Kung Fu Timber Sale Decision Document
Revised Myrtle Creek Harvest Plan Environmental Assessment
DOI-BLM-ORWA-R050-2013-0003-EA

Bureau of Land Management
South River Field Office, Roseburg District

Background

The 2016 Revised Myrtle Creek Harvest Plan Environmental Assessment (2016 REA), of which the Kung Fu Timber Sale is a component, proposed to apply uniform (CT) and variable density (VDT) thinning to 1,160 acres and variable retention harvest (VRH) to 334 acres in the Matrix land use allocations. Additionally, VDT would be applied to 374 acres in the Riparian Reserves (RR) land use allocation. The 2016 REA describes and analyzes a no action alternative and two action alternatives. Under Alternative Two (the proposed action), thinning and VRH would be utilized whereas Alternative Three utilizes only thinning harvest.

The selected alternative, Alternative Two Modified, is a combination of activities proposed under Alternatives Two and Three of the 2016 REA and includes approximately 1,014 acres of VDT, 614 acres of CT, 209 acres of VRH, and 209 acres of reforestation and stand maintenance. Forest management treatments will be conducted as described in the REA (pp. 21-25) with the exception of the gap size in RR. Road management, fuels management and subsoiling actions will be as described in the REA (pp. 25-30).

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.

Public Involvement & Response to Comment

The BLM initiated the Myrtle Creek Harvest Plan project in December of 2012. The project has been described in the Roseburg District Quarterly Planning Update since December 4, 2012 (2016 REA, p. 5). Informal scoping comments were received from two individuals and two organizations in January, February, and March of 2013. Letters were sent to landowners with property adjacent to BLM-administered lands where timber harvest is proposed, those whose property lies beside or astride identified haul routes, and those with registered surface water rights for domestic use located within one mile downstream of any proposed units in September 2013. The scoping comments were considered and addressed in the REA (pp. 5-10).

The Myrtle Creek Harvest Plan Environmental Assessment (EA) was released for a 30-day period of public review and comment beginning on June 4, 2014, and running through July 3, 2014. Comments were received from four organizations and four individuals. Additionally, we received a form letter from 189 individuals during the comment period. After issuing the EA, additional red tree vole (RTV) surveys were conducted by BLM and the Northwest Ecosystem Survey Team (NEST) and BLM continued to conduct annual northern spotted owl (NSO) surveys. The BLM issued a 2015 Revised Myrtle Creek Harvest Plan EA (2015 REA) for a 15-day comment period on August 11, 2015 to incorporate the new RTV information and a non-high priority site

designation analysis. Comments were received from four organizations. The BLM issued a 2016 Revised Myrtle Creek Harvest Plan EA (2016 REA) for a 15-day comment period on February 12, 2016 to incorporate NSO survey information from surveys conducted in 2014 and 2015. The BLM received comments from four organizations. Responses to comments pertinent to this decision and not already addressed in the revised documents are either included in Appendix B or described below.

Decision

It is my decision to authorize the Kung Fu timber sale, which continues implementation of a combination of activities described in Alternatives Two and Three (Alternative Two Modified; see Appendix A - Maps) in the 2016 REA (pp. 18-35). I made two notable changes to Alternative Two in response to public comments. One of those changes does not pertain to the Kung Fu Timber Sale because it affected the amount of VRH in stands 80 years of age and older. The change pertinent to this sale is related to concerns about the effects of creating openings as large as one and a half acres in size within RR. To address this concern, it is my decision to create gaps no larger than 0.25 acres in RR.

Specific to the Kung Fu timber sale, a seasonal timing restriction from January 1 to August 15, both dates inclusive, for all activities within 660 feet of occupied golden eagle sites will be applied to portions of units 4 and 5 to prevent potential disturbance to nesting golden eagles. This timing restriction may be waived if searches document the sites or forest stands adjacent to the sites are unoccupied. A small portion of the southwestern boundary of Unit 4 will be seasonally restricted and the western edge of Unit 5 will have a 330 foot feathered treatment including a 50 foot "no-treatment" buffer along the unit boundary nearest the identified alternate nest tree and retention of overstory trees to maintain suitable nesting habitat near the alternate nest tree which is west of the unit. (2016 REA, p. 34). Additionally, 60 percent canopy cover will be retained in Unit 6 so that suitable northern spotted owl habitat function will be maintained.

The Kung Fu timber sale consists of seven units in Sections 2, 3, 17, 18, 19, 21 and 29, T. 28 S., R. 4 W., Willamette Meridian (see Appendix A - Maps). Table 1 shows that the harvest units total approximately 361 acres, including "no-treatment" buffers in RR. An additional 4 acres would be cleared for road rights-of-way. Activities will occur in the following land use allocations: General Forest Management Area (GFMA, 299 acres), Connectivity/Diversity Block (C/D, 26 acres), and RR (40 acres including the "no treatment" area). Treatments in the GFMA include 116 acres of CT, 149 acres of VDT, 30 acres of VRH and 4 acres of clearing for road rights-of-way. Treatments in the C/D Blocks land use allocation include 17 acres of CT and 9 acres of VDT. Variable density thinning will be applied in all RR associated with the units (40 acres with 5 acres in the "No Treatment" riparian reserve buffers). The 4 acres would be cleared for road rights-of-way are in Units 4, 5, and 7. Three units will be harvested using cable yarding systems, one unit will be harvested using a ground-based system and three units will be harvest using a combination of ground-based and cable systems. In addition to timber harvest, the following activities will occur (see Table 2 and Appendix A - Maps):

- **Road Construction (1.09 miles) and Decommissioning (2.29 miles):** Approximately 36 percent of the constructed roads will be within unit boundaries. BLM Road 28-4-28.1, Spur 1 and Spur 3 (0.54 miles) will be constructed, surfaced with rock and retained for future use. Four road segments (Spurs 4, 5, 6, and 7; 0.55 miles) will be constructed and used for harvest operations, then decommissioned. All road construction and decommissioning will occur during the dry season (described below). Table 2 depicts the road treatments and lengths, and *Appendix A - Maps* show the road locations.

  At a minimum, road decommissioning will consist of removing temporary drainage structures, constructing water bars, seeding and mulching disturbed areas, and blocking roads to vehicular use (2016 REA, p. 26). If it is not possible to accomplish decommissioning at the end of the first operating season, the purchaser shall be responsible for winterizing temporary roads by water-barring, obstructing motorized access, and mulching. Road construction and decommissioning will follow the northern spotted owl operating restrictions where applicable (see below).

- **Road Renovation (14.19 miles):** Ten road segments (see Table 2 and *Appendix A - Maps*) will be renovated during the dry season. All of the renovated roads will be retained for future use, with the exception of approximately 1.98 miles that is identified for decommissioning. Renovation actions are those needed to restore the road to original design specifications and may include blading, brushing, removing obstructions or trees within the right-of-way, reshaping drainage dips and the road bed, replacing and/or installing cross drains and live water culverts when needed, and spot aggregate placement where needed. Northern spotted owl operating restrictions will be implemented where applicable (see below).

- **Road Improvement (0.04 miles):** One road segment (Spur 2) will be improved and retained. Improvements include installing additional drainage structures and applying rock surfacing.

- **Road Daylighting (6.63 miles):** Daylighting followed by road renovation will occur along 4 road segments on two roads (see Table 2; *Appendix A - Maps*). Daylighting will be conducted as described in the REA (p. 28). Daylighting treatments include clearing shrubs and trees and/or thinning trees less than 24 inches diameter breast height where overstory trees shade the roadway surface. Treatments will be limited to 33 feet from the center line of the road.

- **Subsoiling:** Approximately 3.3 acres of skid trails, equipment areas and landings will be subsoiled in Units 2, 5, 6 and 7. Subsoiling will treat compacted soils to a minimum of 18 inches in depth or to the top of gravelly-cobbly soil layers if these layers are shallower than 18 inches.

- **Post-Harvest Fuels Treatment:** Activity fuel accumulations along roads, primary skid trails, and landings will be piled and burned as described in the REA (p. 29). Specifically, activity fuels will be hand piled and burned within 50 feet of BLM Road 28-4-21.2 in Unit 1, BLM Roads 28-4-21.0 and 28-4-19.1 in Unit 6, BLM Road 27-4-31.0 in Unit 7, and within 100 feet of property lines and in the northwest portion in Unit 3. Activity fuels at landings in all units, and along road daylighting areas will be machine piled and burned.

- **Post-Harvest Tree Planting and Density Control:** Approximately 30 acres designated for VRH will be planted with tree seedlings. Density control treatments within planted areas will be applied as necessary to postpone full canopy closure until the stand reaches approximately 30 years old.

Total harvest volume is estimated at 5,859 thousand board feet. Approximately 5,406 thousand board feet derived from harvest in the GFMA and C/D Blocks land use allocations is chargeable to the Roseburg District annual allowable sale quantity. The remaining 453 thousand board feet is derived from VDT in Riparian Reserves and is not chargeable to the annual allowable sale quantity. Timber sale unit numbers and corresponding REA unit designations are displayed in Table 1.

Table 1: Kung Fu Timber Sale Unit Description.

Sale Unit	REA Unit Designation	Age in 2016	Land Use Allocation[2]	Harvest Acres	Alternative Two Mod. Harvest Prescription[1]	Northern Spotted Owl Critical Habitat	Yarding Method
1	28-4-21B	43	C/D RR	17 2	CT VDT	No	Cable
2	28-4-21A	85	C/D	9	VDT	No	Ground-Based
3	28-4-29A	75	GFMA RR	30 4	VRH VDT	No	Cable
4	28-4-17A	52	GFMA RR RR	57 6 1	CT VDT "No Treatment"	No	Cable
5	28-4-18A 28-4-19A	50 57	GFMA	59	CT	No	Cable/Ground-Based
6	28-4-19B	110	GFMA RR RR	48 10 2	VDT VDT "No Treatment"	No	Cable/Ground-Based
7	28-4-2A 28-4-3A	46 48	GFMA RR RR	101 13 2	VDT VDT "No Treatment"	Yes	Cable/Ground-Based
Total				361			

Applicable project design features described in the REA (pp. 32-35) have been incorporated into timber sale contract stipulations.

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 (2016 REA, p. 14). Any equipment removed from the contract area during the life of the contract must be re-cleaned before being returned to the contract area.

Conventional ground-based yarding equipment will operate on designated skid trails, using pre-existing trails to the greatest extent practicable. Ground-based operations will be limited to the dry season, typically July 15 through October 15, but may be shortened or extended, dependent on weather conditions, when soils are at their driest and least susceptible to compaction. Operations are generally restricted to slopes of 35 percent or less, but may be authorized on steeper inclusions and pitches between gentler benches where appropriate (2016 REA, p. 32).

Conventional ground-based harvest systems, excluding feller-bunchers, are acceptable for the ground-based harvest in units 2, 5, 6 and 7. The units contain soils with moderate to high clay content, low levels of rock and moderate to high susceptibility to soil compaction or contain areas of reduced soil nutrients where soil disturbance will be limited. Field review[1] shows past feller-buncher operations on these soil types have yielded unacceptable levels of soil compaction and disturbance.

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 75 feet of lateral yarding capability (2016 REA, p. 33). The system shall also have the capability to yard in multi-span configuration.

With the exception of the clearing of road rights-of-way and VRH in Units 3, no timber falling, bucking or yarding shall be conducted in thinning units during the bark-slip period from April 15 to July 15 of each calendar year, both days inclusive. This restriction may be waived or modified depending upon seasonal variations, logging systems, and operator skill.

Access will be primarily provided by existing roads, supplemented by the construction of seven road segments (1.09 miles). Table 2 and Appendix A - Maps display details of necessary road treatments.

Table 2: Kung Fu Timber Sale Road Construction, Renovation, Improvement, Decommissioning and Daylighting.

Road Number	Road Treatment	Treatment Length (miles)	Daylighting (miles)	Unit
27-4-31.0	Renovate, Decommission	0.98	0	7
28-4-2.1	Renovate, Decommission	0.53	0	7
28-4-3.0	Renovate, Rock, Retain	0.20	0	7
28-4-8.1	Renovate, Rock, Retain	4.52	3.06	7
28-4-8.3	Renovate, Rock, Retain	0.79	0	4
28-4-18.0	Renovate, Rock, Retain	0.85	0	4
28-4-19.0	Renovate, Decommission	0.23	0	5
28-4-21.0	Renovate, Rock, Retain	4.83	3.57	1, 2, 3, 4, 5, 6
28-4-21.2	Renovate, Rock, Retain	1.26	0	1
28-4-28.1	Construct, Rock, Retain	0.37	0	3
Spur 1	Construct, Rock, Retain	0.12	0	4
Spur 2	Improve, Rock, Retain	0.04	0	4
Spur 3	Construct, Rock, Retain	0.05	0	5
Spur 4	Construct, Decommission	0.32	0	5
Spur 5	Construct, Decommission	0.13	0	5
Spur 6	Construct, Decommission	0.03	0	7
Spur 6	Renovate, Decommission	0.24	0	7
Spur 7	Construct, Decommission	0.07	0	7

[1] USDI BLM 2013. Sir Galahad Commercial Thinning and Density Management Soil Impacts Field Review. Roseburg District, Roseburg, Oregon.

Rationale for the Decision

Alternative Two Modified will address public concerns and meet the project objectives (purpose and need) of providing sustainable timber production; developing desired species composition, structural characteristics, and distribution of seral or age classes; enhancing species and structural diversity in Riparian Reserves; and reducing stand densities to promote tree survival and growth (2016 REA, pp. 48-60). Alternative One would not accomplish these objectives (2016 REA, pp. 45-47). Alternative Two would meet the project objectives but would not adequately address public concerns. Alternative Three would not accomplish the project objectives to the extent that Alternative Two or Alternative Two Modified will because Alternative Three would not contribute to developing desired seral or age class distribution in the GFMA land use allocation (2016 REA, p. 60).

Wildlife

Consultation with the U.S. Fish and Wildlife Service (Service) has been completed and the project complies with the Endangered Species Act. In a Biological Opinion (USFWS 2015[2]; TAILS #: 01EOFW00-2015-F-0229, dated August 5, 2015) the Service found the proposed action "…is not likely to jeopardize the spotted owl…The proposed action has also been planned in a manner which incorporates recommendations of the Spotted Owl Revised Recovery Plan's Recovery Actions 10 and 32…the proposed action is not likely to adversely modify spotted owl critical habitat because it is not anticipated to diminish the intended connectivity or demographic support conservation function of the affected critical habitat subunit KLE-2." (p. 1-2) The project area is outside of marbled murrelet management zones, and hence would have no effect on the species or its habitat (2016 REA, p. 188).

Northern Spotted Owl (Strix occidentalis caurina)

Disturbance

No effect to northern spotted owls from noise disruption or disturbance is expected (2016 REA, p. 33, 77). Any operations with the potential for disruption of nesting northern spotted owls would be subject to seasonal restrictions. Operations within applicable disruptions threshold distances of known northern spotted owl sites or unsurveyed suitable habitat will be prohibited from March 1 through July 15, both dates inclusive. Removal of suitable northern spotted owl habitat or pile burning within one-quarter mile of known northern spotted owl sites, or unsurveyed suitable habitat will be prohibited from March 1 through September 30, both dates inclusive.

[2] U.S. Fish and Wildlife Service. 2015. Formal consultation on the Roseburg District of the Bureau of land Management's 2015 Batch of Five Timber Sales (Reference Number 01EOFW00-2015-F-0229). August 5, 2015.

Suitable and Dispersal Habitat

The BLM modified Alternative Two in response to public comments on the EA/REA, by reducing the amount of area treated and harvest intensity. Consequently, the effects of proposed activities on northern spotted owls and their habitat will be reduced from the effects disclosed for Alternative Two in the REA. The Kung Fu Timber Sale harvest area was reduced by approximately 28 acres between consultation and final unit layout such that the effects of proposed activities on northern spotted owls and their habitat will be reduced from the effects described in consultation documents (Biological Assessment and Biological Opinion, BO). The final Kung Fu Timber Sale units do not modify or remove suitable northern spotted owl habitat in any nest patches or core areas. Impacts to northern spotted owl suitable habitat are limited to thinning 7 acres in the home range, but outside of the core area, of site 0560O.

The Kung Fu Timber Sale includes application of VRH in northern spotted owl dispersal habitat (30 acres in Unit 3) in the GFMA land use allocation outside of northern spotted owl home ranges and critical habitat. Post-harvest, Unit 3 will not support northern spotted owl use (2016 REA, p. 77) but retained habitat components will contribute to future development of suitable habitat; providing the necessary habitat diversity such as multi-layered canopy, large trees and snags. Retention in Unit 3 is as described in the REA (pp. 23-24). In approximately 40 years, post-harvest, Unit 3 will provide dispersal habitat and in approximately 80 years, post-harvest, the unit will provide nesting, roosting and foraging habitat (2016 REA, p. 77).

Thinning will modify approximately 228 acres of northern spotted owl dispersal habitat outside of occupied northern spotted owl nest patches and core areas, with the exception of approximately 69 acres (Unit 4) which is in the core area of northern spotted owl home range 0560O. Dispersal habitat function will be maintained because 40 percent canopy cover will be retained (2016 REA, pp. 21-22). Northern spotted owls are expected to continue using thinned areas because canopy closure will remain above 40 percent and the quadratic mean diameter of trees in the treated stands will be at least 11 inches, figures widely used as thresholds for dispersal function (2016 REA, p. 62, 75 and 76). However northern spotted owls may utilize the thinned stand less than unthinned stands until canopy closure returns to pre-thinning levels (2016 REA, p. 76).

Site Occupancy

Three northern spotted owl home ranges will be affected by Kung Fu timber sale units: 0273O, 0560O, and Deer Myrtle (1170O). The BLM initially identified site 0273O in 2014 when a pair with fledglings was located; the site had pair status but did not nest in 2015. The BLM also initially identified site 0560O in 2014 when a pair with fledglings was located. Site 0560O also successfully reproduced in 2015. Site 1170O was initially identified in 2015 when a pair of northern spotted owls with fledglings was located.

Suitable habitat in sites 0273O and 0560O is below the suitable habitat viability thresholds at the home range and core area scales. Suitable habitat is below the home range threshold in site 1170O, but above the core area threshold (2016 REA, p. 63). The Kung Fu timber sale will not change the suitable habitat viability status of these home ranges because suitable habitat will not be treated within sites 0273O and 1170O (2016 REA, p. 78) and thinning (7 acres) in suitable habitat at the home range periphery of site 0560O will not alter the function of the habitat because at least 60 percent canopy cover will be retained.

Northern spotted owls are expected to continue to use thinned areas (2016 REA, p. 62, 75 and 76). However, northern spotted owls potentially using the three affected home ranges in the future may expand home range size (2016 REA, p. 75) and may utilize the thinned stands less than unthinned stands in the short-term (2016 REA, p. 76).

Northern Spotted Owl 2012 Critical Habitat

Unit 7 (114 acres of thinning) of the Kung Fu timber sale is the only unit located in the critical habitat Klamath East Subunit 2 (KLE-2), thus it is the only unit designated as northern spotted owl critical habitat (2016 REA, p. 177). Canopy cover in Unit 7 will remain above 40 percent, thus maintaining dispersal habitat function and providing for northern spotted owl movement between the western Cascades, coastal Oregon, and Klamath Mountains.

Based upon the critical habitat analysis in the BO, the Service finds Kung Fu timber sale activities "…are not likely to adversely affect designated spotted owl critical habitat and, as such, are not likely to appreciably diminish the conservation support function of this [critical habitat unit] CHU subunit KLE-2 or critical habitat at the Provincial and range-wide scales primarily because these project impacts are relatively very small at the local area. Conservation measures in the Project at the stand and landscape scales in terms of retention of spotted owl prey habitat features along with their broad distribution across the landscape are likely to provide some benefits to spotted owls." (USFWS 2015, p. 70)

Northern Spotted Owl 2011 Recovery Plan

Known threats to the northern spotted owl are addressed by recovery strategies that include habitat conservation and active forest restoration as recovery strategies (USFWS 2011, p. II-2). The recovery plan also strongly encourages land managers to be aggressive in the implementation of recovery actions (USFWS 2011, p. II-11).

This project is consistent with the Revised Recovery Plan for the Northern Spotted Owl (Recovery Plan) by implementing disturbance-based management within the range of the northern spotted owl with the goal of maintaining or restoring forest ecosystem structure, composition, and processes so they are sustainable under current and future climate conditions. It is also consistent with the Recovery Plan recommendations for the application of ecological forestry principles (2016 REA, p. 81).

The Kung Fu timber sale complies with Recovery Action 6 by implementing ecological forestry principles that emphasize retention of larger and older trees, snags and downed wood, and live trees (2016 REA, p. 23-24). The project will be conducted following principles of ecological forestry as recommended throughout the Recovery Plan (USFWS 2011, pp. III-11 thru 14, 19, and 20). It will emulate natural disturbance processes through prescriptive actions (USFWS 2011, p. III-13), promoting spatial heterogeneity within patches on local landscapes, and restore species and structural diversity, including early successional ecosystems (USFWS 2011, pp. III-14 and 18).

The Recovery Plan recommends conserving northern spotted owl sites and high-value northern spotted owl habitat (USFWS 2011, pp. III-42 thru 47). The Recovery Plan also identifies a number of activities that could have short-term effects to northern spotted owls, but which would still be consistent with the Recovery Plan. Among these are restoration activities that would reduce threats from stochastic disturbance (USFWS 2011, pp. III-13 thru 14, and 45 thru 46) and restoration of high quality early-seral habitat (USFWS 2011, pp. III-14 and 46), both of which will be accomplished by implementing Kung Fu timber sale. Given these factors, the sale is consistent with the Recovery Plan (2016 REA, p. 81).

In a BO (USFWS 2015, pp. 69-70), the Service made the following findings:

- The Kung Fu timber sale is located on Matrix lands which under the Northwest Forest Plan (NWFP) these lands are where the emphasis on timber harvest was intentionally placed. Further, adjacent reserve areas will continue to be managed to maintain and further restore older forest habitats to benefit a myriad of native species, including northern spotted owls.
- The proposed action does not remove northern spotted owl suitable habitat in suitable habitat limited home ranges.
- In addition to the non-jeopardy NWFP Opinion, the proposed action is reasonably consistent with Recovery Actions 10 and 32 of the Recovery Plan. With the possible exception of small roadside slivers, all habitats meeting the intent of Recovery Action 32 have been removed from proposed harvest areas. The District planned the proposed action consistent with the intent of Recovery Action 10 in that the northern spotted owl sites would be conserved and most of the proposed harvesting occurs outside of core use areas for known northern spotted owl sites.
- The capability of the habitat and the current population of northern spotted owls to support a persistent northern spotted owl population is likely to be retained with implementation of the project. The proposed action will not appreciably reduce the likelihood of survival or recovery for the northern spotted owl population.

