WASHINGTON NATURAL HERITAGE PROGRAM SITE SURVEY

Parched Timber Sale

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Executive Summary

The primary purpose of this inventory effort was to survey additional units in the Parched timber sale for rare plant and ecosystem element occurrences (EOs). Natural Heritage methodology was used to survey for rare plants, identify ecosystems, and assess their ecological integrity. Two state threatened ecosystems (G2G3/S2 and G2/S2) and one state sensitive plant (G4/S2) were identified and assessed: stands of *Pseudotsuga menziesii / Holodiscus discolor - Rosa gymnocarpa / Festuca occidentalis* Forest (G2G3/S2) were found to have sufficient ecological integrity to represent an expansion of an existing EO in the area. Stands of *Pseudotsuga menziesii - Tsuga heterophylla / Gaultheria shallon - Holodiscus discolor* Forest (G2/S2) represent a new EO (this includes some areas previous surveyed in Parched surveys from 2024, but that were too small on their own to be considered EOs at the time). State sensitive Whipple-vine (*Whipplea modesta,* G4/S2) was also observed, often within these threatened ecosystems.

Introduction

Erin Burke first surveyed portions of the Parched and Alley Cat timber sales in October of 2024 (Burke et al., 2024), then returned in May 2025 for preliminary assessment of the remaining units. Tynan Ramm-Granberg followed up in July 2025 to complete surveys of the Parched timber sale and other suitable habitat on DNR trust land on Dry Hill for rare plant and ecosystem (i.e., plant community/plant association) element occurrences (EOs). When potential ecosystem EOs were found, their ecological integrity and overall conservation value were assessed. Timber Sale surveys were conducted at the request of the DNR Olympic Region Manager. Surveys extended beyond timber sale boundaries for two reasons. First, ecological integrity ranks for the primary ecosystem documented in Parched are largely dependent on the overall size of the occurrence, which extended well beyond sale boundaries. An erroneous conclusion may have been reached regarding the EO status of the ecosystems if we did not survey additional acreage outside of the sale boundaries. Second, Washington Natural Heritage Program (WNHP) staff have been asked to assess the potential for a natural area in the Elwha watershed, meaning that the additional survey work served two purposes.

Methods

Site Survey Approach

For rare plant taxa, a guided intuitive survey is conducted based on suitable habitat characteristics. Locations reported by the public are also confirmed and mapped. Additional populations are opportunistically detected while walking or driving outside of the survey area.

For ecosystems, a site walkthrough approach was used to observe the ecological variation within the timber sale units and beyond. This approach ensured that the topographic variability of each unit was surveyed. The surveyor stopped frequently to classify and confirm the plant association (= ecosystem) using Ramm-Granberg (2025) and Chappell (2006a).

Conservation Status of Vascular Plants

WNHP uses NatureServe's Conservation Status Assessment methodology (Faber-Langendoen et al., 2012; Master et al., 2012) to assess the conservation status of each plant taxa in the Washington flora (Fertig, 2021). Taxa are assigned global (G) and subnational(= State, S) conservation status ranks on a scale from 1 to 5 (from highest to lowest conservation concern). Where applicable, ranks are assigned to infraspecific taxon (T). These ranks incorporate rarity, threats, and other factors. Conservation Status Ranks may be simplified into a Washington State Conservation Status based on the matrix in Table 1.

Table 1. Assignment of State Conservation Status for Rare Plants from (WADNR, 2025).

Natural Heritage Conservation Status Rank	State Conservation Status
G1S1, G2S1, G3S1 T1S1, T2S1, T3S1	Endangered
G2S2, G3S2 T2S2, T3S2	Threatened
G3S3, G4S1, G4S2, G4S3**, G5S1, G5S2, G5S3**	Sensitive

T3S3, T4S1, T4S2, T4S3*, T5S1, T5S2, T5S3*	
SH, SX	Extirpated
G4S3**, G4S4, G5S3**, G5S4, G5S5 T4S3*, T4S4, T5S3*, T5S4, T5S5	No Concern

*G = global conservation status rank; T = trinomial conservation status rank, which are assigned to subspecies and varieties; S = subnational conservation status rank
**S3 taxa evaluated on a case-by-case basis

Ecosystem Classification

WNHP uses the U.S. National Vegetation Classification (USNVC, 2022) to document the terrestrial ecosystems that occur in the state. Numerous regional classifications that overlap with this project area have contributed to the USNVC (Chappell, 2006a, 2006b; Crawford et al., 2009; Ramm-Granberg et al., 2021)—these documents were supplemented by vegetation keys such as Ramm-Granberg (2025) and Ramm-Granberg et al. (2025) to identify the ecosystems occurring within the targeted survey areas. Finally, ecosystem descriptions were cross-referenced with NatureServe Explorer (https://explorer.natureserve.org/) to check for any revisions that may have occurred since publication.

