

# **APPENDIX C**

## **CONSISTENCY WITH EASTSIDE SCREENS AND NATIONAL FOREST MANAGEMENT ACT**



## FOREST VEGETATION CONSISTENCY FINDINGS

### Consistency of Proposed Silvicultural Activities with the Eastside Screens Forest Plan Amendment

In March 1993, the Natural Resources Defense Council (NRDC) petitioned the U.S. Forest Service (Pacific Northwest Region) to halt all timber harvest activity in old growth forest occurring on national forest lands located east of the Cascade Mountain crest in Oregon and Washington (this geographical area is also known as the Eastside).

A month later in April 1993, a group of university and U.S. Forest Service research scientists released an “Eastside Forest Ecosystem Health Assessment” in draft form; this assessment is known as the “Everett Report” because it was directed by Dr. Richard Everett, a scientist located at the Wenatchee Forestry Sciences Laboratory (Everett et al. 1994).

In response to both the NRDC petition and the Everett report, the Pacific Northwest Region of the U.S. Forest Service issued interim direction in August 1993 requiring that timber sales prepared and offered by Eastside national forests be evaluated to determine their potential impact on riparian habitat, historical vegetation patterns, and wildlife fragmentation and connectivity.

This interim direction, known as the Eastside Screens, was used to amend Eastside forest plans when Regional Forester John Lowe signed a Decision Notice on May 20, 1994 to implement Regional Forester’s Forest Plan Amendment #1 (USDA Forest Service 1994). Regional Forester’s Forest Plan Amendment #1 is amendment #8 to the Umatilla National Forest Land and Resource Management Plan.

A slightly revised version of the Eastside Screens was issued as Regional Forester’s Forest Plan Amendment #2 when Regional Forester John Lowe signed a Decision Notice on June 12, 1995 (USDA Forest Service 1995). Regional Forester’s Forest Plan Amendment #2 is amendment #11 to the Umatilla National Forest Land and Resource Management Plan.

The Eastside Screens consist of six items: three general items (items 1 to 3), a riparian standard (item 4), an ecosystem standard (item 5), and a wildlife standard (item 6). This section describes how proposed silvicultural activities for the South George Vegetation and Fuels Management Project would comply with the Eastside Screens.

#### **General Standards (items 1-3 in FP Amendment #11)**

Item 1 defines the scope of the Eastside Screens to be timber sales only.

**Finding:** The proposed action includes intermediate and regeneration silvicultural activities. In some portions of the planning area, these activities would be implemented using a commercial timber sale contract. Since item 1 defines the scope of the Eastside Screens to be timber sales only, and because a timber sale contract will be used to implement some of the silvicultural activities, this means that the South George Vegetation and Fuels Management Project must comply with the Eastside Screens.

Item 2 exempts personal-use firewood sales, post and pole sales, sales to protect health and safety, and sales within recreation special use areas from the amendment.

**Finding:** It is not anticipated that personal-use firewood sales, post and pole sales, sales to protect health and safety, or sales within recreation special use areas would be used to implement any of the thinning or regeneration cutting proposed actions, so item 2 does not apply to the South George Vegetation and Fuels Management Project.

Item 3 exempts five categories of timber sales from the ecosystem standard (but not from the riparian and wildlife standards):

- Precommercial thinning;
- Material sold as fiber;
- Dead material less than 7 inches in diameter, with incidental green volume;
- Salvage sales located outside mapped old growth, with incidental green volume; and
- Commercial thinning and understory removal sales located outside mapped old growth.

**Finding:** Both of the intermediate silvicultural activities (improvement cutting and low thinning) qualify for an exemption from the ecosystem standard because they are “commercial thinning and understory removal sales located outside mapped old growth” (the fifth category of timber sales included in item 3).

Note: “Mapped old growth” is defined to include both of the Forest Plan allocations for old growth (C1 and C2) and as depicted on published maps distributed with the Forest Plan (USDA Forest Service 1990), as amended. This definition for mapped old growth follows written guidance and direction from the Pacific Northwest Region “Eastside Screens Oversight Team” (Lowe 1995).

However, direction from the Pacific Northwest Regional Office states that it is not mandatory to exempt “commercial thinning and understory removal sales” from the ecosystem standard and it further notes that in some circumstances, it may be advantageous to project viability to not exempt them (Lowe 1995).

