

25 YEARS OF VR IMPLEMENTATION ON WFP TENURE

February 19, 2025



Western Forest Products®



- Background
 - What is VR vs Retention Silvicultural System
 - How VR fits into Western's Forest Management System
 - Wildlife and Biodiversity Program
- Implementation
 - Corporate
 - Operational
 - Standard
 - Monitoring
 - Continual Improvement
- Future of Retention
 - WFP
 - BC's Old Growth Review
 - BC's Biodiversity and Ecosystem Health



Variable Retention vs Retention Silvicultural System

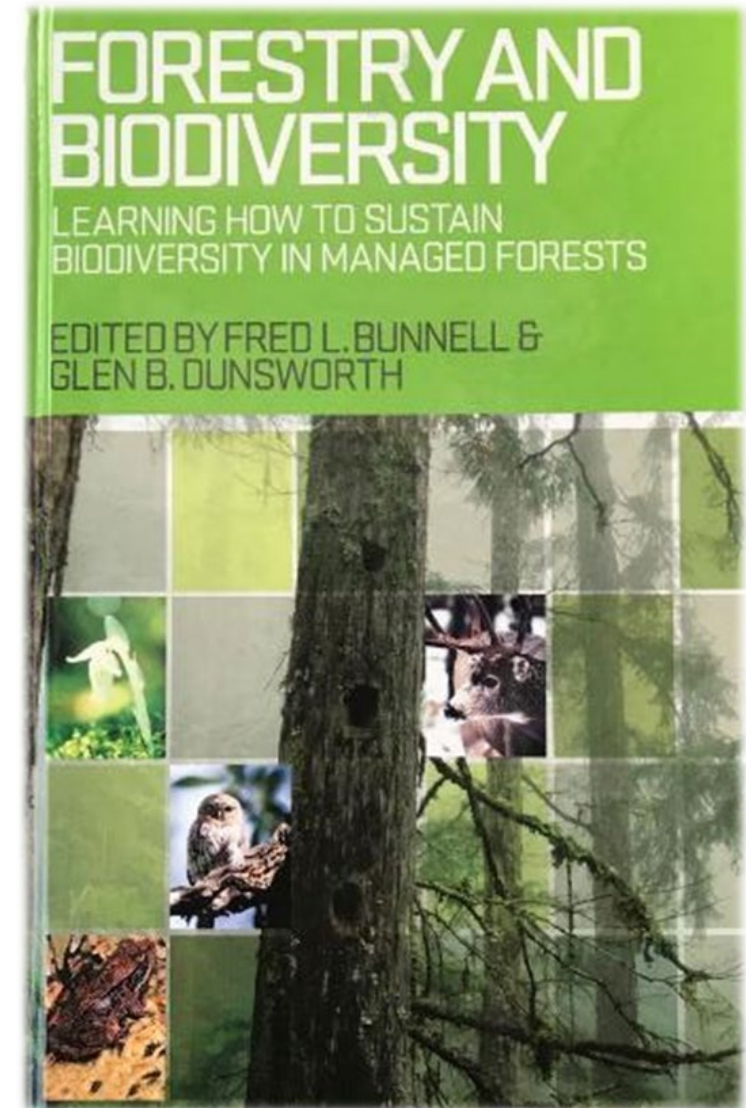
- Variable Retention (VR)
 - Umbrella term used as a general approach to silvicultural systems across a landscape or management unit to maintain biodiversity
- Retention Silvicultural System (Mitchell and Beese 2002*) – 2 parts
 1. **retain individual trees or groups of trees** to maintain structural diversity over the **area of the cutblock** for at least one rotation, and
 2. leave more than half the total area of the cutblock (Net area to be reforested (NAR) + permanent roads) within one tree height from the base of a tree or group of trees, whether or not the tree or group of trees is inside the cutblock (**Forest Influence**).



