 2 (Unit 6)	PRS-9	0.08	Construct/Renovate/Decommission
Spur 3 (Unit 7)	PRS-3	0.11	Construct/Retain
Op. Spur 1-1 (Unit 1)	PRS-10	0.03	Construct/Decommission

Prior to move-in, all equipment used in logging and road construction, excluding log trucks and crew transport, will be steam-cleaned or pressure washed to remove soil and materials that may be contaminated with weed seed or root fragments. Any equipment removed from the contract area during the life of the contract must be re-cleaned before being returned to the contract area.

Feller bunchers will not be permitted. Ground based harvest will occur on areas with moderate to high susceptibility to soil compaction, with low rock content and moderate to high clay content. Monitoring shows feller buncher operations on similar soils have not produced acceptable results.

Conventional ground-based yarding equipment will operate on designated skid trails and will use pre-existing trails to the greatest extent practicable. Operations will be limited to the dry season, typically mid-May to mid-October, when soils are at their driest and least susceptible to compaction. This season may be shortened or extended, depending on weather conditions. Operations are generally restricted to slopes of 35 percent or less, but may be authorized on steeper inclusions and steeper pitches between gentler benches where appropriate.

For cable yarding, a skyline system capable of maintaining a minimum of one-end log suspension will be used. It shall be equipped with a mechanical slack pulling carriage having a minimum of 100 feet of lateral yarding capability, have a maximum spar height of 40 feet, and a maximum power rating of 225 horsepower. The system shall also have the capability to yard in multi-span configuration.

With the exception of the clearing of road rights-of-way, no timber falling, bucking or yarding shall be conducted during the bark-slip period from April 15 to July 15 of each calendar year, both days inclusive. This restriction may be waived depending upon seasonal variations, logging systems, and operator skill.

Road construction and renovation (8.75 miles) are restricted to the dry season, typically May 15 and October 15. This season may be shortened or extended, dependent on weather conditions. Road decommissioning will consist of water-barring, slashing, and obstructing motorized access. If it is not possible to decommission roads at the end of an operating season, the purchaser shall be responsible for winterizing them by water-barring, obstructing motorized access, and mulching.

Public Involvement & Response to Comment

Analysis for the Box of Rocks Commercial Thinning and Density Management EA was begun in June of 2010. Informal scoping comments were received from one organization in October of 2010. These comments were considered and addressed in the EA (pp. 4-10).

The EA was released for a 30-day period of public review and comment beginning on February 22, 2011, and running through March 24, 2011. Comments were received from five organizations, none of which raised issues not already addressed, as noted above, or analyzed in the EA. One comment did point out an error in the Carbon Storage and Release numbers portrayed in Table 3-11 (EA, p. 80), and is addressed below.

The comment pointed out that the carbon balance of 267,479 tonnes exceeded the pre-harvest total. This figure is correct. The pre-harvest figure was misrepresented as 237,125 tonnes instead of 273,125 tonnes as shown for the existing carbon balance in Alternative One. If one subtracts 5,646 from 273,125 the resulting balance is 267,479.

Rationale for the Decision

Continuing implementation of Alternative Two will meet the objectives of protecting late-seral habitat, lowering the risk of large scale fires in late-seral habitats, enhancing late-seral vegetation and enhancing species and structural diversity in stream-side habitat while contributing to socio-economic benefits envisioned in the PRMP/EIS (EA, p. 3). Alternative One will not accomplish these objectives.

Wildlife

Northern Spotted Owl

No effect to northern spotted owls (*Strix occidentalis* var. *caurina*) from noise disruption or disturbance is expected (EA, p. 51). Spot check surveys prior to activities are necessary in Units 2 and 3 and spot check surveys concurrent with operations are necessary for Units 1 and 6. If spotted owls are detected in the spot check areas, all ongoing operations that have a likelihood of direct harm to a spotted owl and/or creating above-ambient noise shall be postponed (USFWS 2012, p. 20)[3] and any operations with the potential disruption of nesting owls will be subject to seasonal restriction.

Northern spotted owls are expected to continue to use the thinned stands after operations are complete because post-treatment canopy closure will remain above 40 percent and the quadratic mean diameter of trees in the stands will exceed 11 inches, figures widely used as a threshold for dispersal function (EA, p. 50). It is acknowledged, however, that northern spotted owls will likely utilize the thinned stands less than unthinned stands until canopy closure returns to pre-thinning levels in a projected 10 to 20 years (EA, p. 50).