The intermediate silvicultural activities described in the proposed action (improvement cutting, low thinning) are contained in the land base used for the historical range of variability (HRV) analysis for the South George Vegetation and Fuels Management Project, so there is no need to exempt them from the ecosystem standard, *and an exemption is not claimed.*

### **Riparian Standard (item 4 in Forest Plan Amendment #11)**

Item 4 of the Eastside Screens directs that timber sales (green and salvage) will not be planned or located in riparian areas.

Umatilla National Forest policy is that amendment #10 (USDA Forest Service and USDI Bureau of Land Management 1994) to the Land and Resource Management Plan will be applied in lieu of the riparian standard from the Eastside Screens.

Forest Plan amendment #10, commonly referred to as PACFISH, is interim direction designed to “arrest the degradation and begin the restoration of aquatic habitat and riparian areas on lands administered by the Forest Service and BLM; it applies to watersheds outside the range of the northern spotted owl that provide habitat for Pacific salmon, steelhead, and sea-run cutthroat trout.”

*This policy means that applying PACFISH also meets the Eastside Screens riparian standard.*

PACFISH uses a buffer concept to establish riparian habitat conservation areas (RHCA) along both sides of streams, rivers, lakes and other wetlands. RHCA widths extend from the edge of the active stream channel and they vary with stream class and whether a stream is fish bearing or not.

RHCAs can be established using specified feet of slope distance (such as 300 feet on either side of perennial, fish-bearing streams) or in numbers of “site potential tree heights” (such as 2 site-potential tree heights for perennial, fish-bearing streams).

The interim RHCA widths established by the PACFISH environmental assessment could be adjusted during watershed analysis or after site-specific analysis presenting a rationale for RHCA modifications.

Timber harvest activities are prohibited by the PACFISH amendment except in the following situations (see timber management standards, page C-9, in USDA Forest Service and USDI Bureau of Land Management 1994):

1. For catastrophic events such as fire, flooding, volcanic, wind or insect damage (when salvage harvest and fuelwood cutting is then allowed if compatible with riparian management objectives); and
2. When applying silvicultural practices to control stocking, reestablish and culture stands, and acquire desired vegetation characteristics in a manner that also meets riparian management objectives.

**Finding:** None of the silvicultural proposed actions (intermediate cutting, regeneration cutting, planting) will occur in any of the riparian habitat conservation areas established by PACFISH (FP amendment #10). *Special Exception:* one specific RHCA location (Red Hill portion of the project area) comprising 24 acres is proposed for treatment (improvement cutting, noncommercial thinning, prescribed fire) as a case study or prototype to examine whether limited RHCA treatments are warranted or advisable in the future (Hanger 2009).

### **Ecosystem Standard (item 5 in Forest Plan Amendment #11)**

The ecosystem standard requires a landscape-level assessment of the historical range of variability (HRV) for structural stages, including a comparison of existing structural stage amounts with their historical ranges.

Item 5 (a) requires that we “characterize the proposed timber sale and its associated watershed for patterns of stand structure by biophysical environment and compare to the Historic Range of Variability (HRV).”

Item 5 (c) requires that we “characterize the difference in percent composition of structural stages between HRV and current conditions.”

**Finding:** Structural stages for the planning area were determined and then compared with their historical ranges (e.g., HRV) by biophysical environment. Results of the analysis results are presented below in table C-1.

Item 5 (b) requires that we (1) “describe the dominant historical disturbance regime, i.e. the disturbance types and their magnitudes and frequencies. (2) Characterize the landscape pattern and abundance of structural stages maintained by the disturbance regime. Consider biophysical environmental setting across the landscape to make this determination. (3) Describe spatial pattern and distribution of structural stages under the HRV disturbance regime, and (4) Map the current pattern of structural stages and calculate their abundance by biophysical environmental setting” (USDA Forest Service 1995).