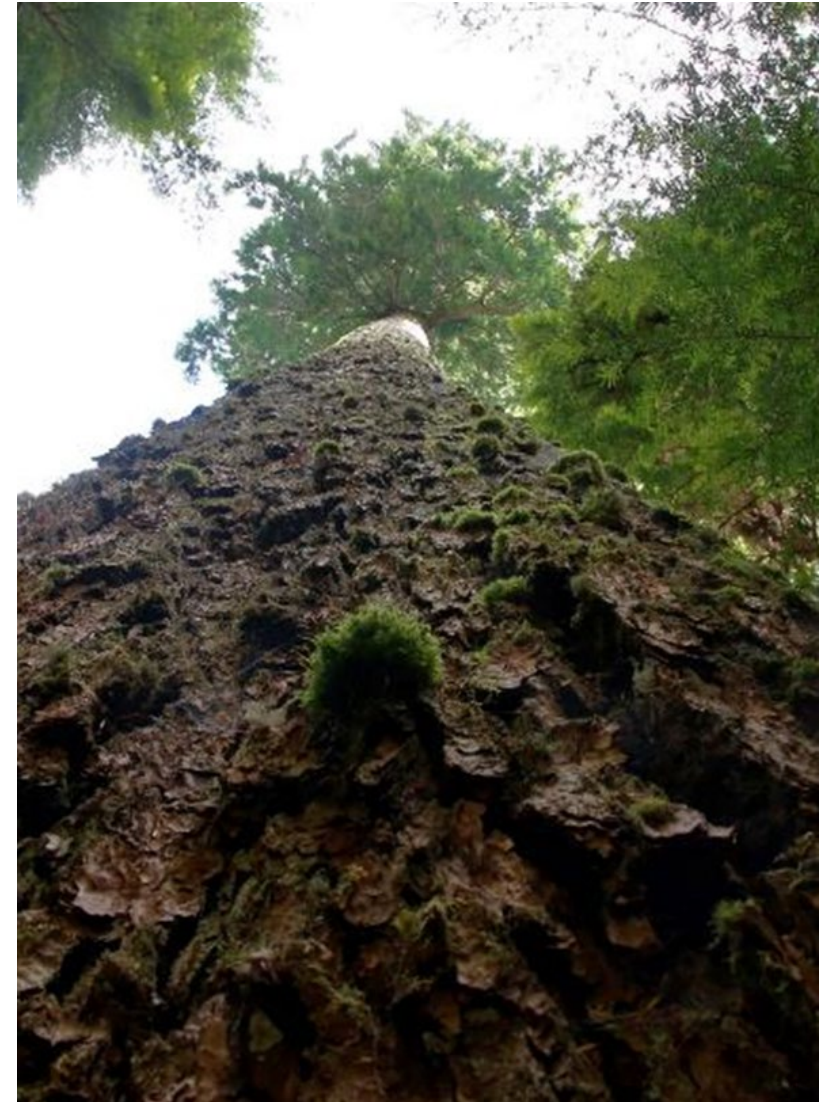
*Mitchell, S.J. and W.J. Beese. 2002. The retention system: reconciling variable retention with the principles of silvicultural systems. Forest Chronicle 78(3)

Integrating VR into Western's Forest Management System

- Forest Project – Forest Strategy – Wildlife and Biodiversity Program (2018)
- Cohesive, structured, multi-scale approach to manage Coastal forests
- Science-based Variable Retention
 - Integrating over 20 years of research with our on-the-ground practice
- Three Goals
 1. Conserve the full range of ecosystems
 2. Maintain habitat types and forest structure
 3. Sustain forest dwelling species



1. Conserve the full range of ecosystems
 - Rare Ecosystems
2. Maintain habitat types and forest structure
 - Old Forest
 - Forest Interior Condition
 - Forest Structure - Retention Silvicultural System
 - Forest Structure - Stand-level Retention
 - Forest Structure - Big Trees
3. Sustain forest dwelling species
 - Species at Risk
 - Species of Significant Concern
 - Common Species