In a biological opinion (Tails #: 01EOFW00-2013-F-0200), the U.S. Fish and Wildlife Service found that the Pop Rocks Thinning project, as proposed in the biological assessment, was likely to adversely affect the northern spotted owl, and will result in incidental take based on road construction and thinning in dispersal and capable habitat within northern spotted owl site 2084O where the current levels of nesting, roosting, and foraging habitat (suitable habitat) in the core area and home range are below the viability thresholds. Activities within site 2084O include: thinning 0.8 acres of dispersal habitat within the core area; thinning 62 acres of dispersal habitat within the home range; constructing road on 0.4 acres of dispersal habitat in the home range; and constructing road on 0.3 acres of capable habitat in the home range.

Northern Spotted Owl Critical Habitat

None of the project area falls within 2008 Critical Habitat (EA, p. 45). Critical habitat was re-designated by the US Fish and Wildlife Service (Service) in 2012. The entire Pop Rocks project is within the 2012 West Cascades South northern spotted owl critical habitat unit, subunit six (WCS-6). Proposed activities will modify dispersal habitat, but maintain habitat function because canopy cover will remain above 40 percent. Thinning will accelerate development of suitable habitat by maintaining structural legacies and promoting habitat diversity (EA, pp. 15-17). This project will modify primary constituent elements on approximately 210 acres of

[3] USFWS. 2012. Protocol for surveying proposed management activities that may impact northern spotted owls. February 2, 2011 revised January 9, 2012. Pp. 42.

critical habitat. In a biological opinion (Tails #: 01EOFW00-2013-F-0200), the U.S. Fish and Wildlife Service (UDSI/FWS 2013, pp. 108-109) found that thinning will not preclude the critical habitat unit from providing dispersal and connectivity between subunits and thinning will be beneficial because thinning will encourage residual trees to develop greater size and structural diversity that will promote development of higher quality northern spotted owl habitat sooner than unthinned areas.

Botany Special Status Species

As discussed in the EA (p. 54), the project watersheds are within the range of Kincaid's lupine (*Lupinus sulphureus* ssp. *kincaidii*), a Federally-threatened herbaceous perennial plant. There will be no direct effect to Kincaid's lupine, as no populations have been identified in any of the thinning units or new road locations comprising this project.

No effects on the Federally-Endangered rough popcorn flower (*Plagiobothrys hirtus*) are expected. While the project watersheds are in the geographic range of the species, habitat provided by vernally wet meadows is not present (EA, p. 54).

No Bureau sensitive plant species were located during surveys therefore no affect to Bureau sensitive species is anticipated.

Aquatic Habitat, Fish, and Essential Fish Habitat

Oregon Coast coho salmon (*Oncorhynchus kisutch*), a federally threatened species, are present in Rock Creek, which is designated as critical habitat for the Oregon Coast coho salmon, and Essential Fish Habitat for both the Oregon Coast coho salmon and Oregon Coast Chinook salmon (*O. tshawytscha*).

No effects from thinning are expected to Oregon Coast coho salmon, critical habitat for the species, or Essential Fish Habitat (EA, p. 64). The closest units to coho salmon habitat in East Fork Rock Creek are near the ridgetop approximately one mile overland from the creek. Stream-side buffers have been established on all streams located within or adjacent to the thinning units, and "no treatment" buffers (60 feet on fish bearing and perennial streams; 35 feet on intermittent streams) have been established adjacent to the stream channels that will filter sediment and provide effective shade for maintenance of water temperatures.

Potential effects on aquatic systems come primarily from road related activities, which can contribute sediment to streams that can affect substrate for spawning. Application of Best Management Practices (EA p. 25) and project design features (EA pp. 15-26 and 65) will minimize the amount of sediment entering streams from road construction, renovation, improvements, maintenance and decommissioning. Some sediment may enter streams, however, resulting in elevated levels of turbidity, but not at levels that exceed typical background levels during winter high flows (EA, p. 64).

All maintenance/renovation of existing roads will include application of rock lifts where needed, and grading and brushing to make roads more accessible. All road renovation activities will take place during the dry season of operation and, absent seasonal precipitation, will not contribute sediment to stream crossings that could affect spawning substrate in downstream reaches.

Haul during the dry season will neither generate nor deliver road-derived sediment to live stream channels. Absent substantial precipitation, there will be no mechanism for moving fine sediment from road surfaces into ditch lines and potentially into nearby stream channels. Additionally, absent surface flow, there will be no mechanism by which intermittent streams will transport sediment downstream to fish bearing reaches.

Haul during the wet season could contribute small amounts of fine sediment to stream channels. The haul route will be monitored and haul will be suspended if conditions will cause sediment to be washed into streams. Where short sections of ditch lead to stream crossings, additional sediment traps (e.g. straw bales) and water bars will be installed to eliminate sediment from entering streams. These areas will be designated by the contracting officer, based on district fisheries and hydrology staff input. The remaining haul routes are along paved roads and no mechanism exists for sediment to be generated or carried to adjacent stream channels via the ditch line or at stream crossings.