Golden Eagle (Aquila chrysaetos)

In 2015, the BLM located a nesting pair of golden eagles in the vicinity of units 4 and 5. BLM wildlife biologists did not locate the active nest tree in the units, but located an alternate nest site west of Unit 5 and an activity area west of Unit 4. As stated previously, seasonal timing restriction will be applied to all activities within 660 feet of the alternate nest tree and the occupied area adjacent to Unit 4 to prevent disturbance to nesting golden eagles (2016 REA, p. 34). The western edge of Unit 5 will have a 330 foot feathered treatment including a 50 foot "no-treatment" buffer nearest the identified alternate nest tree and retention of overstory trees in Unit 4 (2016 REA, p. 34).

Botany Special Status Species

The project is within the range of Kincaid's lupine (*Lupinus sulphureus* spp. *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 units comprising this project (2016 REA, pp. 13, 179 and 185).

There will be no effects on the Federally-endangered rough popcorn flower (*Plagiobothrys hirtus*). The project is not in the species' geographic range and vernally wet meadows are not present (2016 REA, p. 185)

No Bureau Sensitive plant species were located during surveys in the Kung Fu timber sale units; therefore no affect to Bureau Sensitive species is anticipated (2016 REA, pp. 13, 181-186).

Survey and Manage

The project is consistent with the 2001 Record of Decision and Standards and Guidelines for Amendments to the Survey and Manage, Protection Buffer, and other Mitigation Measures Standards and Guidelines.

On February 18, 2014, the District Court issued a remedy order in the case of *Conservation Northwest et al. v. Bonnie et al.* that directs the use of the 2001 species list as modified by the 2001, 2002, and 2003 Annual Species Reviews, except for the changes made for the red tree vole, and application of the "Pechman exemptions".

The Pechman exemptions include both pre-disturbance surveys and known site management. 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."

Under the current guidance described above, thinning units under 80 years old are exempt from the requirements of the 2001 ROD (as amended in March 21, 2004). Kung Fu timber sale includes 258 acres (units 1, 4, 5, and 7), including "no treatment" areas, which are exempt from survey requirements because they comply with Pechman exemption "a" (Table 1).

Unit locations that are not exempt from Survey and Manage surveys were evaluated for presence of suitable habitat. Required protocol surveys were conducted in suitable habitats using the 2001 Survey and Manage ROD species list (2016 REA, pp. 34 and 67).

Units 2 and 3 do not contain suitable mollusk habitat; therefore surveys were not conducted. Protocol surveys were conducted in Unit 6 and along BLM Road 28-4-19.0, Spur 4, and Spur 5 and no Survey and Manage mollusk species were found.

The great gray owl (*Strix nebulosa*) habitat was identified in the analysis area. Habitat evaluation, based on the survey protocol, revealed that Unit 3 (28-4-29A) and a portion of Unit 5 (28-4-19A) required great gray owl surveys. The BLM surveyed the units in 2014 and 2015 (2016 REA, p. 34). Additionally, application of protocol survey standards in units 3 and 5 resulted in completed surveys in Unit 6 (28-4-19B). Two years of protocol surveys did not detect any great gray owls in the surveyed area.

Oregon red tree vole (RTV) (*Arborimus longicaudus*) is a 2001 ROD Survey and Manage species (Category C, survey and manage known sites). None of the Kung Fu units required RTV surveys because they either do not provide suitable habitat that may potentially contribute to a reasonable assurance of red tree vole persistence (2016 REA, pp. 41-42) (Huff et al. 2012) or they are exempt from surveys under Pechman exemption "a". However, survey information was provided to the BLM on August 25, 2015 and August 29, 2015 by Northwest Ecosystem Survey Team (NEST), a citizen science group. The BLM assessed the information in the Myrtle Creek RTV Determination of NEPA Adequacy (DNA). The NEST identified and climbed individual trees in Unit 4; eight active RTV nests were identified which form three active RTV sites (DNA, p. 8).

The 2001 ROD Survey & Guidelines (S&Gs) for Amendments to the Survey & Manage, Protection Buffer, and other Mitigation Measures Standards and Guidelines provides for the local line officer to identify non-high priority sites on a case-by-case basis (200 1 ROD S&Gs, page 10). Non-high priority sites are not needed for species persistence and do not require site management. The BLM shared the Myrtle Creek Harvest Plan Red Tree Vole Non-High Priority Site Evaluation with the USFWS, USFS, and the BLM state office technical expert as outlined in the Identification of Non-High Priority Sites Process BLM-IM No. OR-2012-036. The BLM received concurrence from the USFWS (2/22/16) and Umpqua National Forest (2/11/16) indicating RTVs will continue to persist. Harvest related activities will occur within three RTV sites and the sites will be managed as non-high priority sites (2016 REA, pp. 68-69, 83-84, 89, and Appendix F; Myrtle Creek RTV DNA).

Survey and Manage botanical species were surveyed in 2012, 2013 and 2014 using the 2001 ROD species list for Survey and Manage lichens, mosses, bryophytes and vascular plants (2016 REA, p. 13). The results of the surveys where lichens were present are displayed in Appendix B of the 2016 REA (p. 180). Two species of Survey and Manage lichen (*Chaenotheca chrysocephala and C. ferruginea*) were identified in thinning Unit 6, none were located in Units 2 and 3. The BLM protected the lichen sites by buffering at each site (2016 REA, p. 13).

Aquatic Habitat, Fish, and Essential Fish Habitat

Oregon Coast coho salmon (*Oncorhynchus kisutch*), a Federally-threatened species, is present in the fish-bearing portions of Myrtle Creek and Days Creek, which are designated as critical habitat for the Oregon Coast coho salmon, and Essential Fish Habitat for the Oregon Coast coho salmon.

The Kung Fu timber sale units are within the Myrtle Creek and Deer Creek-South Umpqua River watersheds, but no direct effects from harvest activities would occur to Oregon Coast coho salmon, critical habitat for the species, or Essential Fish Habitat (2016 REA, pp. 100, 101, 104-105; Myrtle Creek No Effect Determination, Admin Record). Riparian Reserves have been established on all streams located within or adjacent to the units, and "no treatment" areas that will filter sediment and provide effective shade for maintenance of water temperatures (100 feet on Oregon Coast coho salmon bearing streams, 60 feet on fish bearing and perennial streams; 35 feet on intermittent streams) have been established adjacent to the stream channels (2016 REA, p. 32).

Potential effects on aquatic systems come primarily from road related activities, which can contribute sediment to streams that can affect substrate for spawning. Despite this potential, road work done during the dry season has no mechanism for sediment transport to occur from roads to streams (2016 REA, p. 101). All road construction, road renovation, road decommissioning, and native surface road improvement will take place during the dry season, typically mid-May through mid-October (2016 REA, pp. 34, 100 and 113). Absent seasonal precipitation which could mobilize sediments, these activities will not contribute sediment to streams that could affect spawning substrates (2016 REA, pp. 101). Application of project design features and Best Management Practices will effectively eliminate delivery of road derived sediment to live stream channels (2016 REA, pp. 104, 106). 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 or that would be reasonably likely to affect Oregon Coast coho salmon (2016 REA, pp. 99, 101, 106 and 133).

Hauling on native surface roads will take place during the dry season, typically mid-May through mid-October (2016 REA, p. 34). Dry season hauling will neither generate nor deliver sediment to live stream channels (2016 REA, pp. 99, 100-101, 102). Gravel-surfaced haul routes could contribute small amounts of fine sediment to stream channels at stream crossings at a time of year when sediment is being transported downstream by high winter flows; but the amount of sediment entering streams will be undetectable (2016 REA, pp. 101, 107). Implementing project design features and Best Management Practices will eliminate the potential for these effects (2016 REA, p. 101, 104). Active haul during the wet season on gravel-surfaced routes will be suspended during or prior to forecasts of substantial rain or if the haul route becomes adversely impacted (2016 REA, pp. 35, 104). Where haul routes are paved, there is no mechanism for sediment to be generated or carried to adjacent stream channels (2016 REA, pp. 99, 101, 107).

Water Quality and Quantity

Riparian Reserves have been established on all streams located within or adjacent to the harvest 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 (2016 REA, pp. 98, 104, 105, 106 and 195).

Variable density thinning in Riparian Reserves will maintain an average canopy cover of at least 50 percent (2016 REA, p. 22) and, in response to public comments on the 2016 REA, gaps will be limited to 0.25 acres in size or less. Variable density thinning in the Matrix will have gaps 0.25 to 0.5 acres in size. Small gaps created by the VDT will have little effect on forest hydrology (2016 REA, p. 107).

Openings in a forest canopy greater than two tree heights across can affect precipitation, snow melt and peak flows (2016 REA, p. 107). Variable retention harvest in Unit 3 (30 acres) occur in the Lower North Fork Myrtle Creek subwatershed which has Equivalent Clearcut Area (ECA) of 10 percent (2016 REA, p. 108). With the addition of concentrated harvest areas, the ECA would increase a small fraction of one percent in this rain-dominated subwatershed (2016 REA, p. 108). There would be no mechanism for peak flow enhancement due to a lack of response until ECA exceeds 29 percent of the subwatershed (2016 REA, p. 108). Consequently, implementation of VRH in Unit 3 in the Kung Fu timber sale does not present a risk to peak flow enhancement.

As discussed in the 2016 REA (p. 95), average road density is 4.4 miles per square mile. Based on rights-of-way widths, assumed to be 40-feet on average, roads cover approximately 4,824 acres and represent 3.3 percent of the analysis area (2016 REA, p. 95). Increases in peak flow can be found when the roads and other impermeable areas occupy more than 12 percent of a catchment scale watershed (Harr *et al*. 1975) (2016 REA, pp. 95). Table 2 shows that three road segments (approximately 0.54 miles) will be constructed, used and retained for future use. Road density will remain well below the 12 percent threshold for risk of peak flow enhancement identified by Harr et al. (1975) (2016 REA pp. 98, 107).

Aquatic Conservation Strategy

Riparian Reserves were established consistent with the 1995 ROD/RMP specification that Riparian Reserve widths will be 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 (2016 REA, p. 32 and Appendix D). The height of a site-potential tree is calculated as 160-feet for the Myrtle Creek and Deer Creek-South Umpqua watersheds (2016 REA, pp. 32 and 191). Approximately 35 acres of VDT will be conducted in Riparian Reserves on the Kung Fu timber sale. One objective for these treatments is to accelerate the development of diverse plant communities that are characteristic of late-seral conditions (2016 REA, pp. 3, 55, 102, 103, 192).

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)." There is no permanent road construction authorized in the South Umpqua River Tier 1 Key Watershed in association with the Kung Fu timber sale, which is consistent with management direction in the ROD/RMP (p. 20) to neither construct nor authorize through discretionary permits a net increase in road mileage in the watershed.

In developing the project, the *Myrtle Creek Watershed Analysis and Water Quality Restoration Plan* (USDI/BLM 2002a), *South Umpqua Watershed Analysis and Water Quality Restoration Plan* (USDI/BLM 2001a) and *Lower South Umpqua Watershed Analysis* (USDI/BLM 2000) were used to evaluate existing conditions, establish desired future conditions, and assist in the formulation of appropriate alternatives (2016 REA, pp. 2, 191, 192).

The purposes of this project include promoting diversity and accelerating tree growth in Riparian Reserves to speed attainment of late-seral stand conditions (2016 REA, pp. 2-3 and Appendix D). The thinning prescriptions are considered watershed restoration and are therefore consistent with the Watershed Restoration component of the Aquatic Conservation Strategy (2016 REA, p. 192).

Cultural/Historical Resources

The Kung Fu timber sale was surveyed for cultural resources in 2013 and 2014. A small isolated lithic scatter (OR-10-111A) was identified within a harvest unit, but no archaeological sites were located. Consequently, the project will have "No Effect" on significant or unevaluated cultural resources. The results of the surveys are documented in CRS No. SR1406. The BLM has completed its National Historic Preservation Act Section 106 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 Archaeologist can properly evaluate and document the resources (2016 REA, p. 15).

Noxious Weeds

As discussed in the REA (p. 14), 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 (2016 REA, p. 14). Control measures may include mowing, hand-pulling, and limited use of approved herbicides (2016 REA, p. 14).

As previously described in 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. Any new infestations would be treated and periodically monitored to determine further treatment needs. Given that regular weed treatments would continue, there would be no perceptible difference in the risk of weed establishment and spread (2016 REA, p. 14).

Carbon Release and Sequestration

The findings of the 2016 REA with respect to thinning are consistent with published findings (Sessions et al. 2011[3]) that carbon pools immediately decline following thinning, and remain lower 50 years after thinning (2016 REA, p. 123-125). This conclusion applies to the thinned areas (331 acres, including “no-treatment” areas in Riparian Reserves) in the Kung Fu timber sale.

The analysis for direct and indirect effects shows VRH will release approximately 14.9 tonnes of carbon per acre immediately after treatment and thinning will release 3.19 to 4.22 tonnes of carbon per acre (2016 REA, p. 123). As proposed in the 2016 REA for Alternative Two, harvesting the Kung Fu timber sale units would release approximately 1,580 to 1,931 tonnes of carbon. Harvesting the Kung Fu timber sale units as described in Alternative Two Modified reduced carbon released to 1,487 to 1,823 tonnes, which represents a reduction of approximately 10 percent.

[3] 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.

Table 3-26 of the 2016 REA (p. 124) compares carbon release and storage in the No Action Alternative to the effects of VRH under Alternative Two. Under No Action, the carbon pool in standing live trees increases from current balance of 125 to 218 tonnes per acre in 50 years. Under Alternative Two, carbon in standing live trees is immediately reduced to 30 tonnes per acre post-harvest, and 50 years after treatment is 63 tonnes per acre. The findings that carbon pools immediately decline following treatment, and remain lower 50 years after treatment are consistent with Sessions et al. (2011).

The 2016 REA (p. 199) also notes that Smith et al. (2006)[4] 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.

Monitoring

As stated in the REA (p. 137), monitoring of the effects of the Kung Fu Timber Sale will be done in accordance with provisions contained in the 1995 ROD/RMP, Appendix I (pp. 84-86, 190-191), focusing on the effects of timber harvest on: Riparian Reserves, Matrix, Air Quality, Water and Soils, Wildlife Habitat, Fish Habitat, and Special Status Species Habitat.

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, Steve Lydick, within 15 days of the publication of the notice of decision/timber sale advertisement on March 29, 2016, 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.

[4] 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

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 the close of business April 13, 2016 (4:30 P.M.), 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 South River Field Office will issue a protest decision.

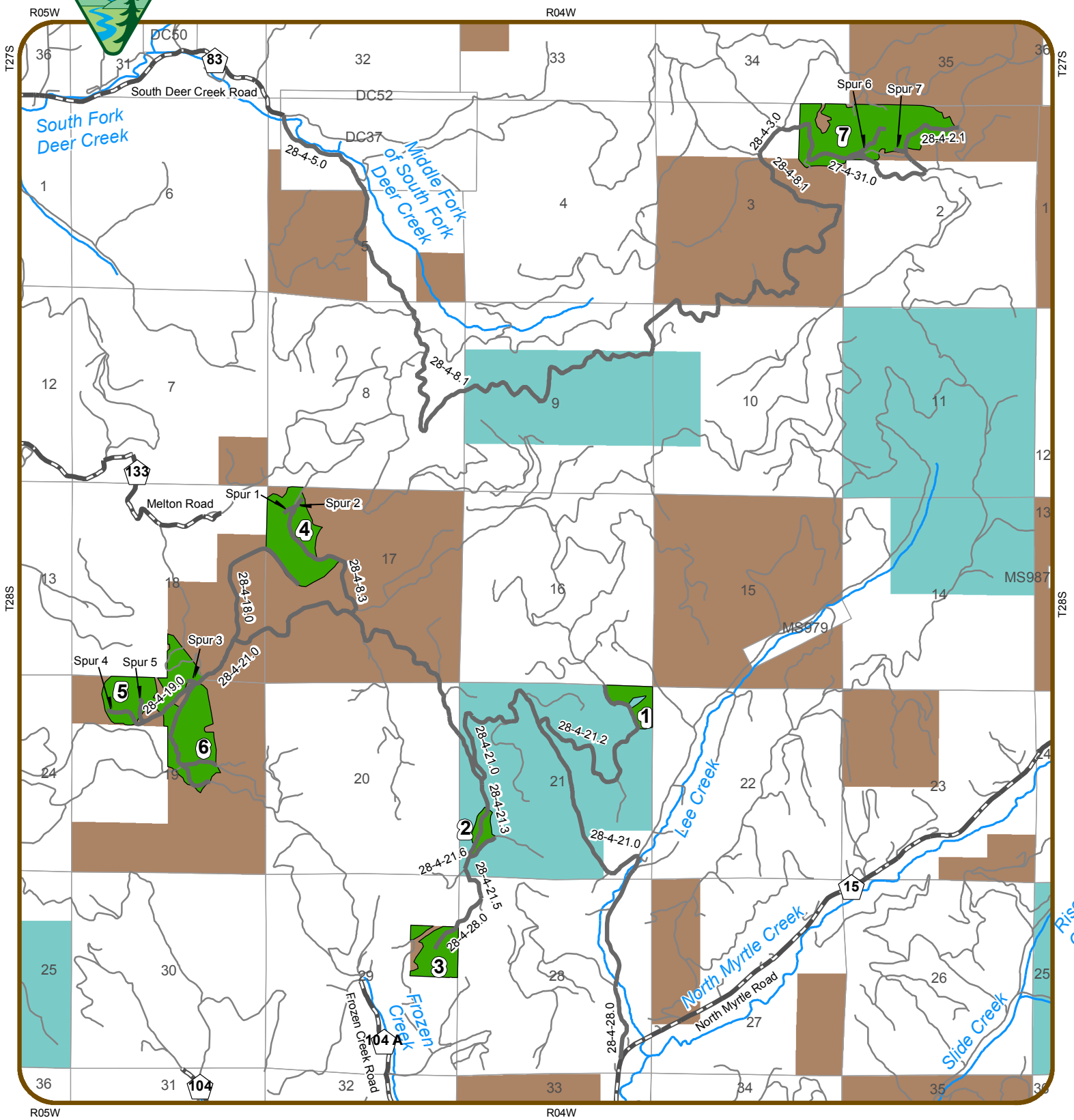
Steve Lydick
Field Manager
South River Field Office
(541) 464-3211

3/17/16
Date

Appendix A

Kung FuTimber Sale Maps

Kung Fu Units and Roads



- Haul Route
- Existing Roads
- County Roads
- Major Streams
- Timber Sale Units
- Connectivity/Diversity Block
- General Forest Management Area

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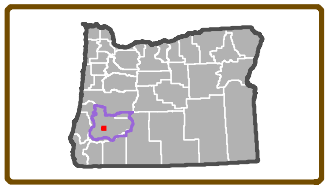
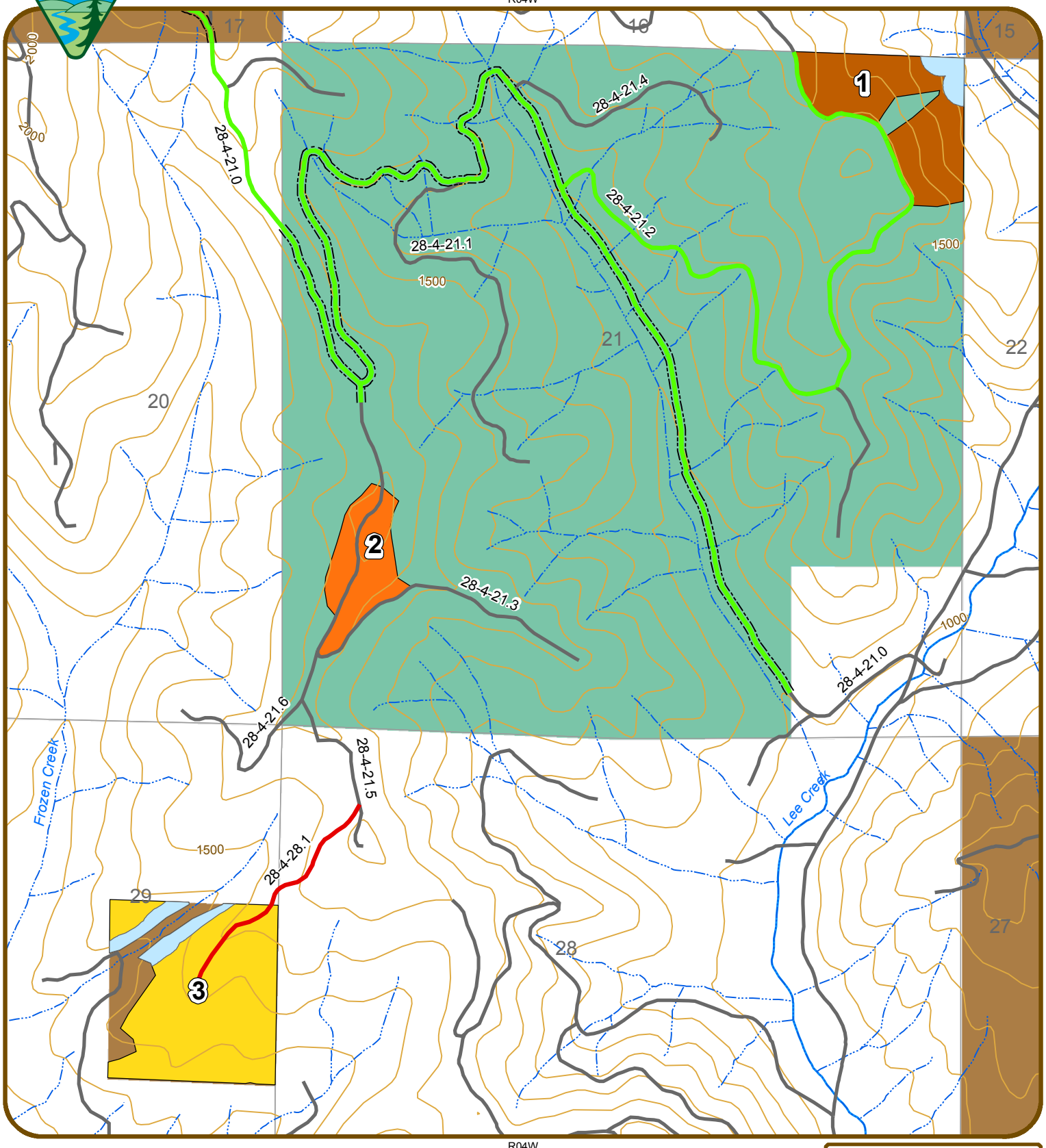


No warranty is made by the Bureau of Land Management as to the accuracy, reliability, or completeness of these data for individual or aggregate use with other data. Original data were compiled from various sources and may be updated without notification.