Retention Silvicultural System Implementation

- “Don’t do the same thing everywhere” – Dr. Fred Bunnell
- Corporate
 - Targets
 - Zoning
- Operational
 - Targets
 - Originally guidance was used to communicate our intent
 - Since 2020, a practice standard has been in place
- Monitoring: Are we meeting the intended outcomes?
 - Annual monitoring of five year rolling average results
 - Periodic map level reviews
 - Periodic field assessments
- Feedback loop



Retention Silvicultural System Implementation - Corporate

- Targets

1. $\geq 50\%$ of the harvest area over a five-year rolling average using the retention silvicultural system (n/i GBR)
2. Meet or exceed Zone targets over a five-year rolling average using the retention silvicultural system

- Zones

- Vancouver Island Land Use Plan Resource Management Zones (Enhanced, General and Special) as modified by
 - Dry sites: CWHxm, CWHdm and CWHmm1
 - More retention
 - Windy areas: Nahwitti Lowland and Windward Island Mountain Ecosections
 - Less retention



Retention Silvicultural System Implementation - Operational

- Targets
 - Meet or exceed Zone targets over a five-year rolling average using the retention silvicultural system
 - Meet or exceed stand-level retention targets by Zone for each retention block
- Originally guidance provided to operational staff
 - Monitoring indicated inconsistent application of the guidance
- Standard released in 2020



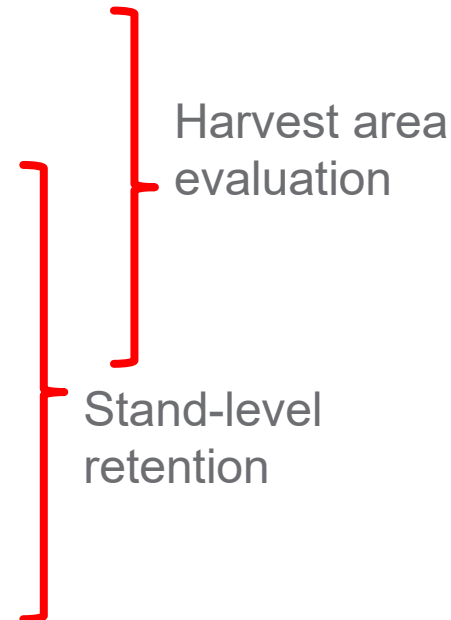
Operational: Standard (2020)

- Where does the standard apply?
- What we want to see retained for one rotation?
 - Groups of trees ≥ 0.25 ha
 - Windthrow strategy applied
 - Biological Anchors such as big trees, veteran trees, bear dens, karst feature, riparian, rare tree species
 - Block must look credibly different than a clearcut
- How we want the retention distributed within a cutblock?
 - Safe and efficient harvesting
 - Preferred spacing between groups or edges of $< 150\text{m}$
- Landscape targets: % retention silvicultural system by zone
 - Zones - VILUP Zones as modified by dry BEC Units and Ecosection
- Stand-level targets by zone