**Finding:** The analyses and map required by item 5 (b) are provided in tables C-1 and C-2, and figure C-1.

**Table C-1 – Structural stage HRV analysis for the ecosystem standard from the Eastside Screens Forest Plan Amendment**

Structural Stage	Dry Upland Forest B.E.		Moist Upland Forest B.E.	
	Historical Range (%)	Current Percent	Historical Range (%)	Current Percent
Stand Initiation	5-15	4	1-10	3
Stem Exclusion: Open Canopy	5-20	8	0-5	17
Stem Exclusion: Closed Canopy	1-10	7	5-25	11
Understory Reinitiation	1-10	24	5-25	30
Multi-stratum, without large trees	5-25	1	40-60	3
Multi-stratum, with large trees	5-20	17	10-30	9
Single stratum, with large trees	15-55	40	0-5	26

*Sources/Notes:* Current percentages were summarized from the South George vegetation database (NFS lands only) and pertain to the entire analysis area (app. 20,640 acres, of which app. 15,430 acres are forested). Due to its small acreage within the analysis area, no results are reported here for the Cold Upland Forest biophysical environment. Gray shading shows late-old structural stages that are either above or below the historical range of variability. Historical percentages for each biophysical environment (B.E.) were derived from Hall (1993), Johnson (1993), and USDA Forest Service (1995), as summarized in Blackwood (1998).

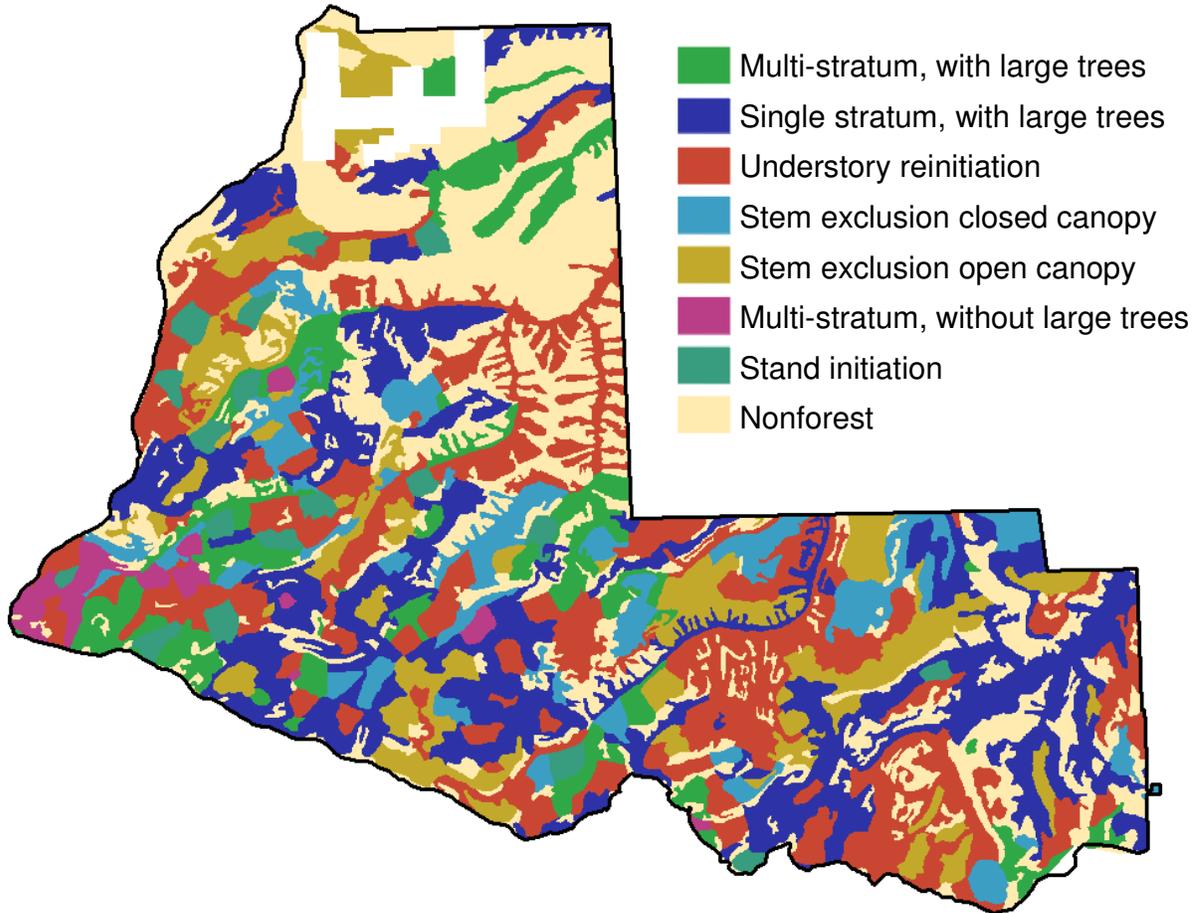
Item 5 (c) also requires that we “identify structural conditions and biophysical environment combinations that are outside HRV conditions to determine potential treatment areas” (USDA Forest Service 1995).

