25 YEARS OF VR IMPLEMENTATION ON WFP TENURE

February 19, 2025

Western Forest Products®

Outline

- 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

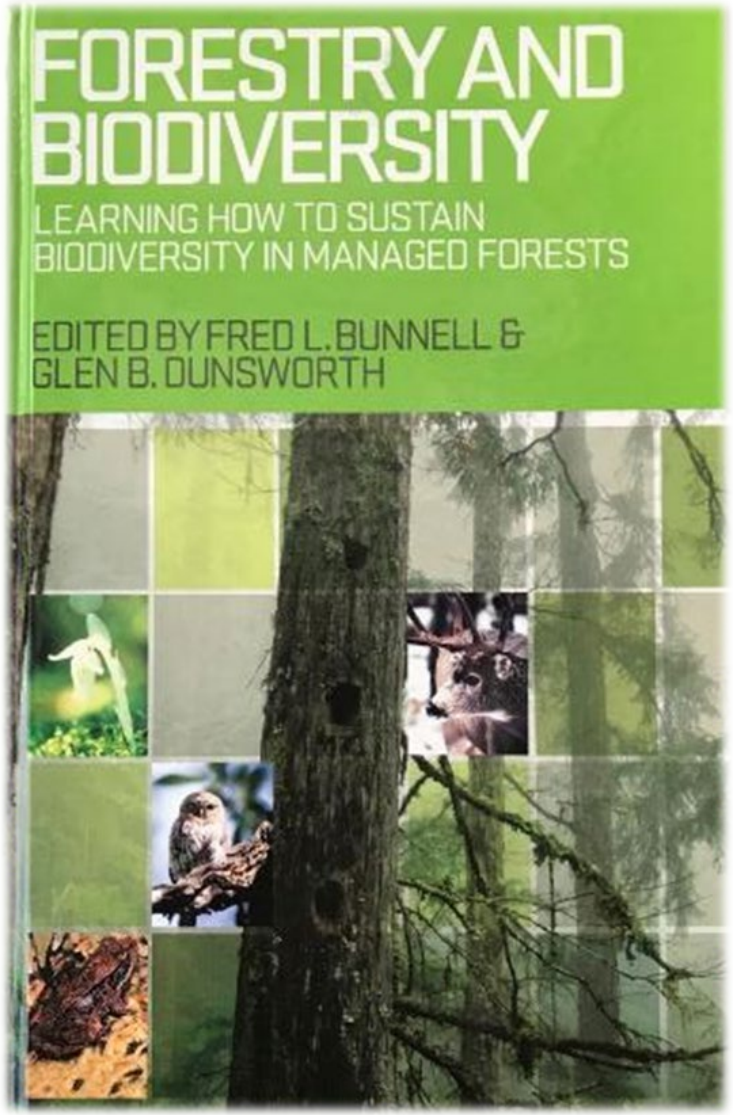
Variable Retention vs Retention Silvicultural System

- 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 of 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



Western's Wildlife and Biodiversity Program

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. ≥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 <150m
- Landscape targets: % retention silvicultural system by zone
  - Zones - VILUP Zones as modified by dry BEC Units and Ecosection
- Stand-level targets by zone