Date: 3/7/2016

Kung Fu Units and Roads



- Existing Roads
- Construction-Maintain
- Renovation-Maintain
- Daylighting
- Streams
- Major Stream
- Connectivity/Diversity Block
- General Forest Management Area
- Variable Retention Harvest
- Uniform Commercial Thinning
- Variable Density Thinning
- Riparian Reserve Variable Density Thinning

0 0.05 0.1 0.2 0.3
Miles

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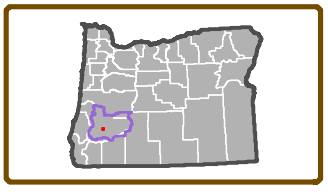
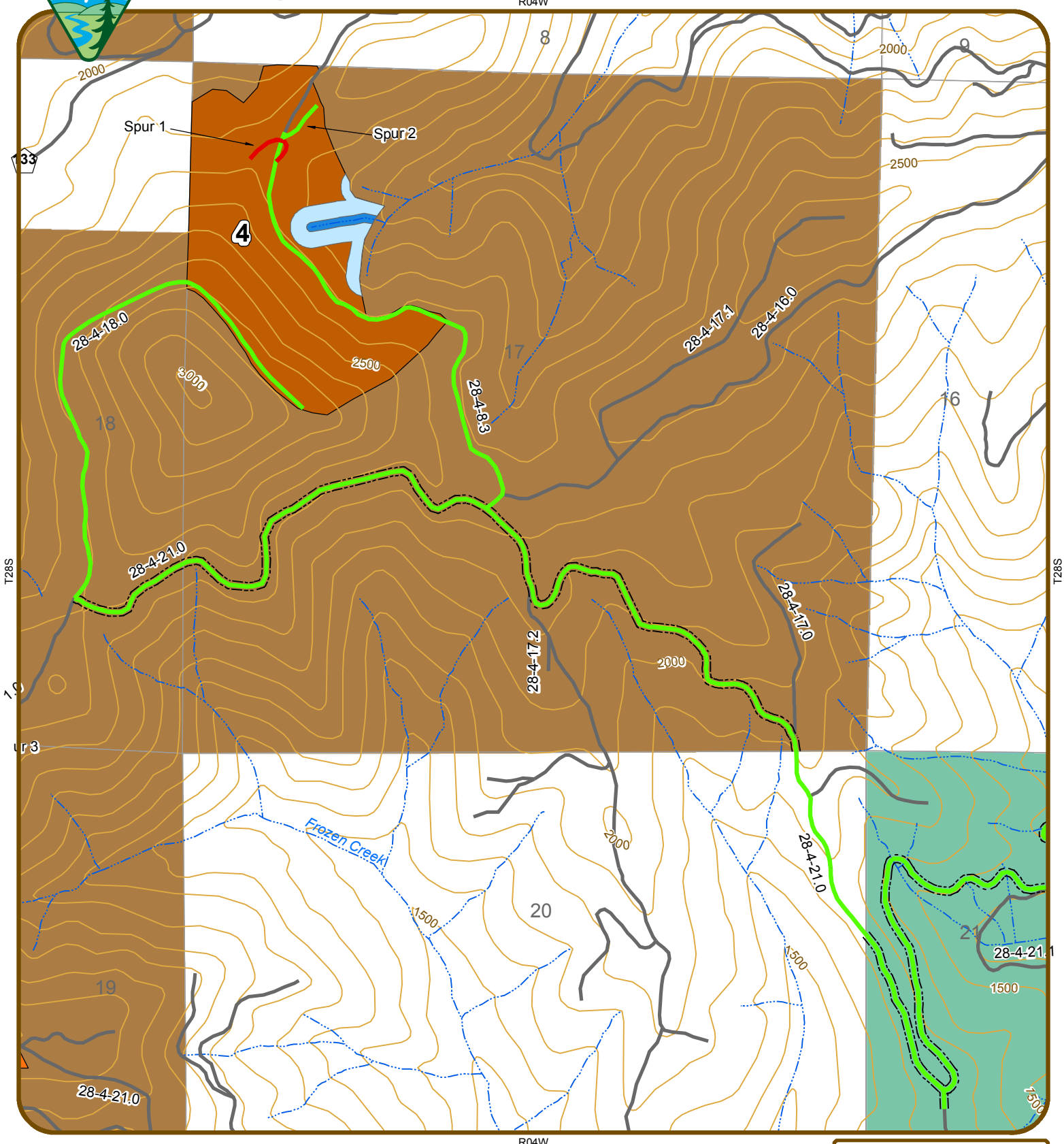


Kung Fu Units and Roads



- Existing Roads
- Construction-Maintain
- Renovation-Maintain
- Daylighting
- County Roads
- Streams
- Connectivity/Diversity Block
- General Forest Management Area
- Uniform Commercial Thinning
- Variable Density Thinning
- Riparian Reserve Variable Density Thinning
- No Harvest Riparian Area

0 0.05 0.1 0.2 0.3
Miles

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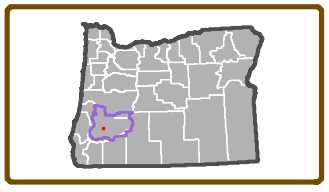
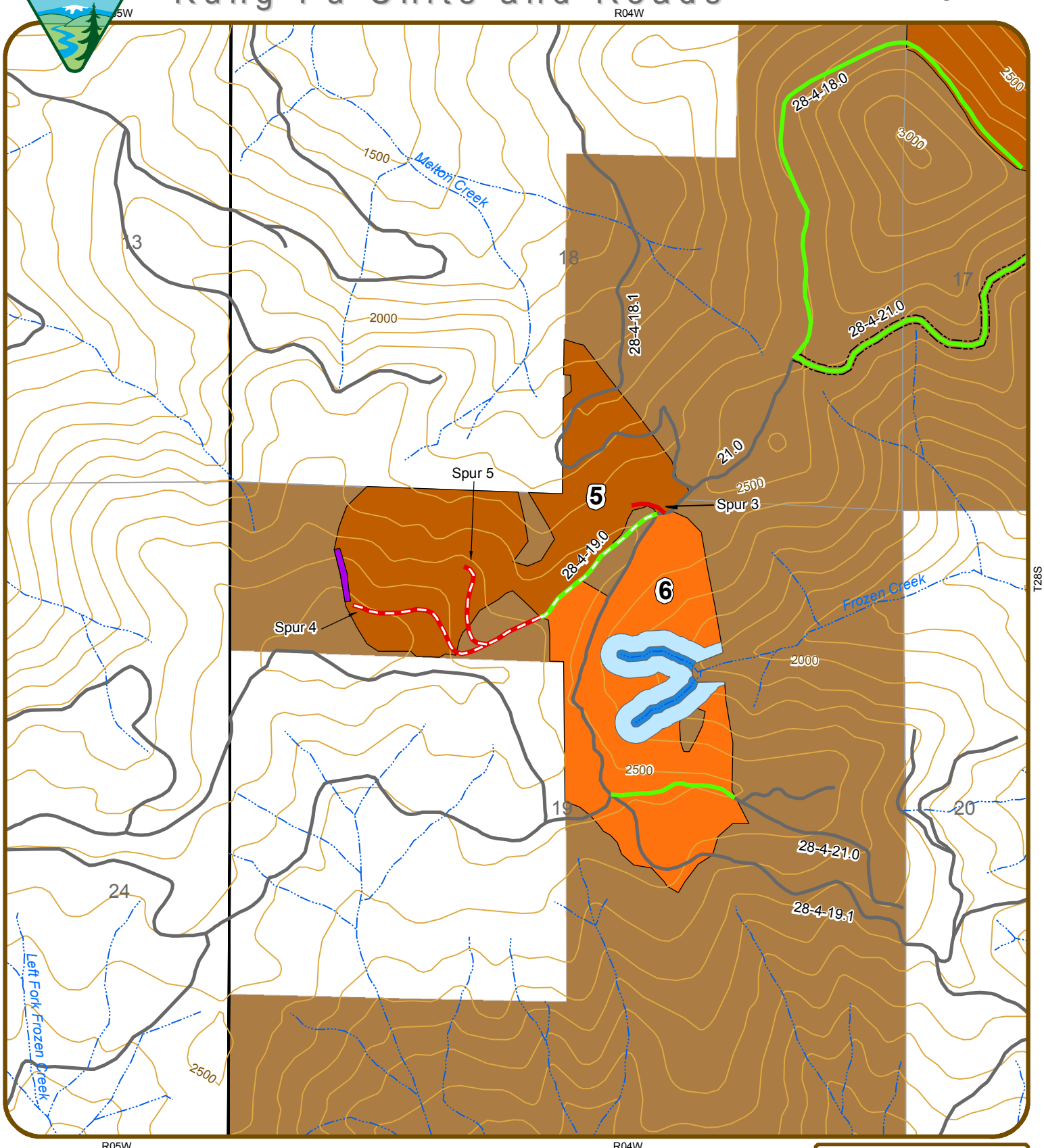


Kung Fu Units and Roads



- Existing Roads
- Construction-Maintain
- Construction-Decommission
- Renovation-Maintain
- Renovation-Decommission
- Daylighting
- Streams
- General Forest Management Area
- Uniform Commercial Thinning
- Variable Density Thinning
- Riparian Reserve Variable Density Thinning
- Eagle Buffer
- No Harvest Riparian Area

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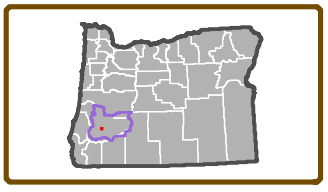
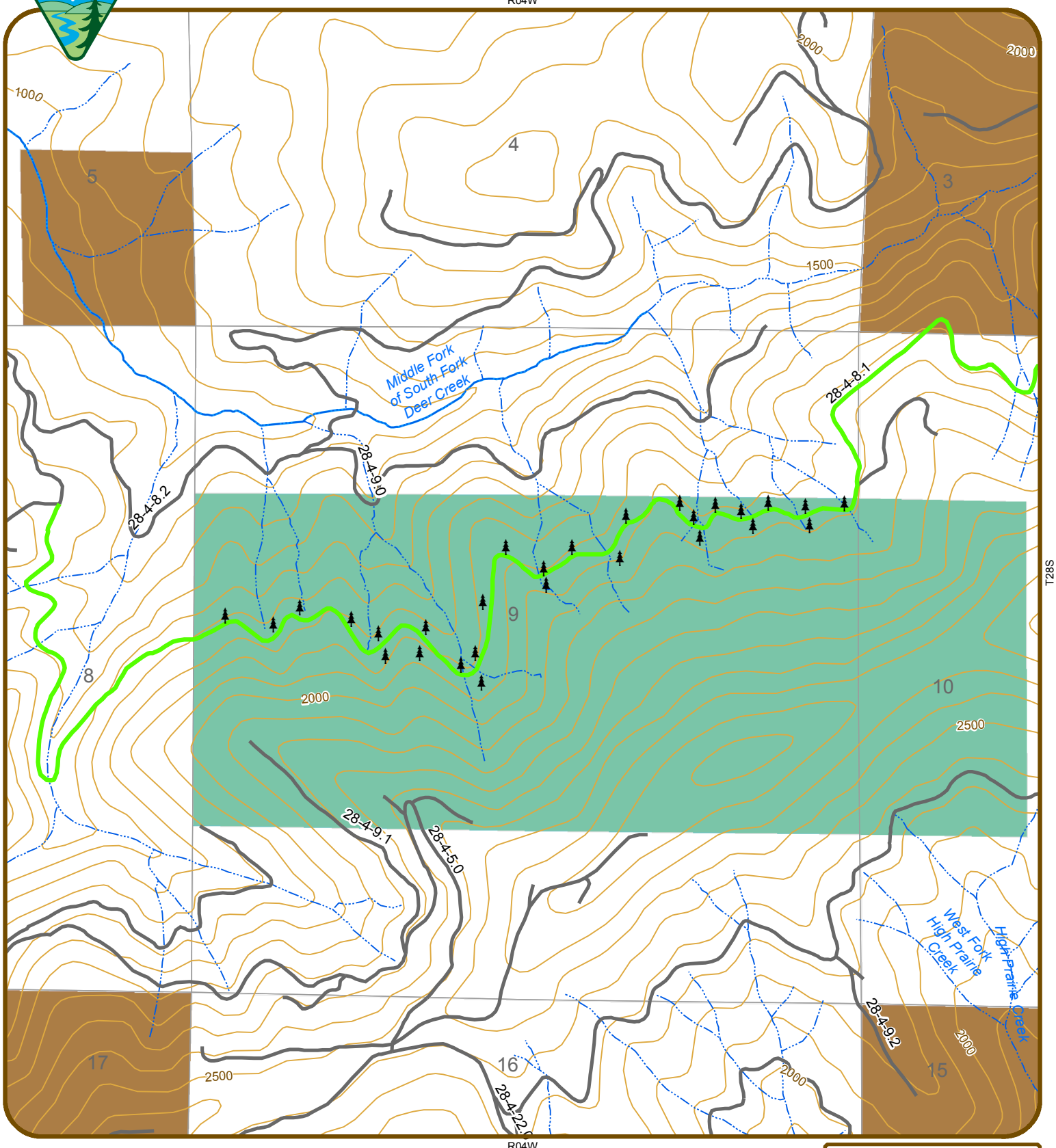


Kung Fu Units and Roads



Existing Roads
Renovation-Maintain
Streams
Major Stream
Connectivity/Diversity Block
General Forest Management Area
Daylighting (Individually Marked Trees)

0 0.05 0.1 0.2 0.3
Miles

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W E
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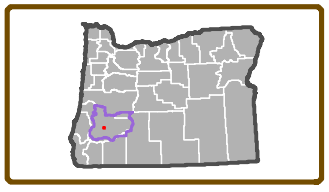
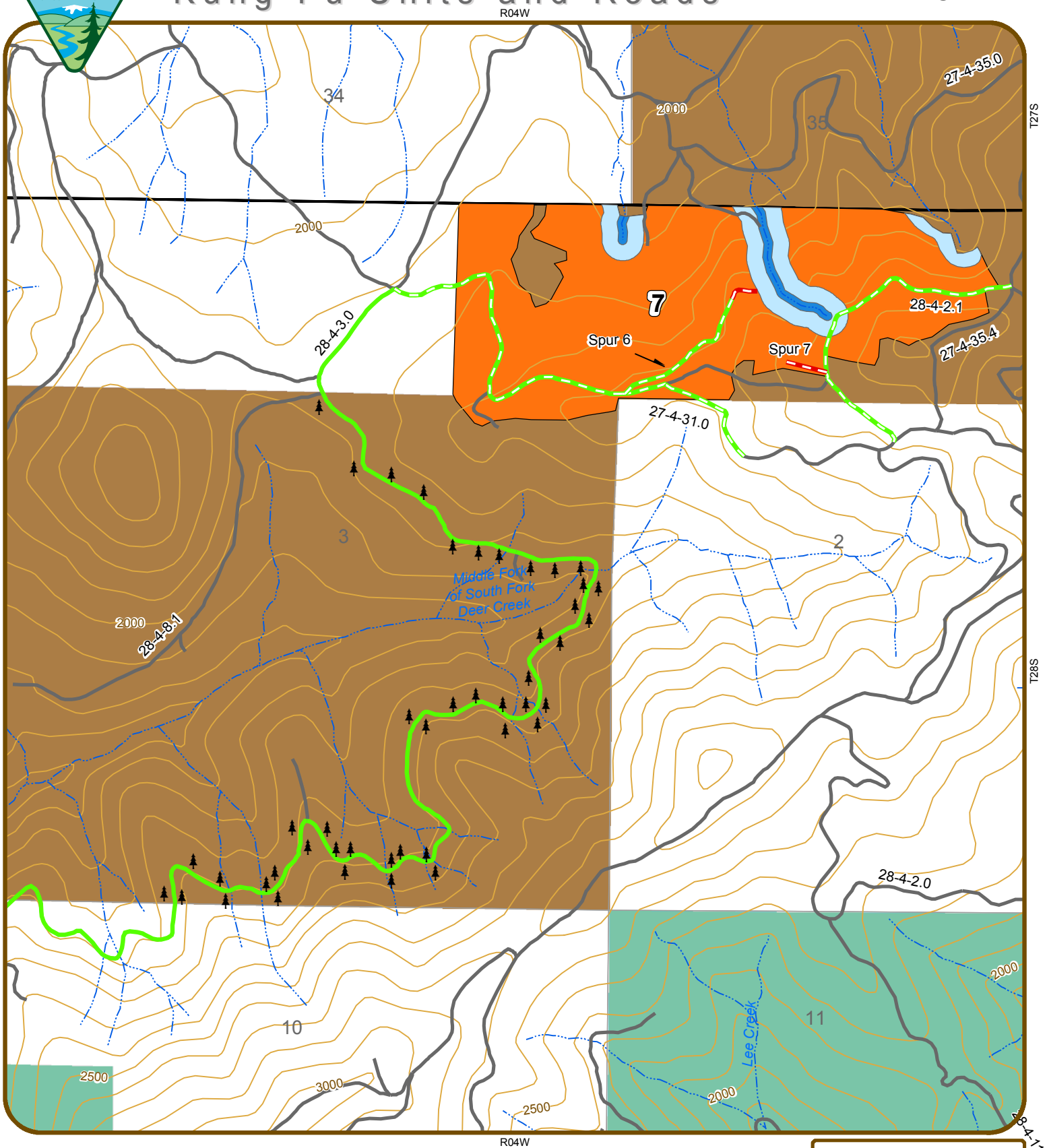


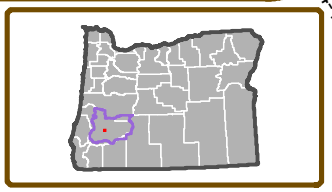
Kung Fu Units and Roads



- Existing Roads
- Construction-Decommission
- Renovation-Maintain
- Renovation-Decommission
- Streams
- Connectivity/Diversity Block
- General Forest Management Area
- Variable Density Thinning
- Riparian Reserve Variable Density Thinning
- No Harvest Riparian Area
- Daylighting (Individually Marked Trees)

0 0.05 0.1 0.2 0.3
Miles

N W E S



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Appendix B

Response to comments on the Myrtle Creek Harvest Plan that Pertain to the Kung Fu Timber Sale

We received 8 unique letters on the Myrtle Creek Harvest Plan Environmental Assessment (EA), four unique letters on the 2015 Revised Myrtle Creek Harvest Plan EA (2015 REA) and four unique letters on the 2016 Revised Myrtle Creek Harvest Plan EA (2016 REA). Substantive comments pertaining to Kung Fu timber sale were grouped into 18 categories. Representative statements of the unique comments in each category are summarized below in *italic font* prior to each BLM response. All EA page numbers referenced in the BLM Responses refer to the 2016 Revised Myrtle Creek Harvest Plan Environmental Assessment.

1. Unit Specific Comments

Comment 1a: *The clearcut units also harm people. For instance, the proposal will clearcut in watersheds people depend on for water (units 29-3-3A , 28-4-29A, and others).*

BLM Response 1a: Clearcutting is not proposed in the Myrtle Creek Harvest Plan. Effects of the action on water quality and quantity were analyzed in the 2016 REA (pp. 105-108). Implementation of Best Management Practices, including "no-treatment" buffers around perennial and intermittent streams, will result in no affect to beneficial uses of water including drinking water quality and quantity (2016 REA, pp. 105, 107).

Comment 1b: *Several units have small corners of matrix on the other side of riparian reserves, so that yarding those small matrix corners means dragging the logs through the reserves. Examples are the NW corner of unit 29-3-03A, and the NE corner of unit 28-4-29A. These matrix corners should be dropped to protect the adjacent riparian reserves.*

BLM Response 1b: Units will be refined during layout. Portions of units that are inaccessible, illogical, or uneconomical will be dropped. … Activities, through the Riparian Reserve, including yarding, were analyzed in the Aquatics section of the 2016 REA (pp. 100-104). Full suspension yarding will be required over perennial streams where practicable (2016 REA, pp.33, 106).

Comment 1c: *The EA says that great gray owl surveys would be done only in units 28-4-19A, 28-4-29A, and 28-5-27A. But what about other units adjacent to meadows and openings the GGO could frequent, such as units 28-4-19B, 28-4-18A, 29-3-09C and 29-3-03A. Also, unit 29A is the unit the BLM has been granted only a one-time access for5. How will multiple visits for surveys be done?*

BLM Response 1c: Using the survey protocol for the great gray owl (USDA/FS-USDI/BLM 2004), the BLM wildlife biologist identified three units of potential great gray habitat requiring surveys (2016 REA, p. 34). Units that do not qualify as suitable habitat based on the protocol definition do not require surveys and are not scheduled to be surveyed. BLM will negotiate access with landowners as needed. Protocol surveys from 2014 and 2015 were conducted and surveyors did not locate any great gray owls in surveyed areas.

[5] BLM Email.

2. Roads

Comment 2a: *"Avoid road construction. Road construction causes serious adverse effects on soil, water, and habitat. There are already too many roads out there."*

BLM Response 2a: Road construction has been minimized to the greatest extent possible (2016 REA, p. 6). New roads were located and designed to minimize effects and avoid user conflicts (2016 REA, p. 25). The effects of road construction on soil, water and wildlife habitat were addressed in Chapter Three of the 2016 REA (pp. 61-115, 124-134, Appendix D). Ground-based yarding would be restricted to the dry season (2016 REA, p. 32), existing skid trails will be used to the greatest extent possible (2016 REA, p. 32), main skid trails and landings will be subsoiled (2016 REA, p. 32), and use of unsurfaced roads for timber hauling would be limited to the dry season (2016 REA, p. 34). Stands with no suitable access were dropped from consideration (2016 REA, p. 2).

Road construction is a cost that must be borne by any given timber sale, and a longer term cost to the BLM for maintenance. Consequently, the BLM does not seek to build any more than the absolute minimum of roads necessary for environmentally responsible timber harvest and forest management. As described on page 2 of the 2016 REA, some stands were eliminated as candidates for thinning because they lacked suitable access and did not have sufficient volume to off-set road construction costs. The BLM is reducing road density by decommissioning 2.16 miles of road in the Kung Fu project (see Table 2-4).

For reasons previously described and given that road construction diminishes the forest landbase, roads are only constructed where necessary to achieve forest management actions. Roads are located in areas that are stable, where the environmental consequences are minimized, and where the construction and long-term maintenance costs are minimized. Roads are not located with an objective to remove the largest trees in a stand. Large trees are not the focus of thinning and would be retained to the greatest degree practicable with cutting limited to clearing road rights-of-way and landings, and providing for operational safety (2016 REA, p. 3 and 24). All of the road construction in the Kung Fu sale, with the exception of a portion three road segments (approximately 0.4 miles), is within harvest units. All of the road construction in the Kung Fu sale, with the exception of a portion of three road segments (approximately 0.2 miles), is in stands 80 years old or younger.