The principal access roads to the sale area are the Rock Creek Access Road (BLM Road No. 26-3-1.0), East Fork Rock Creek Road (BLM Road No. 25-2-11.0) and North Fork East Fork Rock Creek Road (BLM Road No. 25-1-18.0). While these roads roughly parallel Rock Creek, East Fork Rock Creek and North Fork East Fork Rock Creek, and are within close proximity to the creeks in many locations, they are paved so no road derived sediments will reach Oregon Coast coho salmon critical habitat or Essential Fish Habitat designated for the Oregon Coast coho salmon and Chinook salmon.

Water Quality and Quantity

Streamside buffers have been established on all streams located within or adjacent to the thinning units, and "no treatment" areas have been established adjacent to the stream channels that will filter sediment and provide effective shade for maintenance of water temperatures.

As discussed in the EA (p. 61), large openings in a forest canopy greater than two tree heights across can affect precipitation, snow melt and peak flows. Thinning in upland stands will maintain at least 50 percent canopy cover (EA, p. 16). Variable density thinning within the stream-side buffer will maintain an average canopy cover of at least 50 percent (EA, p. 18). Small gaps or openings created by the variable density thinning within the stream-side buffer will not approach the size of openings described above. Consequently, this project does not present a risk to peak flow enhancement.

As discussed in the EA (p. 61), the average road density, an index of the relative amount of road in the analysis area, is 5.13 miles per square mile. Roads under BLM ownership comprise 45 percent of the total road mileage. Based on rights-of-way widths, assumed to be 40-feet on average, roads cover approximately 1,990 acres and represent 3.89 percent of the analysis area. Increases in peak flow can be found when the roads and other impermeable areas contained within occupy more than 12 percent of a catchment scale watershed (Harr, *et al*. 1975).

Aquatic Conservation Strategy

Streamside buffers were established consistent with the 1995 ROD/RMP (p. 24) specification with widths equal to the height of two site potential trees on each side of fish-bearing streams and one site-potential tree on each side of perennial or intermittent non-fish bearing streams, wetlands greater than an acre, and constructed ponds and reservoirs. The height of a site-potential tree is calculated as 180-feet for the Rock Creek watershed. Approximately 35 acres of variable density thinning will be conducted within the stream-side buffer on the Pop Rocks Thinning project. A principal objective for these treatments is to accelerate the development of late-seral characteristics.

Key Watersheds were established "as refugia...for maintaining and recovering habitat for at-risk stocks of anadromous salmonids and resident fish species (ROD/RMP, p. 20)." The Rock Creek watershed, in which Pop Rocks Thinning is located, is not designated as a Tier 1 or Tier 2 Key Watershed (ROD/RMP, p. 20).

In developing the project, the Rock Creek Watershed Assessment[4] (Winn 2006) was used to evaluate existing conditions, establish desired future conditions, and assist in the formulation of appropriate alternatives.

One of the primary purposes of this project is to accelerate tree growth within the stream-side buffer and speed attainment of late-seral stand conditions with high vegetative diversity and complexity. The thinning prescriptions are considered to be a watershed restoration project and are therefore consistent with the Watershed Restoration component of the Aquatic Conservation Strategy.

Cultural/Historical Resources

The Pop Rocks Thinning project was surveyed for cultural resources, and none were identified. The results of the surveys are documented in CRS No. SW1207. The BLM has completed its Section 106 of the National Historic Preservation Act responsibilities under the 2012 National Programmatic Agreement and the 1998 Oregon Protocol. In compliance with the Act, ground-disturbing activities will be halted if cultural resources are discovered until an Archeologist can properly evaluate and document the resources.

Noxious Weeds

As discussed in the EA (p. 27), in the absence of this project, weed control measures will still be undertaken. These actions include inventory of infestations, assessment of risk for spread, and application of control measures in areas where other management actions are proposed or planned. Control measures may include mowing, hand-pulling, and limited use of approved herbicides.

[4] Winn, Lisa A. Rock Creek Region Assessment and Action Plan. Roseburg, Oregon: Prepared for the Umpqua Basin Watershed Council and Roseburg Bureau of Land Management; 2006 March.

As described on page three of this document, equipment washing is required to minimize the risk of introducing soil from outside the project area that may be contaminated with noxious weed seed or other propagative materials. Consequently, negligible changes in noxious weed populations are expected (EA p. 27).

Monitoring

Monitoring of the effects of the Pop Rocks Thinning project will be done in accordance with provisions contained in the 1995 ROD/RMP, Appendix I (p. 84-86, 190-191, 193-199, and 201), focusing on the effects of thinning on: Aquatic Conservation Strategy Objectives, Late-Successional Reserves, Air Quality, Water and Soils, Wildlife Habitat, Fish Habitat, Special Status Species Habitat, and Cultural Resources.