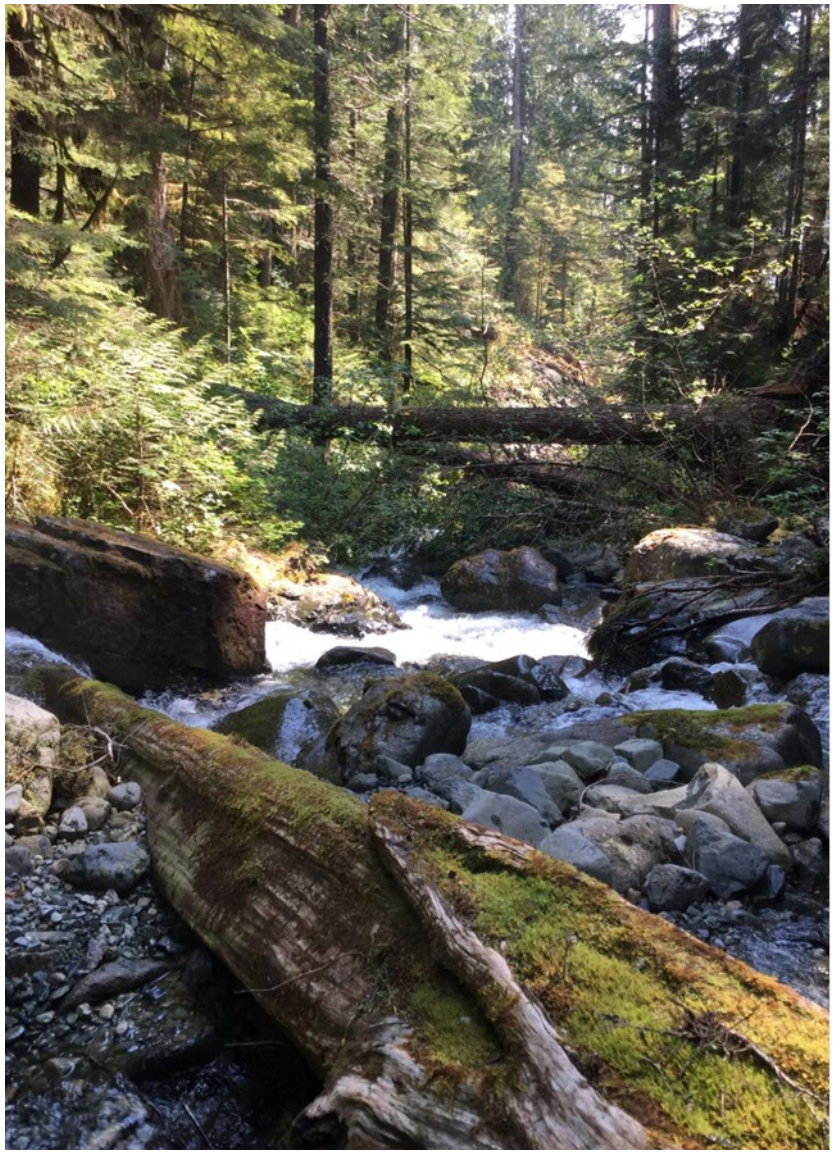
Monitoring: Annual Monitoring of Targets