Comment 2b: *"The agency assumes that temporary and semi-permanent new roads will have no effect because they are temporary. The agency has shown no scientific evidence for this assumption. In fact, scientific research has shown exactly the opposite."*

BLM Response 2b: The BLM does not assume temporary roads will have no effect because they are temporary as the commenter purports. The BLM understands that road construction can affects resources, analyzed the potential effects of road construction in the 2016 REA, and took measures to avoid or minimize impacts.

> 2016 REA ((p. 6) – "Best management practices (BMPs) limit the amount of road construction to what is necessary to manage the land…Road systems would be planned in a manner that meets resource objectives and minimize resource damage. Roads would be located in areas that minimize mass soil movement, erosion, and sedimentation."
>
> 2016 REA, (pp. 13-15) – Surveys for botanical species and cultural resources were completed and botanical and cultural resources identified were avoided during final road location.

The 2016 REA (p. 14) acknowledges that road construction equipment can introduce new weed species into an area and can spread existing weed species. Project design criteria are included in the 2016 REA and the Kung Fu decision to steam clean or pressure wash equipment to remove contaminated soil.

2016 REA (p. 67) – "Data from the GeoBob database (USDI BLM 2013) shows these [sensitive] species are present in the analysis area. None of the known [sensitive species] locations coincide with proposed harvest units or road construction locations."

2016 REA (p. 76) – Table 3-17 summarizes the effects to northern spotted owl habitat by alternative.

2016 REA (p. 77) – "Road construction outside of harvest units would remove approximately two acres of [northern spotted owl] habitat in nine road segments. Due to the limited opening size created by the constructed roads outside of harvest units, the function of adjacent stands is expected to be maintained. Movement of northern spotted owls through the landscape would continue."

2016 REA (p. 82) – "Road construction would remove potential [bat] roosting habitat along 14 acres of habitat in stands greater than 80 years old but would also contribute to edge habitat and open foraging habitat. Road construction through younger stands would also increase available edge and gaps in the proposed units and result in more foraging areas for bats."

2016 REA (p. 84) – "Road construction in stand at least 80 years old would remove approximately 14 acres of [mollusk] habitat."

2016 REA (p. 85) – "The open areas created by variable retention harvest and road construction would not be suited to Pacific wren use…"

2016 REA (p. 86) – "The open areas created by variable retention harvest (334 upland acres) and road construction would not be suited to hermit warbler use…"

2016 REA (p. 87) – "Timing restrictions described in Chapter Two Project Design Feature D would be applied to eliminate effects of timber harvest, road construction and fuels management from potential disturbance to nesting birds and their young."

2016 REA (p. 90) – "Hermit warblers prefer habitats with closed tree canopy…Road construction would remove suitable habitat."

2016 REA (p. 101) – "None of the road construction would have any direct hydrologic connectivity to streams, since newly constructed roads would not cross fish-bearing streams and would be constructed in stable, ridge top locations, to the greatest extent practicable, or separated from the nearest stream by another road."

2016 REA (p. 103) – "Road renovation, improvement and construction would not affect recruitment of large wood to streams. Generally, removal of trees for road construction would occur outside of "no-treatment" areas. Proposed road construction within Riparian Reserves is limited to 0.14 miles, of which less than 100 feet occurs within a "no-treatment area" of the upper extent of a headwater stream. This construction may minimally reduce the amount of large wood that could enter streams, but the likelihood of reducing the quantity of in-stream large wood is minimal due to site specific characteristics of these roads proposed for construction and the nature of the nearest stream."

2016 REA (p. 104) – "There would be no change in pool availability as road maintenance/renovation, construction, and decommissioning would not remove trees that would affect recruitment of pool-forming wood or impact the capacity of stands adjacent to streams to contribute large wood or small functional wood in the future…Proposed road construction/improvement and renovation would not involve installation or replacement of stream crossings, and would not affect fish passage."

2016 REA (p. 106) – "Cross-channel yarding of timber would occur where…where new road construction would cause excess resource damage."

2016 REA (p. 111) – "Existing unstable areas and areas with a high potential of instability have been excluded from harvest and road construction…"

2016 REA (p. 113) – "Over 90 percent of the proposed road construction would be on ridge-tops or on stable sideslopes, having low risk of failure. Nine short segments of road, approximately 0.5 miles in combined length, would be constructed on moderately stable sideslopes. Implementing BMPs would minimize risk of slope failure in these locations."

2016 REA (p. 129) – "The open areas created [by] variable retention harvest (up to 759 acres) and road construction would not be suited to Pacific wren use…"

2016 REA (p. 133) – "The analysis on fish considers proposed and future foreseeable activities that can affect sediment and substrate, and in-stream functional wood such as thinning and road construction in the Riparian Reserves. Other proposed and ongoing management activities listed previously, and timber harvest and road construction outside of Riparian Reserves would have no cumulative effects on sediment and substrate or in-stream functional wood as they would have no direct or indirect effects."

2016 REA (p. 134) – "…proposed road decommissioning helps to offset road construction and reduces cumulative effects associated with new roads."

To achieve Aquatic Restoration Strategy objectives there will be no new, permanent stream crossings or new, permanent road construction in Riparian Reserves (2016 REA, p. 195).

Road construction was included in calculations for carbon release (2016 REA, p. 123, 136, 201)

Comment 2c: "*Research results, published in Restoration Ecology, shows…that ripping out a road is NOT equal to never building a road to begin with...Even though ripped roads increase water infiltration over un-ripped roads, it does not restore the forest to a pre-road condition. "These increases do not represent "hydrologic recovery" for the treated areas, however, and a risk of erosion and concentration of water into unstable areas still exists." Luce, C.H., 1997. Effectiveness of Road Ripping in Restoring Infiltration Capacity of Forest Roads, Restoration Ecology; 5(3):265-270."*

BLM Response 2c: BLM is not ripping roads with intentions of restoring natural conditions as purported by the commenter. The BLM will decommission approximately 2.16 miles of roads and subsoil in the Kung Fu Timber Sale to avoid sedimentation into streams, initiate habitat development for wildlife species, reduce compaction, reduce soil bulk density, provide soil aeration, allow for natural seeding of trees, contribute to survival and growth of seedlings and increase water infiltration capacity (2016 REA, p. 77, 99, 103, 113). The BLM agrees that ripping roads may not eliminate all effects from road construction but decommissioning and subsoiling will produce benefits where they are proposed when compared to retaining those roads and landings. The BLM agrees with the commenter's citation from Lucas (1997), "…ripped roads increase water infiltration over un-ripped roads…"

Road decommissioning would be accomplished in a variety of ways, based upon evaluation of circumstances specific to each road. At a minimum, decommissioning would include water-barring and blocking the road(s) to vehicular use. It may also include removing drainage structures, sub-soiling the roadbed, mulching with straw and seeding with native grasses, or mulching with logging slash to further discourage off-highway vehicle use. Landings on temporary roads may be subsoiled in conjunction with road decommissioning (2016 REA, p. 26).

Subsoiling would be completed in ground-based harvested areas, on compacted and displaced soil areas in main and secondary skid trails, equipment areas and on some native surfaced landing areas free of logging slash. Subsoiling includes decompacting the affected areas, water barring as needed, replacing some topsoil on the treated areas to provide innoculum, and placing slash on the decompacted areas as mulch and a deterrent to unauthorized OHV use. Current tilling practices specify that slash, other organic debris and topsoil cover at least 50 percent of the subsoiled areas, where available (2016 REA, p. 30, 113).

Although subsoiling with slash and topsoil placement does not bring about complete recovery from soil compaction and displacement, it is an important step in the recovery process (Luce 1997). Past monitoring indicates that a single tilling pass results in 40 to 80 percent fracturing of compacted soil. Several passes that are offset from each other can bring about greater than 80 percent soil fracturing (2016 REA, p. 113).

3. Stand Age

Comment 3a: "*Regen logging of mature forests truncates the full cycle of forest development that includes density dependent and density independent mortality, gap formation, understory establishment, biomass accumulation, snag creation, etc...*"

BLM Response 3a: Age class distribution displayed in Table 3-12 (2016 REA, p. 60) shows there is no shortage of older forests in the GFMA portion of the analysis area compared to desired conditions. Forests older than the 90 year 10-year age class exceed desired conditions (2016 REA, p. 60) by approximately 17 percent.

Comment 3b: "*The rationale that BLM must log to fulfill the purposes of the matrix land allocation is unsupported because there is significant new information indicating a need for more forest conservation. For instance, mature forests store carbon to help mitigate global climate change and they provide habitat for spotted owls (which need additional conservation of suitable habitat so they can co-exist with barred owls).*"

BLM Response 3b: The preceding comment is speculative. It provides no specific examples, supported by peer reviewed literature, to support the assertions that there is new information which would undermine the established purpose for the matrix allocations.

One of the primary objectives of stands in the Matrix is for the purpose of timber production. Other land use allocations, specifically Late-successional Reserves and Riparian Reserves, were established for ecological reasons that include terrestrial and aquatic habitat objectives.

Carbon Storage and Release were analyzed in Chapter Three and Appendix E (2016 REA, pp.120-124, 135-136, 197-201).

"There is no data indicating a relationship between forest treatments or lack of treatments and an increase or decrease in the distribution of the barred owl." (2016 REA, p. 66).

With respect to amendments to the Western Oregon Resource Management Plans, the effort is currently underway and will consider the most recent science regarding the appropriate distribution of snags and down wood for proper ecological functions.

The BLM has properly identified purposes and needs of the project in the 2016 REA (pp. 2-3). These purposes and needs are reasonable given directives and objectives in the ROD/RMP (pp. 15, 19-20, 33, 60, 150-153). The 2016 REA specifies the underlying purposes and needs to which the agency is responding (2016 REA, pp, 2-4). The analysis of alternatives is guided by the agency's purpose and need (2016 REA, Chapter 3).

Comment 3c: "*Focus on treating the youngest stands that are most "plastic" and amenable to restoration.*"

BLM Response 3c: The pool of candidate harvest stands was refined based on stand age, stand development, site conditions, logistical considerations and other factors (2016 REA p. 2). The need for treatment was discussed on pages 2 and 3 of the 2016 REA.

The BLM management action/direction (MAD) is intended to require that young stand commercial thinning be part of a planned schedule of timber harvest. Very little commercial thinning was assumed during the first few decades of the NFP, only about 10 percent of the harvest acres (USDI, 1994, Appendices - pp. 266 and 253). This MAD emphasizes the higher potential growth response from initiating thinning early in a stand's life (Reukema and Bruce, 1977; Bailey and Tappeiner, 1998). The intent was to focus on stands with the highest potential for response to thinning first, rather than focus on the higher volume in older stands that were closer to rotation age.

Without question, the Roseburg District has been giving priority to thinning younger stands across the district. Nearly all thinning harvests in the past two decades have come from stands less than 80 years of age. Commercial density management (thinning) accomplishments have been eight times the projected level for the first two decades of the plan period (USDI, 2014b, Table 9, p. 37; USDI, 1994, Table II-6, Appendices p. 252). The Myrtle Creek 2016 REA reflects this continuing emphasis on thinning in stands under 80 (2016 REA, Tables 2-1 and 2-2, pp. 19-20).

4. Riparian Reserves Treatments & Aquatic Conservation Strategy

Comment 4a: "*Most riparian reserves are short of dead wood…*"

BLM Response 4a: We assume the commenter is referring to the presence of dead wood within the stream channel and the future supply of dead wood to the stream. The supply of small wood relative to the stream sizes in the treatment units is not limited but large wood is limited. Small wood is present within RR but has been transported downstream during high flows where it eventually is trapped by large wood forming debris jams. Because large wood is limited in the treatment units, small wood debris jams are limited.

Field review by the BLM was used to verify that Riparian Reserves are not limited by the abundance of small functional dead wood. Small fish-bearing reaches adjacent to units generally had large volumes of functional wood derived from adjacent stands as alder and small conifers were subject to blow down or

mortality and fell toward the streams. Some larger pieces were interacting with the stream channels, but overall there were few pieces capable of trapping and storing gravel and creating deep pool habitat…"(2016 REA, p. 93). The supply of small functioning wood is not limited as evidenced by the fact that in the rare cases where reaches of streams in the analysis area contain large dead wood, smaller dead wood is trapped forming debris jams.

Comment 4b: *"Any proposal to log riparian reserves must address these [Aquatic Conservation Strategy] factors, develop clear goals, provide clear linkages between proposed actions and desired outcomes… show there is a need for intervention."*

BLM Response 4b: The commenter incorrectly assumes that small wood and potential functional dead wood are limiting factors to in-stream habitat. The treatment units are not limited in small dead wood. Streams in the treatment units are limited in large dead wood. Thus, thinning is being conducted to promote development of future large dead wood. In the short-term, BLM has been implementing stream restoration projects to add large dead wood to streams (2016 REA p. 93).

Consistency of the proposed action with the objectives of the Aquatic Conservation Strategy is included in Appendix D of the 2016 REA (pp. 191-196). Variable density thinning in Riparian Reserves was designed to attain desired late-successional vegetation characteristics by promoting ecological diversity and complexity (2016 REA, p. 191, 192, 193, 194). Variable density thinning is considered a restoration action and is consistent with the Watershed Restoration component of the ACS (2016 REA, p. 192).

Comment 4c: *"Within the Riparian Habitat Conservation Areas, timber management and other land management activities are essentially prohibited unless the watershed analysis indicates such activity is necessary to accelerate meeting desired ecological conditions."*

BLM Response 4c: There is no Riparian Habitat Conservation Area (RHCA) land use allocation on BLM lands, so management direction for RHCAs is not applicable. On Roseburg BLM lands, the ROD/RMP permits management activities in the Riparian Reserves land use allocation: "Apply silvicultural practices for Riparian Reserves to control stocking, reestablish and manage stands, and acquire desired vegetation characteristics needed to attain Aquatic Conservation Strategy objectives." (ROD/RMP, p. 25) Variable density thinning (density management) was proposed for the reasons stated above to meet the purpose and need to increase habitat diversity in Riparian Reserves (2016 REA, pp. 2 and 3).

Accelerating the attainment of desired ecological conditions is not noted in the Aquatic Conservation Strategy (ACS). Management actions that do not maintain the existing condition or lead to improved conditions in the long term would not "meet" the intent of the Aquatic Conservation Strategy (NWFP, p. B-10). Appendix D in the Revised Myrtle Creek Harvest Plan 2016 REA shows the project is consistent with the ACS.

The Myrtle Creek Watershed Analysis makes a recommendation for density management (commercial thinning) of mid and late seral stands in Riparian Reserves.

> "The purpose of commercial thinning is to maintain or improve overstory and understory tree growth rates and vigor and manipulate species composition and spatial arrangement by reducing stand density. Snag and coarse woody debris recruitment and releasing or thinning understory components may be done at the same time.

Treatment prescriptions may vary depending on site and landscape specific objectives. Treatments would maintain or improve diameter growth rates and control crown depth and crown closure to meet the objectives. Density management may also create gaps to release or thin the understory and recruit snags and coarse woody debris.

Stand structure and expected stand development should be the principal criteria for treatment, not the age of the stand." (Myrtle Creek Watershed Analysis, p. 183)

Comment 4d: *"Considering CWD and snags are important components of riparian reserves, their* [sic] *current lacking within the project areas, the habitat improvement these incidentally felled trees would provide and the purpose and need of the project, it seems prudent to reserve them within the riparian reserve LUA (instead of placing them on trucks to be sent to mills)."*

BLM Response 4d: All coarse woody debris and snags would be retained in "no-treatment" Riparian Reserve area. In treated areas within Riparian Reserves, existing snags would be protected to the greatest extent practicable (2016 REA, p. 23). In general, the size of trees to be removed outside of the "no-treatment" will not contribute large long-lasting functional wood to streams. The largest trees in the treated areas will be retained wherever practicable (2016 REA, pp. 23 and 24). Treatments will promote vegetation structural and species diversity that will accrue in the outer portions of the Riparian Reserves which will in turn promote primary productivity and allow nutrients to be more readily accessible to fish (2016 REA, p. 102).

Comment 4e: "*Thinning in mature Riparian Reserves does not comply with the Aquatic Conservation Strategy (ACS) of the Northwest Forest Plan. The NWFP states:*

> *"Prohibit timber harvest, including fuelwood cutting, in Riparian Reserves, except…. to control stocking, reestablish and manage stands, and acquire desired vegetation characteristics needed to attain Aquatic Conservation Strategy objectives."*

BLM Response 4e: Consistency of the proposed action with the objectives of the Aquatic Conservation Strategy is included in Appendix D of the 2016 REA (pp. 191-196). Variable density thinning in Riparian Reserves was designed to attain desired late-successional vegetation characteristics by promoting ecological diversity and complexity (2016 REA, p. 191, 192, 193, 194). Variable density thinning is considered a restoration action and is consistent with the Watershed Restoration component of the ACS (2016 REA, p. 192).

Comment 4f: "*The EA failed to describe which ACS objective was met by clearcutting 1.5 acre gaps in the reserves*[6] *and thinning native forests in the reserves up to 118 years old. The BLM has never proposed to abuse the riparian reserves in this way before, and we are dismayed the BLM is using these prescriptions in the reserves for the first time in this EA."*

BLM Response 4f: The Myrtle Creek Harvest Plan does not prescribe any clearcutting. Treatments in Riparian Reserves are limited to variable density thinning as described in the 2016 REA (pp. 22-23), with the exception of gap size. In response to public comments, Alterative Two Modified, the selected alternative, will create gaps and skips in Riparian Reserves that are no larger than 0.25 acres (see BLM Response 4g, below). Variable density thinning in Riparian Reserves is not new, and the Roseburg BLM has been using thinning in Riparian Reserves to achieve ACS objectives for over a decade.

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[6] Myrtle Creek Harvest Plan EA page 22.

Comment 4g: "*Thinning: There is no scientific justification to thin mature, native forests in riparian reserves…We described some of the problems with thinning older forests… These problems are magnified when done in Riparian Reserves. Logging in older riparian reserves has the appearance of a volume grab, not restoration, especially when there is no scientific justification for improving forest health by thinning mature riparian forests.*

Canopy gaps of 1.5 acres in the riparian reserves are way too big. The BLM offers no justifications for a football field and a half opening in reserves. It meets none of the 9 ACS objectives. It appears to be just a volume grab."

BLM Response 4g: Variable density thinning in Riparian Reserves is not a "volume grab" as volume from Riparian Reserves is not included in ASQ calculations. Variable density thinning in Riparian Reserves was designed to create structural diversity and species complexity consistent with ACS objectives (2016 REA, Appendix D, pp. 191-196). See BLM Responses 4e, 4f, and 8a.

5. Adjacent Landowners

Comment 5a: "*BLM's RMP requires some protections for rural residences adjacent to BLM logging units. However, the BLM is arbitrarily restricting this consideration only to families who own less than 5 acres. If a family owns 6 or more acres, they don't qualify for these protections. We believe this is unreasonable, as all adjacent rural residences should be given the same considerations, such as no clearcutting, broadcast burning, and reduced herbicide use."*

BLM Response 5a: The Myrtle Creek Harvest Plan does not propose to clearcut, broadcast burn or use herbicides adjacent to any rural residences. During scoping, no landowners adjacent to the Kung Fu project expressed concern. Additionally, the ROD/RMP (p. 54) established direction for Rural Interface Areas which are zoned lands for 1-5 acre lots, a decision that rests with the Douglas County zoning commission.

Comment 5b: "*The EA failed to describe how the BLM would protect families with water rights in the project area, as well as people just walking along BLM roads that are subject to herbicide spraying."*

BLM Response 5b: The 2016 REA explains that herbicide application is ongoing with implementation of the Roseburg District Integrated Weed Control Plan (USDI/BLM 1995b, DOI-BLM-OR-R000-2013-0003-DNA and referenced NEPA documents within). The effects of implementing the District Integrated Weed Control Plan on drinking water supplies and human safety are addressed in the Roseburg District Integrated Weed Control Plan EA (USDI/BLM 1995b). BLM herbicide application treats individual plants. Application methods are limited to truck-mounted sprayers, backpack and hand sprayers, and wick wipers. Time and location of application is restricted based upon forecast weather conditions, proximity to live water and riparian areas, and proximity to residences or other places of human occupation (2016 REA, p. 14). Additional, information on the impacts to drinking water and human health have been analyzed at the programmatic level at the national level in the Vegetation Treatments Using Herbicides on Bureau of Land Management Lands in 17 Western States Programmatic Environmental Impact Statement (USDI/BLM 2007) and at the state level within the Vegetation Treatments Using Herbicides on BLM Lands in Oregon (USDI/BLM 2010). Based on the risk assessments, there is no risk to human health at typical or maximum rates of the three chemicals currently approved for use within the Roseburg District due to dermal exposure of contaminated vegetation or the consumption of contaminated ambient stream water (USDI/BLM 2010, p. 103).

6. An EIS is needed

Comment 6a: "*A FONSI is not applicable to this project. An EIS is needed to address the significant impacts this project.*

This project meets the "intensity" test because of its large size and impacts to numerous endangered species, including the newly arrived wolf. The degree to which the proposed action affects public health and safety is large, considering it impacts access to household drinking by at least one family, and maybe more, and impacts the family's safety with a new road near their home.

This project impacts unique characteristics of ecologically critical areas, such as endangered species habitat and rural residential habitat. This project especially impacts the quality of the human environment when it proposes regeneration harvest next to rural residents, lowering their property value and increasing their workload on invasive noxious weeds. The highest impact to the human environment is depriving people of their clean spring water, potentially not replacing it at all in a manner that allows pressurized irrigation water.

This is all highly controversial: removing spotted owl habitat to create early-seral forests, thinning mature forests, even in riparian reserves, directly impacting water of adjacent citizens, and the large size of this project. Precedents set include large gaps in riparian reserves, thinning mature forests in riparian reserves and the matrix, regeneration harvests of young, 50-year-old forests, and daylighting. This action is related to other actions with cumulatively significant impacts, including the White Rock OHV emphasis area.

An EIS is needed."

Comment 6b: *"The proposed action will adversely affect the spotted owl to a degree that warrants an EIS." and "The expanse of the project area and acreage and the challenges it has presented to BLM in adequately complying with the requirements of NEPA demonstrate the need for a detailed EIS on this project."*

BLM Response 6a and 6b: The project affects only four percent of the BLM land in the analyzed watersheds and only one percent of all ownerships in the analyzed watersheds. The effects to threatened and endangered species were analyzed (2016 REA, p. 61-66, 71-73, 75-81, 87-89, 92-96, 98, 100-105, 127-128, 131-133, Appendix B, Appendix C, Appendix D) and upon review, the decision maker determined the effects do not warrant development of an EIS (see FONSI). Drinking water quality and quantity will not be affected (see response to comments 6j, 6k, and 6m).

Critical habitat for listed species and "rural residential habitat" are not the equivalent of "ecologically critical areas". As stated in the finding of no significant impact (FONSI) for the project, historic or cultural resources, park lands, prime farmlands, wetlands, wild and scenic rivers, or ecologically critical areas are not present in the analysis area. The Tater Hill Area of Critical Environmental Concern/Research Natural Area is within the analysis are but would not be affected by proposed actions.

