



SERNbc Restoration Standards for ERP Special Management Zones

How crisis response, operational efficiency, and policy shortcuts created the conditions for today's SMZ reforms

CONTEXT FOR THIS PRESENTATION

SERN BC WORKING WITH LOCAL STAKEHOLDERS AND FIRST NATIONS , formed the “Yun Ghun’ Li Table”. This group, coordinated and led by John DeGagne, forms a leadership table that spearheaded the focus on many aspects of restoration within the areas of the Shovel and Island Lake wildfire zones.

I would like to specifically give recognition to the Nadleh Whu’ten and Stelat’en First Nations contributions to these and many other priorities that SERNBC has worked with these Nations to prioritize.

I want to include the funding we received from HCTF, who is part of this as a funder.

Among the concerns, were to address the mid and long term impacts these wildfires have on the landscape, future forest, the water systems, food security, and wildlife that depend on them.



The recommendation was for SERNbc to retain the services of David Daust and Karen Price who worked directly with affected First Nations to develop the ERP.

The ERP was a collaborative venture which identified Zonation for Prioritization of values across the Shovel/Island Lk areas including:

Timber Restoration Zones

WUI's

Special Management Zone's

This presentation will not be getting into the specifics of this document, however, the objectives and Results described in the ERP, required the development of stocking standards and professional practices.

In developing Restoration Standards and Professional Practices, it was critical to review the history, policies, and practices which were the root causes of ecosystem and wildlife impacts the Yun Ghun'Li table was highly concerned with.

I was contracted to develop DRAFT Stocking Standards for the SMZ and TRZ of this ERP.



I shamelessly stole these images from their website:
www.saftforestry.com

Our Participants

John DeGagne,
Nick Hamilton,
Cheryl Johnston-Schuetz,
Taisa Brown,
Craig Farnden,
Duncan McColl,
Daniel Sklar,
Britney Grunerud,
Kirsten Chapman,
Alexandre Bevington,
Alana Clason,
Caitlin Harrison,
Brandon Geldart,
Irene Ronalds,
Pam Ketlo,
Doug Casimel,
Jason Regnier,
Isaiah Reynolds,
Jason Parsons,
and Diana Gerdenits.

Special mention: Bruce Rogers reviewed the original draft utilizing climate-based seed transfer and provided feedback.

Upon my completion of the Draft Stocking Standards SERNBC wanted to create a collaborative team review and amendment process to develop the final stocking standards

This is the list of all people who presented, came to the meetings and provided much needed information and feedback that informed our final SMZ Restoration Standards and Professional Practices.



A little about me...



- 30 + years of Operational and Silviculture
- Sweden
- Mid-Coast
- Haida Gwaii
- Central BC
- NE BC
- Kooteney's
- Vernon/Kamloops/Clearwater Valley
- Omenica
- Government, BCTS, Consultants, First Nations, and Industry
- Site Plans
- Field Data Collection
- FSP Reviews
- Planting Implementation
- Backlog Forestry Management
- Training
- Stand Management Prescriptions



Sweden: Working for the largest forestry company. Yes, that is a lot of Canadian Lodgepole pine! Facilitated migration? They were regulated to stop planting it.

Eco/Timber Cruising: protecting very minor areas of orchids – in a large landscape of plantations.



Mixedwoods of southern Germany, like Sweden is heavily privatized forest lands. Ecosystems and wildlife integrity is highly artificial –for instance, pollen analysis in bogs was required to reverse engineer what their ecosystems and forest structures were supposed to be. To date while the forests are experiencing unprecedented dieback, there are other issues, such as build up of organic materials on the forest floor. The lack of specific microorganisms required to break down foliage from some species (particularly foreign species) is causing build up in some forests.



My learnings from work I have done here in BC and in Europe:

