

Washington DNR West Side Stand Development Stage (SDS) Form

Version 1.0 (Revised and updated February 2024)

Date	Assessor name	Primary Twn-Rge-Sect	Timber sale/activity name	Timber sale unit number(s)	FMA's assessed
3/19/2024	Alan Mainwaring	21N-08E-25	Sylvan Pearl VRH	Unit 1	306995
3/19/2024	Alan Mainwaring	21N-09E-30	Sylvan Pearl VRH	Unit 2	221000
3/19/2024	Alan Mainwaring	21N-09E-30	Sylvan Pearl VRH	Unit 3	306716
3/19/2024	Alan Mainwaring	21N-09E-30	Sylvan Pearl VRH	Unit 4	306983
3/19/2024	Alan Mainwaring	21N-09E-19&30	Sylvan Pearl VRH	Unit 5	271129
3/19/2024	Alan Mainwaring	21N-09E-20&29	Sylvan Pearl VRH	Unit 6	339347
3/19/2024	Alan Mainwaring	21N-09E-29	Sylvan Pearl VRH	Unit 7	339355
3/19/2024	Alan Mainwaring	21N-09E-29	Sylvan Pearl ROW	Unit 8	339356

Stand development stages observed:

Unit number	Sector of unit, if applicable (e.g. N, S, E, W, NE, NW, SE, SW, ...or 'all' or 'remainder' or whatever makes sense)	Approximate acres	Harvest prescription	SDS (Van Pelt guide pg. 46-47) <i>see appendix for crosswalk to other DNR-relevant classifications</i>
Unit 1	All	24	VRH	Maturation II
Unit 2	All	1	VRH	Maturation I
Unit 3	All	4	VRH	Maturation II
Unit 4	All	2	VRH	Maturation II
Unit 5	Southern 1/3	7	VRH	Maturation II
Unit 5	Northern 2/3	16	VRH	Maturation I
Unit 6	All	62	VRH	Maturation I
Unit 7	All	47	VRH	Biomass Accumulation-Competitive Exclusion
Unit 8	Right-of-Way	0.6	VRH	Biomass Accumulation-Competitive Exclusion

*SDS classes are, in order: Cohort Establishment, Canopy Closure, Biomass Accumulation/Stem Exclusion, Maturation I, Maturation II, Vertical Diversification, Horizontal diversification, Pioneer Cohort Loss.

*Important additional notes on the Van Pelt key are included at the bottom of this form.

Notes / rationale

Appendix A – Sylvan Pearl Photo Log
Appendix B – Sylvan Pearl Stand Development Stage Field Review
Appendix C – Sylvan Pearl Timber Sale Maps
Appendix D – Cross walk between stand development classification systems