Protest Procedures

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 Subpart 5003 Administrative Remedies, protests of this decision may be filed with the authorized officer, Max Yager within 15 days of the publication of the notice of decision/timber sale advertisement on June 24, 2014, in *The News-Review*, Roseburg, Oregon.

43 CFR § 5003.3 subsection (b) states: "Protests shall be filed with the authorized officer and shall contain a written statement of reasons for protesting the decision." This precludes the acceptance of electronic mail (email) or facsimile (fax) protests. Only written and signed hard copies of protests that are delivered to the Roseburg District Office will be accepted. The protest must clearly and concisely state which portion or element of the decision is being protested and the reasons why the decision is believed to be in error.

43 CFR § 5003.3 subsection (c) states: "Protests received more than 15 days after the publication of the notice of decision or the notice of sale are not timely filed and shall not be considered." Upon timely filing of a protest, the authorized officer shall reconsider the project decision to be implemented in light of the statement of reasons for the protest and other pertinent information available.

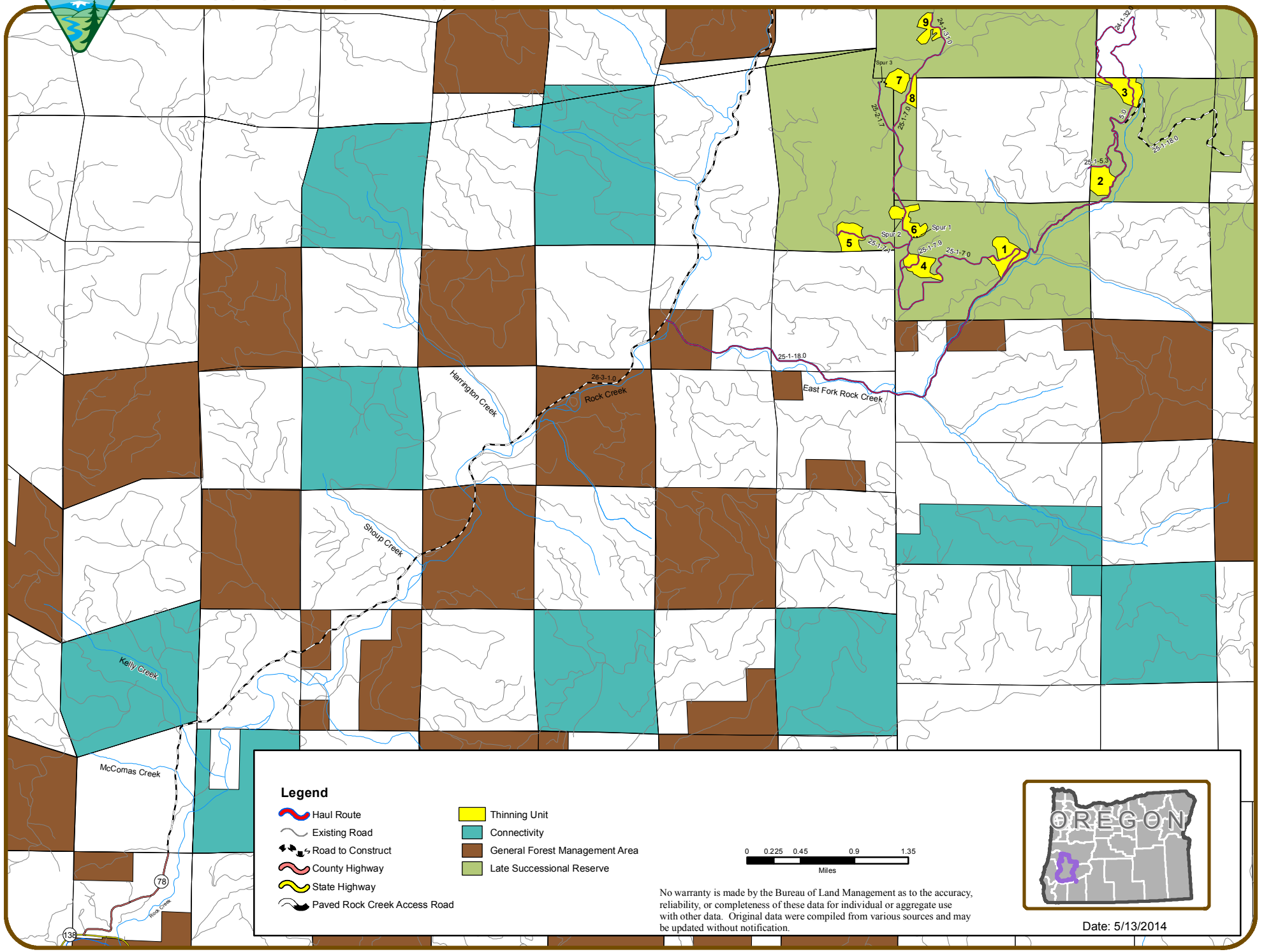
The authorized officer shall, at the conclusion of the review, serve the protest decision in writing to the party or parties. Upon denial of protest, the authorized officer may proceed with the implementation of the decision as permitted by regulations at 43 CFR § 5003.3 subsection (f).