- 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

Harvest area evaluation

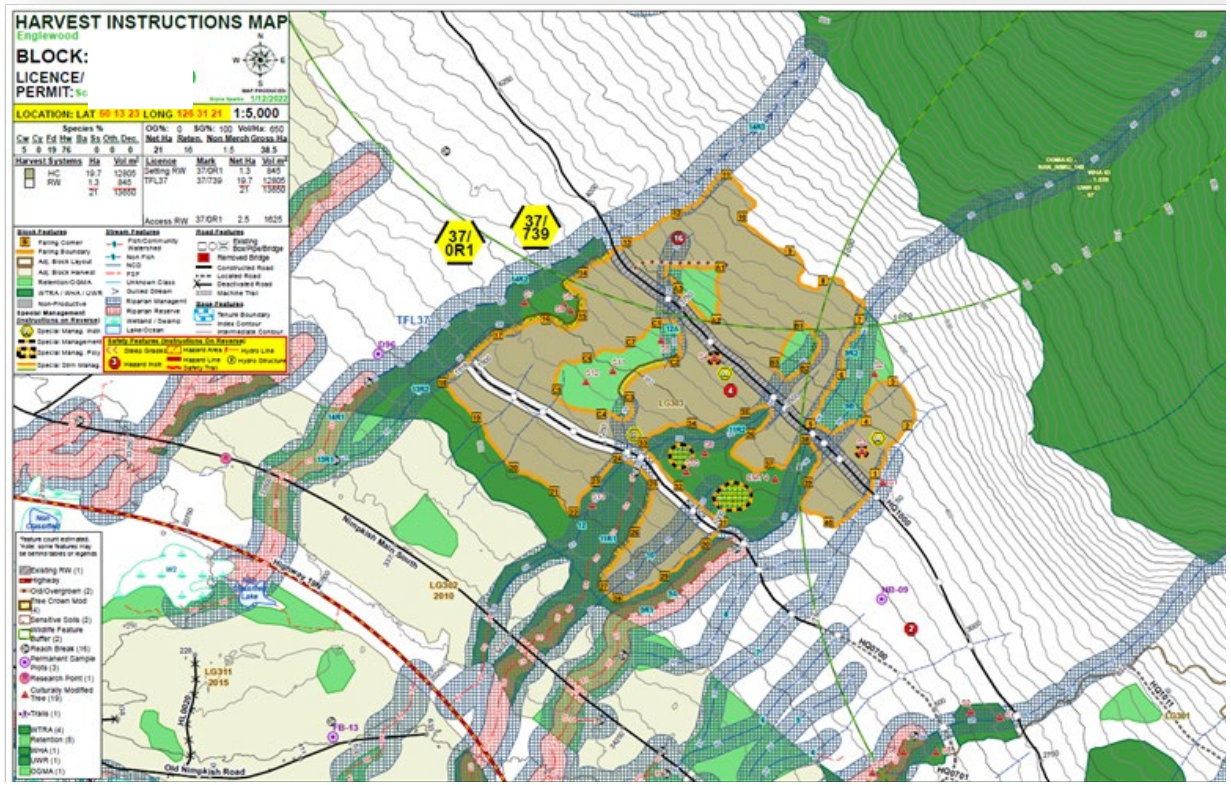
Stand-level retention

- 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

