Region 6 No Activities Within Old Growth form

SUMMARY	
Project Name:	27 Road Fuelbreak CE
Forest:	Mt. Hood

On December 18, 2023, National Forest System (NFS) Deputy Chief Chris French sent a letter of direction to all Regional Foresters. The letter reserved to the NFS Deputy Chief the decision-making authority over management of old-growth forest conditions on NFS lands during the National Old Growth Amendment process. This direction applies to any projects signed on December 19, 2023, or later. Any project proposing management activities that will occur **where** old growth forest conditions (based on **regional old-growth definitions**) exist on NFS lands shall be submitted to the NFS Deputy Chief for review and approval.

This form documents that an old growth forest conditions evaluation has occurred for project areas that do not contain old growth forest conditions or that do not propose management in old growth forest conditions.

Defining Old Growth Forest Conditions in the Project Area

Old growth forests are the last stop in the successional continuum and typically include the oldest and largest diameter trees with high levels of structural and biological diversity.

Mature and old-growth forests are holistically defined not just by ecology, but by policy and values as well. Practical application of mature and old growth definitions requires selection of primary attributes of interest, and then compromise to select a subset of those attributes that are meaningful, practical to measure, and, ideally, able to be mapped. This practice typically results in some minimum criteria that are established for determining whether stands qualify as old growth; for example, at least six live trees per acre >29.5 inches in diameter at breast height in the grand fir vegetation zone (USDA and USDI 2023).

In fulfillment of EO 14072, section 2b, existing old-growth definitions for each Forest Service region were applied to Forest Inventory Analysis (FIA) data to produce a national-scale inventory. A similar process was completed to spatially represent mature forest working definitions using FIA data. In areas managed under the Northwest Forest Plan in the Pacific Northwest Region, an old growth structure index score for stand age 80 (OGSI 80) was used to identify mature forest and an old growth structure index score for stand age 200 (OGSI 200) was used to identify old growth forest conditions (Davis et al. 2022). Minimum thresholds for old growth status were specified for each plant association zone based on large tree diameter and density, snag diameter and density, coarse woody debris cover, and diameter diversity. For the remaining lands in the Pacific Northwest Region (eastern Oregon and Washington), use the 1993 “interim definitions” for the Eastside Screens (ESS) forests (https://ecoshare.info/2009/12/16/r6-old-growth-interim-definitions/, Table 14).

DEFINITION OF OLD GROWTH CONDITIONS USED
Definition of Old Growth Used: The Mt. Hood National Forest applied the Region 6 Interim Old Growth standards (Hopkins 1993) when determining if individual stands are to be classified as old growth. Similar to FS-1215a, the interim Old Growth standards provide quantitative structural features to classify stands as old growth according to forest plant association zone and site productivity. Old Growth metrics were defined for applicable treatment units within this project using the definitions in the Region 6 Interim Old Growth Definition for Grand fir/white fir series and western hemlock series (Hopkins 1993). These definitions were compared to those provided in FS-1215a.

The following definitions are associated with Hopkins 1993:

Live Tree							Dead Trees			
Plant Association	**Main Canopy**			**Variation in Tree Diameter**	**Tree Decadence**	**Tree Canopy Layer**	**Standing**		**Down**	
	DBH*	TPA*	Age*	Yes or No	TPA	Number	DBH	TPA	Diameter	Pieces
Grand Fir High Productivity Site	21"	15	150	Yes	Yes	2	14"	1	12"	5
Western Hemlock High Productivity Site	42"	8	200	Yes	Yes	2	20"	4	12"	69

*Required minimums

The following definitions are associated with FS-1215a:

Plant Association	Large Tree DBH	Large Tree Density TPA	Snag DBH	Snag Density TPA	Cover of Downed Wood ≥9.8" DBH	Diameter diversity index
White Fir/Grand Fir	29.5"	6	19.7"	4	2	Yes
Western Hemlock	39.5"	4	39.4"	3	4	Yes

Hopkins 1993 provides a more detailed qualitative & quantitative description of stand-level features that define old growth according to forest plant association and site productivity. Hopkins includes minimums for live trees over a minimum diameter and age. It includes other features to consider such as stand size, diameter variation, canopy layer, decadence, complexity, and dead trees (snags and downed logs). These values, in conjuncture with narrative descriptions, are better suited to fully describe old growth.