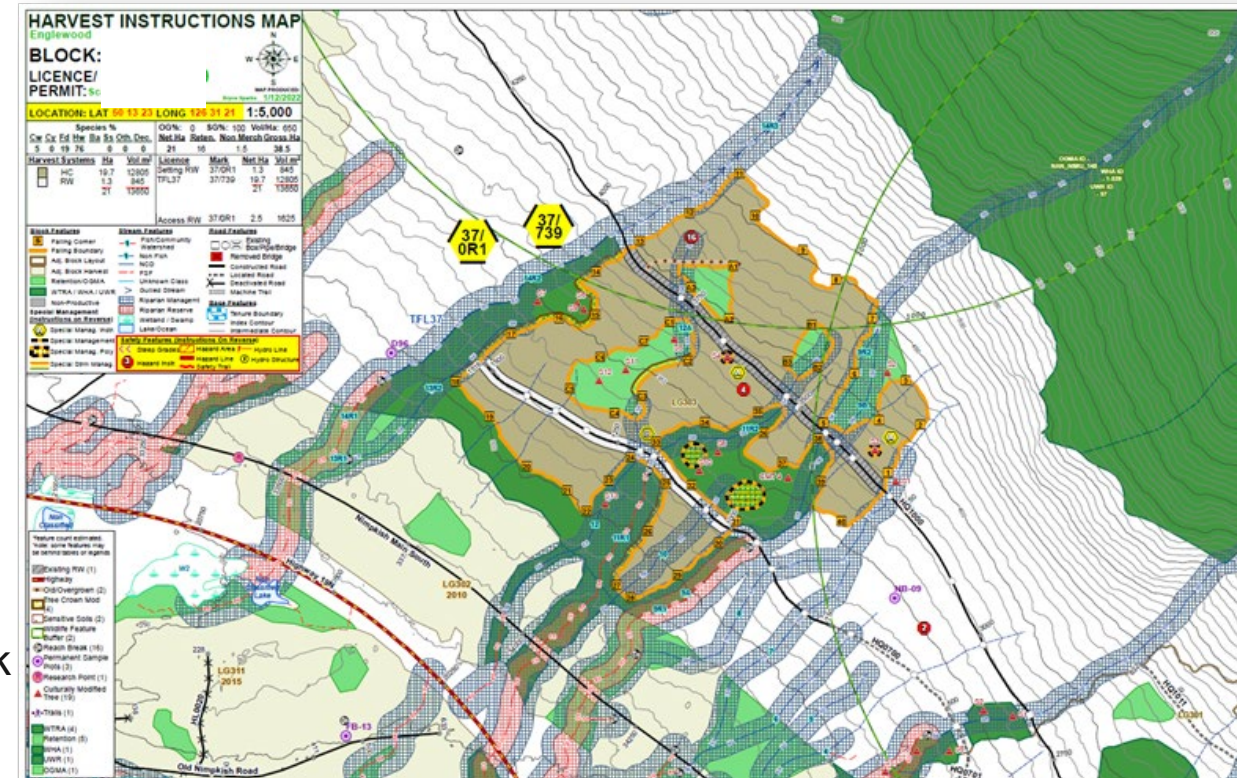
Monitoring: Annual Monitoring of Targets

- All cutblock data is stored in Land Resource Manager (LRM)
- Simple query to extract data for annual analysis
 - Operation
 - Harvest Area
 - Zone
 - Harvest Year
 - Silvicultural System
 - Block
 - Total Area Under Prescription
 - Retention/WTRA area
- Random data checks
 - Missing data, incorrect data, blocks that should not be part of the query
- 2019-2023 Retention: 65% of our harvest area used retention silvicultural system