**Finding:** Results from the structural stage HRV analysis were used when determining potential treatment areas for the South George Vegetation and Fuels Management Project. However, HRV analyses were also completed for species composition and tree density in addition to structural stages, so potential treatment areas reflect HRV results for all three of these indicators: species composition, structural stage, and tree density.

**Table C-2 – Biophysical environments matrix for upland forests of the South George analysis area**

PVG	Area (Acres)	Disturbances	Fire Regime	Patch Size	Elevation (Feet)	Slope (Percent)	Dominant Aspects
Dry Upland Forest	3,670	Fire Insects Harvest	Frequent Surface	1-3,000	4,500 (3410-5560)	40 (10-60)	Southeast South Southwest
Moist Upland Forest	11,500	Insects Fire Diseases	Infrequent Mixed	1-10,000	4,960 (3630-5970)	30 (0-60)	Southeast South Southwest
Cold Upland Forest	260	Wind Insects Fire	Replacement	1-5,000	Elevation, slope, and aspect were not summarized for the Cold PVG because it has too few acres to analyze.		

*Sources/Notes:* Taken verbatim from Appendix A, table A2 (see Silviculture Specialist Report, project file). Elevations, slope percents, and aspects were summarized from the South George vegetation database (NFS lands only). Patch size was taken from Johnson (1993). For elevations and slope percents, values are presented in this format: average (minimum-maximum). Fire regime names are from Schmidt et al. (2002).



**Figure C-1** – Map depicting the current pattern of structural stages for the entire South George analysis area (app. 20,640 acres). Structural stage names in the map legend correspond to the Eastside Screens names (see table C-1), not to the names or acronyms used for structural stages elsewhere in this report.

**Wildlife Standard (item 6 in Forest Plan Amendment #11)**

Item 6 (a) states that the wildlife standard has two possible scenarios to follow as based on HRV results for late-old structural stages (LOS), and it defines LOS to be the “multi-stratum with large trees” and “single stratum with large trees” structural stages.

Item 6 (b) directs that:

1. Scenario A (item 6 d) is to be used whenever either one of the LOS stages is below HRV. If both LOS stages occur within a single biophysical environment and one is above HRV and one below, scenario A is to be used.
2. Scenario B (item 6 e) is to be used only when both LOS stages for a particular biophysical environment are within or above HRV.

**Finding:** Table C-1 shows that both LOS stages are within HRV for the dry upland forest biophysical environment, but that both of the LOS stages are outside of HRV for the moist upland forest biophysical environment (one stage is above HRV; the other stage is below HRV). According to item 6 (b) of the wildlife standard and the HRV results presented in table C-3, this means that forest vegetation proposed actions for the South George Vegetation and Fuels Management Project must comply with:

- Scenario B for the Dry Upland Forest biophysical environment.
- Scenario A for the Moist Upland Forest biophysical environment.

**Table C-3– HRV analysis results for late-old structure (LOS) structural stages**

Biophysical Environment	Structural Stage	Historical Range (%)	Current Percent	Forest Plan Amendment 11 Wildlife Standard Results:
Dry Upland Forest	SSLT	15-55	40	<i>Scenario B</i>
	MSLT	5-20	17	
Moist Upland Forest	SSLT	0-5	26	<i>Scenario A</i>
	MSLT	10-30	9	

*Sources/Notes:* Refer to table C-1 for the complete structural stage analysis. Gray shading indicates late-old structural stages that are either above or below the historical range of variability. Note that in table C-1, the SSLT structural stage is referred to as “Single stratum, with large trees” and the MSLT structural stage is referred to as “Multi-stratum, with large trees.”

Item 6 (c) requires that any of the five timber sales exempted from the ecosystem standard (see item 3 in General Standards section above) must still meet the intent of the wildlife standards by following items 1-4 from the scenario A direction (scenario A is item 6 (d) of the Wildlife Standard).

**Finding:** As described above in the General Standards section, it would be permissible to exempt the intermediate silvicultural activities (improvement cutting and low thinning) from the ecosystem standard but it is not mandatory to do so (Lowe 1995), and *an exemption is not claimed for the South George Vegetation and Fuels Management Project*. Therefore, the direction in item 6 (c) that exempted timber sales meet the wildlife standards contained in item 6 (d) (scenario A, below) does not apply to this project.