Mapping Old Growth Forest Conditions in the Project Area

FS-1215a recognizes that although there is interest in a high-resolution spatial representation of old growth and mature forest conditions, that was not achievable as part of the rapid, national-scale inventory effort associated with EO 14072. The Pacific Northwest Region still lacks a readily available method to delineate mature and old-growth forests at fine spatial scales with a high degree of accuracy over large areas. Per FS-1215a, forests managed under the Northwest Forest Plan in the Pacific Northwest Region can use OGSI 200 (Davis et al. 2022) to identify minimum thresholds for old growth status.

Application of the national inventory results (based on remote sensing and FIA data) at fine spatial extents is not appropriate. Per FS-1215a, the remaining forests can use Old Growth of the Pacific Northwest Outside the Northwest Forest Plan as defined by FS-1215a, the new GNN-based ESS old growth product developed using the OG Inventory definitions for old growth. However, application of

the national inventory results (based on remote sensing and FIA data) at fine spatial extents is not appropriate. Spatially identifying old growth forest in a stand management context will likely require additional measurements, assessment of data applicability at local scales, adjustments to criteria/attributes of interest at local scales.

Methods to Consider for Mapping Old Growth Forest Conditions in the Project Area

- **Using OGSI 200 as the regional and national definition and inventory of old growth forest conditions on Westside forests.** This method is appropriate for assessing characteristics across large landscapes. Available maps help to visualize and understand the distribution of important characteristics: density of large live trees, density of large snags, coarse woody debris cover, and diameter diversity. Because of known discrepancies between the OGSI 200 layer and actual on-the-ground conditions, OGSI 200 alone at the project area scale may not suffice to delineate stands.
- **Old Growth of the Pacific Northwest Outside the Northwest Forest Plan as defined by FS-1215A in fulfilment of EO 14072 (Eastside Interim OG Definitions) map.** This is a GNN-derived map, similar to OGSI 200, that provides a geospatial representation of the Old Growth definitions as defined by FS-1215A. This map is most appropriate for larger scales, but can inform large project areas and is the regionally supported map for Eastside old growth forests. Similar to OGSI 200, this map has known discrepancies with on-the-ground conditions, so use of this method alone may not suffice to delineate stands.
- **Succession Classes (SClass).** The SClass layer is another geospatial representation of mature and old growth, and has been used to represent late successional areas on Eastside forests. This layer will overestimate old growth, since the most appropriate succession classes include both mature and old growth.
- **LiDAR- or DAP-derived tree approximate objects (TAOs).** Also known as tree maps, may be used to analyze individual tree heights and derive the density of large live trees. However, this data source represents dominant and co-dominant trees, and species composition must come from another data source such as potential natural vegetation zones. Diameters associated with TAOs are produced from height-diameter equations, which also introduce error. Lack of data on understory canopy layers, snags, and coarse woody debris remains a limitation.
- **Using stand age from the existing vegetation database to identify mature and old growth forest conditions.** Age estimates may be outdated and may vary considerably outside plantations.
- **Using the northern spotted owl cover type map as a predictor for mature and old growth forest.** Mature and old growth forests often provide suitable owl habitat, but the two are not synonymous. Suitable owl habitat may not be mature or old growth forest just as mature and old growth forest may not be suitable northern spotted owl habitat.
- **Using common stand exam or walk-through data collected in the field.**
- **Other.** Other strategies may be used if they are sufficiently robust and thoroughly documented.

METHODS USED FOR MAPPING OLD GROWTH FOREST CONDITIONS
Does the Climate Risk Viewer Show Old Growth Forest Conditions in the Project Area: Yes. The project area is within the Maupin, OR Fireshed, which is estimated to contain between 7,454 to 43,184 acres of Old Growth Forest according to the Climate Risk Viewer.

The old growth fireshed layer from the Climate Risk Viewer is too coarse in scale to identify old growth forest conditions at the stand or project-level. Instead, the more spatially accurate R6 Old Growth Geospatial Reference and/or local information were used as described below.

Does R6 Old Growth Geospatial Reference Show Old Growth Forest Conditions in Project Area:
Yes
In Treatment Units:
Yes

Methods Used for Mapping Old Growth Forest Conditions:
OGSI 200 as defined by FS-1215a was used as the starting point. This dataset applies to westside forests associated with the Northwest Forest Plan, ie. the Mt. Hood National Forest. As described above, this is a national dataset that is best suited for landscape-level assessments of old growth forest conditions. Using this dataset, two treatment units within the project area contained mapped OGSI 200, 16 & 181.