Northern spotted owl habitat is not being removed to create early-seral habitat (see response to comments 9c, 16b, 19d, and 18f). Thinning will occur in forests that will benefit from treatment (see response to comments 8a and 8b). No variable retention harvest will occur in stands less than 60 years old. The proposed action is not precedent setting: the Roseburg District has been harvesting in Riparian Reserves for over a decade; harvesting in mature forest was established in the 1995 ROD/RMP; 50 year old forest will not be regenerated; and daylighting is consistent with thinning and road maintenance which were

established in the 1995 ROD/RMP. The White Rock OHV emphasis area is a third party proposal and not a BLM foreseeable future action. The Draft FONSI and Final FONSI declare the project will not have a significant impact on the human environment and an EIS is not warranted.

Wolves are not know to occur in the analysis area (See BLM Response 18e).

7. Regeneration Harvest

Comment 7a: *"The EA fails to closely examine the rationale for regen logging, or consider the significant adverse effects of regen logging, nor does the EA consider alternative ways to enhance early seral habitat that do not require sacrificing mature forests."*

BLM Response 7a: The BLM has not identified enhancing early seral habitat as a purpose or need of this project. Five purposes and needs for the proposed action are clearly described in the 2016 REA (p. 2): 1) produce forest products from the Matrix, 2) promote tree survival, tree growth and forest health in the Matrix, 3) promote habitat diversity in Matrix, 4) manage the GFMA for a balanced distribution of age classes, and 5) increase habitat diversity in Riparian Reserves.

Contrary to the commenter's intimation, the proposed action does not include any harvest in Late-Successional Reserves (2016 REA, p. 19 and 20) so there will be no direct effects to Late-Successional Reserves. Green tree and snag retention are described in Chapter Two (2016 REA, 23-24) and will comply with the ROD/RMP direction (pp. 38, 64-65). The proposed action addresses the purposes and needs listed in the 2016 REA, and the effects of implementing the proposed action and alternatives to the proposed action are described in Chapter Three of the 2016 REA. The Draft FONSI indicates no significant impacts were identified as does the final FONSI. The Kung Fu timber sale includes one VRH unit (Unit 3) that is 75 years old

Comment 7b: *"The effects of regen harvest are more significant than thinning (or no action/conservation) in terms of: habitat destruction and fragmentation, soil erosion, soil compaction, degraded soil foodweb, degraded water quality, future snag recruitment, edge effects including blowdown, rain-on-snow effects including peak flows, degraded scenic values, release of sequestered carbon pools, lost wilderness potential, and increased fire hazard."*

BLM Response 7b: Chapter Three discloses the effects of three analyzed alternatives on vegetation, wildlife species and habitat, aquatic resources, soils, fuels/air, and carbon storage and release (2016 REA, pp. 38-136). Botanical resources, cultural resources, recreation resources, visual resources were addressed in Chapter One (2016 REA, pp. 11-15).

The 2016 REA (pp. 23-25) describes the harvest prescription for variable retention harvest and indicates 20-30 percent of the pre-harvest basal area would be retained. Areas of high biodiversity will be candidates for aggregate retention (2016 REA, pp. 23, 24).

The "no-treatment" areas would continue to prevent sediment from reaching streams, and would maintain streamside shade (2016 REA, pp. 99, 104). Variable retention harvest in the uplands would have no effects on Riparian Reserves and "no-treatment" areas within them would prevent effects to fish (2016 REA, p. 99). Alternative Two variable retention harvest would have no effects to any fish species (2016 REA, p. 99). The combination of an improved road system, vegetated ditchlines, and project design features is expected to prevent detectable quantities of sediment delivery to the aquatic system (2016 REA, p. 101). There would be no adverse effects anticipated to critical habitat (2016 REA, p. 104).

Existing unstable areas and areas with a high potential of instability have been excluded from harvest and road construction, or tree retention would be implemented to help minimize soil disturbance and maintain slope stability (2016 REA p. 102) or unit-specific design features (2016 REA, pp. 35) would be used to maintain soil stability in areas known to be unstable (2016 REA, p. 111). Identified unstable areas within units would be avoided during harvest by excluding them from harvest (2016 REA, p. 111, 112). Project Design Features (2016 REA Chapter Two) and Best Management Practices would help maintain slope stability, minimize surface disturbance, minimize soil displacement and erosion, and protect soils/growing sites, therefore the risk of slope failure and landslides in proposed harvest areas would be low (2016 REA, p. 112). Steeply incised and seasonally saturated slopes would be protected in established Riparian Reserves (2016 REA, p. 112).

Peak flows were discussed in 2016 REA (p. 98, 107-108) and the analysis shows implementing an action alternative will not exceed thresholds for road density or clearcut area in the analysis area. Most in-stream wood comes from within one site potential tree height of the channel (Naiman et al. 2002) (2016 REA, p. 102). Thinning would, over time, accelerate growth and development of larger trees close to stream channels with the potential to contribute habitat forming in-stream wood. Trees within the "no-treatment" areas would continue to provide adequate small wood as large trees develop in treated areas. Gaps and openings created in riparian stands outside of the "no-treatment" areas would mimic natural disturbance events, favor development of large trees, and allow development of understory vegetation that would provide deciduous leaf litter for stream invertebrates. (2016 REA, p. 102-103).

Soil displacement and/or compaction in ground-based variable retention harvest units would be less than 10 percent of each unit, within the ROD/RMP guideline (2016 REA, p. 122). Identified native-surface landings and compacted equipment areas free of logging slash, heavily compacted skid trails, and road segments designated for decommissioning would be subsoiled to reduce compaction (2016 REA, p. 114). In areas to be cable yarded, one-end log suspension will help minimize surface and soil disturbance (2016 REA, p. 114). Variable retention harvest would primarily utilize cable yarding (approximately 287 acres). Implementation, as described in Chapter Two of the 2016 REA, would result in less than four percent detrimental disturbance in cable yarded areas (2016 REA, p. 114). They would revegetate fairly rapidly. Any erosion of exposed soils that occurs will principally remain within the boundaries of the units (2016 REA, p. 115).

The Myrtle Creek Harvest Plan does not propose any use of chemicals (i.e. herbicides). When the BLM does use herbicides, use is specifically targeted at noxious weeds; individual plants are treated as opposed to broadcast applications (2016 REA, p. 7 and 14).

In the short-term, harvested units would store less carbon than untreated areas (2016 REA, p. 124). In the first 50 years post-harvest, the active forest management proposed under Alternative Two makes a positive contribution to CO_2 sequestration compared to the current condition, as described in the 2016 REA. Carbon storage will increase 83 to 104 percent over the current condition (2016 REA, p. 124).

Proposed activities would not measurably impair or interfere with the recreation opportunities in the analysis area because no changes to the recreation objectives and opportunities detailed on pages 55 and 56 in the 1995 ROD/RMP are proposed by this 2016 REA (p. 12).

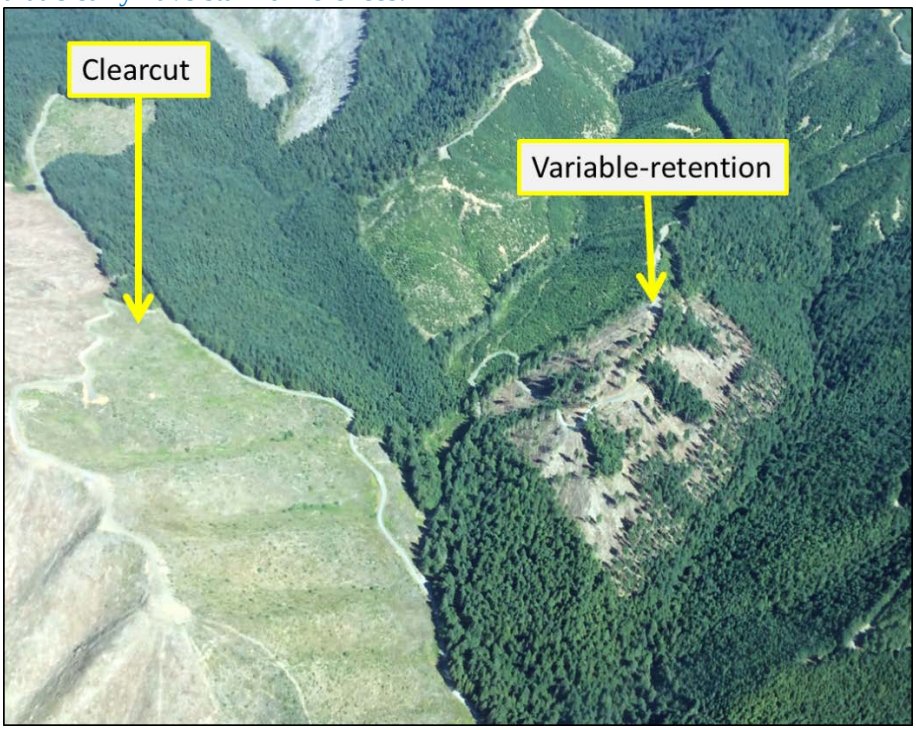
Visual quality was addressed in the 2016 REA (p. 12). All of the units in this analysis area are rated VRM Class IV. None of the alternatives would impact VRM Class IV visual (scenic) values due to the acceptably high levels of visual modification allowed in BLM-managed lands ranked as Class IV.

Comment 7c: "*Alternative 2 should not be chosen because it includes Variable Retention Harvests, similar to clearcutting, in 434 acres. Roseburg BLM has already clearcut over half of the public forests it manages, and now has an abundance of managed plantations. The BLM should not clearcut any more forests, including using VRH."*

BLM Response 7c: The *gross* acreage of the 14 variable retention harvest units in Alterative Two is 434 acres (2016 REA, p. 2) which includes 73 acres of variable density thinning and 24 acres of untreated areas within associated Riparian Reserves (2016 REA, Tables 2-1 and 2-2, pp. 19-20). Alternative Two includes 334 acres of upland variable retention harvest (2016 REA, pp. 4 and 36). Within these 334 acres, 20-30 percent of the pre-harvest basal area will be retained in aggregate and dispersed retention (2016 REA, p. 23). In response to EA comments, the BLM reduced the amount of variable retention harvest in the selected alternative, Alternative Two Modified, which includes 236 acres of upland variable retention harvest with aggregate and dispersed retention in nine stands less than 80 years old.

Variable retention harvest is not clearcutting. Figure 3-18 of the 2016 REA (p. 57) clearly illustrates what representative variable retention harvest units will look like post-harvest. Figure 1 below shows a vivid contract between clearcutting and variable retention harvest.

Figure 1: Clearcut harvesting and variable retention harvesting are different silvicultural prescriptions that clearly have stark differences.



Comment 7d: "The BLM has no business regenerating mature forest."

BLM Response 7d: The ROD/RMP establishes regeneration harvest as an appropriate silvicultural system for forests generally beginning between the ages of 80 and 110 years old in the GFMA (ROD/RMP, pp. 61, 147, and 151). Furthermore, the O&C Lands Act mandates management of suitable O&C timber lands for permanent forest production in accordance with the principles of sustained yield (2016 REA, p. 1).

8. Thinning

Comment 8a: "…*the BLM is thinning stands that are too old. The EA points out:*

> * *In the GFMA, commercial thinning would be programmed in stands under 80 years old… (ROD/RMP, p. 151);*

BLM Response 9a: The Kung Fu timber sale includes one thinning stand that is 110 years old (Unit 6). The RMP allows commercial thinning and density management in the GFMA land use allocation to be programmed for stands under 80 years of age (ROD/RMP, p. 151) but does not prohibit thinning in stands over 80 years of age; regeneration harvest is not necessarily the only treatment option for older stands. See "*Management Actions/Direction for Commercial Thinning and Regeneration Harvest in the General Forest Management Area (GFMA)*" in the administrative record for further explanation. It is appropriate to thin older stands in the GFMA land use allocation where volume production, stand vigor, and structure objectives for thinning will be met and where other management objectives are achieved concomitantly.

The ROD/RMP management action/direction is intended to require that young stand commercial thinning be part of a planned schedule of timber harvest to take advantage of the fact that yield is maximized by thinning at the earliest possible age (Reukema and Bruce 1977) and that early thinning provides the best opportunity to maintain large crown ratios and rapid growth rates (Bailey and Tappeiner 1998).

The ROD/RMP management action/direction does not explicitly preclude thinning in older stands. It is evident from the 1994 FEIS that the value of thinning older stands was acknowledged; "Commercial thinning can be effective in increasing recoverable timber yields by harvesting trees which would otherwise die prior to the final regeneration harvest in stands as old as 150 years (Williamson and Price, 1971; Williamson, 1982)." [Roseburg FEIS, 1994; p. Appendices 76]. Clearly it was expected that opportunities to thin older stands was sanctioned.

Thinning will usually be designed to assure high levels of volume productivity (ROD/RMP p. 151). The ROD/RMP (p. 62) states, "Apply commercial thinning in the Matrix where research indicates gains in timber production are likely." The 2016 REA states that thinning is expected to provide high levels of volume productivity (2016 REA, p. 48). This is supported by research in young stands (e.g., Chan et al. 2006). Additionally, Williamson (1982) analyzed a stand thinned at age 110, 19 years post-harvest. He found that the thinned plots had responded well, whether growth was measured for individual trees or the entire stand. For the entire 19 year period, gross growth was slightly reduced compared to unthinned. He concluded: "This study illustrates vividly the advantages of thinning stands that are this old, rather than simply sanitizing them and salvaging mortality."

Williamson and Price (1971) analyzed data from nine studies where thinning has been done in stands ranging from 70 to 150 years-old. Cubic foot volume averaged about 77 percent of normal gross growth between ages 70 and 110 and increased to 118 percent at age 150. They also found that near maximum utilization of the site can be accomplished over a wide range of residual densities.

A high level of volume productivity does not infer a goal of maximization. The principal benefit of thinning regardless of stand age is the harvest of merchantable trees that would otherwise be lost to mortality, large trees at a given age, enhanced stand stability and vigor (Reukema and Bruce 1977; Curtis and Marshall 2009). The thinning studies in older stands cited above exhibit those benefits.

Thinning in older stands can also result in substantial improvement of forest health. Williamson and Price (1971) examined results from nine studies of thinning in older stands and found that thinned stands had less mortality from all natural causes. Windthrow was lower than unthinned stands and insect damage, primarily from bark beetles, was dramatically inhibited (Williamson and Price, 1971).

The BLM concludes that thinning in Unit 6 is not precluded in the ROD/RMP and is consistent with the ROD/RMP[7] direction because thinning will increase growth. Unit 6 is 110 years old. The key stand attributes or relative density and crown ratios suggest Unit 6 is a good candidate to positively respond to thinning.

Comment 8b: "*Dozens of units being thinned that are over 80 years old and some are even over 100 years old. Thinning older forests doesn't meet the purpose and need of the EA, to promote forest health. In older stands, trees are not "released" as they are in younger stands. Additionally, felling and yarding of trees causes numerous logging scars on retained trees, and 100-year-old trees can't recover from their wounds like 50-year-old trees. Crown ratios do not increase and scald is a problem when thinning in older stands. New roads for extracting volume is not good for the watershed and more wildlife habitat are degraded when thinning older forests.*

There is a good reason why the RMP restricts thinning to younger forests. If the BLM disagrees, the BLM should produce some science that thinning older, mature forests promotes "forest health"."

BLM Response 8b: The commenter offers no evidence to support the assertions made. See responses 1a and 8a. Thinning in older stands meets the purpose and need by: 1) producing forest products; 2) promoting trees survival, tree growth and forest health in the Matrix; and 3) promoting habitat diversity. As previously discussed, it is also supported by research.

Comment 8c: *The EA failed to fully consider the impacts of removing most old growth in the thinning units. The decision documents should disclosed how many will be taken or left, and not keep the information secret.*

BLM Response 8c: The BLM does not propose to log any old growth habitat in the Myrtle Creek Harvest Plan. The ROD/RMP (p. 112) defines old growth as a forest stage existing from approximately age 200 until stand replacement occurs and secondary succession begins again. All of the units proposed for harvest are under 130 years of age (2016 REA, pp. 19-20 and 41-42). Legacy retention is described in the 2016 REA (pp. 23-24). Older remnant trees and large snags that may be present are not the focus of the proposed treatments and would be retained to the greatest degree practicable (2016 REA, p. 23).

9. Age Class Distribution

Comment 9a: *"The purpose and need for a "balanced distribution of age classes" is unsupported… BLM does not define what a balanced age-class distribution is..."*

BLM Response 9a: "…there are few young stands on BLM-administered lands resulting in an unbalanced age class distribution. The ROD/RMP (p. 61) specifies application of silvicultural systems that are planned to produce, over time, forests which have desired species composition, structural characteristics, and distribution of seral or age classes, as set forth in Appendix E of the ROD/RMP.

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[7] ROD/RMP references to support relevancy of the above statement to BLM management (emphasis added in bold):

> "Manage timber stands to reduce the risk of stand loss from fires, animals, **insects,** and diseases."(ROD/RMP p. 60)
>
> *Forest Health* – The ability of forest ecosystems to remain productive, resilient, and stable over time and to withstand the effects of periodic natural or human caused stresses such as drought, **insect attack**, disease, climatic changes, flood, resource management practices and resource demands. (ROD/RMP p. 104-105)
>
> *Density Management* – Cutting of trees for the primary purpose of widening their spacing so that growth of remaining trees can be accelerated. Density management harvest can also be used to improve **forest health**, to open the forest canopy, or to accelerate the attainment of old growth characteristics if maintenance or restoration of biological diversity is the objective. (ROD/RMP p. 103)

Appendix E objectives include managing the GFMA for a balance of age classes (ROD/RMP, p. 150)." (2016 REA, p. 3). Tables 3-4 and 3-12 (2016 REA, pp. 39 and 60) clearly show the desired age class distribution in GFMA and that the current distribution is not balanced.

Comment 9b: *"…there are currently large areas of early and mid seral forests adjacent to the project areas and there is no need to develop additional areas (as Alternative two would accomplish)."*

BLM Response 9b: The purposes and needs for the project are described in the 2016 REA (pp. 2-4). The BLM identified a purpose and need to manage the GFMA land use allocation for a balanced age class distribution (2016 REA, pp. 2 and 3). Table 3-12 in the 2016 REA (p. 60) shows the distribution of seral stages for each alternative compared to the desired condition for each seral stage. Because of the reduction in the amount of variable retention harvest, the seral stage distribution will shift slightly less under Alternative Two Modified when compared to Alternative Two. Under Alternative Two Modified the Non-Forest (1.6 percent of the analysis area) and 90+ years (49.6 percent of the analysis area) age class would remain unchanged. Variable retention harvest in the 40-80 year age class will contribute approximately 236 acres to the 0-30 year age class which will help balance the distribution in the 0-30 year age class.

As noted in the 2016 REA (p. 77) "Although important components of suitable habitat (snags, down wood, hardwood, legacy conifers and residual green trees) would be retained, variable retention harvest would create conditions that would not support northern spotted owl use. Variable retention harvest would create larger openings where northern spotted owls would be subject to a greater risk of predation from other raptors until the replacement stands begin to function as dispersal habitat in approximately 40 years.

Private land management emphasizes conifer dominance. For species dependent on early-successional habitat, private lands are not expected to provide quality habitat because of intensive management practices such as heavy replanting and repeated herbicide application that are intending to exclude competing vegetation including flowering plants, shrubs and hardwoods (2016 REA, p. 72).

Comment 9c: "*The BLM claims they need to manage the GFMA for a balanced 10-year-age class distribution. However, the EA failed to explain how this fits into the overall need to promote diversity. There is already 21.6% of the BLM lands in early seral habitat within the project area, plus the 70% of the watershed that is privately held. The project area had many NWFP clearcuts in the mid-1990s, like Lean Louis and the Louis Weaver timber sales. These units, never herbicide sprayed, and some adjacent to units in this project, already provide high-quality early seral habitat. Clearly, the BLM needs more forests for the old-growth dependent species, not early-seral species. The EA failed to explain why the BLM wants more early seral habitat."*

BLM Response 9c: The 2016 REA does not state a need to manage the GFMA land use allocation for a balanced 10-year age class distribution to promote diversity nor does the project have a purpose and need to create early-seral habitat; the BLM did not analyze a purpose and need that does not apply to this project.

The 2016 REA explains there is a need to promote diversity in the Matrix to meet ROD/RMP objectives (2016 REA, p. 3). Under Alternative Two and Alternative Two Modified (the selected alternative), diversity will be promoted in the Matrix by applying variable density thinning and variable retention harvest. Diversity will be at the landscape scale and at the stand scale. Management of within stand diversity is described in the harvest prescriptions in the 2016 REA (pp. 21-25).

The 2016 REA also explains there is a need to manage the GFMA land use allocation for a balanced age class distribution as directed in the ROD/RMP (2016 REA, p. 3). Additionally, Figures 4-4 and 4-5 of the PRMP/EIS (pp. 4-26 and 4-27) show the short-term and long-term early seral stage (0-10 year age class) would represent approximately 15 percent and 5 percent of the BLM-administered lands, respectively. Since there are no objectives related to early seral habitat creation related to the Riparian Reserves and Late-successional Reserves land use allocations, the burden of providing early seral habitat is on the Matrix land use allocations. Table 3-2 of the 2016 REA shows only two percent of the BLM-administered lands in the analysis area are in the 0-10 year age class. Variable retention harvest in Alternative Two makes a modest (1.4 percent) step toward achieving a balanced age class distribution in the GFMA land use allocation (2016 REA, p. 4) and contributes to the creation of early seral conditions as analyzed and depicted in the PRMP/EIS. Alternative Two Modified, the selected alternative, will contribute to the creation of early seral conditions in the GFMA land use allocation even though the BLM reduced variable retention harvest by 98 acres when compared to Alternative Two.

The referenced timber sales, now approaching 20 years old, were the only Northwest Forest Plan regeneration harvests conducted in the watershed and the 375 acres harvested in these two sales represents only 1.2 percent of BLM-administered lands in the watershed.

10. New Information

Comment 10a: "*The BLM depends on their 1994 RMP for an analysis of logging in the matrix. However, the BLM's RMP NEPA was done 21 years ago. There is a lot of new information in those 21 years that the Myrtle Creek Harvest Plan failed to consider, such as climate change, and the influx of barred owls. The BLM cannot just ignore this new information. For instance, the assumption that the BLM can do regeneration harvests in the matrix is not justified."*

BLM Response 10a: The BLM did not fail to consider climate change and barred owls. The BLM discusses climate change and carbon storage and release in the 2016 REA (pp. 121-125, 136-137, 197-201) and barred owls were identified as a threat to the northern spotted owl in the 2016 REA (pp. 65, 66). Additionally, there is no data indicating a relationship between forest treatments or lack of treatments and an increase or decrease in the distribution of the barred owl (2016 REA, p. 66).