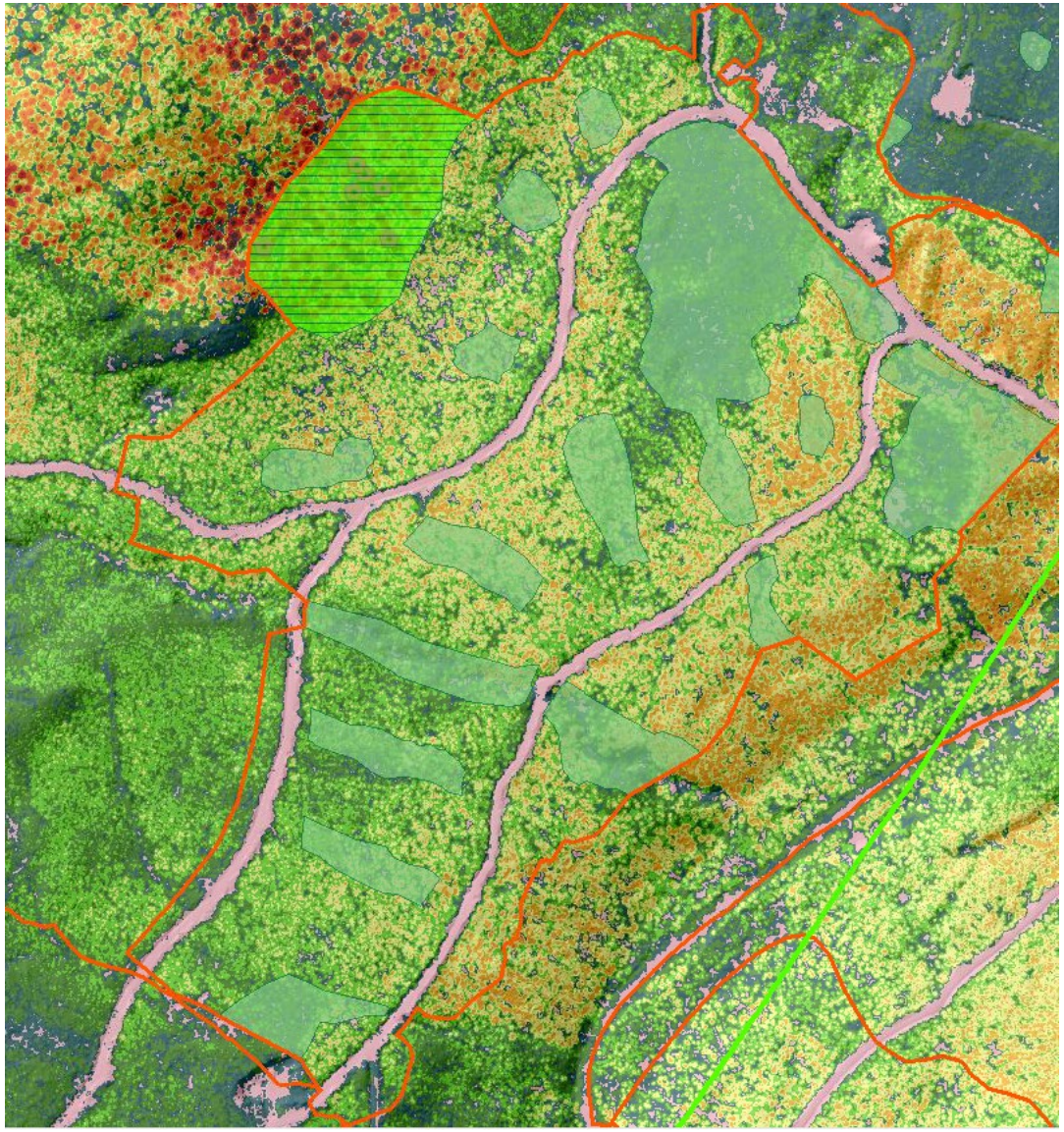


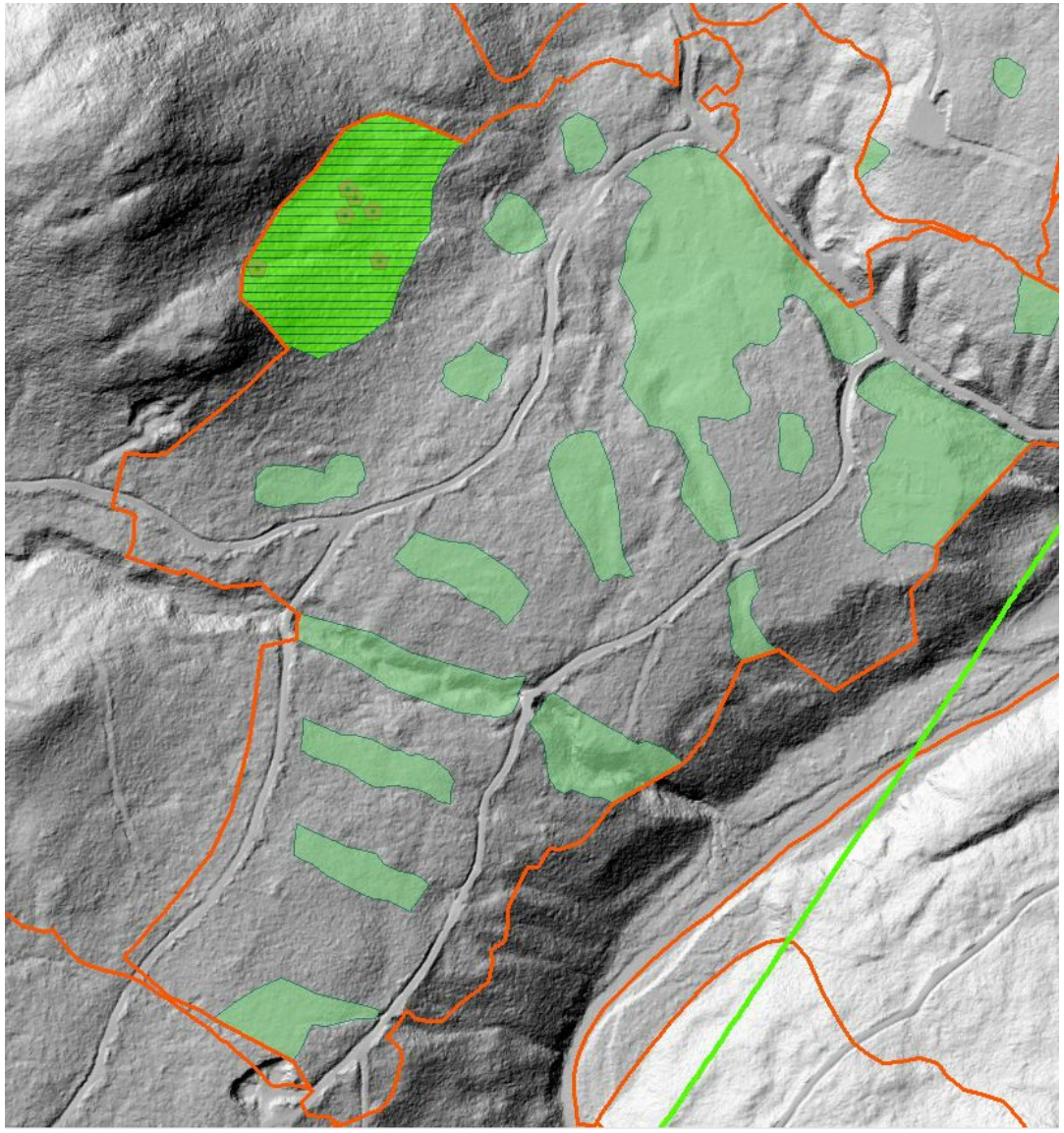
Monitoring: Map Review

- 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?