Appendix A – Sylvan Pearl Timber Photo Log



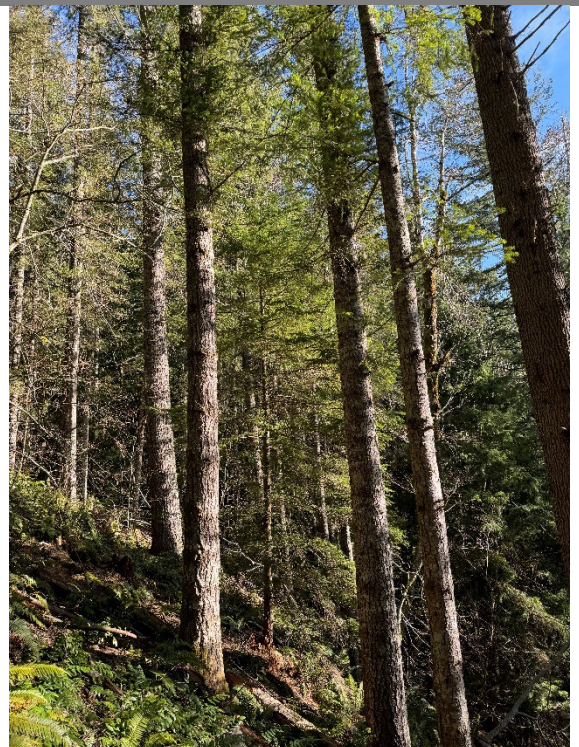
PHOTO LOG

Sylvan Pearl Timber Sale

ALL PHOTOS TAKEN BY: Alan Mainwaring



1
Unit 1, Maturation II



2
Unit 1, Maturation II



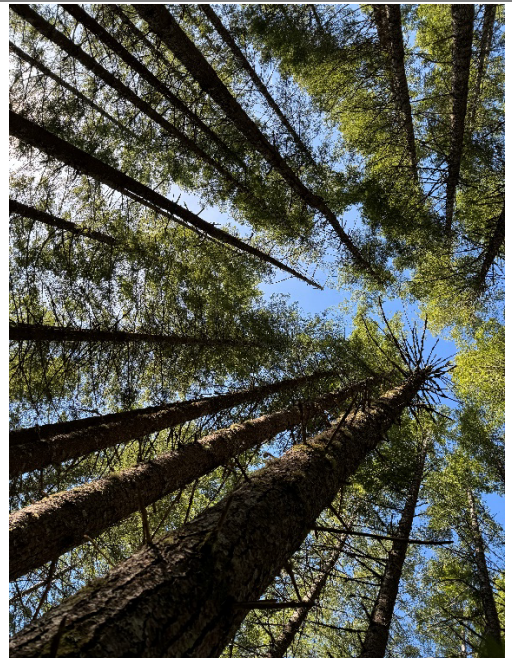
3
Unit 2, Maturation I



4
Unit 2, Maturation I



5
Unit 3, Maturation II



6
Unit 3, Maturation II



7
Unit 4, Maturation II



8
Unit 5, (Southern 1/3), Maturation II



9
Unit 5 (Northern 2/3, PCT evident), Maturation I



10
Unit 5 (Northern 2/3), Maturation I



11
Unit 6, Maturation I



12
Unit 6, Maturation I



13
Unit 7, Biomass Accumulation/Stem Exclusion

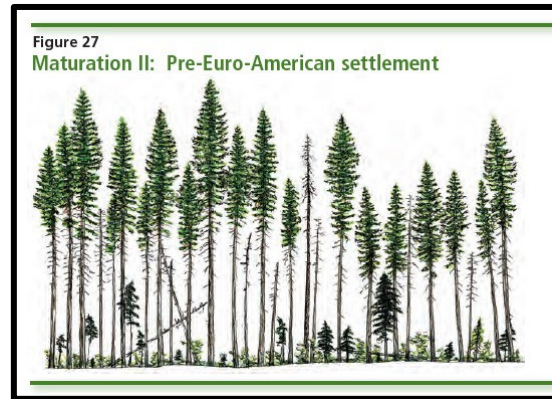


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Unit 7, Biomass Accumulation/Stem Exclusion

Appendix B – Sylvan Pearl Stand Development Stage Field Review

Completed by: Alan Mainwaring

Assessed on: 3/19/2024



Unit 1 (24 acres)-

Van Pelt Guide Stand Development Key Score- Maturation II. This is a naturally regenerated second-growth conifer stand dominated by Douglas-fir (DF) with a few Western Hemlock (WH) in the pioneering cohort. Epicormic branching are small but numerous and consistent. WH are well established in the understory well into the bole zone (20-30 feet tall). The ground vegetation is dominated by sword fern, Oregon grape, vine maple and some red huckleberry. Individual DF trees score a 1 on the Van Pelt Individual Tree Key. The bark is just starting to develop fissures. Branch stubs are retained on the lower tree bole nearly to the ground. Small epicormic branching is common on dominant DF trees. Structure- Down wood made up primarily of large old-growth stumps (with post-harvest char) and dispersed cull logs and smaller second-growth competitive mortality trees.