The BLM does not assume that regeneration is appropriate in the Matrix, to the contrary, this project appropriately implements a decision made in the RMP that includes regeneration harvest in the Matrix (2016 REA, p. 8 and RMP, pp. 61, 62, 64-65, 146, 150-153).

Comment 10b: *The rationale that BLM must log to fulfill the purposes of the matrix land allocation is unsupported because there is significant new information indicating a need for more forest conservation. For instance, mature forests store carbon to help mitigate global climate change and they provide habitat for spotted owls (which need additional conservation of suitable habitat so they can co-exist with barred owls). BLM has a duty to keep its RMP up-to-date, but the EA fails to address this significant new information.*

BLM Response 10b: The BLM has properly identified purposes and needs of the project in the 2016 REA (pp. 2-3). These purposes and needs are reasonable given directives and objectives in the ROD/RMP (pp. 15, 19-20, 33, 60, 150-153). The 2016 REA specifies the underlying purposes and needs to which the agency is responding (2016 REA, pp, 2-4). The analysis of alternatives is guided by the agency's purpose and need (2016 REA, Chapter 3).

One of the primary objectives of stands in the Matrix is for the purpose of timber production (ROD/RMP, p. 33). Other land use allocations, specifically Late-successional Reserves and Riparian Reserves, were established for ecological reasons that include terrestrial and aquatic habitat objectives.

Carbon Storage and Release were analyzed in Chapter Three and Appendix E (2016 REA, pp.121-125, 136-137, 197-201).

"There is no data indicating a relationship between forest treatments or lack of treatments and an increase or decrease in the distribution of the barred owl." (2016 REA, p. 66).

With respect to amendments to the Western Oregon Resource Management Plans, the effort is currently underway and will consider the most recent science regarding the appropriate distribution of snags and down wood for proper ecological functions.

Comment 10c: "*The BLM brags in the EA that "the percent of existing northern spotted owl habitat removed by harvest during the first decade [of the NWFP] was considerably less than expected."*[8] *But also unexpected was the invasion of the barred owl. Since the NWFP did not consider the impact of the barred owl, the situation would be worse if owl habitat was removed as expected. The EA cannot ignore new information, such as barred owl and climate change that was not considered in the EIS for the NWFP or the RMP. While the EA acknowledges the influx of barred owls, the EA failed to consider that influx in environmental impacts."*

BLM Response 10c: The BLM is not boastful, but simply presenting findings from the 10-year status review indicating that the extent of suitable habitat removed by timber harvest was considerably less than expected.

The 2016 REA explains that independent of the proposed alternative, the barred owl will remain in the analysis area and is expected to continue increasing its distribution and numbers displacing northern spotted owls. There is no data or peer reviewed literature indicating a relationship between forest treatments or lack of treatments and an increase or decrease in the distribution of the barred owl.

11. Cumulative Impacts

Comment 11a:

> "*As BLM is well aware, much of the public lands it administers are located in a checkerboard arrangement and thereby are often bordered by intensely managed, privately held, industrial timber lands. Thus, Umpqua Watersheds asserts the following: that from a landscape, watershed-wide perspective, this checkerboard arrangement is the true, broadest and most useful context within which the bureau must assess its managerial responsibilities, and out of which it should offer any subsequent harvest and restoration proposals, etc. This wider context should be the basis from which BLM begins any analysis. This, so that its assessments of current and future conditions and the need and purpose for proposed actions are truly representative of the actual ecological state across any given watershed(s).*

[8] EA page 65

BLM, by any reasonable metric, whether it be sylvan, biological, wildlife (terrestrial and aquatic), hydrological, social/economic, etc., must consider all ownerships in the watersheds herein under consideration. It is Umpqua Watersheds studied opinion that, to include only the public lands contained within the analysis area as the context surrounding the harvest plan, would be to create a grossly inaccurate picture of current conditions on these watersheds. Further, to consider only these public forests, would be to present a disingenuous prediction of the cumulative effects and their intensity upon the analysis area, as a whole."

BLM Response 11a: The BLM identified analysis assumptions in the 2016 REA, which Umpqua Watershed agrees are accurate regarding management of private industrial land in the analyzed watersheds (see paragraph 7 of UW comments). Peak flow and equivalent clearcut area (ECA) analysis considered all ownerships (2016 REA, pp. 91, 108). Northern spotted owl site analysis considered all ownerships (Chapter 3 and p. 177).

Private land was analyzed in the PRMP EIS and the ROD/RMP established management direction for a balanced seral or age class distribution in the general forest management area (GFMA) (ROD/RMP, p. 61). The purpose and need for Myrtle Creek Harvest Plan is implementation of the ROD/RMP that directs the GFMA land use allocation to be managed in a balanced seral or age class distribution (ROD/RMP, p. 61, 150).

Comment 11b:

"*From Page 1 of the Draft FONSI , we quote: "Both context and intensity must be considered in determining significance of the environmental effects of agency action (40 CFR 1508.27):"*

Further, UW notes paragraph 7, under the <u>Intensity</u> section of the same document: "Whether the action is related to other actions with individually insignificant impacts but cumulatively significant impacts. - 40 CFR 1508.27(b) (7)"

The draft finding of no significant impact speaks, on page 2, of the lack of early seral forest in the analysis area as a justification for the resumption, by the district, of regeneration harvest (VRH). While it may well be true that there is currently a dearth of the 0 to 30 year age class on area BLM holdings, it is absolutely inaccurate, in speaking of the watersheds herein under discussion, when they are viewed at the landscape level."

BLM Response 11b: Variable retention harvest was not proposed to create early seral habitat as the commenter suggests, but rather, is an ancillary benefit. One of the purposes and needs for the Myrtle Creek Harvest Plan is to contribute toward establishing a balanced seral or age class distribution in the GFMA land use allocation per ROD/RMP management direction (pp. 61 and 150). Establishing the balanced seral or age class distribution in the GFMA land use allocation will contribute toward meeting the ROD/RMP Matrix objective to provide early-successional habitat (ROD/RMP, p. 33).

Comment 11c: "*On page 37 of the EA under Timber Resources, section A, the second paragraph states: "It is assumed that large industrial owners will continue to manage primarily for timber production on a rotation of 40 to 65 years. It is also assumed that industrial harvesting will follow the Oregon Forest Practices Act, and <u>stands will likely remain in early- and mid-seral stages across the landscape</u>" (emphasis UW's). Umpqua Watersheds agrees with this analysis, i.e.: that these private timber lands are and will be subject to repeated clear cut harvest and reforestation. At the landscape level, there is thus no dearth of the early seral age class. At more than a few locations, the biological quality of this industrial early seral may be questionable, however it's widespread existence across the watersheds under discussion in this harvest plan, as BLM has stated above, is not."*

BLM Response 11c: The BLM appropriately identified, defined, and analyzed resources in the analysis area. The ROD/RMP does not give management direction for private lands, but it does direct the BLM to manage the GFMA land use allocation for a balanced seral or age class distribution (ROD/RMP, pp. 61 and 150).

Comment 11d: "*Further, it is Umpqua Watersheds' stated opinion, that this fact of the checkerboard bears directly upon every aspect of BLM's action proposals. This extends to the proposed harvest of stands in the mature and older age classes. Just as early seral plantations are abundant on adjoining private timber lands in these watersheds, conversely, stands aged 80 years and over are rare to nonexistent on the considerable private holdings therein. For that matter, in historical terms, they are not overabundant and are often fragmented on the public lands of the Roseburg District, BLM. If the private wood products sector currently and in the future, perceives a need for a supply of older trees, the vast industrial timber, holdings extant in Oregon ought to be well able to supply some of that need. That the private timber industry chooses to focus almost exclusively on harvest of trees in the 40 to 65 year age class (we have observed younger harvests on private industrial lands), ought not be taken, by BLM, as an imperative to harvest older trees from public forests, where the ecological and biological services, including carbon sequestration and climate mitigation of such older stands are so highly prized and so much in demand, now and in the future."*

BLM Response 11d: Again, the ROD/RMP does not give management direction for private lands, but it does direct the BLM to manage the GFMA land use allocation for a balanced seral or age class distribution (ROD/RMP, p. 61 and 150). The ROD/RMP does not prohibit regeneration harvest in stands older than 80 years old. In fact, implementation of the ROD/RMP is dependent upon management of stands older than 80 years old in the Matrix to fulfill management direction and objectives. Table HH-14 of the PRMP EIS shows all of the regeneration harvest in the second decade, of which we are currently in, would occur in stands 100 years and older (PRMP EIS, p. Appendices 233). Alternative Two Modified, the selected alternative, excludes variable retention harvest in stands 80 years of age and older. Alternative Two Modified also includes thinning 585 acres of forest 80 years of age and older.

Comment 11e: "*And, to assume that there are no cumulative impacts from certain proposed management actions in the Myrtle Creek Harvest Area is not correct, in UW's opinion. Again, common sense, basic logic and its own Draft EA demand that the BLM take full account of the cumulative, very negative and ongoing clear cutting on adjoining private timber lands within these watersheds. Such intense management of private industrial timber lands virtually ensures a suite of cumulative, intense and, as UW believes, destructive impacts to wildlife and water quality, including to listed and threatened species currently and into the future. Sadly, these impacts are imposed upon all of the lands and waterways under discussion in the draft promulgated by BLM, including public lands."*

Comment 11f: *"The cumulative impacts analysis is lacking…the BLM should recognize all the evidence in front of them that indicates that the cumulative effect to harvest across their ownership is having a negative affect on the spotted owl and disclose that information to the public."*

BLM Response 11e and 11f: Cumulative impacts were addressed in the 2016 REA (pp. 125-137). The cumulative effects analysis considered past activities in the description of the existing conditions (2016 REA, p. 125). Ongoing and future foreseeable activities were also addressed (2016 REA, pp. 125-126). The BLM appropriately described the parameters of the cumulative effects analysis on wildlife and water quality in the 2016 REA (pp. 127-134). The cumulative effects analysis varies by wildlife species (2016 REA, p. 127-132). The cumulative effects analysis area for aquatic resources was not limited to BLM administered lands (2016 REA, p. 133).

12. Climate Change/Carbon

Comment 12a: "*It is, at this late date, a well established if unfortunate fact, that climate change is proceeding at an unforeseen and alarming rate, even exceeding the dire predictions derived from previous climate modeling. Harvesting older stands (>80 yrs.) and replacing them with seedlings exacerbates carbon release and damages its sequestration. Again, given the short rotation, clear cut harvest practices conducted on adjacent or nearby private industrial holdings and their cumulative negative impacts upon carbon levels in the atmosphere, BLM should carefully weigh short term harvest benefits against long term climate impacts. Currently, as with other sylvan, biological, wildlife, etc. aspects of forest management, there is a zero to minute possibility, that any such consideration will be much in evidence on industrial timberlands. For better or worse, the burden of this suite of vital considerations falls squarely on our public agencies and the forests they are charged with overseeing."*

BLM Response 12a: Climate change and greenhouse gas emissions have been identified as an emerging resource concern by the Secretary of the Interior (Secretarial Order No. 3226; January 16, 2009), the OR/WA BLM State Director (IM-OR-2010-012, January 13, 2010), and by the general public through comments on recent project analyses (2016 REA, p. 121). The BLM addressed climate change in the Carbon Storage and Release section of the 2016 REA (pp. 121-125, 136 and Appendix E).

We have no control over the management of private timber lands and, as stated in the 2016 REA (pp. 47 and 126), assume industrial landowners will continue to manage primarily for timber production using intensive timber management practices. Additionally, while we have a Secretarial Order directing us to consider the effects of management on greenhouse gas emissions, there is no legislative mandate that these forest lands be managed for long-term sequestration of carbon as a primary long-term objective.

Comments 12b: "*BLM documents this project will cause 11,444 tonnes of carbon to be released into the atmosphere, and that the clearcut units will recover that carbon at a rate 200% less than the thinned units. Our public forests should be leveraged to mitigate climate change, not cause increased carbon pollution."*

BLM Response 12b: It is unclear how the commenter concluded that clearcut units will recover carbon at a rate of 200% less than thinned units as clearcutting is not proposed in the Myrtle Creek Harvest Plan. Modeling (methods presented in Appendix E of the 2016 REA), indicates that over the next 50 years under Alternative One stored carbon will increase by 158% above current conditions (507,024 tonnes carbon increase) (2016 REA, p. 122-123). Under Alternative Two, using the high point of the modeled range, carbon storage will increase by 104% (343,640 tonnes carbon increase) over the next 50 years, and under Alternative Three, using the high point of the modeled range, carbon storage will increase by 123% (408,436 tonnes carbon increase) (2016 REA, pp. 123-125). Under Alternative Two it is estimated that re-sequestration of all carbon directly released would occur in eight years and under Alternative Three it will take one to two years (2016 REA, pp. 124 and 125). Under Alternative Two Modified, the carbon storage is estimated to increase 104% to 123% over the next 50 years and the estimated re-sequestration of all carbon directly released would occur in two to eight years. See BLM Response 12a.

13. Conduct Necessary Surveys

Comment 13a: *"BLM needs to conduct surveys for rare and uncommon late successional species such as the red tree vole and provide the results in the NEPA document for public review and comment…* NEPA also requires surveys in order to fulfill NEPA's mandate for informed decision-making. We are also concern*ed that the RTV protocol does not do a good job of determining the presence or absence of the species as required by the 2001 ROD for survey and manage."*

BLM Response 13a: The NEPA does not require surveys as the commenter asserts. The NEPA is a statutory requirement. The NEPA: 1) mandates preparation of detailed statements of effects; 2) establishes the need for considering alternatives to the proposed action; 3) requires use of an interdisciplinary process; 4) requires consultation with other Federal agencies; and 5) requires that detailed statements and comments and view of other agencies be made available to the public (BLM Handbook H-1790-1, p. 1).

S&M is a BLM policy, not a statutory requirement. The RTV protocols are intended to locate RTVs where habitat conditions indicate they are most likely to be found. Whether or not the survey protocols are sufficient is outside the scope of this analysis. The 2016 REA explains ongoing survey efforts and requirements (pp. 13 and 34). Protocol survey results are summarized in Appendix F of the 2016 REA.

14. Stands over 80

Comment 14a: "*The loss of recruitment of dead wood habitat when logging older stands is a long-term impact and provides a very strong argument against logging in stands over 80 years old.*"

BLM Response 14a: The RMP establishes that regeneration harvest is appropriate in the Matrix and made no reservations based on stand age. The ROD/RMP includes management direction (p. 65) for large down logs which has been incorporated into the project design (2016 REA, pp. 24-25). The effects of the project are within those disclosed in the PRMP EIS (USDI-BLM 1994).

Comment 14b: "*The RTV [red tree vole] surveys should have been done and results included in the EA so the public could comment on the BLM's implementation of the Survey and Manage standards. The BLM claims only older units with large diameters need RTV surveys, like unit 28-5-27A. We disagree. Units to be regenerated must also have RTV surveys. Variable retention projects do not fit under exemption a: Thinning projects in stands younger than 80 years old". VRH and stands over 80 years old need RTV surveys, not just ones over a diameter limit.*"

BLM Response 14b: The 2016 REA is an analysis of the potential effects of a proposed action. It is pre-decisional in nature and there is no need to conduct surveys and establish protection measures until the time a decision is made to move forward with implementation. The 2016 REA (p. 10) states, "The BLM would conduct surveys in suitable habitat for required 2001 Survey and Manage species in all stands greater than 80 years of age and all variable retention harvest units. Surveys would be conducted using accepted protocols…Red tree vole surveys would be conducted in stands subject to habitat disturbing activities that meet the following criteria: 1) Minimum quadratic mean diameter (QMD) is 18 inches or larger, and 2) Stand age is 80 years old or older *or* the stand has at least two superdominant trees per acre that have suitable habitat characteristics such as large limbs, palmate branches, broken tops or forked trunks (USDA/FS-USDI/BLM 2012)." Surveys have been completed in suitable habitat. Survey results are summarized in Appendix F of the 2016 REA.

Comment 14c: *The EA fails to accurately disclose the adverse effects (trade-offs) of logging on late successional habitat.*

BLM Response 14c: The 2016 REA does not disclose the effects of proposed activities on Late-Successional Reserves because all of the harvest units are located outside of Late-Successional Reserves (2016 REA, p. 19-20) and there are no Late-Successional Reserve in the analysis area. The 2016 REA discloses effects of three alternatives on forest stands (2016 REA, pp. 45-60). The effects of proposed actions on wildlife species associated with late-successional habitats are also disclosed (2016 REA, pp. 61-90).

15. Snags and Large Down Wood

Comment 15a: "*Retain abundant snags and course wood both distributed and in clumps so that thinning mimics natural disturbance. Retention of dead wood should generally be proportional to the intensity of the thinning, e.g., heavy thinning should leave behind more snags not less. Retain wildlife trees such as hollows, forked tops, broken tops, leaning trees, etc.*"

BLM Response 15a: Snags will be retained where operationally feasible and safe. Retention of snags and coarse wood are discussed in the 2016 REA (pp. 22, 23, 24, 25). The amount of snags and large coarse wood will comply with the ROD/RMP requirements to retain snags within a timber harvest unit at levels sufficient to support species of cavity nesting birds at 40 percent of potential population levels (ROD/RMP, pp. 34, 38, 64). At a minimum, an average of 120 linear feet per acre of large down wood in Decay Classes 1 and 2 will be provided (2016 REA, p. 24).

Comment 15b: "*Thinning does not always accelerate development of late successional forests, in particular commercial thinning has an adverse effect on snags and dead wood that are defining characteristics of late successional habitat.*"

BLM Response 15b: Accelerating development of late-successional forest is not a purpose and need of this project. The purpose and need for this project is clearly described in the 2016 REA (pp. 2-3). Relative density of retained trees would range from 0.35 to 0.40 in uniform thinning GFMA units(2016 REA, p. 21); 0.25-0.30 in uniform thinning C/D Blocks units (2016 REA, p. 21); and 0.20 to 0.30 in treated variable density thinning units (2016 REA p. 22);. Over 40 percent green tree canopy cover would be retained in thinned units (2016 REA, pp. 21, 22). Green tree retention in variable retention harvest units would be 20-30 percent of the pre-harvest stand basal area (2016 REA, p. 23). Snags needed to support 40 percent of potential population levels would be retained (2016 REA, p. 24). Effects to snags (p. 51) and effects to snag associated species (pp. 61-90, 127-132) are disclosed in the 2016 REA.

Comment 16c: "*Since logging has long-term adverse effects on snag recruitment, it is necessary to adopt mitigation with long-term effects, such as retaining generous untreated "skips" embedded within treatments areas where natural mortality processes can flourish.*

BLM Response15c: The project was designed to retain "skips", legacy trees, snags and large down wood (2016 REA, pp. 21-25). The 2016 REA (Chapter Three) discloses the effects of harvesting up to 4.4 percent of the analysis area. Mortality processes would continue to produce variable sizes, quantities and qualities of snags on the remaining 95.6 percent of the analysis area and in the untreated skips within the units.

Comment 15d: "*Considering CWD and snags are important components of riparian reserves, their current lacking within the project areas, the habitat improvement these incidentally felled trees would provide and the purpose and need of the project, it seems prudent to reserve them within the riparian reserve LUA (instead of placing them on trucks to be sent to mills).*"

BLM Response 15d: All coarse woody debris and snags would be retained in "no-treatment" Riparian Reserve area. In treated areas within Riparian Reserves, existing snags would be protected to the greatest extent practicable (2016 REA, p. 23).

16. Northern Spotted Owl (General)

Comment 16a: *"Clearcutting forests harm wildlife, especially the spotted owl since the BLM is proposing to log in its critical habitat. This project will clearcut up to 202 acres of spotted owl suitable habitat. All of these older forests should be dropped from the project."*

BLM Response 16a: Clearcutting is not proposed in the Myrtle Creek Harvest Plan. The 2016 REA analyzes the effects associated with 202 acres of variable retention harvests within suitable northern spotted owl habitat (2016 REA, pp. 75-80). Alternative Two Modified, the selected alternative, includes 99 acres of variable retention harvest in suitable habitat.

Comment 16b: "*Table 3-14 in the EA shows that the spotted owls in the Myrtlewood watershed are in bad shape. There was no reproduction in 2013, and only 2 reproducing pairs in 2012. If the BLM doesn't help this population, in critical habitat, the owls could be extirpated from the area within our lifetimes. Now is no time to convert potential owl habitat to early-seral habitat, or degrade NRF habitat by thinning in mature forests. The BLM is not allowed to degrade critical habitat, as this project does."*

BLM Response 16b: We assume the commenter is referring to the Myrtle Creek watershed, as there is no Myrtlewood watershed in western Oregon as the commenter suggests, although there is a Myrtlewood Field Office located on the Coos Bay District approximately 20 miles west of the analysis area.

An adverse modification determination is one that resides with the U.S. Fish and Wildlife Service (2016 REA, p. 6). The BLM analyzed effects of the proposed activities on northern spotted owl critical habitat (pp. 73, 80, 88, 128, 131) and consulted with the U.S. Fish and Wildlife Service on three occasions (2016 REA p. 138). In three Biological Opinions (TAILS#: 01EOFW00-2013-F-0200; TAILS# 01EOFW00-2015-F-0229; 01EOFW00-2016-F-0065), the U.S. Fish and Wildlife Service found that the proposed action will not or is unlikely to adversely modify critical habitat for the spotted owl and proposed activity in critical habitat in the action area is not likely to impair the capability of critical habitat to provide demographic support or facilitate connectivity among adjacent subunits.

Comment 16c: *"BLM fails to actually analyze the new information from the most recent owl surveys in the current revision and FONSI."*

BLM Response 16c: The BLM issued the 2016 REA for the purpose of disclosing the updated information (pp. i, 63-64) and the analysis of the alternatives, where applicable, regarding the recent northern spotted owl survey data (pp. 78-79, 88) and consultation with the USFWS (p. 177).

The 2016 REA FONSI (February 11, 2016) also disclosed the results of the northern spotted owl surveys conducted by the BLM (p. 1) and the associated analysis (pp. 12-13). The Kung Fu Decision Document (p. 7) discloses that "…suitable habitat will not be treated within sites 0273O and 1170O (2016 REA, p. 78) and thinning (7 acres) in suitable habitat at the home range periphery of site 0560O will not alter the function of the habitat because at least 60 percent canopy cover will be retained. Northern spotted owls are expected to continue to use thinned areas (2016 REA, p. 62, 75 and 76). However, northern spotted owls potentially using the three affected home ranges in the future may expand home range size (2016 REA, p. 75) and may utilize the thinned stands less than unthinned stands in the short-term (2016 REA, p. 76)."