If no protest is received by close of business July 9, 2014 (4:30 P.M., PST), this decision will become final. If a timely protest is received, the project decision will be reconsidered in light of the statement of reasons for the protest and other pertinent information available, and the Swiftwater Field Office will issue a protest decision.

for Max Yager
Field Manager
Swiftwater Field Office
(541) 440-4930

5/29/14
Date

POP ROCKS UNITS AND ROADS



Legend

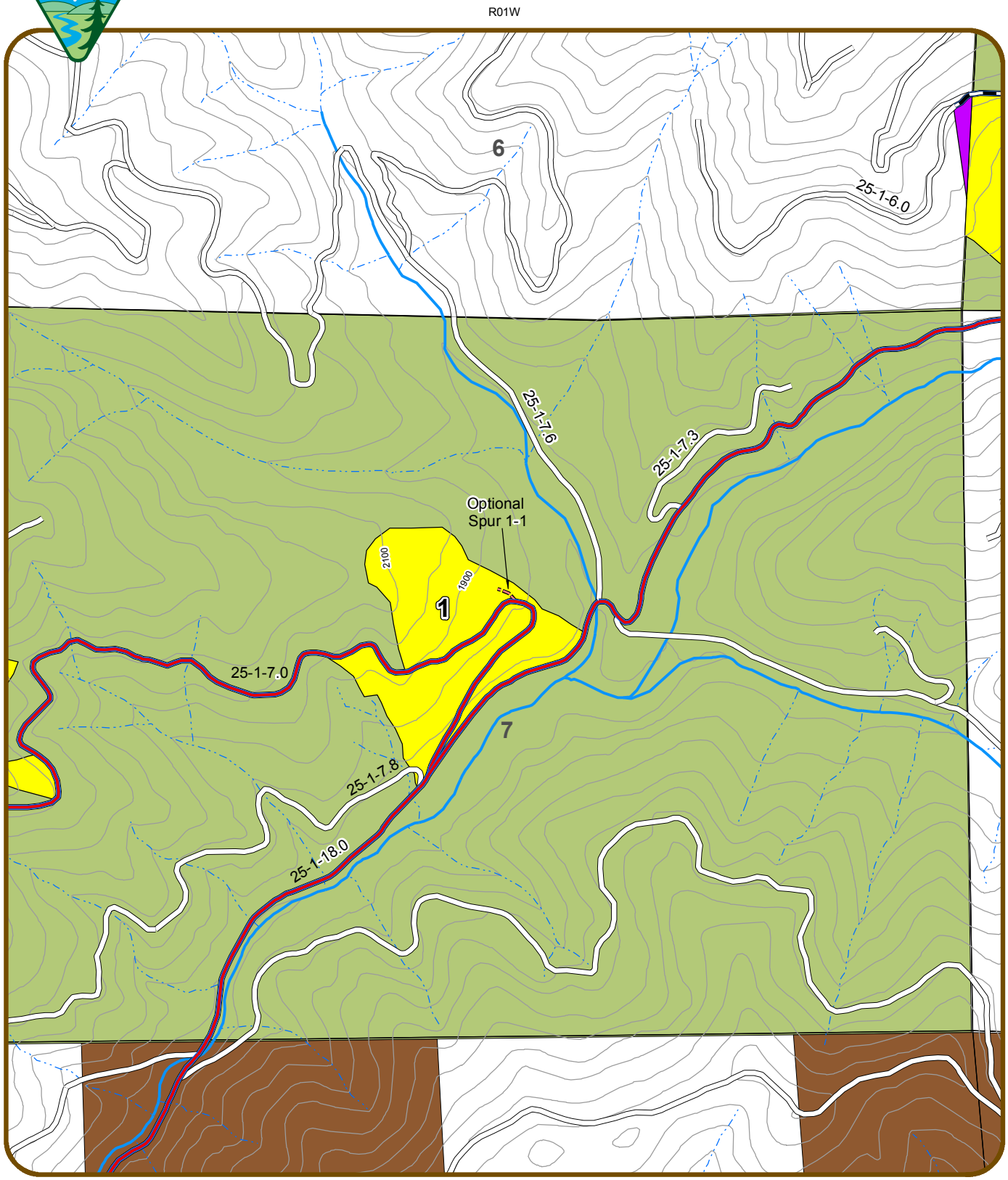
- Haul Route
- Existing Road
- Road to Construct
- County Highway
- State Highway
- Paved Rock Creek Access Road
- Thinning Unit
- Connectivity
- General Forest Management Area
- Late Successional Reserve

0 0.225 0.45 0.9 1.35
Miles

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.