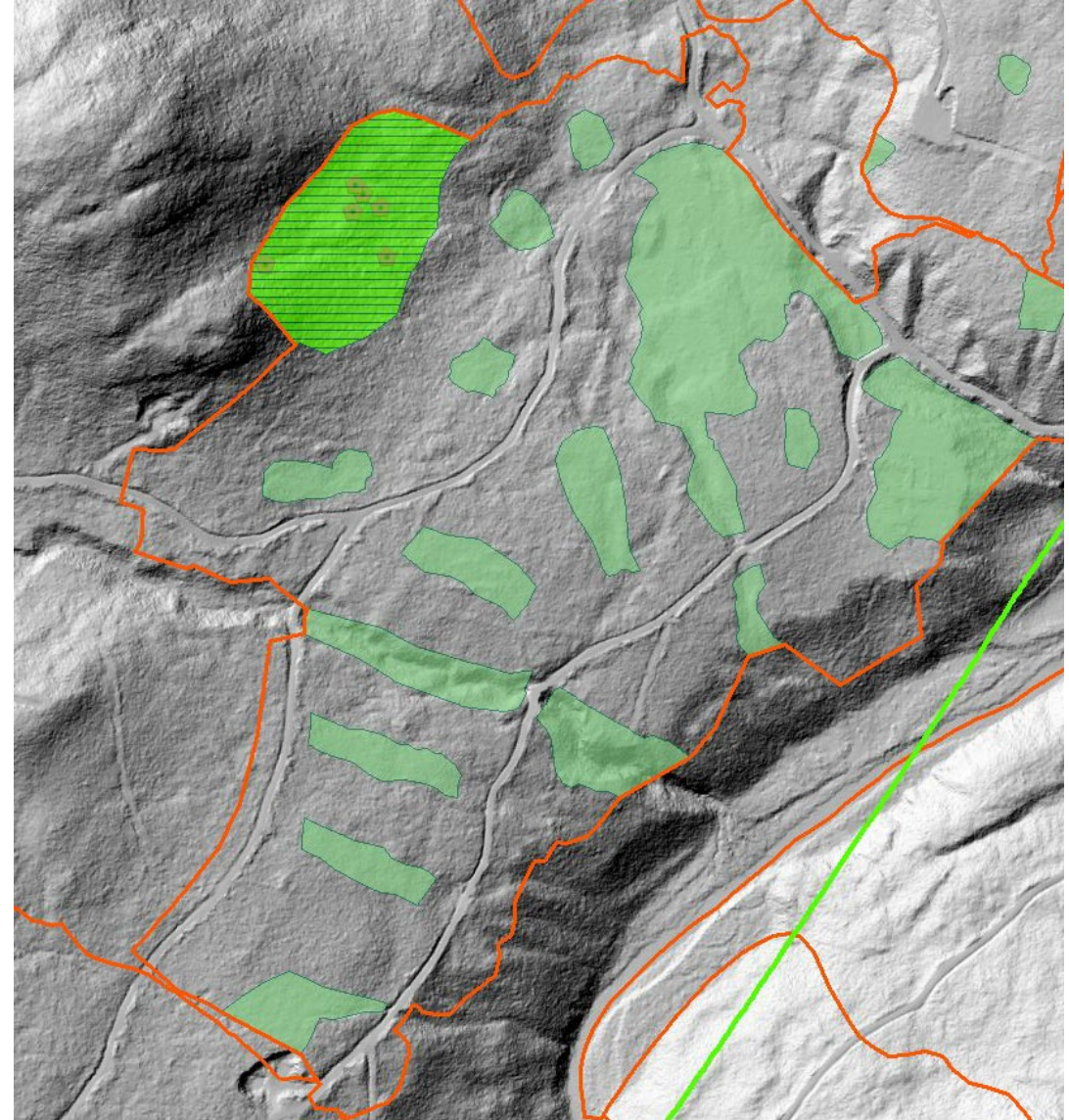