Unit 2 (1 acre)-

Van Pelt Guide Key scores: Stand Development Key Score- Maturation I. This is a naturally regenerated DF dominated stand (high stocking). There are a few WH, 6-10' tall but mostly void of an established understory. This is a small unit just below the road between creeks. Epicormic branching limited to a few mid-canopy, small diameter DF. Same stand history as unit 1. The Individual Tree Score is a -0- with tight bark, retained branch stubs and few epicormic branches. Structure- Down wood made up primarily hand-cut DF stumps (fire charred) and a few cull logs, one being a sound western red cedar.

Unit 3 (4 acres)-

Van Pelt Guide Key scores: Stand Development Key Score- Maturation II. This unit has a southerly aspect with many WH~15-20 feet tall. Many DF have small wispy epicormic branching. Ground vegetation is salal, sword fern and Oregon grape. Structure is made up of old-growth stumps and a few competitive mortality trees. Individual Tree Score is a 1 with tight bark, retaining lower branches and frequent small epicormic branches.

Unit 4 (2 acres)-

Van Pelt Guide Stand Development Key Score- Maturation II. Several well dispersed WH sapplings (~15-20' tall) and many DF sporting wispy epicormic branches. The Individual Tree Score is a -1- with tight bark, retaining lower branches yet developing small epicormic branches. Structure- Down wood made up primarily of old-growth stumps and cull logs with a lesser component of small diameter competitive mortality trees.

Units 5 (southern 7 acres)-

The southern area of Unit 5 has the same Stand Development Key Score (Maturation II) and description as Unit 4.

Units 5 (northern 16 acres)-

Van Pelt Guide Stand Development Key Score- Maturation I. The norther 2/3rds of Unit 5 appears to have a slightly different stand history in that a precommercial thinning is evident throughout. I could not make the call on if this were a handplanted stand or not. Some areas have understory shade tolerant WH and WRC established though most does not. There are WH and WRC in the pioneering cohort within the main canopy. These trees retain living branches down to the lower 1/3 of the tree bole. The understory trees have stalled leader growth due to the tight canopy restricting light to the forest floor as evidenced by the flat tops. The ground vegetation is made of small and scant salal, Oregon grape and sword fern. Structure- Down wood made up primarily of large old-growth stumps (with post-harvest char) and dispersed cull logs and smaller second-growth competitive mortality trees.

Unit 6 (62 acres)-

Van Pelt Guide Stand Development Key Score- Maturation I. Little to no epicormic branching in DF. WH and WRC are in the pioneering cohort and retain the original living branches down the lower 1/3 tree bole. Ample understory WH, stalled with flat tops at ~10-15' tall. Red and blue huckleberry are present. This is at the snowline so much of the forest floor is covered. The Individual Tree Score is a -0-, with tight bark, trained lower branches and very limited epicormic branching. Structure- some small old-growth stumps and small cull logs with a few windthrow silver fir.