Ecosystem Conservation Status

Like plant species, ecosystems are assigned global (G) and subnational (= State, S) conservation status ranks using NatureServe's Conservation Status Assessment Methodology (Faber-Langendoen et al., 2012; Master et al., 2012). A conservation status rank represents an assessment of a specific ecosystem's risk of elimination. Conservation status ranks have been assigned to each element (ecosystem type) for its entire range, incorporating rarity, threats, and other factors. Conservation Status Ranks may be simplified into a Washington State Conservation Status based on the matrix in Table 2.

Table 2. Assignment of State Conservation Status for Ecosystems from (WADNR, 2025).

Natural Heritage Conservation Status Rank*	State Conservation Status**
G1S1, G2S1, GNRS1, GUS1	Endangered
G2S2, G3S1, G3S2, G2SNR, G2SU, GNRS2, GUS2	Threatened
G3S3, G3SNR, G3SU, G4S1, G4S2, G4S3**, G5S1, G5S2, G5S3**, GNRS3**, GUS3**	Sensitive***
G4S4, G5S4, G5S5	No Concern
GNRSNR, GUSU, G4SNR, G4SU, G5SNR, G5SU	Review****

*G = global conservation status rank; S = subnational conservation status rank. If a rank spans two ranks (e.g., S1S2), the most conservative rank (S1) is used. If range spans three ranks (e.g., S1S3), the midpoint (S2) is used.
**If S3 rank is rounded from a range rank (e.g., S3S4) or includes a '?' modifier (e.g., G4S3?), element has a Review status instead of Sensitive.
***If element would be ranked as Sensitive, but has a "Q" modifier (e.g., G4QS3, representing classification uncertainty), element has a Review status instead.
****Consult with Natural Heritage for more information about how to treat individual elements with Review status.

Ecological Integrity of Ecosystem Stands

The Ecological Integrity Assessment (EIA) methodology provides a rapid, standardized assessment of the current ecological integrity of a stand of a given ecosystem (Faber-Langendoen et al., 2019; Rocchio et al., 2024a, 2024b). The EIA results in an EIA rank ranging from 'A' to 'D', with 'A' indicating excellent ecological

integrity and 'D' indicating poor ecological integrity. A size metric is then integrated to produce an element occurrence rank (EO rank), which is an estimate of the overall conservation value of the stand. More information about size metrics and their role in calculating EO Ranks can be found in Sections 3.10 'Size' (p. 80-83) and 4.5 'Calculate the Element Occurrence Rank' (p. 87-88) of Rocchio et al., 2024a.

If an ecosystem with conservation status rank of G1 or G2 was located, its extent was mapped, and then an EIA was conducted to determine its current ecological condition (landscape context, native plant composition, invasive weed cover, vegetation structure, surficial soil condition, overall size, etc.). We also used DNR forest inventory data, historical aerial imagery, and timber harvest records to determine the stand age, corroborated by keys from Van Pelt (2007) (also used to assess old-growth characteristics of individual trees). This information was used to help score EIA metrics related to vegetation structure.

Element Occurrence Criteria

For rare plant taxa, the minimum criteria for an EO is simply a natural population of at least a single persisting, recurring, or potentially persisting or recurring individual (NatureServe, 2020). NatureServe's Habitat-based Plant Element Occurrence Delimitation Guidance (NatureServe, 2020)provides instruction on whether separate populations should be treated as one or multiple EOs. Occurrences within 1 kilometer of each other may be mapped as separate "source features" (sub-populations) of the same EO.

Element occurrences are entered into the Washington Natural Heritage Program's Biotics database and used for a variety of conservation and management outcomes. For more information, please see the Washington Natural Heritage Program website (http://www.dnr.wa.gov/natural-heritage-program).

For ecosystems, WNHP uses the combination of an ecosystem's conservation status rank and its EO rank to determine whether a stand of a given ecosystem is an "element occurrence". Element occurrences (EOs) are populations of species or specific examples of ecosystems with significant conservation value that contribute to the survival or persistence of the element (i.e. the species or ecosystem) (NatureServe, 2002). We use NatureServe's Element Occurrence data standards to guide our delineation of ecosystem occurrences (see https://www.natureserve.org/products/element-occurrence-data-standard). The EO data standards provide guidelines for decisions such as whether a particular patch of a given ecosystem is large enough to be considered an element occurrence. The standard also provides guidance on whether two distinct stands of the same ecosystem should be lumped as a single EO or split into two occurrences. The EO rank is determined by completing an EIA of the specific stand of the ecosystem in question. Common ecosystems with relatively few threats (e.g. conservation status rank of G5/S5) must be in excellent condition (EO rank 'A+' or 'A-') to be considered EOs, while all nearly occurrences of the most endangered ecosystems (e.g., G1/S1)—even in poor condition (D)—have significant conservation value (Table 3). Element occurrences are entered into the Washington Natural Heritage Program's Biotics database used for a variety of conservation and management outcomes. For more information, please see the Washington Natural Heritage Program website (http://www.dnr.wa.gov/natural-heritage-program).