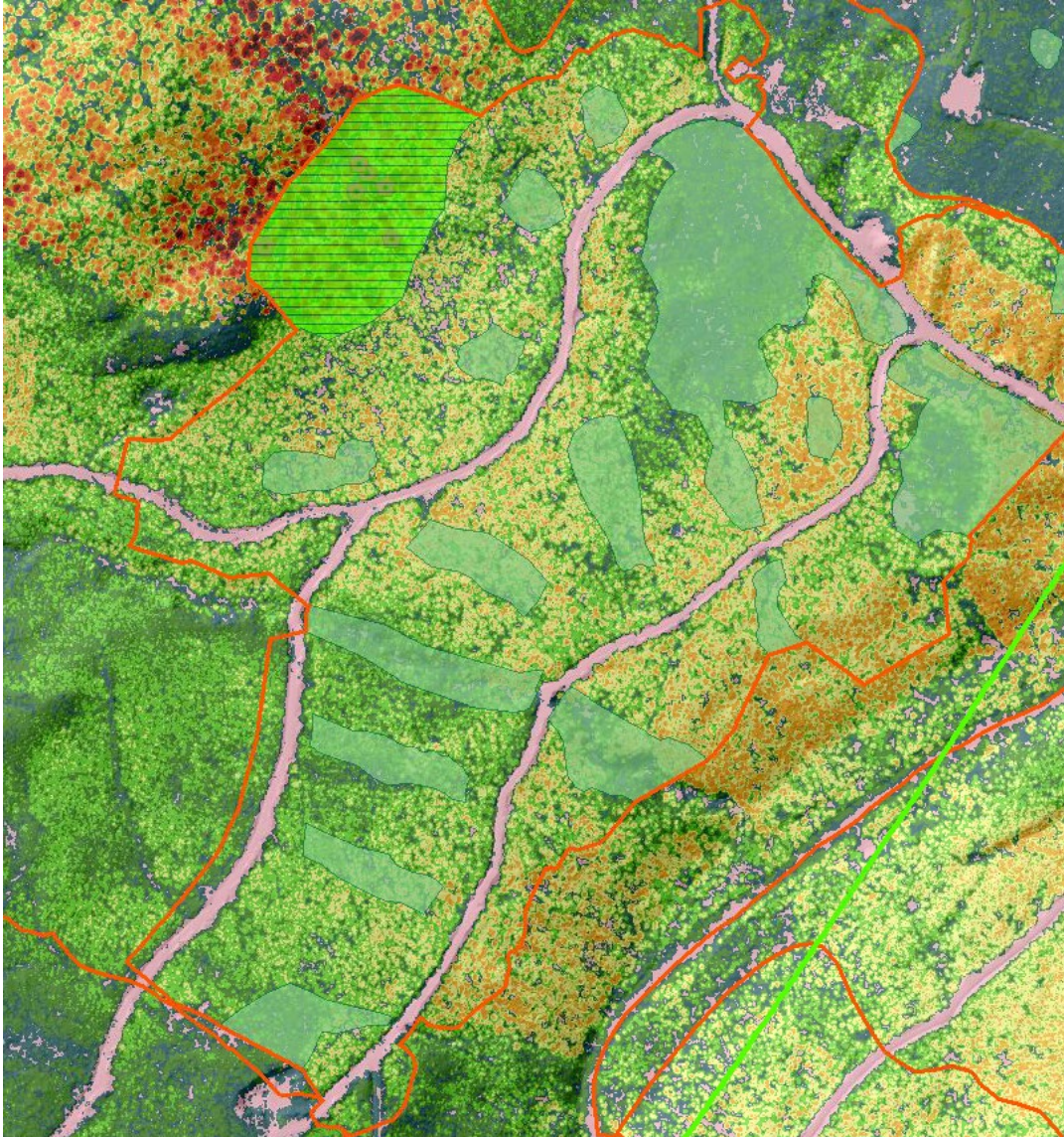