Date: 5/13/2014

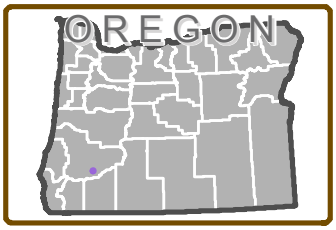
POP ROCKS UNITS AND ROADS



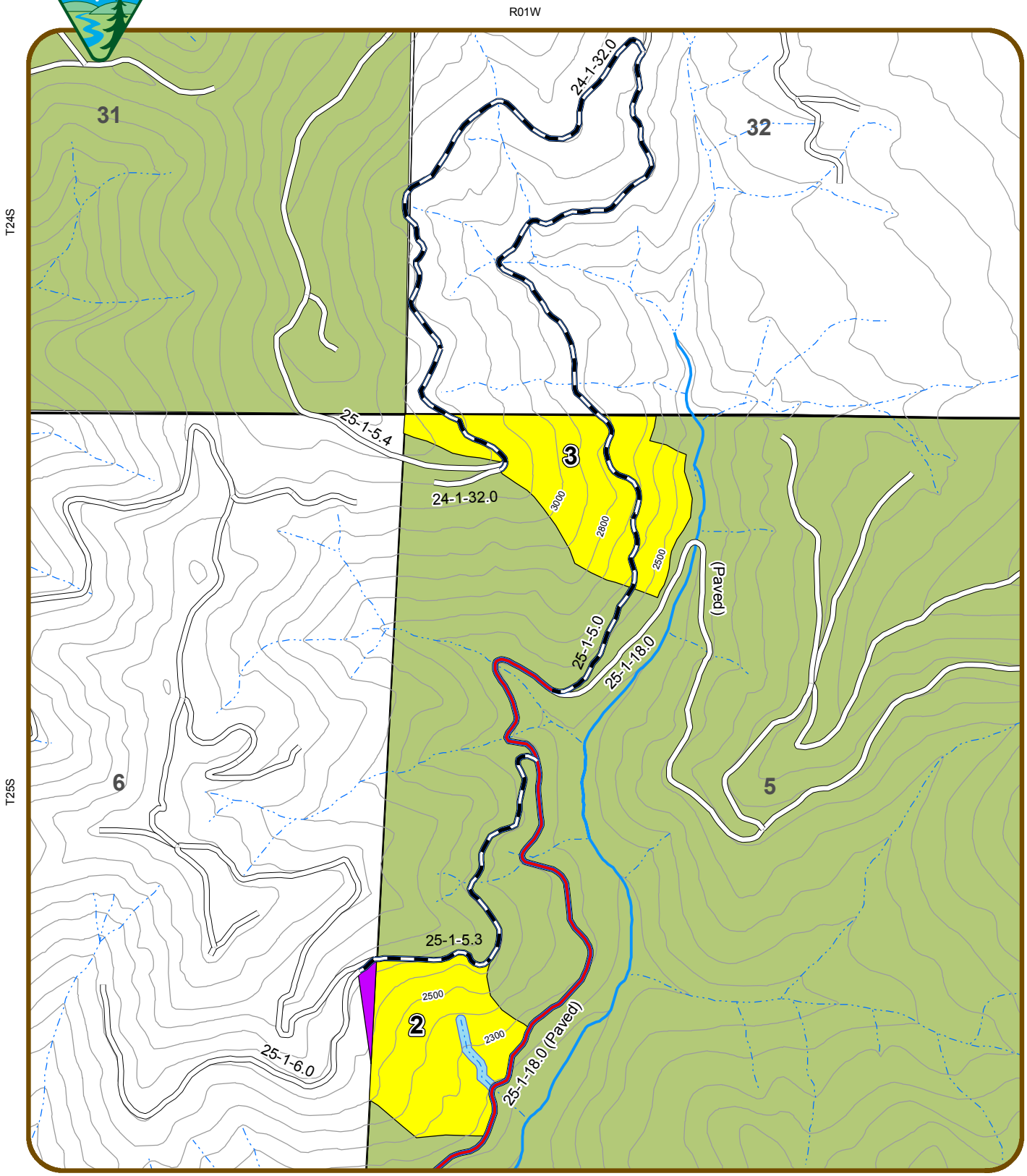
Legend

- Haul Route
- Road to Renovate, Maintain
- Existing Road
- Optional Operator Spur
- Major Stream
- Streams
- Thinning Unit
- General Forest Management Area
- Late Successional Reserve
- Yarding Wedge