Table 3. Decision Matrix for Ecosystem Element Occurrences. Element conservation status ranks vary from 1 (critically imperiled) to 5 (common/secure), calculated across the element's global (G) and subnational/state (S) range. 'NR' = not ranked.

EORANK	Global Rank	Element Conservation Status Rank			
			G2S2, GNRS2,	GUS3, GNRS3, G3S3, G4S1, G4S2,	G4S3, G4S4, G5S3, G5S4, G5S5,

	State Rank	G1S1, G2S1, GNRS1, GUS1	G3S1, G3S2, GUS2	G5S1, G5S2, any SNR	GNRS4, GNRS5, GUS4, GUS5
A+ (3.8 to 4.0)		EO	EO	EO	EO
A- (3.5 to 3.79)		EO	EO	EO	EO
B+ (3.0 to 3.49)		EO	EO	EO	
B- (2.5 to 2.99)		EO	EO	EO	Not an Element Occurrence
C+ (2.0 to 2.49)		EO	EO		
C- (1.5 to 1.99)		EO	Not an Element Occurrence	Not an Element Occurrence	
D (1.0 to 1.49)		EO			

Results

Two state threatened ecosystems (G2G3/S2 and G2/S2) and one state sensitive plant (G4/S2) were found during surveys. Both ecosystems and the plant species have been assessed and mapped in the Dry Hill area previously (Burke et al., 2024).

Ecosystems

Two state threatened ecosystems (G2G3/S2 and G2/S2) plant associations were identified in Parched units and adjacent areas (Figure 1, Figure 2, Table 3). *Pseudotsuga menziesii / Holodiscus discolor – Rosa gymnocarpa / Festuca occidentalis* Forest (Table 5) was found in Parched Units 1B and 4 and elsewhere on south-facing dry ridges with shallow soils. An EO for this ecosystem was also identified nearby during previous survey efforts in the Parched sale (Burke et al., 2024). This ecosystem is restricted to the rainshadow of the Olympic Mountains in Washington (NatureServe, 2025a). Areas mapped as this type have inclusions of Sierran-North Pacific Bald, Bluff & Prairie and are often adjacent to (or occur in a mosaic with) *Pseudotsuga menziesii - Tsuga heterophylla / Gaultheria shallon - Holodiscus discolor* Forest.

The *Pseudotsuga menziesii - Tsuga heterophylla / Gaultheria shallon - Holodiscus discolor* Forest (Table 5) is considered a matrix ecosystem (NatureServe, 2015) that historically occurred over much larger areas (NatureServe, 2025b). This ecosystem was mapped in previous timber sale surveys in the Parched sale and stands were found to be in excellent condition (Burke et al., 2024). However, the amount observed at that time (44 acres) was too small on its own to meet EO specifications. Additional surveys in July 2025 confirmed a total of 89 acres within the Parched sale plus 173 acres in nearby areas outside of the sale. This was enough acreage (connected by natural landcover) to clear the threshold for an EO.

Table 4. Ecosystems assessed in Parched timber sale and nearby areas on Dry Hill.

USNVC Plant Association	EL Code	State Conservation Status (G/S Rank)	Element Occurrence?
Pseudotsuga menziesii / Holodiscus discolor - Rosa gymnocarpa / Festuca occidentalis Forest Douglas-fir /Oceanspray – Baldhip Rose / Western Fescue Forest	CEGL000456	Threatened (G2G3/S2)	Yes
Pseudotsuga menziesii - Tsuga heterophylla / Gaultheria shallon - Holodiscus discolor Forest Douglas-fir - Western Hemlock / Salal – Oceanspray Forest	CEGL005537	Threatened (G2/S2)	Yes

Table 5. United States National Vegetation Classification (USNVC) hierarchy for ecosystem element occurrences in Parched timber sale and nearby areas on Dry Hill.