Monitoring: Map Review

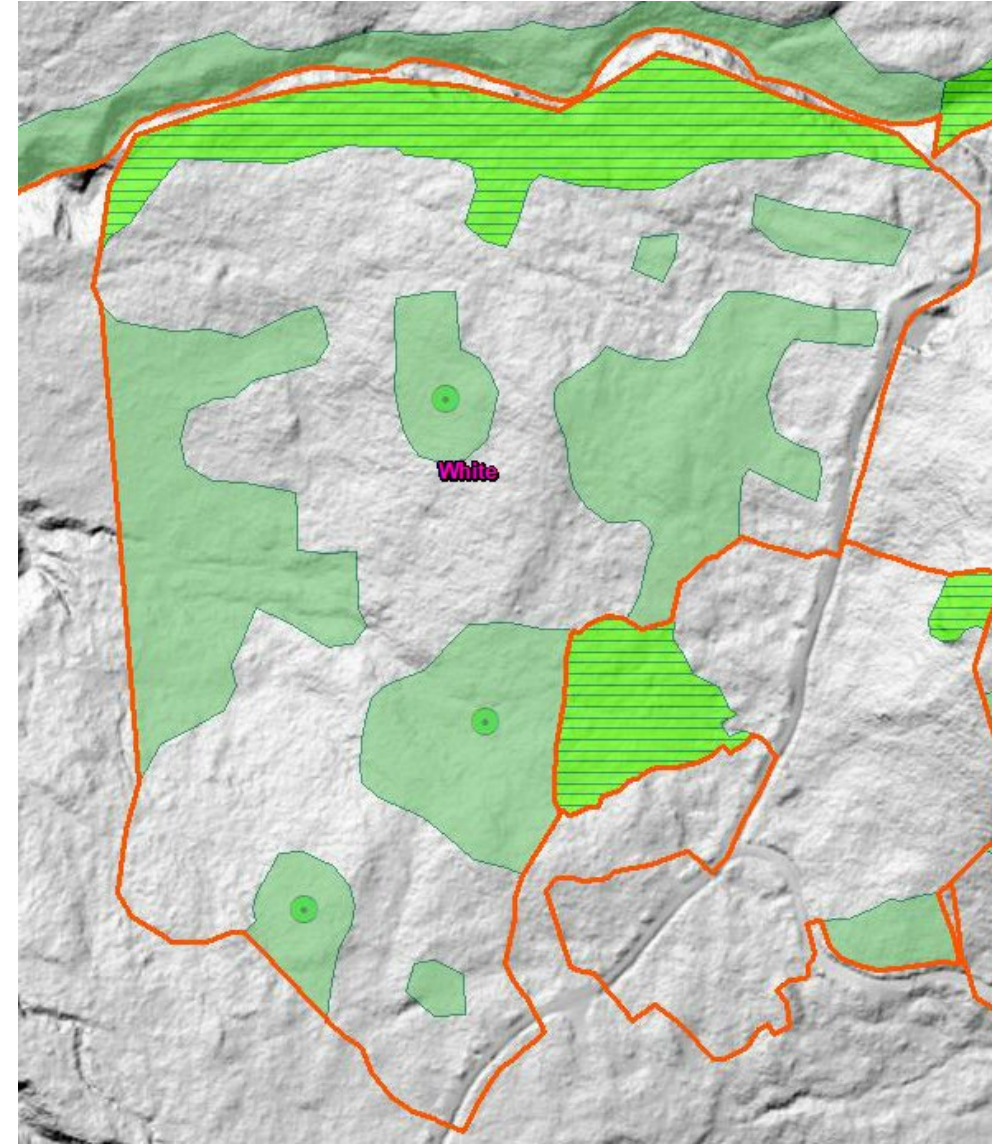
- Informal
 - asked for advice
- Formal
 - part of Western's monitoring program
 - periodic focused assessment
- Goal: does the block meet the intent of retention?
- What do we look at?
 - Conformance to our standard, including targets check
 - Biological anchors
 - Patch size
 - Distribution
 - Variability in patch size
 - “The Look”
 - Anything missed?



Monitoring: Map Review: Example 1 (2G)