Item 6 (d) of the Wildlife Standard, which is scenario A, includes four major items and many sub-items as described below. Since the Moist Upland Forest biophysical environment must comply with Scenario A, all findings will be reported in the context of this biophysical environment.

1. Item 1 allows some timber sale activities to occur within late/old structure (LOS) stages that are within or above HRV in order to maintain or enhance LOS in a particular biophysical environment.

**Finding:** This item refers to LOS and how manipulation of LOS could occur. The Moist Upland Forest biophysical environment has one of the two late-old structural stages involved in the improvement cutting proposed action – the SSLT stage (none of the Moist MSLT stage is proposed for treatment). Including timber sale activities in the SSLT stage on the Moist Upland Forest biophysical environment is permissible because this is the stage that is within or above HRV (it is above HRV in this instance - see table C-1), and the intermediate silvicultural activity (improvement cutting) proposed for this stage is designed to maintain or enhance LOS conditions on moist sites.

2. Item 2 states that many types of timber sale activities are permissible outside of LOS, with the intent of maintaining or enhancing LOS components, but that (a) “remnant late and old seral and/or structural live trees greater than or equal to 21 inches in diameter” must be maintained; that (b) manipulation of vegetative structure not meeting LOS standards should occur in such a way that conditions are moved toward LOS structure; and that (c) maintenance or restoration of open, park-like structure should be emphasized whenever appropriate.

**Finding:** This item refers to three aspects of LOS components, and how they would be maintained or enhanced by proposed timber sale activities. The project’s design features and management requirements stipulates that no live trees equal to or greater than 21 inches dbh would be removed on the Moist Upland Forest biophysical environment (except for health and safety purposes such as imminent danger trees along open roads in the project area). The SSLT stands proposed for treatment on moist sites would receive an improvement cutting, a silvicultural activity designed to maintain their LOS characteristics while simultaneously reducing tree density sufficiently to promote establishment of an understory tree component, thereby fostering a future progression from the SSLT stage (currently over HRV) to the MSLT stage (currently under HRV).

The third aspect of item 2 emphasizes maintenance or restoration of an open, park-like structure; this sub-item is not particularly applicable to the Moist Upland Forest biophysical environment for 2 reasons: (1) an open, park-like structure was common for the Dry Upland Forest biophysical environment but not for the Moist Upland Forest environment, as demonstrated by the great disparity between the SSLT HRV ranges for the two biophysical environments (table C-1); and (2) the SSLT stage is currently above HRV for moist sites (table C-3), so there is no desire or objective to increase it even further above the range.

3. Item 3 involves maintaining or enhancing the current level of connectivity between LOS stands and between Forest Plan old-growth areas, reducing fragmentation of existing LOS stands, and not applying even-aged regeneration cutting methods or group selection to non-LOS stands located within, or surrounded by, LOS stands.

**Finding:** This item refers to connectivity between LOS stands, and it prohibits certain cutting methods in non-LOS stands with an objective of avoiding fragmentation and maintaining connectivity. The project’s wildlife biologist and the interdisciplinary team leader reviewed activity-unit locations, juxtaposition, and proposed silvicultural prescriptions in an effort to address the sub-items contained in this item 3.

As a result of their review, several units were dropped from further consideration, or the silvicultural prescription and other components of the design features were modified, in order to maintain or enhance existing connectivity and not contribute to future increases in fragmentation that could have a detrimental effect on existing LOS stands in the project area.

4. Item 4 involves (a) provision of snags, green-tree replacements, and down logs; and (b) maintenance of goshawk habitat by requiring protection of every known goshawk nest (both active and historical), requiring 30 acres of goshawk nesting habitat surrounding all active and historical goshawk nest trees, and provision of a 400-acre “post fledging area” around every known active nest site.

**Finding:** The project’s design features and management requirements stipulate that snags and replacement tree numbers will meet or exceed Forest Plan standards. Snag abundance on the landscape was evaluated and compared to reference data from DecAID. For specific details about the snags, replacement trees, and down logs items, see the wildlife specialist report.

According to the wildlife specialist report, there are no known goshawk nests in the South George planning area. If a nest is discovered during project preparation or implementation, most-

suitable nesting habitat and post-fledging area standards from this portion of the Wildlife Standard would be applied at that time.