TT2 Temperate-Boreal Forest & Woodland Biome
TT2.b Cool Temperate Forest & Woodland Subbiome
   TT2.b2 Oceanic Cool Temperate Rainforest Ecobiome
      TT2.b2.Na North American Pacific Coast Temperate Rainforest Division
         M024 North Pacific Coastal Rainforest Macrogroup
           G240 Coastal Douglas-fir - Western Hemlock Rainforest Group
              A3379 Tsuga heterophylla - Pseudotsuga menziesii / Holodiscus discolor Dry Forest Alliance

CEGL005537	Pseudotsuga menziesii – Tsuga heterophylla / Gaultheria shallon – Holodiscus discolor Forest Association

   TT2.b3 Temperate Continental Conifer Forest & Woodland Ecobiome
      TT2.b3.Nc Californian-North Pacific Foothills Forest & Woodland Division
         M886 Californian-North Pacific Dry Foothill Forest & Woodland Macrogroup
           G800 North Pacific Douglas-fir - Madrone Dry Woodland Group
              A3716 Pseudotsuga menziesii - Abies grandis - Arbutus menziesii Forest & Woodland Alliance

CEGL000456	Pseudotsuga menziesii / Holodiscus discolor – Rosa gymnocarpa / Festuca occidentalis Forest Association

Ecological Integrity Assessment
Sale units and additional nearby areas were assessed as EOs using standard EIA methodology. Results are below.

Pseudotsuga menziesii / Holodiscus discolor – Rosa gymnocarpa / Festuca occidentalis Forest (EO 10410)
The newly mapped stands of this ecosystem received an 'A-' (3.66) for Condition and a 'C' (2.0), based on best professional judgement, for Landscape Context resulting in an EIA Score of B- (2.91) for this large-patch type (Figure 1, Table A-1). The existing EO (EO ID 10410) had an EIA Score of B+ (3.29). Using area-weighted averages, the aggregated EIA score is a B+ (3.08) (Table A-2). The new stands added an additional 27 acres, bringing the total size up to just under 60 acres, resulting in a size rank of 'C' (2.0) and an EO Rank of 'B-' (2.75) (Table A-2, Table A-7).

A complete EIA score breakdown may be found in Appendix A, Table A-1 and Table A-2.

Pseudotsuga menziesii - Tsuga heterophylla / Gaultheria shallon - Holodiscus discolor Forest (EO 10493)
The newly mapped stands of this plant community received an 'A-' (3.66) for Condition and a 'C' (2.0), based on best professional judgement, for Landscape Context resulting in an EIA Score of B- (2.91) for this matrix ecosystem (Figure 1, Table A-3). Previously assessed areas received an EIA Score of B+ (3.25). Using area-weighted averages, the aggregated EIA score is a B+ (2.95) (Table A-2). The new stands added an additional 218 acres, bringing the total size up to 262 acres, and the largest aggregated area separated only by natural land cover is >100 acres, resulting in a size rank of 'C' (2.0) and an EO Rank of 'C+' (2.45) (

Table A-4, Table A-7).

A portion of Parched unit 3A and adjacent rights-of-way were harvested and converted to roads/landings in the time between WNHP's 2024 and 2025 surveys. This impacted a very small portion of the *Pseudotsuga menziesii - Tsuga heterophylla / Gaultheria shallon - Holodiscus discolor* Forest EO.

A complete EIA score breakdown may be found in Appendix A, Table A-3 and

Table A-4.

Rare Plants
Whipple-vine (*Whipplea modesta*, G4/S2, State Sensitive) was found within both ecosystem EOs, particularly *Pseudotsuga menziesii / Holodiscus discolor – Rosa gymnocarpa / Festuca occidentalis* Forest. While it is often found associated with rocky, open forests and roadside on south- and west-facing slopes, it was also found in locations that do not meet these search criteria (e.g., in denser forests and away from obvious bedrock outcroppings). It occurs quite frequently across the southern half (at minimum) of Dry Hill.

Whipple-vine is a time-intensive species to survey. Because of the frequent co-occurrence with *Pseudotsuga menziesii / Holodiscus discolor – Rosa gymnocarpa / Festuca occidentalis* Forest, this species was mapped as occurring throughout the ecosystem EO. Additional locations were recorded opportunistically when Whipple-vine was observed. These observations represent an expansion of the existing Whipple-vine EO (EO ID 10437). Further surveys may result in additional mapping of this species.