Date: 5/13/2014

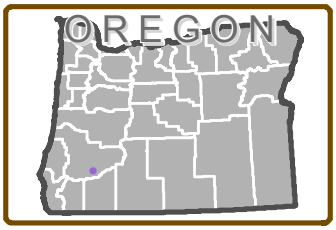


POP ROCKS UNITS AND ROADS



Legend

- Haul Route
- Road to Renovate, Maintain
- Existing Road
- Major Stream
- Streams
- No Harvest Stream Buffer
- Thinning Unit
- Late Successional Reserve
- Yarding Wedge



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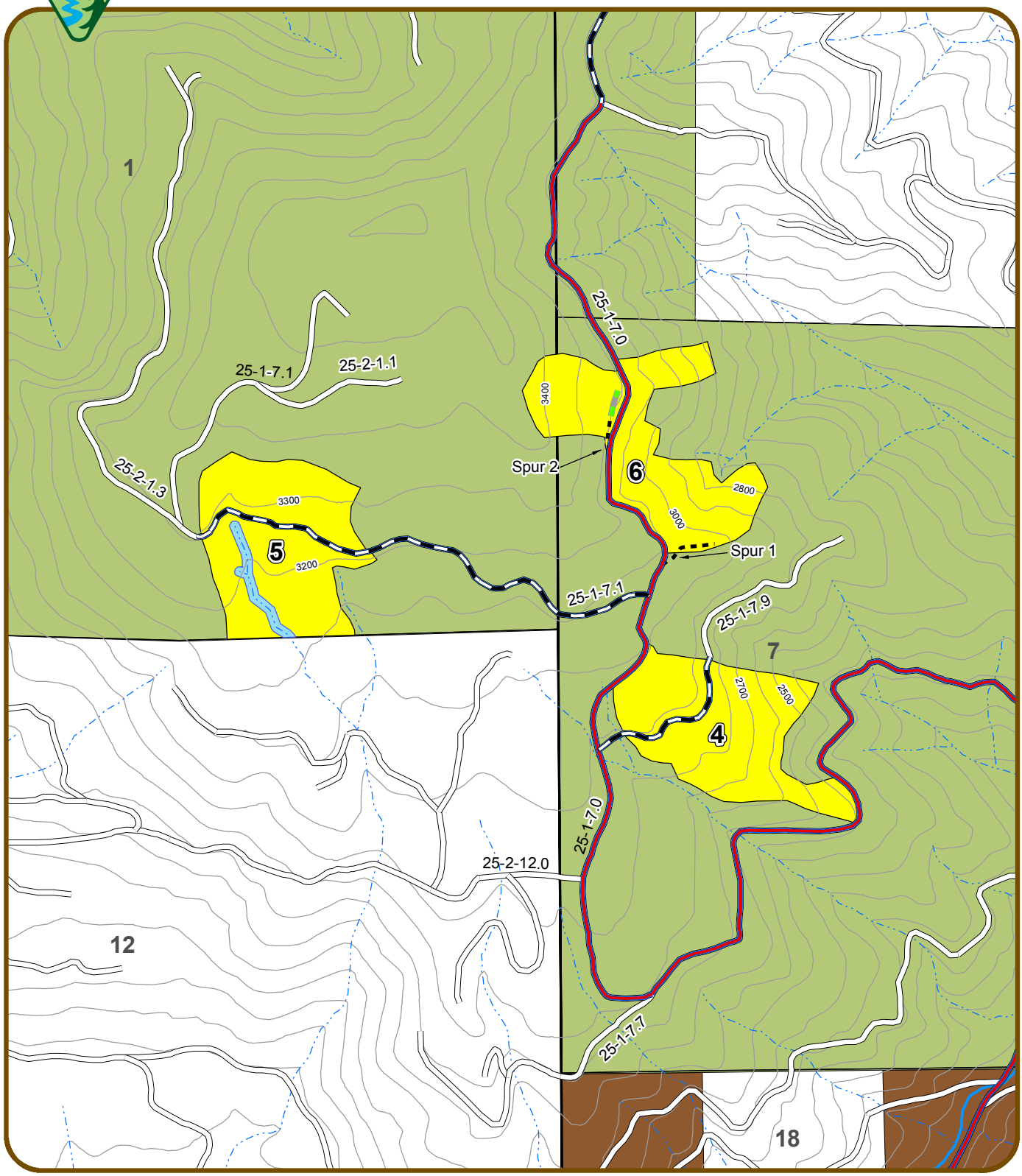
POP ROCKS UNITS AND ROADS



R02W R01W

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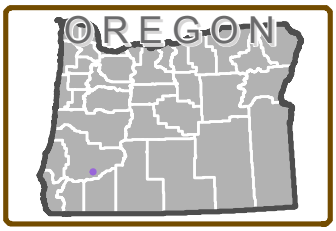
Miles