Item 6(e), which is scenario B of the wildlife standard, has the four requirements described below. Since the Dry Upland Forest biophysical environment must comply with Scenario B, all findings will be reported in the context of this biophysical environment.

1. Item 1 of scenario B establishes a priority for timber harvest activities, ranging from non-LOS stands (first priority) to smaller, isolated LOS stands (second priority) and finally to the interior of large LOS stands as a third priority (large LOS is defined as stands occupying 100 acres or more). Regeneration and group selection treatments are not allowed in the interior of large LOS stands (item 6(e)(1)(c)).

**Finding:** The underlying assumption of this item is that if timber sale activities were allowed to occur within LOS stands, they could cause significant reduction in LOS suitability, particularly if the silvicultural activities being applied involved regeneration cutting methods. For the South George project, timber sale activities are being proposed for non-LOS at a much greater rate than for LOS stands (for alternatives B/C, 74% of the silvicultural activity units occur in non-LOS stands; for alternative D, 83% of the silvicultural activity units occur in non-LOS stands).

Also, all silvicultural activity proposed for LOS stands involves improvement cutting, an intermediate (non-regeneration) silvicultural activity that would maintain LOS characteristics after treatment. Since improvement cutting is the only activity proposed for LOS stands, regardless of which biophysical environment they occur in or which of the wildlife screen scenarios they fall under, there is no regeneration cutting proposed (including group selection) for any portion of the LOS stands, including their interiors. Only one thinning unit (unit #55) affects a large portion of LOS habitat (138 acres).

2. Item 2 of scenario B requires that connectivity be maintained between LOS stands and FP-designated old-growth areas, and that fragmentation of existing LOS stands be avoided by limiting silvicultural treatments to non-regeneration and single-tree selection prescriptions (this requirement is derived from item 6(d)(3) of scenario A).

**Finding:** The project's wildlife biologist and the interdisciplinary team leader reviewed activity-unit locations, juxtaposition, and proposed silvicultural prescriptions in an effort to address the sub-items contained in this item 2.

As a result of their review, several units were dropped from further consideration, or the silvicultural prescription and other components of the design features were modified, in order to maintain or enhance existing connectivity and not contribute to future increases in fragmentation that could have a detrimental effect on existing LOS stands in the project area (taken verbatim from finding for item 6(d) (3)).

3. Item 3 of scenario B is a non-fragmentation standard that limits silvicultural treatments within the interior of large LOS stands to "non-fragmenting prescriptions such as thinning, single-tree selection (UEAM), salvage, understory removal, and other non-regeneration activities." Group selection is allowed when openings mimic the natural forest pattern and do not exceed ½ acre in size.

**Finding:** As described above for item 1, all silvicultural activity proposed for LOS stands involves improvement cutting, an intermediate silvicultural activity (and a "non-fragmenting prescription") that would maintain LOS characteristics after treatment. Since improvement cutting is the only activity proposed for LOS stands, regardless of which biophysical environment they occur in or which of the wildlife screen scenarios they fall under, there are no proposals to

use group selection or other regeneration cutting methods for LOS stands. Only one thinning unit (unit #55) affects a large portion of LOS habitat (138 acres).

4. Item 4 of scenario B requires that the snag, green-tree replacement, and down log standards from scenario A be followed (this is item 6(d)(4)(a) of scenario A), and that the goshawk standards from scenario A also be met (this is item 6(d)(4)(b) of scenario A), although item 4 does modify certain aspects of the post-fledging goshawk requirement from scenario A.

**Finding:** The finding reported above for item 6(d) (4) discloses how the snag, green-tree replacement, and down logs standards will be met for the South George project. Note that this item 4 for wildlife standard 6(e) is basically a restatement of the same item 4 for wildlife standard 6(d), so the same finding applies for both situations.

## **Consistency of Proposed Silvicultural Activities with the National Forest Management Act of 1976 (NFMA)**

The National Forest Management Act (NFMA; Public Law 94-588; 16 U.S.C. 1600) requires specific findings to be made and documented when considering the implementation of certain management practices. The following is documentation of specific NFMA compliance findings for proposed silvicultural activities in the South George planning area. Based on the analyses described in this report, and on proposed silvicultural prescriptions for the South George project, the following findings pursuant to NFMA are made:

### **Consistency**

**Finding:** Silvicultural activities proposed for implementation during the South George project are fully consistent with the Umatilla National Forest Land and Resource Management Plan (Forest Plan), as amended, and all of its relevant Forest Plan components (standards, guidelines, objectives, desired future conditions, etc.).