Site-Specific Local Information Used to Determine Presence of Old Growth Forest Conditions:
Common stand exam data was collected in 2023 for treatment units within the project area, including unit 16 & 181. Data collected included metrics associated with Old Growth definitions described above. These include diameter and quantities of live & dead trees, down woody measurements, and assessment of canopy layers. Tree age was measured on dominant trees representing the oldest cohort of trees present. This data is input into FSVeg, where plot-level data is scaled to a per-acre basis at a unit level.
The following information was used to assess old growth forest conditions at a unit level:

Unit No.	Acres	Avg Dominate Tree Age	TPA with DBH of ≥21"	TPA with DBH of ≥42"	Snags/Acre (>14" DBH)	Snags/Acre (>20" DBH)	Downwood Logs/Acre (>12" Mid point)
16	99	172	9	NA	2	NA	0
181	20	165	NA	0	NA	0	0

Stand walk-throughs during common stand exam data collection also assessed variation in tree diameter, tree decadence, number of canopy layers and presence of gaps or openings due to disturbance.

A detailed comparison of metrics found that Unit 16 meets definitions defined by Hopkins 1993 for the Grand fir/white fir plant association for average dominant tree age, snags greater than 14” dbh, diameter diversity, and quantity of canopy layers. It does not meet definitions for minimum trees per acre greater than 21” dbh (a required minimum standard, according to Hopkins), downed logs greater than 12” diameter at midpoint, or tree decadence. Unit 181 meets definitions defined by Hopkins 1993 for the Western Hemlock plant association for diameter diversity, tree decadence, and canopy layers. It does not meet the definitions for minimum trees per acre greater than 42”

dbh or dominant tree age (both required minimum standards), or for snags greater than 20” dbh and downed logs greater than 12” diameter at midpoint.

Stand size and scale are also relevant factors to consider. Treatment units were delineated to meet the project purpose and need of creating a roadside fuelbreak, and do not encompass entire stands as traditionally defined. Minimum old growth stand size within grand fir/white fir plant communities is 60 acres and was not defined for the western hemlock plant association (Hopkins 1993). The linear nature of treatment units in this project is a relevant factor to consider in addition to the lack of meeting old growth structural characteristics as described above. Refer to the attached old growth review document for unit specific data collected for this project.

The R6 Old Growth Geospatial Reference and site-specific local information were reviewed and the interdisciplinary team did not identify old growth forest conditions within the project area.

Review Required	**Date Review Complete**
Project Silviculturist Lisa Garrigues	LISA GARRIGUES Digitally signed by LISA GARRIGUES Date: 2024.04.04 13:16:43 -07'00'
Project Team Leader/Environmental Coordinator Ashley Popham	ASHLEY POPHAM Digitally signed by ASHLEY POPHAM Date: 2024.04.05 09:06:01 -07'00'
Project Line Officer Kameron Sam	KAMERON SAM Digitally signed by KAMERON SAM Date: 2024.04.05 13:38:08 -07'00'

Old Growth potential identified within the OGSI 200 Layer within Proposed 27 Road Treatment Units.

Individual Unit Data Collected Fall 2023

Unit No.	Acres	Plant Association	BA (Ft^2/ac)	TPA	Avg Dominate Tree Age	TPA withDBH of ≥21"	TPA withDBH of ≥29.5"	TPA withDBH of ≥42"	TPA withDBH of ≥39.5"	SDI	QMD (in)	Avg Ht (Ft)	Canopy Cover	Snags/Acre (>14" DBH)	Snags/Acre (>20" DBH)	Snags/Acre (>19.7" DBH)	Snags/Acre (>39.4" DBH)	Downwood Logs/Acre (>12" Mid point)	Downwood Logs/Acre (>9.8" Mid point)	Diameter Diversity index	Treatment/Unit Notes
16	99	Grand Fir/Oregon Grape	271	474	172	9	0	NA	NA	477	18.8	91	71	2	NA	0	NA	0	0	6.5	LSR unit. 20" DBH limit Ponderosa Pine. Riparian area present (refer to Aquatics PDC for mitigation measures). Has diversity in composition along elevational bands. Some past treatment history in N portion of unit.
181	20	Western Hemlock/Vine Maple	235	280	165	NA	NA	0	0	083	21.0	101	75	NA	0	NA	0	0	0	5.7	LSR unit. 20" DBH limit Ponderosa Pine. Non-commercial treatment up to 12" dbh recommended to meet resource needs.