Conclusion

The stands of *Pseudotsuga menziesii / Holodiscus discolor – Rosa gymnocarpa / Festuca occidentalis* Forest (G2G3/S2) represent an expansion of the existing EO (EO ID 10410). Newly mapped stands of *Pseudotsuga menziesii - Tsuga heterophylla / Gaultheria shallon - Holodiscus discolor* Forest (G2/S2) combine with previously mapped areas (Burke et al., 2024) to have sufficient acreage to represent a new EO for this ecosystem (EO 10493)

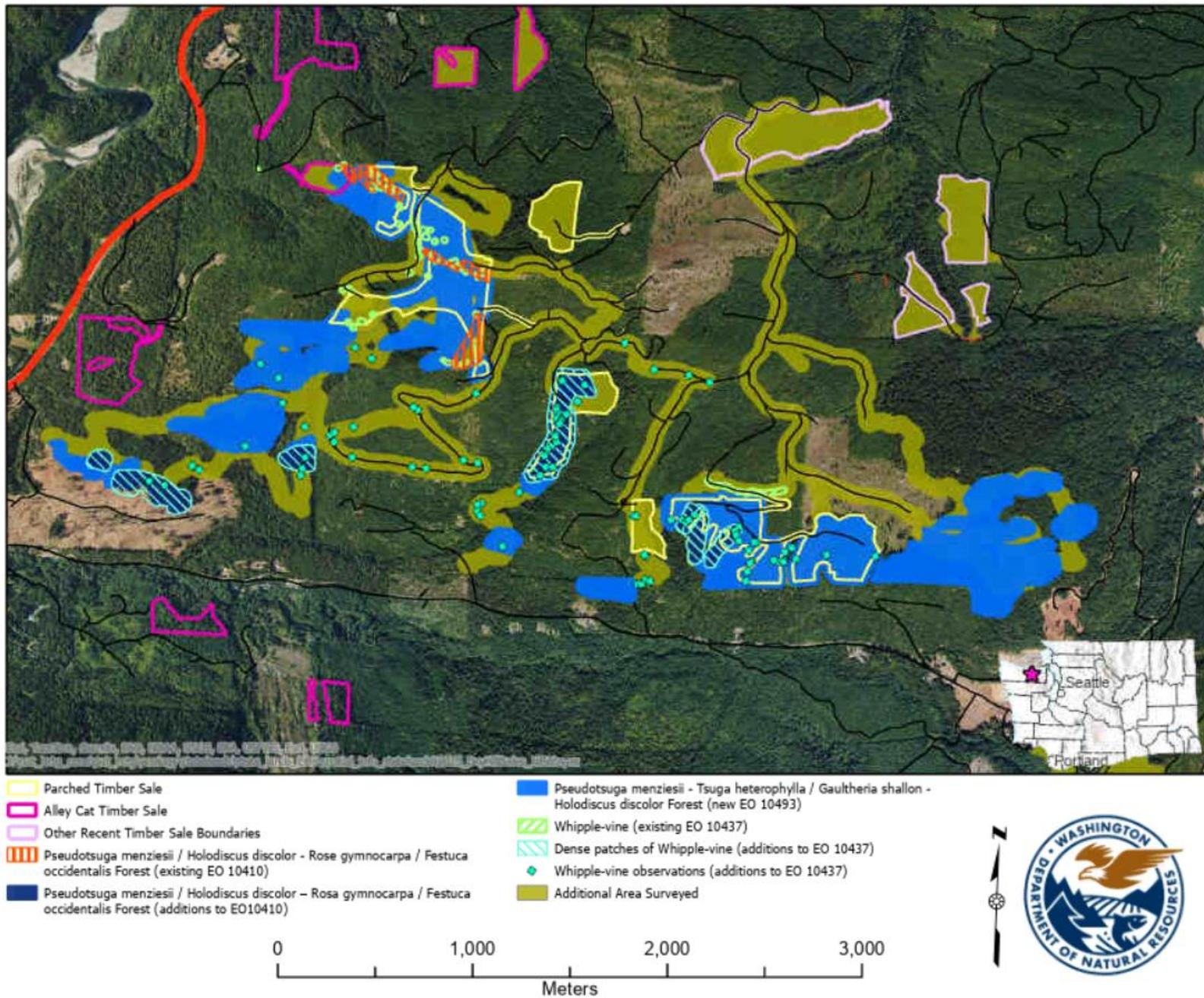Additional mapping of Whipple-vine represents an expansion of an existing EO (EO ID 10437) for this species.