Comment 16d: "*Rather than continuing the piecemeal approach to projects and their impacts to the overall population of the owl, BLM should be fully disclosing the poor population levels of the owl in the Klamath Analysis area and that the continued harvest is the prime reason for this.*"

BLM Response 16d: The BLM assumes the commenter is referring to research conducted by Dugger et al. (2015)[9]. The study found that although habitat loss is still a concern (p. 98) the current most important cause of northern spotted owl population decline is the invasive nature of the barred owl (p. 98). The document did not identify that harvest was the prime reason for poor population levels, rather it summarized (p. 60) that "…harvesting of old-growth forest habitat suitable for Spotted Owls and other dependent species…on federal lands has declined since the adoption of the NWFP."

To further clarify, the BLM assumes the commenter's reference to the "Klamath Analysis area" refers to the Klamath Demography area. The 2016 REA is outside of the Klamath Demography area.

Comment 16e: "*Withdraw from harvest any unit within NSO core areas, including the six new sites.*"

BLM Answer 16e: The 2016 REA (p. 77) disclosed the effects of treatments in northern spotted owl core areas and home ranges. However, the Kung Fu Decision Document (p. 6) indicates that the harvest area was reduced and the Kung Fu timber sale units will not modify or remove northern spotted owl suitable habitat within nest patches or core areas. The Decision Document (p. 7) also declares that dispersal habitat will be treated inside the core area of northern spotted owl site 0560O and that dispersal function will be maintained because canopy closure will be above 40 percent and the quadratic mean diameter which will be at least 11 inches; figures widely used as thresholds for dispersal function (2016 REA, p. 62, 75 and 76).

17. Aquatic Conservation Strategy

Comment 17a: *Logging in riparian reserves will violate the ACS by retarding attainment of dead wood objectives both instream and in the upland portion of the riparian reserves. In most cases passive management will best meet ACS objectives. Any alleged benefits from logging in the reserves are far outweighed by the adverse trade-offs which BLM fails to clearly and accurately disclose in the EA.*

BLM Response 17a: The 2016 REA (p. 3) explains the need for diverse habitats in Riparian Reserves. "There is a need for diverse habitats in Riparian Reserves. Management of Riparian Reserves is intended to aid in the attainment of Aquatic Conservation Strategy (ACS) objectives of restoring and maintaining the ecological health of watersheds and aquatic ecosystems on public lands (ROD/RMP, p. 19). Silvicultural practices are to be applied to control stocking, reestablish and manage stands, and acquire desired vegetative characteristics (ROD/RMP, pp. 25). Density management in Riparian Reserves would reduce canopy cover that is suppressing shade-intolerant conifers and deciduous trees, and that is resulting in a reduction in species diversity. Density management would maintain ecological health, allow the release and accelerated growth of selected trees that would maintain or restore structural diversity of plant communities in the riparian zone, and maintain coarse woody debris for future in-stream recruitment (ROD/RMP, pp. 19 and 20)." (2016 REA, p. 3)

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[9] Dugger et al. 2015. The effects of habitat, climate, and barred owls on long-term demography of Northern Spotted Owls. 2015 Condor V:118,pp. 57-116

The effects of proposed actions within Riparian Reserves were analyzed in Chapter Three of the 2016 REA. Establishment of Riparian Reserves and "no-treatment" stream buffers are explained in the 2016 REA (p. 32). Passive management will occur in the "no-treatment" buffer along streams and under Alternative One (No Action).

Effects on in-stream functional wood are described in the 2016 REA (pp. 97, 102-103). Additionally, Appendix D of the 2016 REA, "Consistency of the Proposed Action with the Objectives of the Aquatic Conservation Strategy" shows the Myrtle Creek Harvest Plan is consistent with ACS objectives (2016 REA, pp. 191-196).

Comment 17b: "*The EA also fails to disclose that natural processes will lead to attainment of ACS objectives without intervention. See Lutz. J.A. 2005. The Contribution of Mortality to Early Coniferous Forest Development. MS Thesis. University of Washington. http://faculty.washington.edu/chalpern/Lutz_2005.pdf*"

BLM Response 17b: Contrary to the commenter's opinion, the 2016 REA describes how stands would develop under the No Action Alternative (2016 REA, pp. 45-47), the effects of the No Action Alternative on aquatic resources (2016 REA, pp. 96-98) and compliance with ACS (2016 REA, Appendix D, pp. 191-196).

Lutz (2005, unsigned master's thesis) examines the temporal and spatial distribution of mortality and its causes. Suppression was observed in over 80 percent of the plots and was more than 2.5 times as common as mechanical damage. However, biomass lost to mortality via mechanical damage was nearly four times that lost via suppression. Mechanical damage killed larger stems and was episodic and spatially aggregated. Hardwood biomass increased with time as dominant stems achieved large size. Although frequent in time and space, suppression mortality leads to subtle changes in forest structure. The larger sizes and spatial aggregation of trees killed by mechanical causes yielded greater ecological change by enhancing spatial heterogeneity of structure and composition. Lutz concludes that gap-forming processes that contribute to structural complexity in old growth can also be active in young forests.

In general, shade-intolerant hardwood species are being overtopped by conifers and succumbing to suppression mortality (2016 REA, p. 40). Proposed Riparian Reserves treatments in the 2016 REA (p. 22) were designed to promote development of large hardwoods that, through mechanical damage, will be the source of future large dead and down biomass that will benefit the Riparian Reserve habitats as Lutz (2005) concluded. The more common suppression mortality will continue to occur in untreated areas of the Riparian Reserve and in "skips" created in the variable density thinning treatments.

Comment 17c: "*The EA failed to consider that new permanent roads do not meet the objectives of the ACS and instead, degrade water quality for fish and humans.*"

BLM Response 17c: The Kung Fu timber sale does not include any road construction within Riparian Reserves. The Kung Fu Decision Document shows 0.54 miles of road will be constructed and retained for future use (Table 2, p. 5). No discernable sedimentation would be expected from road construction with the application of Best Management Practices and project design features (2016 REA, p. 99). Road construction will not affect recruitment of large wood to streams (2016 REA, p. 102). There will be no change in pool availability as road construction will not remove trees that will affect recruitment of pool-forming wood or impact the capacity of stands adjacent to stream to contribute large wood or small functional wood in the future (2016 REA, p. 103). Proposed road construction will not affect fish passage (2016 REA, p. 103). No adverse effects to coho salmon critical habitat or essential fish habitat are anticipated (2016 REA, 103).

Water Quality/Water Quantity pertaining to Essential Fish Habitat was analyzed in the 2016 REA (p. 103) and concluded there will be no effect to water quality and/or quantity. Additionally, Water Quality analysis in the 2016 REA (pp. 104-106) indicates there will be no effect on beneficial uses and drinking water sources from the proposed actions. Consistency with the ACS objectives was addressed in Appendix D of the 2016 REA (pp. 193-196).

From a peak flow perspective, there is no concern until roads populate 12 percent of the drainage area (2016 REA, p. 95). For example, if we used an average 60-foot clearing limit, accounting for feeder roads and main collectors having varying widths, we would need to have in excess of 10 miles of road per square mile before this became a concern. In the Myrtle Creek watershed, road density was estimated to range from 3.03 to 5.94 miles per square mile and averages 4.36 miles per square mile, as reported in watershed analysis in 2002 (p. xiii). While road density has undoubtedly increased some in the ensuing 12 years, it has not increased by 200-250 percent.

18. Other

Comment 18a: "*Where road building is necessary, ensure that the realized restoration benefits far outweigh the adverse impacts of the road. Carefully consider the effects of roads on connectivity, especially at road/stream crossings, across ridge tops, and midslope hydrological processes (such as large wood delivery routes)…Avoid log hauling during the wet season.*"

BLM Response 18a: Roads would be sited on ridge tops and stable side slope locations and disconnected from the road drainage network where practicable (2016 REA, p. 25). Ground-based yarding would be restricted to the dry season (2016 REA, p. 32) and use of unsurfaced roads for timber hauling would be limited to the dry season (2016 REA, p. 34). Road density is disclosed in the Aquatics section (2016 REA, p. 95, 194). No harvest buffers filter sediment and provide a continuous source of small and large functional wood to stream channels (2016 REA, p. 100, 101, 102, 105). Road renovation, improvement and construction will not affect recruitment of large wood t streams. Road renovation and improvement will benefit the analysis area because well-maintained roads have less potential to produced sediment that can be delivered to streams. Proposed road construction within Riparian Reserves is limited to 0.14 miles, of which less than 100 feet occurs within a "no-treatment are" of the upper extent of a headwater stream. The likelihood of reducing the quantity of in-stream large wood is minimal due to the site specific characteristics of these roads proposed for construction and the nature of the nearest stream (2016 REA, p. 103).

Comment 18b: "*We oppose roadside daylighting (strip clearcutting along roads), especially in riparian reserves where it will certainly prevent or retard attainment of ACS objectives…The EA fails to fully disclose the adverse effects of "road daylighting"*

BLM Response 18b: Daylighting is not clearcutting as suggested by the commenter. Daylighting is a combination of road maintenance and thinning-type treatments that are routinely implemented by the Roseburg BLM and consistent with the ROD/RMP. The 2016 REA (p. 28) explains that daylighting treatments include clearing shrubs and trees and/or thinning trees less than 24 inches diameter breast height where overstory tree canopy shades the roadway surface. Daylighting will occur up to 33 feet from center line of existing roads and will not occur within pre-established Riparian Reserve "no-treatment" areas except where a hydrologist or fisheries biologist determines that site specific characteristics warrant the need for daylighting to mitigate sediment transport to the stream network while meeting Aquatic Conservation Strategy objectives." (2016 REA, p. 28) The 2016 REA discloses the effects of road daylighting in Chapter Three (2016 REA, pp. 76, 77, 80, 87, 88, 97, 100, 103, 105, and 120).

Comment 18c: "*…the EA failed to look at the entire project area, as required by NEPA, and for the most part, only looked at the small percent of the watershed owned by the BLM, ignoring the overall landscape."*

BLM Response 18c: The BLM appropriately defined and analyzed resources in the analysis area. The analysis area is described in the 2016 REA (p. 1): The analysis area includes lands managed by the South River Field Office of the Roseburg District, Bureau of Land Management (BLM) in the Myrtle Creek 10th-field watershed[10], as well as the Upper Deer Creek, Days Creek, and Roberts Creek 12th-field subwatersheds. The analysis did not simply use percentage of the watershed administered by BLM. The analysis considered the condition and role of private lands in many instances (2016 REA, pp. 6, 8, 25, 33, 37, 38, 47, 70, 72, 73, 74, 94, 95, 97, 98, 108, 118, 120, 126, 128, 192).

Comment 18d: "*The BLM failed to look at the entire watershed. And as mentioned earlier, there is a lot of early-seral habitat on BLM land too. The BLM failed to disclose what early-seral species was more in need of habitat than old-growth dependent species. The BLM failed to consider that historically, the watershed had far more old growth and far less early-seral."*

BLM Response 18d: The 2016 REA never identified the need to create early-successional habitat as part of the purpose and need for action. The purpose and need are clearly stated on pages 2-3 of the 2016 REA. The 2016 REA considered species associated with early successional habitats (pp. 65, 69-70, 73-74, 80, 85-86, 90 and Appendix C). The commenter incorrectly assumes the BLM desires to manage the landscape to resemble historic conditions. The desired age class distribution for GFMA was established by the ROD/RMP (p. 151) and is identified in the 2016 REA (pp. 39, 60).

Comment 18e: "*The EA failed to consider the impacts of this project on that endangered species. For instance, road density impacts wolves, and this project increases roads. The BLM must consult with USFWS on the endangered wolf impacts of this project."*

BLM Response 18e: The wolf activity area of the referenced wolf "family" (OR7) was entirely outside of the Roseburg District BLM-administered lands in 2014 and is entirely off of the Roseburg District in 2015[11]. The proposed actions will have no effect on the referenced wolf pack.

Comment 18f: "*If the BLM wants even more high-quality early-seral habitat for wildlife, there are other alternatives for providing that that should have been considered, such as VDT with openings, or better, modifying practices on non-federal lands to reduce herbicide use."*

BLM Response 18f: The Myrtle Creek project was not designed to create high quality early-seral habitat for wildlife. As suggested by the commenter, Alternative Two includes 1,005 acres of variable density thinning which accounts for over 50 percent of the proposed treatments. Alternative Two Modified, the selected alternative, includes 1,014 acres of variable density thinning, which represent 54 percent of the proposed treatments. The Kung Fu timber sale includes 193 acres of variable density thinning, representing 53 percent of the entire sale. Modifying how non-federal lands are managed is beyond the scope of this analysis and beyond the authority of this agency.

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[10]The U.S. Geological Survey implemented a new numbering/naming convention for hydrologic units (HUs). 5th-field watersheds are now designated as 10th-field HUs, and 6th-field subwatersheds as 12th-field HUs.

[11] Map available at http://www.dfw.state.or.us/wolves/

Determination of NEPA Adequacy (DNA) Worksheet

U.S. Department of the Interior
Bureau of Land Management
Roseburg District

OFFICE: South River Field Office

CASEFILE/PROJECT NUMBER: DOI-BLM-ORWA-R050-2013-0003-EA

PROPOSED ACTION TITLE/TYPE: Kung Fu Timber Sale and Deerly Beloved Timber Sale Red Tree Vole Update

DETERMINATION OF NEPA ADEQUACY (DNA): Not all decisions require the use of a DNA. When used, a DNA confirms that an action is adequately analyzed in existing NEPA document(s) and is in conformance with the land use plan. A DNA is not itself a NEPA document. The signed conclusion of the DNA worksheet is an interim step in the BLM's internal review process and does not constitute a decision and is not subject to protest or appeal. However, the decision on the action being implemented may be subject to protest or appeal under 43 CFR Part 4 and the program-specific regulations.

LOCATION/LEGAL DESCRIPTION:

A. Description of the Proposed Action and any applicable mitigation measures

The proposed actions are those described in the Revised Myrtle Creek Harvest Plan Environmental Assessment (REA). The purpose of this determination of NEPA adequacy is to review this REA to ensure the analysis is sufficient to account for potential impact to 19 red tree vole (RTV) nest trees not previously identified in the REA.

B. Land Use Plan (LUP) Conformance

Roseburg District Resource Management Plan and Record of Decision (ROD/RMP)

Approved June 1995

This review is in conformance with the ROD/RMP objectives and management direction for survey and manage species (ROD/RMP, p. 42-43). Specifically:

- "Survey prior to activities and manage sites"
- "Develop management actions/direction to manage habitat for the species on sites where they are located".

Record of Decision and Standards and Guidelines for Amendments to the Survey and Manage, Protection Buffer, and other Mitigation Measures Standards and Guidelines (ROD/S&G) Approved January 2001.

This review is in conformance with the ROD/S&G objectives and management direction for survey and manage species (ROD/S&G, p. 10-11). Specifically:

- "Identify and mange high-priority sites to provide for reasonable assurance of species persistence. Until high-priority sites can be determined, manage all known sites."
    - "Until a Management Recommendation is written addressing high-priority sites, either assume all sites are high priority, or local determination (and project NEPA documentation) of non-high priority sites may be made on a case-by-case basis with: (1) guidance from the Interagency Survey and Manage Program Manager; (2) local interagency concurrence (BLM, FS, USFWS); (3) documented consideration of the condition of the species on other administrative units as identified by the Program Manager-typically adjacent units as well as others in the species range within the province; and (4) identification in the Interagency Species Management System (ISMS)[1].
    - "Surveys will be conducted at the project level prior to habitat-disturbing activities and in accordance with Survey Protocols. Sites found as a result of these surveys will be managed as described above under manage high-priority sites."

C. Identify applicable National Environmental Policy Act (NEPA) documents and other related documents that cover the proposed action.

Revised Myrtle Creek Harvest Plan Environmental Assessment (DOI-BLM-ORWA-R050-2013-0003-EA)

Myrtle Creek Harvest Plan Non-high Priority Site Designation (2015 REA Appendix F)

Myrtle Creek Harvest Plan Non-high Priority Site Designation concurrence (Umpqua National Forest and USDI Fish and Wildlife Service)

D. NEPA Adequacy Criteria

1. Is the new proposed action a feature of, or essentially similar to, an alternative analyzed in the existing NEPA document(s)? Is the project within the same analysis area, or if the project location is different, are the geographic and resource conditions sufficiently similar to those analyzed in the existing NEPA document(s)? If there are differences, can you explain why they are not substantial?

The proposed action and project design are identical to that described in the Revised Myrtle Creek Harvest Plan (pp. 18-31) with two exceptions: variable retention harvest would only be implemented in stands less than 80 years old and gaps in Riparian Reserves would be no larger than 0.25 acres in size.

[1] ISMS – Interagency Species Management System, was a precursor to the Geographic Biota Observations database (GeoBOB); this database was the original repository for survey and manage species location and survey information.

The purpose of this determination of NEPA adequacy is to review the REA to ensure the analysis adequately analyzed the RTV given new information that was provided to the BLM by a citizen science group, the Northwest Ecosystem Survey Team (NEST), on August 25, 2015 and August 29,2015, after release of the REA. The NEST identified and climbed individual trees in Units 28-4-09A and 28-4-17A (Appendix 1, Figures 1 and 2). The BLM did not analyze Unit 28-4-17A for RTVs in the REA because, like the other younger stands, it is not considered to be "suitable habitat that may potentially contribute to a reasonable assurance of persistence" for the RTV (p. 14, USDA and USDI 2012). The BLM evaluated Unit 28-4-09A for suitable RTV habitat and surveyed the unit in 2015. The results of the survey are reflected in the REA Appendix F. The new information does not change the analysis area, resource conditions, or environmental effects described in the REA.

2. Is the range of alternatives analyzed in the existing NEPA document(s) appropriate with respect to the new proposed action, given current environmental concerns, interests, and resource values?

The REA presents an adequate range of alternatives and adequately analyzes the RTV. The additional RTV information presented by NEST generates no additional alternatives that could have been considered while meeting the purpose and need for action or have different outcomes with respect to the species.

3. Is the existing analysis valid in light of any new information or circumstances (such as, rangeland health standard assessment, recent endangered species listings, updated lists of BLM-sensitive species)? Can you reasonably conclude that new information and new circumstances would not substantially change the analysis of the new proposed action?

The new information would not change the conclusions reached in the in the REA (p. 84):

1. "Based on the amount of high quality RTV habitat within the analysis area (6,735 acres) and the overall high likelihood of it being occupied (86 percent) there is a moderate-high number of likely extant sites in the analysis area. Completed surveys and database analyses validate this conclusion."
2. "After considering the very modest (0.3 percent) amount of the Roseburg District land base that has been harvested annually for the past two decades, the abundance of highly suitable habitat on BLM administered lands, and BLM efforts to recover the northern spotted owl, there is little doubt that existing suitable RTV habitat in the analysis area (and the District) will remain available, well-distributed, and occupied."
3. "The distribution of high quality RTV habitat on BLM-administered lands and the connectivity habitat on non-federal lands throughout the analysis area provide habitat connectivity that allows RTVs to disperse throughout this landscape because RTV habitat is well distributed."
4. "Approximately 70 percent of the analysis area (ACEC, KOAC, RR, OG) is either reserved from timber harvest, or being managed to retain and develop late-successional forests. The proposed action would affect 18 known sites out of hundreds to thousands of estimated active RTV sites in the analysis area and would not diminish the likelihood of RTV persistence in the analysis area."

4. Are the direct, indirect, and cumulative effects that would result from implementation of the new proposed action similar (both quantitatively and qualitatively) to those analyzed in the existing NEPA document?

The direct, indirect, and cumulative effects that would result from implementation of the proposed action described in the REA would not change as a result of the RTV information. Although NEST identified active RTV nest trees in Unit 28-4-17A, the habitat conditions exhibited in the stand are not those "that may potentially contribute to a reasonable assurance of persistence" in the unit of RTVs.

5. Are the public involvement and interagency review associated with the existing NEPA document(s) adequate for the current proposed action?

A notice of project initiation was published in the Roseburg District Quarterly Planning Update (December 4, 2012), informing the general public of the nature of the proposed action. Letters were sent to landowners with property adjacent to BLM-administered lands where timber harvest is proposed, those whose property lies beside or astride identified haul routes, and those with registered surface water rights for domestic use located within one mile downstream of any proposed units in September 2013. They were encouraged to share any concerns or special knowledge of the project area that they may have.

Informal scoping comments were received from two individuals and one organization, however, and were given due consideration in this analysis. These comments were responded to in the EA. The BLM received one comment pertaining to the RTV…"[r]ed tree vole surveys would be conducted in stands subject to habitat disturbing activities that meet the following criteria: 1) Minimum quadratic mean diameter (QMD) is 18 inches or larger, and 2) Stand age is 80 years old or older *or* the stand has at least two superdominant trees per acre that have suitable habitat characteristics such as large limbs, palmate branches, broken tops or forked trunks (USDA/FS-USDI/BLM 2012). All of the units (six) with QMD greater than 18 inches are over 80 years old and require RTV surveys if an action alternative is selected (see Table 3-5)." (REA p. 10)

In September 2013, letters were sent to the Confederated Tribes of Grand Ronde, Confederated Tribes of Siletz Indians, and Cow Creek Band of Umpqua Indians requesting identification of any special interests or legal rights pertaining to the lands being analyzed. No responses were received.

The Myrtle Creek Harvest Plan Environmental Assessment (EA) was released for a 30-day period of public review and comment beginning on June 4, 2014, and running through July 3, 2014. The BLM received comments from four organizations and four individuals. Additionally, we received a form letter from 189 individuals during the comment period. After the EA was issued, the BLM completed RTV surveys and revised the Myrtle Creek Harvest Plan (REA) to incorporate survey results and to incorporate an evaluation for non-high priority site designation. The REA was released for a 15-day period of public review and comment between August 12, 2015 and August 26, 2015. Comments on the REA were received from four organizations. Responses to the relevant comments not already addressed in the EA will be included in the decision document(s) for the Revised Myrtle Creek Harvest Plan.

E. Persons/Agencies /BLM Staff Consulted

Agencies

U.S. Fish and Wildlife Service
U.S. Forest Service

BLM Staff

Name	Title	Resource	Initials	Date
Christopher C. Foster	Supervisory Natural Resource Specialist	Wildlife	CCF	3/2/16

Conclusion

Based on the review documented above, I conclude that this proposal conforms to the applicable land use plan and that the NEPA documentation fully covers the proposed action and constitutes BLM's compliance with the requirements of the NEPA.

Signature of Project Lead

Date 3/2/16

Signature of NEPA Coordinator

Date 3/2/16

Signature of the Responsible Official:

Date 3/3/16

Appendix 1. Maps

Figure 1. Red tree vole nest tree locations in Unit 28-4-09A.

Figure 2. Red tree vole nest tree locations in Unit 28-4-17A.

Figure 1. Red tree vole nest tree locations in Unit 28-4-09A.