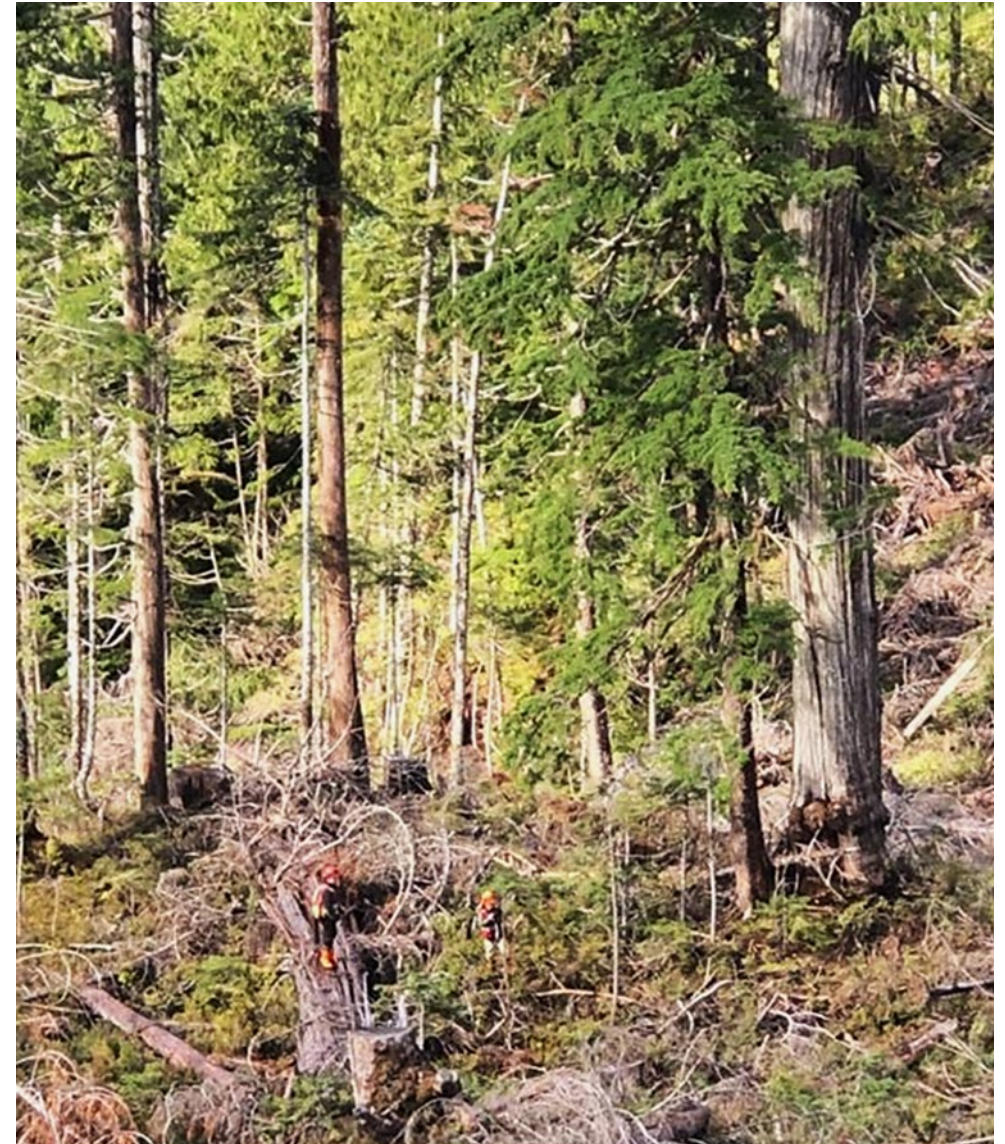


Monitoring: Map Review: Example 2 (OG)



Monitoring – Field Assessments

- Goal: Are we seeing what we expect to see in the field?
- Check for
 - Windthrow
 - Windthrow prevention treatments
 - Damage to trees from harvesting
 - Harvesting inefficiencies
 - Biological Anchors
 - “The Look”



Key Learnings from Previous Monitoring

- Misinterpretation of Guidance
 - Examples of past issues:
 - Long linear blocks with no internal retention – meets forest influence;
 - Inconsistent calculation of forest influence;
 - Leave tree selection;
 - Harvesting adjacent to a previous retention block;
 - Spatial distribution of forest patches (sections of cutblock are quite open); and
 - Windfirmness
 - Resulted in (continual improvement):
 - a clear, concise practice standard in 2020;
 - Focus on patches of trees, limited the use of individual trees
 - more frequent monitoring of post layout maps to catch potential issues prior to harvest;
 - LiDAR-based tool to calculate forest influence; and
 - more frequent training.

Future of Retention Silvicultural System

- Globally recognized silvicultural system
- Use of the retention silvicultural system is not going away.
 - Integral part of Western's Wildlife and Biodiversity program.
- Retention Silvicultural System has been incorporated in the TFL 37 FLP Pilot and various planning initiatives with First Nations such as Integrated Resource Management Plans (IRMPs).
- BC Old Growth Review (2020)
 - Recommendation 12: Innovative Silvicultural System
 - Move from predominately clearcut with reserves to multiple silvicultural systems to manage multiple values
 - Implementation on current Western tenure started in 1999 (Weyco 1999, Canfor 2000)
- BC's Biodiversity and Ecosystem Health Initiative
 - Connection between landscape-level retention, stand-level retention and species-specific strategies is critical to biodiversity and ecosystem health.