Figure 1. Overview of areas surveyed, recent timber sales, and existing and new EOs in the Dry Hill block of State Trust land.
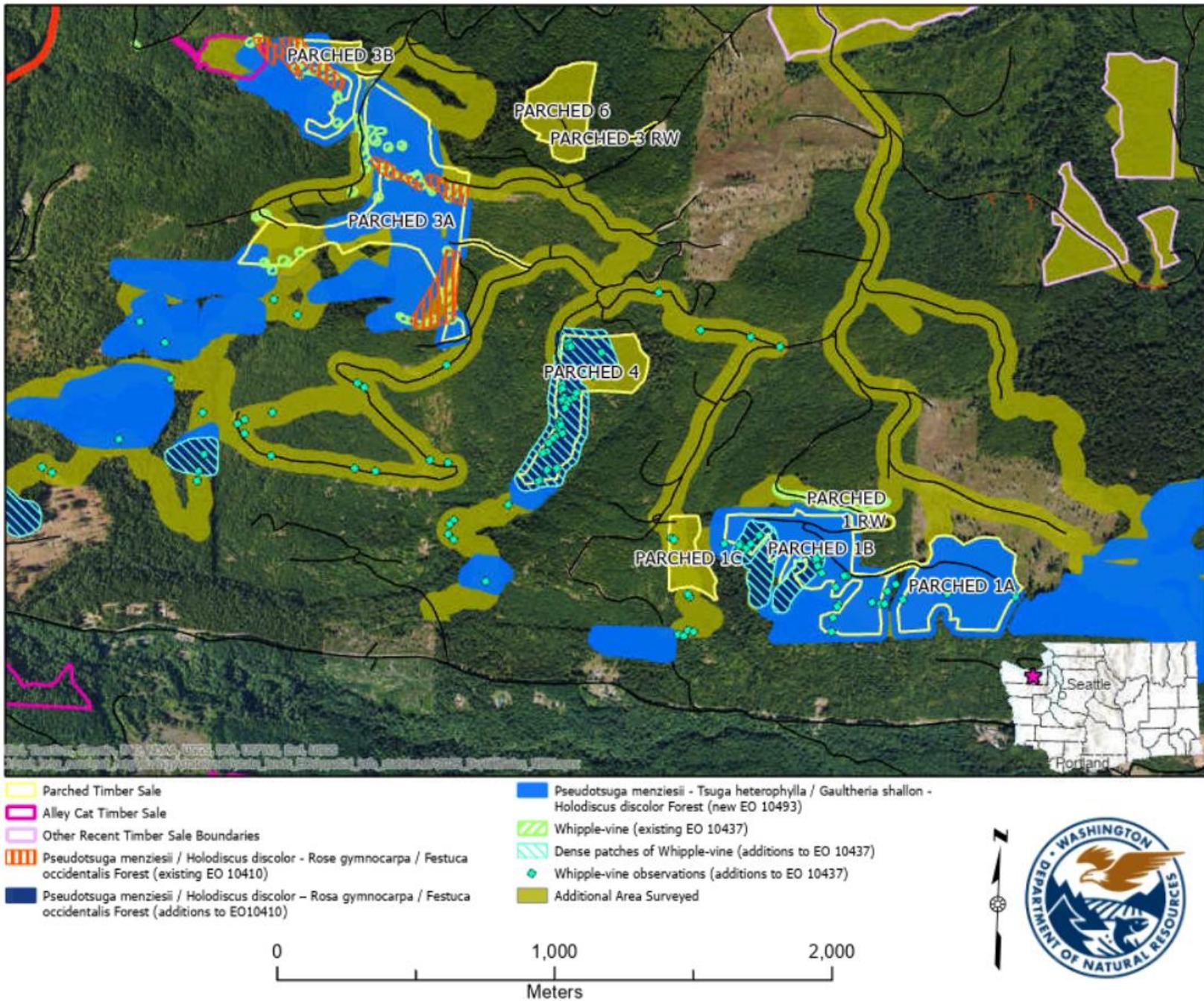
Figure 2. Surveyed units of Parched timber sale and ecosystem and plant EOs found in and adjacent to sale boundaries.

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Appendix A: Ecological Integrity Assessment (EIA) Calculations

Ecological Integrity varied over the timber sale units and neighboring parcels. The table below presents the range of metric ranks and major ecological factors, followed by the weighted average of primary factors, EIA scores, and the overall EO rank.

Table A-1. EIA Calculations for *Pseudotsuga menziesii / Holodiscus discolor - Rosa gymnocarpa / Festuca occidentalis* Forest (G2/S2) located in Parched Units 1B, 4, and other areas in Dry Hill (**Figure 1**)