**Finding:** Selection of a silvicultural system (even-aged or uneven-aged cutting methods, including intermediate and regeneration activities) was guided by eight criteria provided in a “Silvicultural Systems Selection” section of the Forest Plan (USDA Forest Service 1990, pages 4-67 and 4-68).

### **Suitability**

**Finding:** All silvicultural activities would be implemented only on lands meeting the definition of forest land (16 U.S.C. 1604) and designated as suitable for timber production by the Forest Plan (USDA Forest Service 1990), as amended (including the 1994 PACFISH amendment to the Forest Plan establishing Riparian Habitat Conservation Areas, which are unsuitable for timber production).

### **Appropriateness of Even-aged Management**

**Finding:** All proposed even-aged management is considered an appropriate method to achieve the identified objectives and other Forest Plan components such as desired future conditions. All stands where even-aged management is prescribed have generally reached culmination of mean annual increment. Implementation of the proposed regeneration silvicultural activities would result in created openings, as defined by Forest-wide direction in the Forest Plan, but none of the created openings would exceed 40 acres in size.

## **Optimality of Clearcutting**

**Finding:** Clearcutting was found to be the optimal silvicultural activity for proposed South George units #12, 25, 29, 36, 43, 62, 101, 103, 106, 113, 116, and 122. This determination was made using criteria provided in the Forest Plan: “stand condition and structure; insect and disease problems; silvics of the tree species concerned; plant community; logging method feasibility and probability of success; site characteristics; regeneration difficulty; economics; and other factors all in the context of meeting the resource objectives for that management area portrayed in the Forest Plan” (USDA Forest Service 1990, page 4-68).

As described in Chapter 2 of the Vegetation Report (project file) clearcutting was a prescription of last resort it was only proposed when no other intermediate (preferred) or regeneration cutting method was appropriate or compatible with existing stand conditions. A major factor in this determination was the presence or absence of a sufficient number of acceptable seed trees. This means that clearcutting was proposed only where this cutting method would accomplish Forest Plan objectives that cannot be accomplished through other cutting methods (Silviculture Report Table 2-3).

**Finding:** To the extent practicable, clearcut units will be shaped and blended to emulate the analysis area’s natural terrain.

## **Vegetation Manipulation**

**Finding:** Tree stand manipulation complies with requirements found in 16 U.S.C. 1604:

1. The proposed silvicultural activities are well suited to the multiple-use goals and objectives established for the South George analysis area when considering the potential environmental impacts associated with their implementation.
2. There is ample assurance that lands proposed for regeneration cutting (created openings in the context of the Forest Plan) will be adequately restocked within five years after final harvest.
3. The proposed silvicultural prescriptions were not chosen primarily because they would give the greatest dollar return or the greatest output of timber, although these factors were considered when evaluating whether a proposed silvicultural activity was economically feasible.
4. The potential implementation effects on residual trees and adjacent stands were considered when developing the silvicultural proposals.
5. No permanent (e.g., irreversible) impairment of site productivity is expected as a result of the proposed silvicultural activities, and the project’s design features and management requirements ensure conservation of soil, slope, and other watershed conditions (Chapter 2, Table 2-5).
6. Riparian Habitat Conservation Areas (RHCAs) will be specifically designated on the ground in such a way as to exclude their full extent from any adjacent upland forest area selected for silvicultural treatment. No silvicultural activities will occur within RHCAs.<sup>1</sup> The provision of RHCAs is deemed to be a sufficient and appropriate measure for protecting streams, streambanks, shorelines, lakes, wetlands, and other bodies of water from potentially adverse project effects on water conditions or fish habitat (16 U.S.C. 1604(E)(iii)).

---

<sup>1</sup> One specific RHCA location (Red Hill portion of the project area) comprising about 25 acres is proposed for treatment (improvement cutting, noncommercial thinning, prescribed fire) as a case study or prototype to examine whether limited RHCA treatments are warranted or advisable in the future (Hanger 2009).

7. The proposed silvicultural activities are expected to provide desired effects with respect to water quantity and quality, wildlife and fish habitat, regeneration of desirable tree species, forage production, recreation uses, aesthetic values, and other resource yields.
8. The proposed silvicultural prescriptions are considered practical in terms of transportation and harvesting requirements, and total financial costs of project preparation, timber harvest, and sale administration.