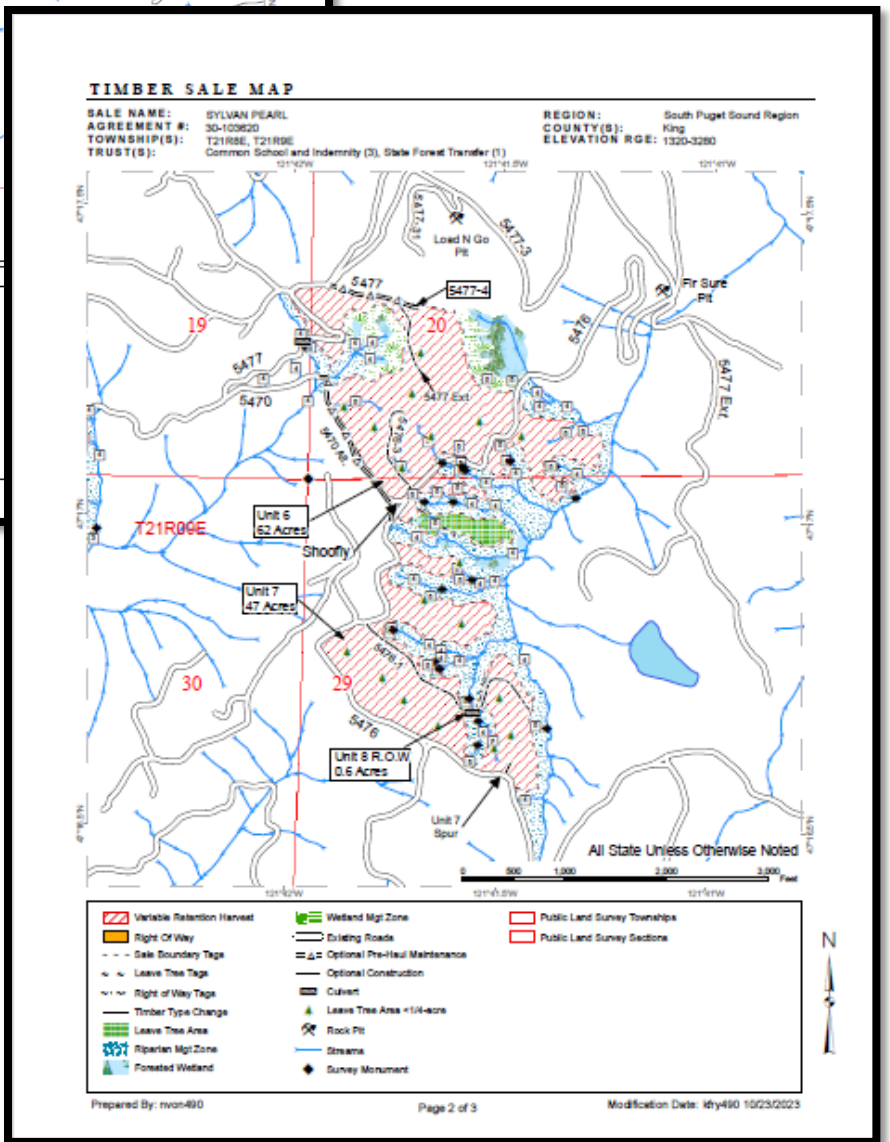
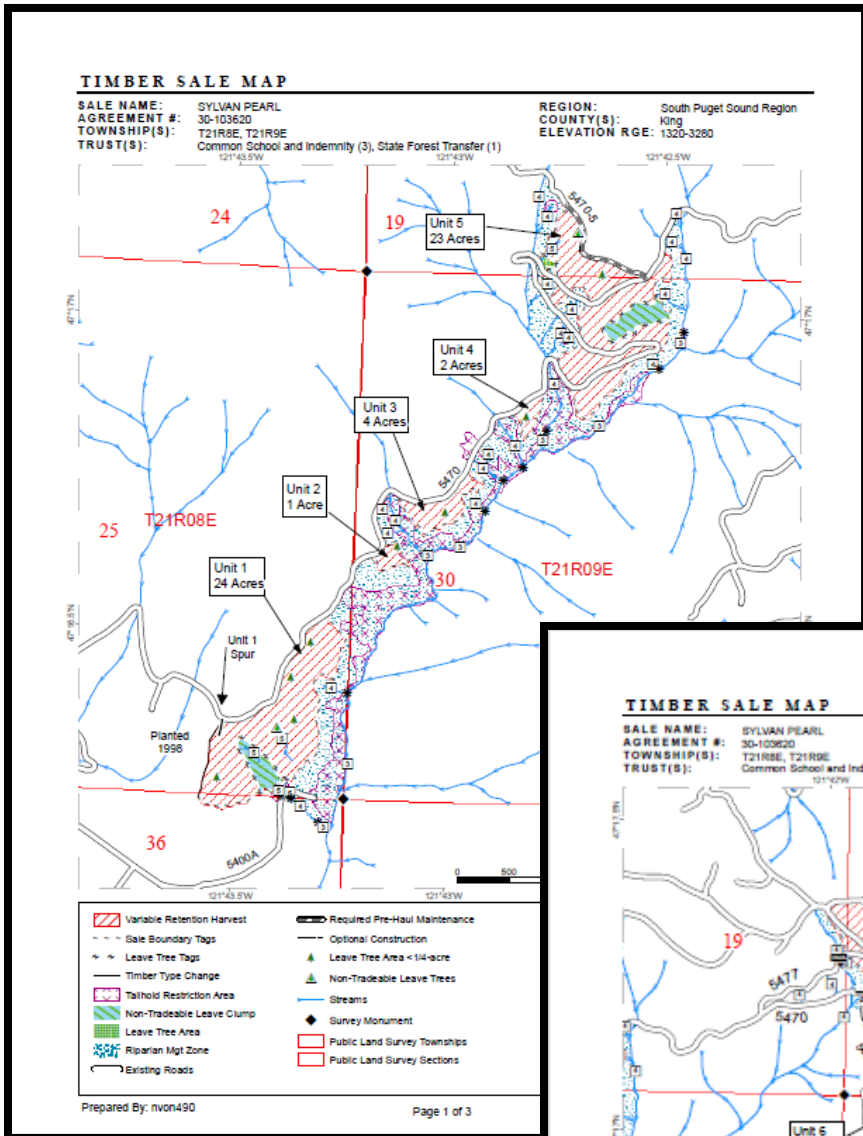
Unit 7 (47 acres)-