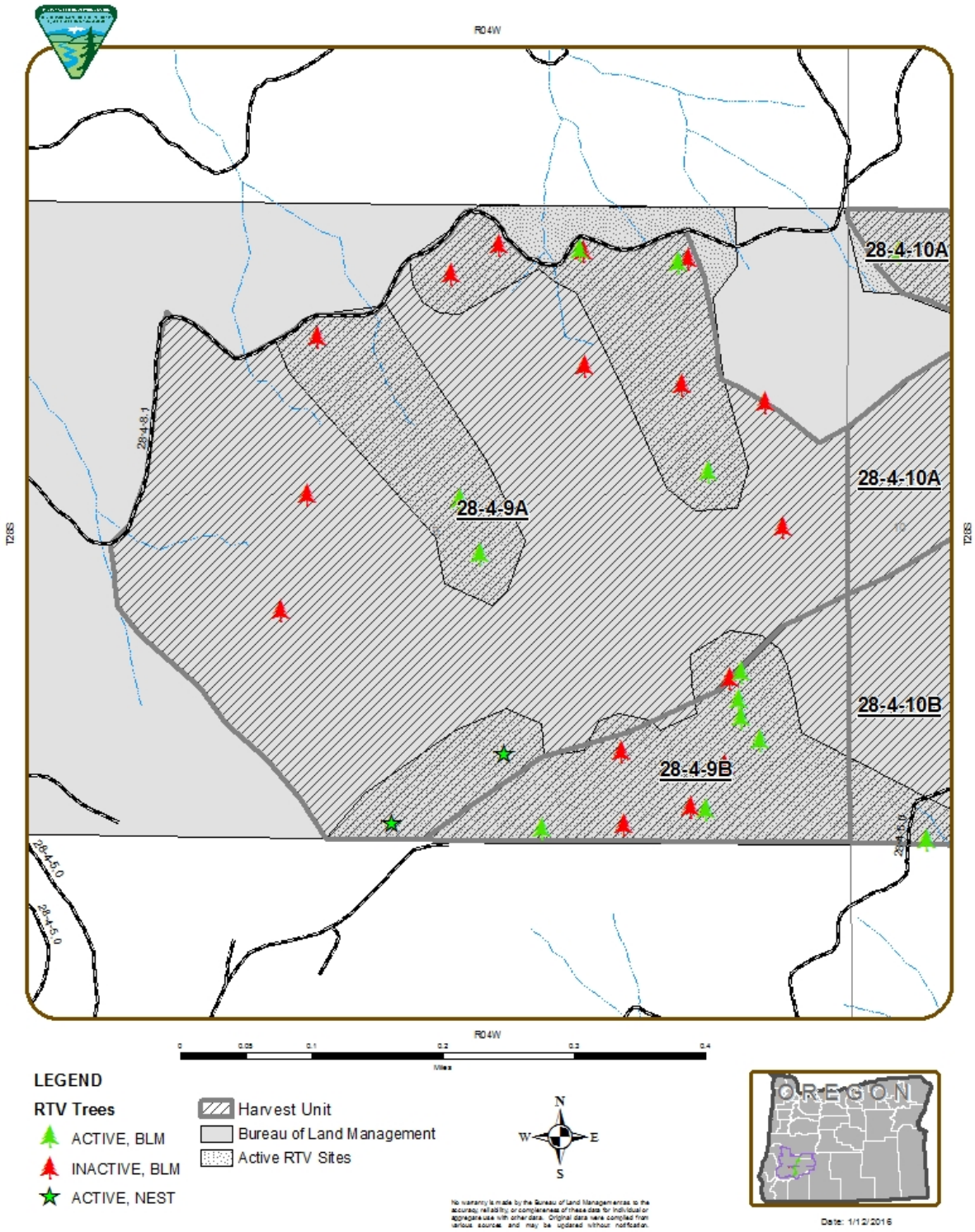
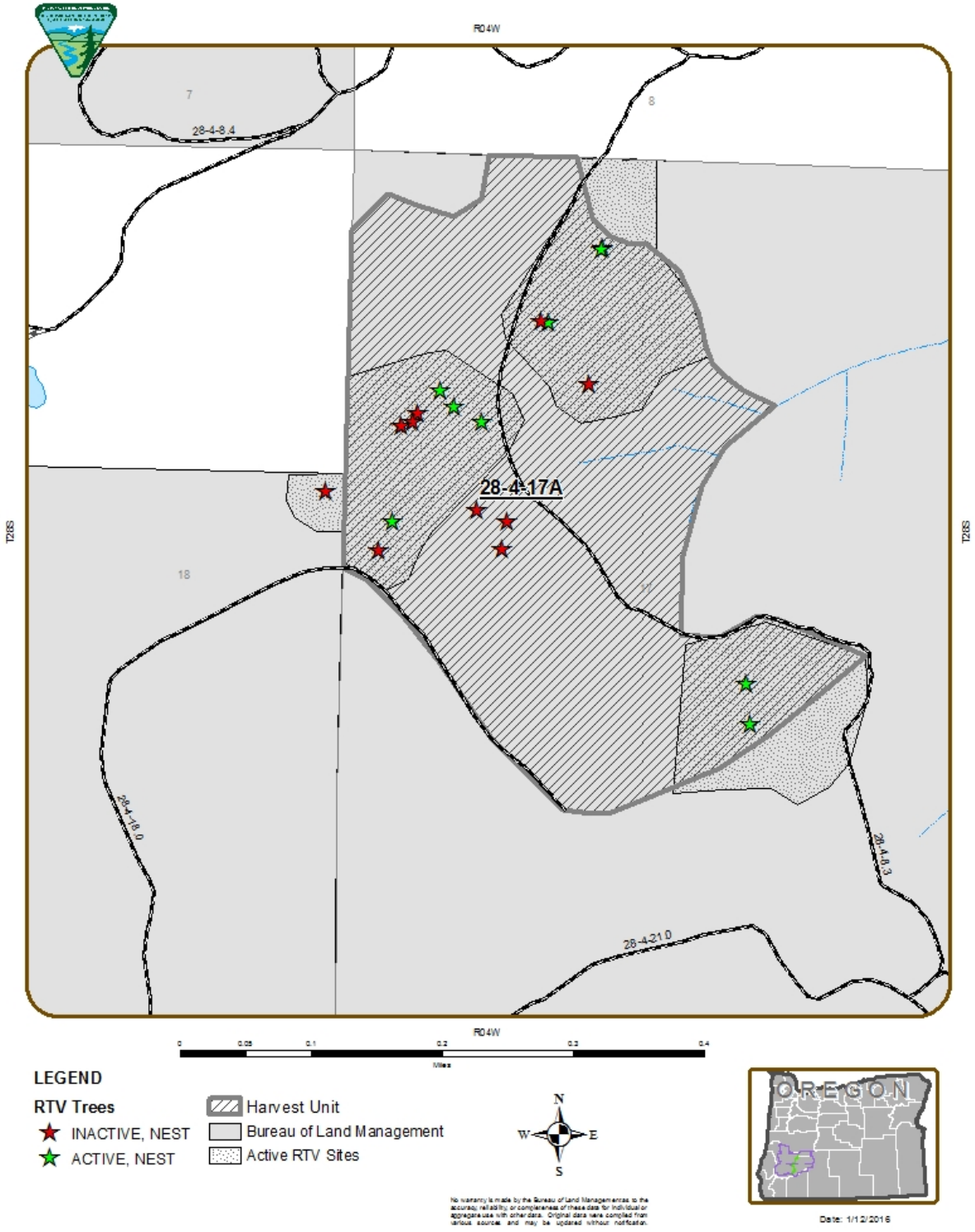


Figure 2. Red tree vole nest tree locations in Unit 28-4-17A.



Determination of NEPA Adequacy (DNA) Worksheet

U.S. Department of the Interior
Bureau of Land Management
Roseburg District

OFFICE: South River Field Office

CASEFILE/PROJECT NUMBER: DOI-BLM-ORWA-R050-2013-0003-EA

PROPOSED ACTION TITLE/TYPE: Kung Fu Timber Sale Spurs 4 and 5 and Unit 28-4-19A boundary adjustment

DETERMINATION OF NEPA ADEQUACY (DNA): Not all decisions require the use of a DNA. When used, a DNA confirms that an action is adequately analyzed in existing NEPA document(s) and is in conformance with the land use plan. A DNA is not itself a NEPA document. The signed conclusion of the DNA worksheet is an interim step in the BLM's internal review process and does not constitute a decision and is not subject to protest or appeal. However, the decision on the action being implemented may be subject to protest or appeal under 43 CFR Part 4 and the program-specific regulations.

LOCATION/LEGAL DESCRIPTION: Section 19, T. 28 S., R. 4 W.; Willamette Meridian (W.M.)

A. Description of the Proposed Action and any applicable mitigation measures

The proposed project would construct and decommission approximately 0.45 miles of road (Spurs 4 and 5 on the attached map) in Unit 28-4-19A rather than construct, surface with rock, and decommission one road segment (0.3 miles; 28-4-19.A) in Unit 28-4-19A that was analyzed in the 2016 Revised Myrtle Creek Harvest Plan Environmental Assessment (2016 REA). The proposed project would also adjust the southern boundary of Unit 28-4-19A. The attached map displays the road segments and the adjusted harvest boundary of Unit 28-4-19A. Project design features described in the 2016 REA (p. 32) would be applied.

B. Land Use Plan (LUP) Conformance

Roseburg District Resource Management Plan and Record of Decision (ROD/RMP)
Approved June 1995

The proposed action complies with the 1995 ROD/RMP because it is specifically provided for in the following decision:

- New road construction was included as a management action in the ROD/RMP (p. 8).
- Commercial thinning was included as a management action in the ROD/RMP (p. 8).

C. Identify applicable National Environmental Policy Act (NEPA) documents and other related documents that cover the proposed action.

2016 Revised Myrtle Creek Harvest Plan EA (DOI-BLM-ORWA-R050-2013-0003-EA), published February 12, 2016

D. NEPA Adequacy Criteria

1. Is the new proposed action a feature of, or essentially similar to, an alternative analyzed in the existing NEPA document(s)? Is the project within the same analysis area, or if the project location is different, are the geographic and resource conditions sufficiently similar to those analyzed in the existing NEPA document(s)? If there are differences, can you explain why they are not substantial?

The 2016 REA disclosed that unit size and shape, and road length and location may change slightly based on field findings during layout (REA, p. 2). The proposed action includes slight modifications based on information obtained during unit layout and final road location.

The proposed action is primarily within Unit 28-4-19A and entirely within the same forest inventory stands that were analyzed in the 2016 REA. The proposed action is also essentially the same action as proposed in the 2016 REA. Rather than constructing, surfacing with rock, and decommissioning 0.3 miles of road, the proposed action would construct and decommission 0.45 miles of road. Additionally, rather than commercially thin 2.4 acres, the proposed action would commercially thin 2.1 acres in the same stand.

2. Is the range of alternatives analyzed in the existing NEPA document(s) appropriate with respect to the new proposed action, given current environmental concerns, interests, and resource values?

The range of alternatives considered and described in the 2016 REA (pp. 18-36) was appropriate given the actions proposed, and the resource commitments and decisions made by the RODs/RMP. The alternatives consisted of no action, thinning only, and the proposed action which consists of a suite of thinning, variable retention harvest, and road construction actions. The minor changes in road location, length, and harvest unit boundary do not create issues requiring development of additional alternatives.

3. Is the existing analysis valid in light of any new information or circumstances (such as, rangeland health standard assessment, recent endangered species listings, updated lists of BLM-sensitive species)? Can you reasonably conclude that new information and new circumstances would not substantially change the analysis of the new proposed action?

Wildlife: The 2016 REA analysis is valid because there have been no additions to the list of federally threatened or endangered species, BLM-sensitive species, or Survey and Manage species since the release (February 16, 2016) of the 2016 REA and FONSI. The adjusted road location would be in the same analyzed forest inventory stands as analyzed in the 2016 REA. Protocol clearance surveys (2016 REA p. 34) for Survey and Manage mollusk species did not locate any of the target mollusk species. Similarly the stands were surveyed to protocol (2016 REA, pp. 34 and 68) standards for the great gray owl and none were found. Habitat conditions in the affected stands (quadratic mean diameter is less than 18 inches) did not trigger red tree vole protocol surveys.

Table 1 below indicates the net result of the proposed action would be a reduction in effects to northern spotted owl suitable habitat because fewer acres of suitable habitat would be affected. This does not substantially change the analysis in the 2016 REA because the action is outside any known and occupied home ranges, core areas, nest patches, and critical habitat for the northern spotted owl.

Table 1: Acreage adjustments between 2016 REA and Kung Fu Decision

Proposed Action	2016 REA Analysis Unit 28-4-19A and Unit 28-4-19B (acres)	Kung Fu Decision Unit 5 and Unit 6 (acres)
Road Construction in Northern Spotted Owl Suitable Habitat	0.5	0.8
Thinning in Northern Spotted Owl Suitable Habitat	1.4	0
Thinning in Northern Spotted Owl Dispersal Habitat	1.0	2.1

Aquatics: The proposed action does not affect water quality or water quantity. The proposed action does not change the fisheries analysis for this project because the spurs and unit are far removed from intermittent streams and much further from perennial streams large enough to support fish. There is no hydrologic connection to the spurs, so there would be no effect to fish or their habitat.

Botany: There have been no additions to the BLM-sensitive species list, Survey & Manage list, or list of federally listed plant species, since completion of the release of the 2016 REA and FONSI. No new information, is available to suggest that range of any species is expanded to include the project area.

Cultural Resources: Surveys for cultural and historical resources were conducted in the area of the proposed action and are documented in CRS# SR1410. No cultural resources were identified during inventory and no new information or circumstances have arisen that would change the analysis of the new proposed action. The BLM has fulfilled its Section 106 responsibilities under the guidance of the 2012 National Programmatic Agreement and 2015 State Protocol.

Soils: For the soils resources, the proposed action would not change the conclusions presented in the 2016 REA, since the adjusted road and unit boundary locations are on similar soils and terrain and in close proximity to those analyzed in the 2016 REA. Under both road construction scenarios, the road locations would have about 150 feet of road (6 percent of the proposed roads) built on moderately stable slopes, with the remaining 94 percent of the routes on stable slopes.

Fuels/Fuels/Air Quality: The proposed action would not change or add to the Fire, Fuels or Air Quality analyses completed in the 2016 REA. The roads would be decommissioned so there would be no increase in public access that may require further activity fuels treatment beyond the typical landing pile burning. Slash may be used in the decommission process as needed. All burning would be done following the requirements for air quality enacted by the Oregon DEQ.

4. Are the direct, indirect, and cumulative effects that would result from implementation of the new proposed action similar (both quantitatively and qualitatively) to those analyzed in the existing NEPA document?

Wildlife: Effects from the proposed action would not alter the analysis of direct, indirect or cumulative effects presented in the 2016 REA (p. 126-131) and FONSI (p. 10). The adjusted road and boundary locations would not cumulatively affect northern spotted owl nest patches or core areas because the project is outside any known and occupied home ranges, core area, and nest patches.

Aquatics: The proposed action does not change the direct, indirect and cumulative effects analysis for fisheries because there would be no effect to fish resulting from the proposed action. There are no intermittent or perennial streams nearby so there would be no change or changes to water quantity or water quality.

Botany: Potential habitat for federally listed, BLM sensitive, or Survey and Manage Category A and C botanical species is not present in the vicinity of the proposed action; therefore there are no impacts to populations or potential habitat for these species. The proposed action is not located within old-growth forest, therefore equivalent effort surveys for Survey and Manage Category B species are not required.

Cultural Resources: Surveys for cultural and historical resources were conducted in the area of the proposed action and are documented in CRS# SR1410. No cultural resources were identified during inventory therefore the project will have "no effect" on known cultural resources.

Soils: The proposed action would primarily occur on stable ridges and side slopes; therefore effects to soils would be the same as those discussed in the 2016 REA.

Fuels: This proposed action does not deviate from or substantially add to the direct, indirect or cumulative effects analyzed for Fire, Fuels or Air Quality within the 2016 REA because the proposed action does not alter the fuels management analyzed in the 2016 REA.

5. Are the public involvement and interagency review associated with existing NEPA document(s) adequate for the current proposed action?

A notice of project initiation was published in the Roseburg District Quarterly Planning Update (December 4, 2012), informing the general public of the nature of the proposed action. Letters were sent to landowners with property adjacent to BLM-administered lands where timber harvest is proposed, those whose property lies beside or astride identified haul routes, and those with registered surface water rights for domestic use located within one mile downstream of any proposed units in September 2013. They were encouraged to share any concerns or special knowledge of the project area that they may have.

Informal scoping comments were received from two individuals and one organization, however, and were given due consideration in this analysis. These comments were responded to in the EA.

In September 2013, letters were sent to the Confederated Tribes of Grand Ronde, Confederated Tribes of Siletz Indians, and Cow Creek Band of Umpqua Indians requesting identification of any special interests or legal rights pertaining to the lands being analyzed. No responses were received.

The Myrtle Creek Harvest Plan Environmental Assessment (EA) was released for a 30-day period of public review and comment beginning on June 4, 2014, and running through July 3, 2014. Comments were received from four organizations and four individuals. Additionally, we received a form letter from 189 individuals during the comment period. After issuing the EA, additional red tree vole (RTV) surveys were conducted by BLM and the Northwest Ecosystem Survey Team (NEST) and BLM continued to conduct annual northern spotted owl surveys. The BLM issued a 2015 Revised Myrtle Creek Harvest Plan EA (2015 REA) for a 15-day comment period on August 11, 2015 to incorporate the new RTV information and a non-high priority site designation analysis. Comments were received from four organizations. The BLM issued a 2016 Revised Myrtle Creek Harvest Plan EA (2016 REA) for a 15-day comment period on February 12, 2016 to incorporate Northern Spotted Owl survey information from surveys conducted in 2014 and 2015. The BLM received comments from four organizations.

E. BLM Staff Consulted

Name	Title	Resource	Initials	Date
Carley Smith	Archaeologist	Cultural Resources	CS	3/16/16
Aaron Roe	Botanist	Special Status Plants		3/16/16
Steve Clark	Fisheries Biologist	Fisheries	SC	3/16/16
Sidney Post	Hydrologist	Water Quality		3/17/16
Ward Fong	Soil Scientist	Soils	WF	3/16/16
Roli Espinosa	Wildlife Biologist	Special Status Wildlife	RE	3/16/16
Krisann Kosel	Fire Ecologist	Fuels		3/16/16

Conclusion

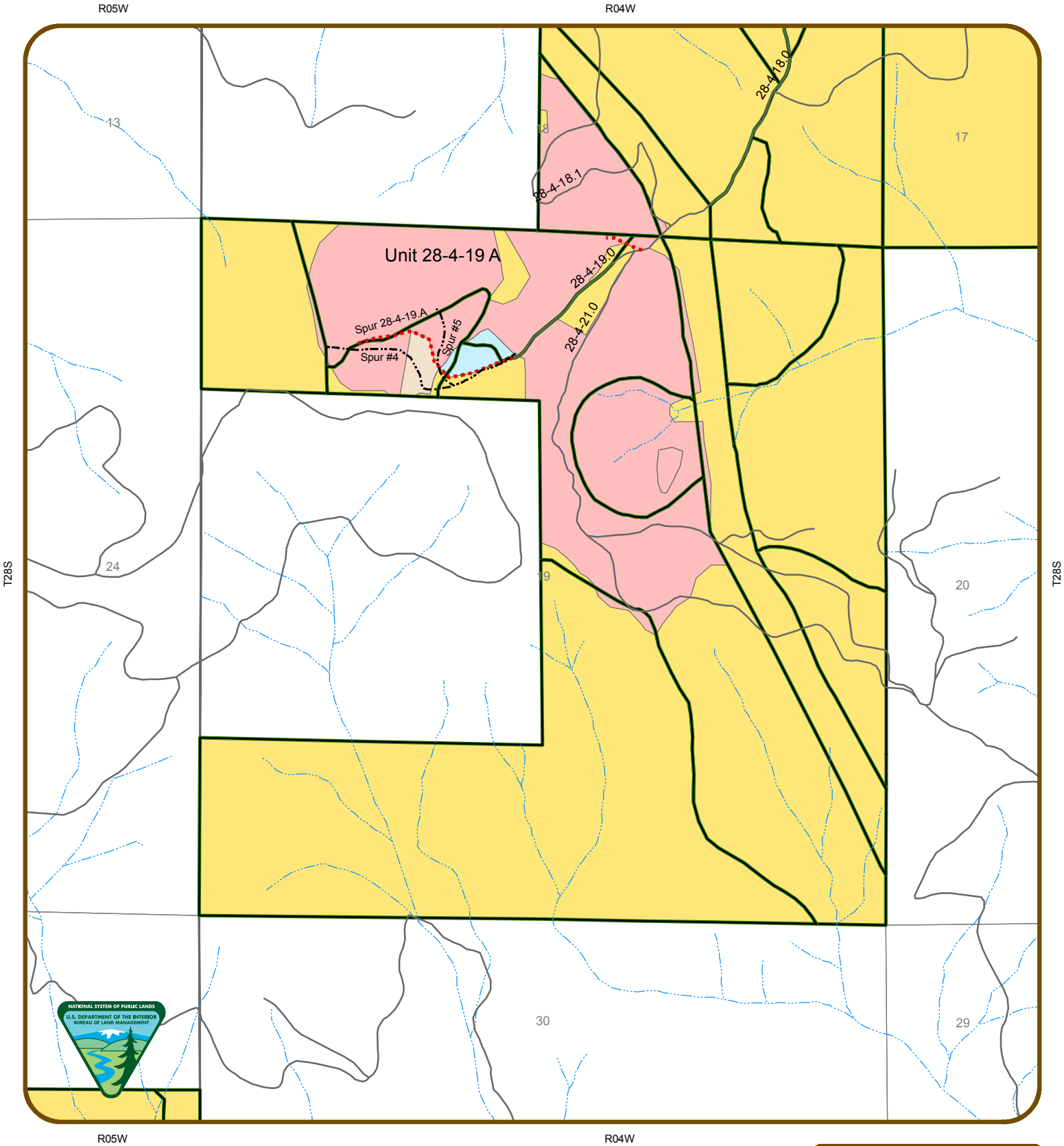
Based on the review documented above, I conclude that this proposal conforms to the applicable land use plan and that the NEPA documentation fully covers the proposed action and constitutes BLM's compliance with the requirements of the NEPA.

Signature of Project Lead: _____ Date 3/16/16

Signature of NEPA Coordinator: Michelle Roberts Date 3/16/16

Signature of the Responsible Official: _____ Date 3/16/16

Kung Fu Spurs #4 and #5 and Unit 28-4-19A Boundary Adjustment
Determination of NEPA Adequacy (DNA)



0 0.025 0.05 0.1 0.15 0.2
Miles

Legend

- Bureau of Land Management
- Private/Unknown
- Harvest Area
- Addition to Harvest Area
- Deleted from Harvest Area
- Stand Type Boundary
- Minor Stream
- Existing Roads
- Proposed Spurs #4 & #5
- Road Construction in EA

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Date: 3/14/2016