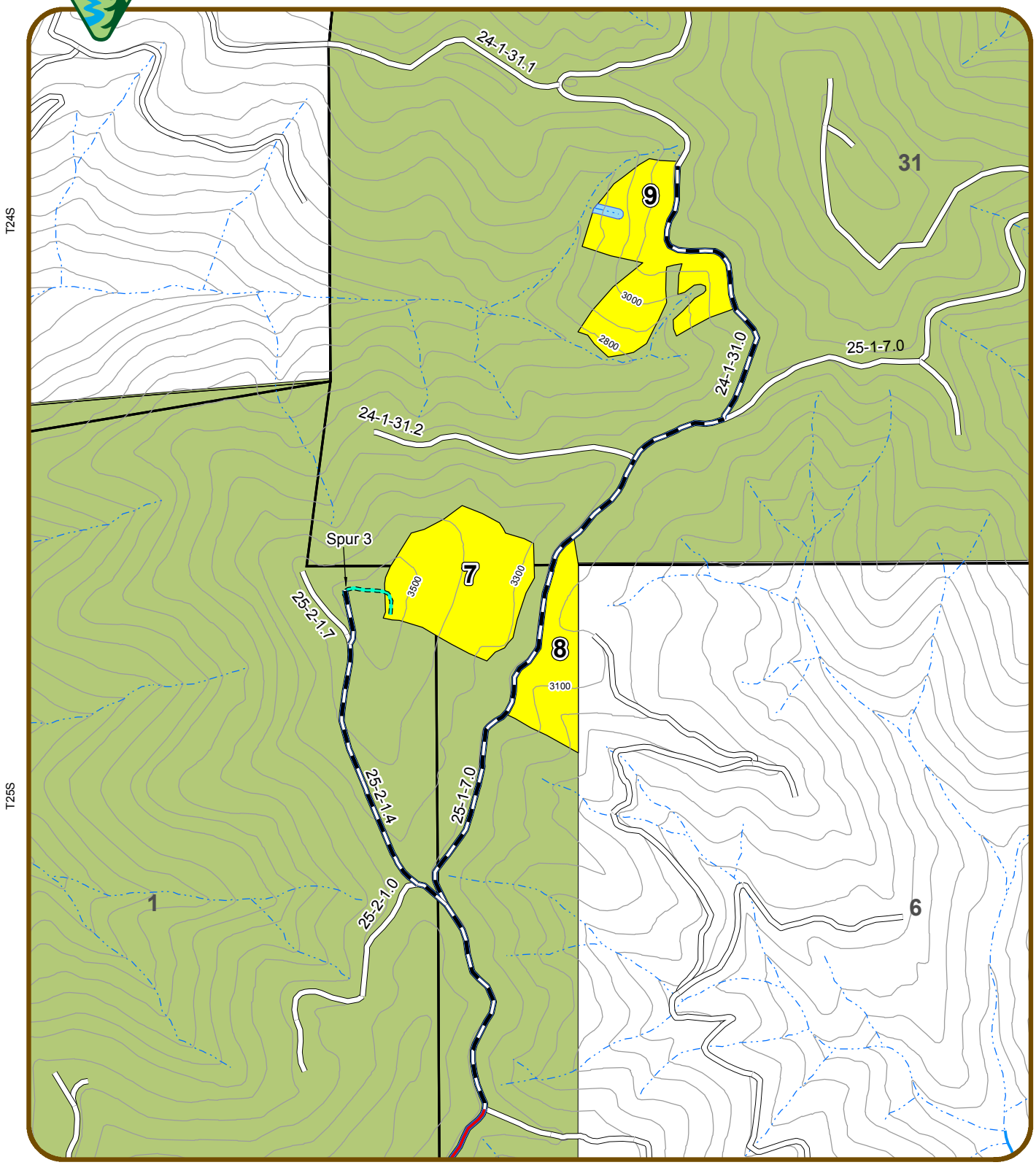
Legend

- Haul Route
- Road to Renovate, Maintain
- Existing Road
- Road to Renovate, Decommission
- Road to Construct, Decommission
- Major Stream
- Streams
- No Harvest Stream Buffer
- Thinning Unit
- General Forest Management Area
- Late Successional Reserve

Date: 5/13/2014



POP ROCKS UNITS AND ROADS

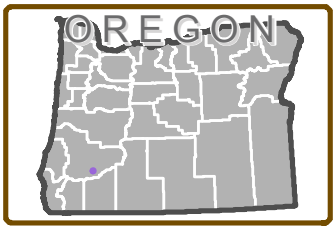


R02W R01W

0 0.05 0.1 0.2 0.3
Miles

Legend

- Haul Route
- Road to Renovate, Maintain
- Existing Road
- Road to Construct, Rock
- Major Stream
- Streams
- No Harvest Stream Buffer
- Thinning Unit
- Late Successional Reserve



Date: 5/13/2014