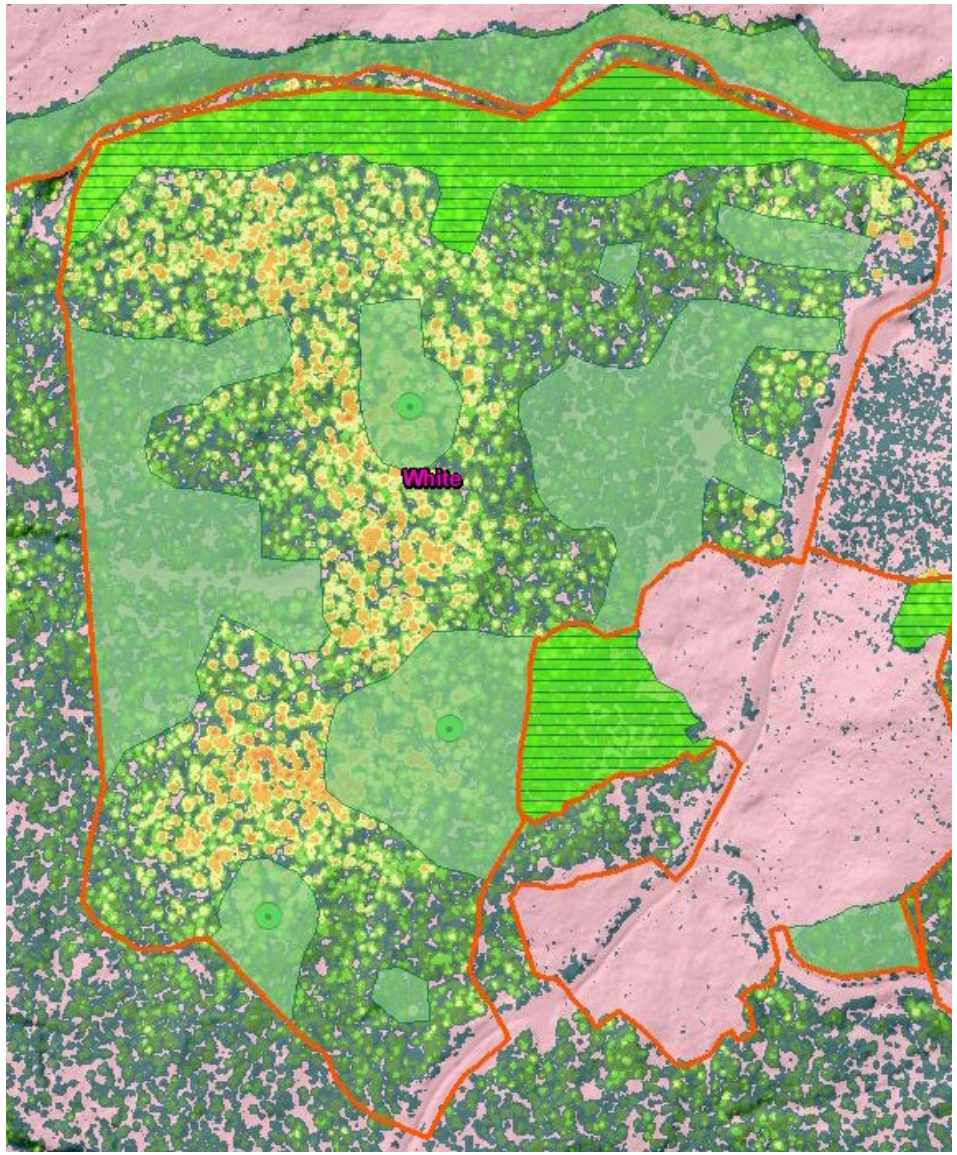


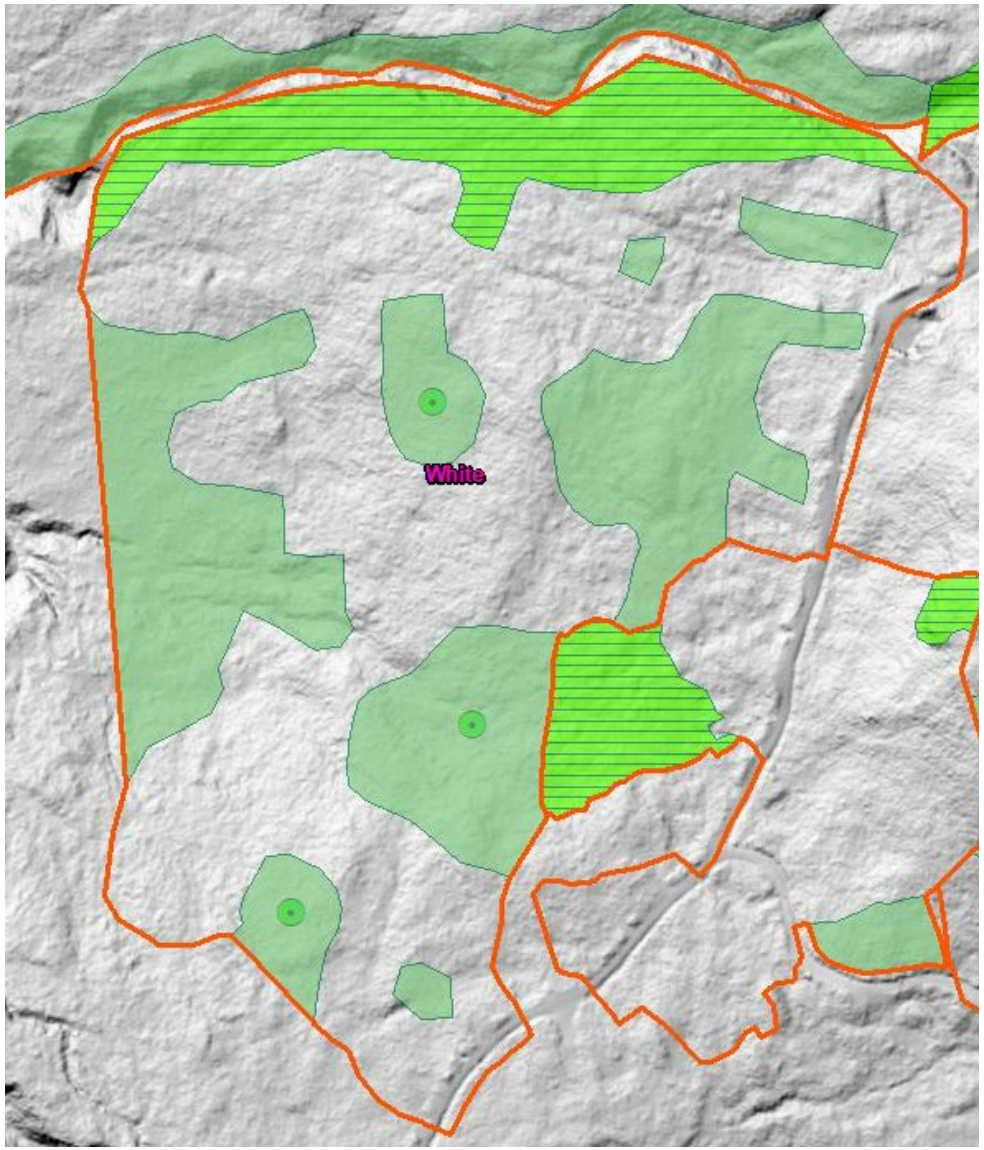
Monitoring: Map Review: Example 1 (2G)