Van Pelt Guide Stand Development Key Score- Biomass Accumulation/Competitive Exclusion. This area features a DF/WH mix with no PCT after a chainsaw harvest and slash burn. Unknown if this was hand planted or a natural regeneration. There are a handful of seedlings on stumps. The ground vegetation is mostly made up of moss at this time of year. Again, the WH retains green needles on the original branching, down to 4' in some cases. Structure is made up of old-growth stumps and competitive mortality trees.

Unit 8 ROW (0.6 acres)-

Same stand as evaluated with Unit 7, BMA?SE

Appendix C – Sylvan Pearl Timber Sale Maps



Appendix D – Cross walk between stand development classification systems

Crosswalk between stand development terms used in this guide and terms used in other DNR publications.

OG Guide	DNR Glossary	Essential Ecological process, elements and other notes
Cohort establishment phase	Ecosystem initiation	Establishment of cohort individuals
Canopy closure	Competitive exclusion: sapling exclusion	Canopy closes
Late canopy closure and early Biomass accumulation/stem exclusion	Competitive exclusion: pole exclusion	Inter-tree competition is the dominant ecological process. Live trees compete with each other for resources (light, water, nutrients). Loss of stems <2" dbh due to shading; Self pruning begins
Biomass accumulation /stem exclusion and early Maturation I	Competitive exclusion: large tree exclusion	Inter-tree competition is the dominate ecological process. Live trees compete with each other for resources (light, water, nutrients). Loss of stems <5" dbh due to shading.
Maturation I	Understory development And Botanically diverse	A shift of the dominate mortality processes occurs from inter-tree competition to stochastic events (disease, wind, fire, pests) resulting in stem loss of larger trees (dominant and co-dominant) and a loss of shade. Openings in the canopy appear, allowing regeneration of shade tolerant species. High rate of biomass accumulation is maintained. In later stages, rate of live biomass accumulation begins to decrease. Continued understory development and stochastic stem loss. Stages generally lacking large down woody debris and large snags.
Maturation II	Botanically diverse	Development of additional species in lower and mid canopy. Large down woody material and large snags are generally absent or at low levels.
Vertical diversification	Niche diversification	Development of additional species in lower and mid canopy to abundant additional species at all canopy levels and increasing levels of large down woody debris and large snags.
Horizontal diversification	Fully functional	More stochastic stem losses create larger gaps. High accumulation of large woody debris, large snags.

Development stages used in this guide from Franklin et al. 2002. DNR stages adapted from Carey et al 1996 and Franklin et al 2002.

Identifying Mature and Old Forests in Western Washington

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Citations:

Van Pelt, R. 2007. Identify Mature and Old Forests in Western Washington.

Washington State Department of Natural Resources, Olympia, WA.