Roll-up Calculations	Rating	Score	Comments
LAN1. Contiguous Natural Land Cover	*		
LAN2. Land Use Index	*		
LAN MEF Score = (LAN1+LAN2)/2	*		
EDG1. Perimeter with Natural Edge	*		Landscape Context is characterized by revenue-generating timberland with numerous bisecting forest roads. The various polygons of this AA are connected via natural land cover (only divided by regenerated harvests, trails, and revegetated forest roads). Because of the time-sensitivity of this assessment, full LAN metrics not calculated. Instead, we assumed an overall Landscape Context PF rank of C+ (2.0). Stands would still qualify as an EO regardless of the Landscape Context, even with a PF rank as low as a D (1.0).
EDG2. Width of Natural Edge	*		
EDG3. Condition of Natural Edge	*		
EDG MEF Score = (((EDG1*EDG2)$^{1/2}$)*EDG3)$^{1/2}$ [Note: ½ exponent = square root]	*		
LANDSCAPE CONTEXT PRIMARY FACTOR SCORE = (EDG Score*0.67)+(LAN Score*0.33)	Large Patch		
Matrix = (EDG Score*0.33)+(LAN Score*0.67) Large-Patch = (EDG Score*0.50)+(LAN Score*0.50) Small-Patch = (EDG Score*0.67)+(LAN Score*0.33)	C+	2.0	
VEG1. Native Plant Species Cover	A	4.0	Only trace cover of exotic species. Relative native cover > 99%.
VEG2. Invasive Nonnative Plant Species Cover	A	4.0	*Ilex aquifolium + Leucanthemum vulgare* = trace cover.
VEG3. Native Plant Species Composition	A	4.0	Excellent diversity.
VEG4. Vegetation Structure	B	3.0	Stand development stage is mostly Maturation 1-westside. Stands on eastern end of Dry Hill appear to be unlogged and initiated via natural post-fire regeneration. Stands to the west (including Parched Unit 4) have scattered large/old growth stumps (harvested with pre-mechanized methods, e.g., springboard notches), but fair-to-good overall structure.

VEG5. Woody Regeneration	A	4.0	Sporadic *Pseudotsuga menziesii*-dominated regeneration, as expected for this type.
VEG6. Coarse Woody Debris	B	3.0	Areas in which some large trees were removed via pre-mechanized harvests have marginally fewer snags. CWD mostly within NRV.
VEG MEF Score = (VEG4+VEG6)/2*0.7+(VEG1+VEG2+VEG3+VEG5)/4*0.3	A-	3.6	
SOI1. Soil Condition	A	4.0	Most stands have nearly continuous undisturbed moss layer. Some stands have mountain bike trails built through them with intensive (but not extensive) impacts.
SOI MEF Score = SOI1	A+	4.0	
CONDITION PRIMARY FACTOR SCORE = (VEG Score*0.85)+(SOI Score*0.15)	A-	3.66	
ECOLOGICAL INTEGRITY (EIA) SCORE Matrix/Large-Patch = (CONDITION SCORE*0.55)+(LANDSCAPE CONTEXT SCORE*0.45) Small-Patch = (CONDITION SCORE*0.7)+(LANDSCAPE CONTEXT SCORE*0.3)	B-	2.91	

Table A-2. Final EIA score and EO score for Pseudotsuga menziesii / Holodiscus discolor - Rosa gymnocarpa / Festuca occidentalis Forest (G2/S2), including existing EO ID 10410, mapped to the west (**Figure 1**)

Roll-up Calculations	EIA Rating	EIA Score	Comments
EO ID 10410 EIA Score	B+	3.29	Includes previously surveyed stands from Alley Cat and Parched timber sales. See Burke et al., 2024 for a complete EIA Score breakdown.
Parched Units 1B, 4, and other recently mapped areas in Dry Hill	B-	2.91	
Weighted Average EIA SCORE	B+	3.08	
Combined SIZ MEF Score	C	2.0	Scored as large-patch type. Newly surveyed area in this report adds approximately 27 acres to existing EO, combined acreage is still ~ 60 acres (C). Largest assessed area separated only by natural land cover ~18 acres (C)
Size Points	C	-0.33	

CALCULATED EO RANK = EIA Score + SIZE Points	B-	2.75	

Table A-3. EIA Calculations for recently assessed areas of *Pseudotsuga menziesii - Tsuga heterophylla / Gaultheria shallon - Holodiscus discolor* Forest (G2/S2). See **Figure 1** for extent.