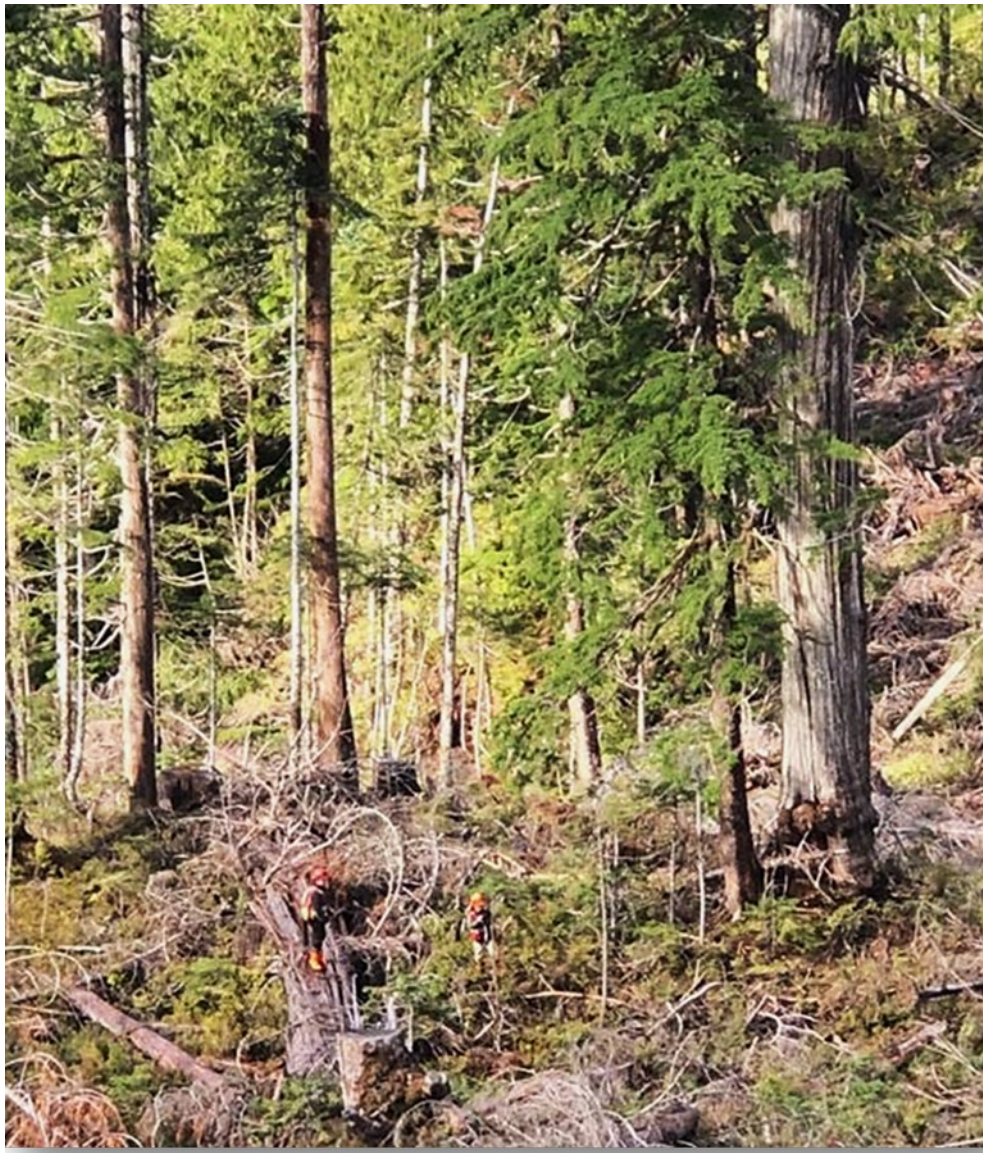
Monitoring: Map Review: Example 2 (OG)





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.

EVERYTHING IS CONNECTED