Hopkins 1993 Guide Minimum Needs** For Grand Fir High Productivity Site

Live Tree						Dead Trees			
Main Canopy			Variation in Tree Diameter	Tree Decadence	Tree Canopy Layer	Standing		Down	
DBH*	TPA*	Age*	Yes or No	TPA	Number	DBH	TPA	Diameter	Pieces
21"	15	150	Yes	Yes	2	34"	1	12"	5

*Required minimums

**For full stand description needed to meet Old growth standards for these plant communities refer to the full women description for grand fir high productivity site & western hemlock high productivity site

Hopkins 1993 Guide Minimum Needs** For Western Hemlock High Productivity Site

Live Tree						Dead Trees			
Main Canopy			Variation in Tree Diameter	Tree Decadence	Tree Canopy Layer	Standing		Down	
DBH*	TPA*	Age*	Yes or No	TPA	Number	DBH	TPA	Diameter	Pieces
42	8	200	Yes	Yes	2	20	4	12"	69

Old Growth Technical Guide developed in fulfillment of Executive Order 14072, Section2(b).

Plant Association zone	Large Tree DBH	Large Tree Density TPA	Snag DBH	Snag Density TPA	Cover of Downed Wood ≥9.8" DBH	Diameter diversity index
White Fir/Grand Fir	29.5	6	19.7	4	2	Yes

* Score is based on trees per acre of trees 2-9.8, 9.9-19.7, 19.8-39.4, and >39.4

Plant Association zone	Large Tree DBH	Large Tree Density TPA	Snag DBH	Snag Density TPA	Cover of Downed Wood ≥9.8" DBH	Diameter diversity index
Western Hemlock	39.5	4	39.4	3	4	Yes

Comparison/Validation of Unit Level Data to Required Old Growth Characteristics

Unit	Current Live TPA 21"+	Hopkins Required Live TPA 21"+	Current Live TPA 29.5"+	2023 Guide Required Live TPA 29.5"+	Is the Stand Meeting Requirments
16	9	15	0	6	No

Unit	Current Live TPA 42"+	Hopkins Required Live TPA 42"+	Current Live TPA 39.5"+	2023 Guide Required Live TPA 39.5"+	Is the Stand Meeting Requirments
181	0	8	0	4	No

Unit	Current Dominate Tree Age	Hopkins Required Live Age	Is the Stand Meeting Requirments
16	172	150	Yes
181	165	200	No

Unit	Current Downwood TPA 12"+	Hopkins Required Snag TPA 12"+	Current Downwood TPA 9.8"+	2023 Guide Required Snag TPA 9.8"+	Is the Stand Meeting Requirments
16	0	5	0	2	No
181	0	69	0	4	No

Unit	Current Snags TPA 14"+	Hopkins Required Snag TPA 14"+	Current Snags TPA 19.7"+	2023 Guide Required Snag TPA 19.7"+	Is the Stand Meeting Requirments
16	2	1	0	4	Yes-Hopkins

Unit	Current Snags TPA 20"+	Hopkins Required Snag TPA 20"+	Current Snags TPA 39.4"+	2023 Guide Required Snag TPA 39.4"+	Is the Stand Meeting Requirments
181	0	4	0	3	No

Unit	Current Diameter Diversity	Hopkins/2023 Guide Required Variation in Tree Diameter/Diameter Diversity	Is the Stand Meeting Requirments	Current Tree Decadence	Hopkins Required Tree Decadence	Is the Stand Meeting Requirments	Current Tree Canopy Layer	Hopkins Required Tree Canopy Layer	Is the Stand Meeting Requirments
16	Yes	Yes	Yes	No	Yes	No	2	2	Yes
181	Yes	Yes	Yes	Yes	Yes	Yes	2	2	Yes

Unit Structural Determination based on above guides and current stand conditons

Unit No.	Acres	Stand Structural Stage
16	99	Young Forest Multi-Strata
181	20	Understory Reinitiation