Roll-up Calculations	Rating	Score	Comments
LAN1. Contiguous Natural Land Cover	*		
LAN2. Land Use Index	*		
LAN MEF Score = (LAN1+LAN2)/2	*		Landscape Context is characterized by revenue-generating timberland with numerous bisecting forest roads. The various polygons of this AA are connected via natural land cover (only divided by regenerated harvests, trails, and revegetated forest roads). Because of the time-sensitivity of this assessment, full LAN metrics not calculated. Instead, we assumed an overall Landscape Context PF rank of C+ (2.0). Stands would still qualify as an EO almost regardless of the Landscape Context, even with a PF rank as low as a D (~1.14).
EDG1. Perimeter with Natural Edge	*		
EDG2. Width of Natural Edge	*		
EDG3. Condition of Natural Edge	*		
EDG MEF Score = (((EDG1*EDG2)$^{1/2}$)*EDG3)$^{1/2}$ [Note: ½ exponent = square root]	*		
LANDSCAPE CONTEXT PRIMARY FACTOR SCORE = (EDG Score*0.67)+(LAN Score*0.33)	Matrix		
Matrix = (EDG Score*0.33)+(LAN Score*0.67) Large-Patch = (EDG Score*0.50)+(LAN Score*0.50) Small-Patch = (EDG Score*0.67)+(LAN Score*0.33)	2.00	C+	
VEG1. Native Plant Species Cover	A	4.0	Only trace cover of exotic species (primarily *Mycelis muralis*). Relative native cover > 99%.
VEG2. Invasive Nonnative Plant Species Cover	A	4.0	*Ilex aquifolium* = trace cover.
VEG3. Native Plant Species Composition	A	4.0	Within NRV. Low cover of *Tsuga heterophylla* in some areas.
VEG4. Vegetation Structure	B	3.0	Stand development is a mix of Maturation 1 & 2-westside. Stands on eastern end of Dry Hill appear to be unlogged and initiated via natural post-fire regeneration. Stands to the west (including Parched timber sale unit 4) have scattered large/OG stumps (harvested with pre-mechanized
VEG5. Woody Regeneration	A	4.0	Within NRV; does not appear to have been replanted.

VEG6. Coarse Woody Debris	B	3.0	Areas in which some/most large trees were removed via pre-mechanized harvests have reduced #'s and decay/size diversity of snags. CWD mostly within NRV, but reduced in areas that were harvested. Overall, Snags & CWD within NRV.
VEG MEF Score = (VEG4+VEG6)/2*0.7+(VEG1+VEG2+VEG3+VEG5)/4*0.3	A-	3.6	
SOI1. Soil Condition	A	4.0	Some stands have mountain bike trails built through them with intensive (but not extensive) impacts. Some old logging roads/skid trails, but also a small proportion of the overall area.
SOI MEF Score = SOI1	A+	4.0	
CONDITION PRIMARY FACTOR SCORE = (VEG Score*0.85)+(SOI Score*0.15)	A-	3.66	
ECOLOGICAL INTEGRITY (EIA) SCORE Matrix/Large-Patch = (CONDITION SCORE*0.55)+(LANDSCAPE CONTEXT SCORE*0.45) Small-Patch = (CONDITION SCORE*0.7)+(LANDSCAPE CONTEXT SCORE*0.3)	B-	2.91	

Table A-4. Final EIA score and EO score for *Pseudotsuga menziesii - Tsuga heterophylla / Gaultheria shallon - Holodiscus discolor* Forest (G2/S2), including previously mapped AA from Burke et al., 2024. See **Figure 1** for extent of mapped ecosystem.

Roll-up Calculations	EIA Rating	EIA Score	Comments
Previously mapped AA EIA Score	B+	3.25	Includes previously surveyed stands from Alley Cat and Parched timber sales (44 acres). See Burke et al., 2024 for a complete EIA Score breakdown.
Parched Units 1B, 4, and other recently mapped areas in Dry Hill	B-	2.91	218 acres
Weighted Average EIA SCORE	B-	2.97	
Combined SIZ MEF Score	C	2.0	Scored as Matrix. Newly surveyed area in this report adds approximately 218 acres to previously assessed areas, combined acreage is 262 acres (C). Largest assessed area separated only by natural land cover >100 acres (C)
Size Points	C	-0.5	
CALCULATED EO RANK = EIA Score + SIZE Points	C+	2.47	

Table A-5. Metric Rank / Score Conversions

Rank	A	A-	B	C	C-	D
Score	4	3.5	3	2	1.5	1

Table A-6. Score / Rank Conversions for MEF, EIA, and EORANK calculations

Rank	A+	A-	B+	B-	C+	C-	D
Score	3.8 - 4.00	3.5 - 3.79	3.0 - 3.49	2.5 - 2.99	2.0 - 2.49	1.5 - 1.99	1 - 1.49

Table A-7. Point Contribution of Size Primary Factor Score

Size Primary Factor Rating	Very Small/Small Patch	Large Patch	Matrix
A = Size meets A ranked rating	+ 0.75	+ 1.0	+1.5
B = Size meets B ranked rating	+ 0.25	+ 0.33	+0.5
C = Size meets C ranked rating	- 0.25	- 0.33	-0.5
D = Size meets D ranked rating	- 0.75	-1.0	-1.5