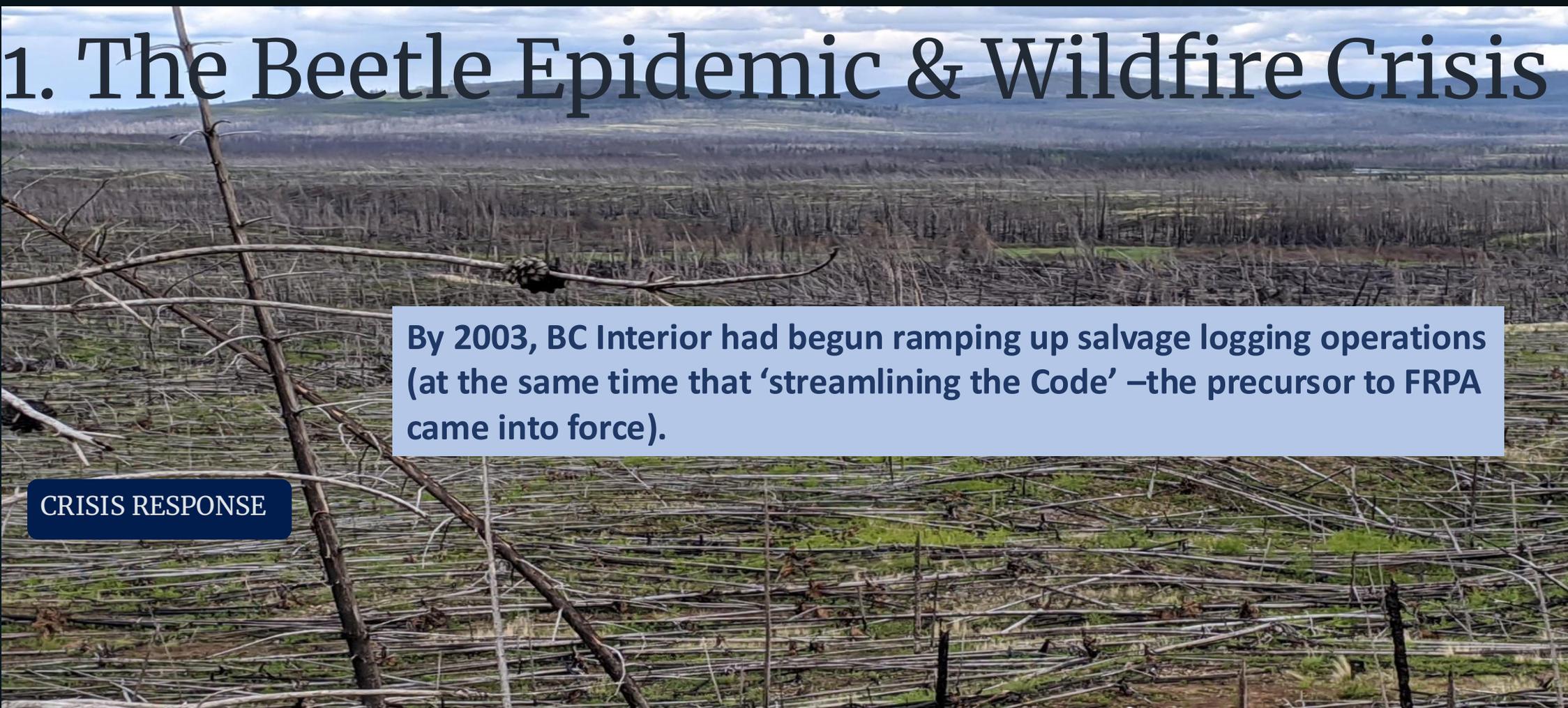
We have only limited understanding of how wildlife, soils and plant species interact and adapt into future forests. Highly managed, fragmented systems in Europe have significant issues due to realizing how important animals, plants, and connectivity are to ecosystems.

We cannot predict, model or manage if we do not have a full understanding of where we are/ were. Carefully identifying ecosystems, plants, and the wildlife are critical to avoid the issues Europe is facing.

We must carefully inventory what we know now, and protect as much as we can, in order to build meaningful models and management strategies.

Issues that shaped our Restoration Standards

1. The Beetle Epidemic & Wildfire Crisis



By 2003, BC Interior had begun ramping up salvage logging operations (at the same time that 'streamlining the Code' –the precursor to FRPA came into force).

CRISIS RESPONSE

The Crisis

Mountain pine beetle epidemic devastated BC's forests, followed by catastrophic wildfires. The response was urgent: rapidly scale up salvage logging and stand reestablishment to recover economic value and restore forest cover.

The Consequence

Industry and government aligned around operational and economic efficiency. Speed and volume became the priority. Ecological considerations were secondary to getting timber out and replanting quickly.

2. Forest and Range Practices Act: Objectives Without Strategy



LEGISLATIVE FAILURE

The Legislative Gap

The Forest and Range Practices Act introduced a 'cookbook' of management objectives—caribou habitat, mule deer habitat, riparian zones—but provided minimal guidance on how to achieve them. Loose, open strategies that were often not specific or easily exempted. (ie. Secondary Structure Criteria).

- ❑ Result: Zones designated for specific wildlife had no real protection. Timber supply always won.

The Timber Caveat

Across all these objectives, a single qualifier undermined them all: **'without unduly reducing the supply of timber.'** This phrase became the escape clause. Wildlife objectives were always secondary to timber supply, making them effectively unenforceable.

3. Standard Units Become Operational Zones, Not Ecological Units

OPERATIONAL CONSOLIDATION

Standard Units were initially developed based on ecosystems and soil types, serving as ecological bases for management prescriptions and meaningful stocking standards. However, due to the need for operational efficiency, they evolved into extensive consolidated management zones, occasionally covering over 700 hectares and combining several distinct ecosystems into one operational entity.

This shift diverged management from the ecological reality of the land.

The Problem: Multiple ecosystems with different wildly divergent edaphics, species suitability, and habitat potential were now treated as uniform management zones.

"standards unit" means one or more parts of a cutblock for which part or parts there is only one of each of the following:

- (a) soil disturbance limit;
- (b) regeneration date;
- (c) stocking standard;
- (d) free growing date;
- (e) free growing height for each species that contributes to establishing a free growing stand on the cutblock;

**FPPR Definitions: Effective
January 10, 2026.**

POLICY PIVOT

The Real Problem

Poor Standard Unit design blending incompatible ecosystems, combined with inappropriate species selection (Lodgepole pine in unsuitable habitats) created monocultures.

The Response

Rather than redesign Standard Units or restore ecological diversity, policy shifted blame to site-specific stocking standards methodology. A new 'landscape-level standard' was developed that completely disconnected management from edaphics and ecological suitability.



This allowed the system to avoid addressing the fundamental ecological failures while appearing to innovate.



MONOCULTURE PROBLEM

4. Lodgepole Pine as the Universal Solution

The Logic

Lodgepole pine was considered a preferred species across nearly every ecosystem type. It grew quickly. It was operationally simple.

The Result

High-density pine plantation monocultures became the default across diverse ecosystems where they were ecologically inappropriate.

The Cost

Loss of biodiversity, reduced wildlife habitat, simplified stand structure, and stands vulnerable to pests and disease.

5. Western Larch: A Shortcut to Freegrowing

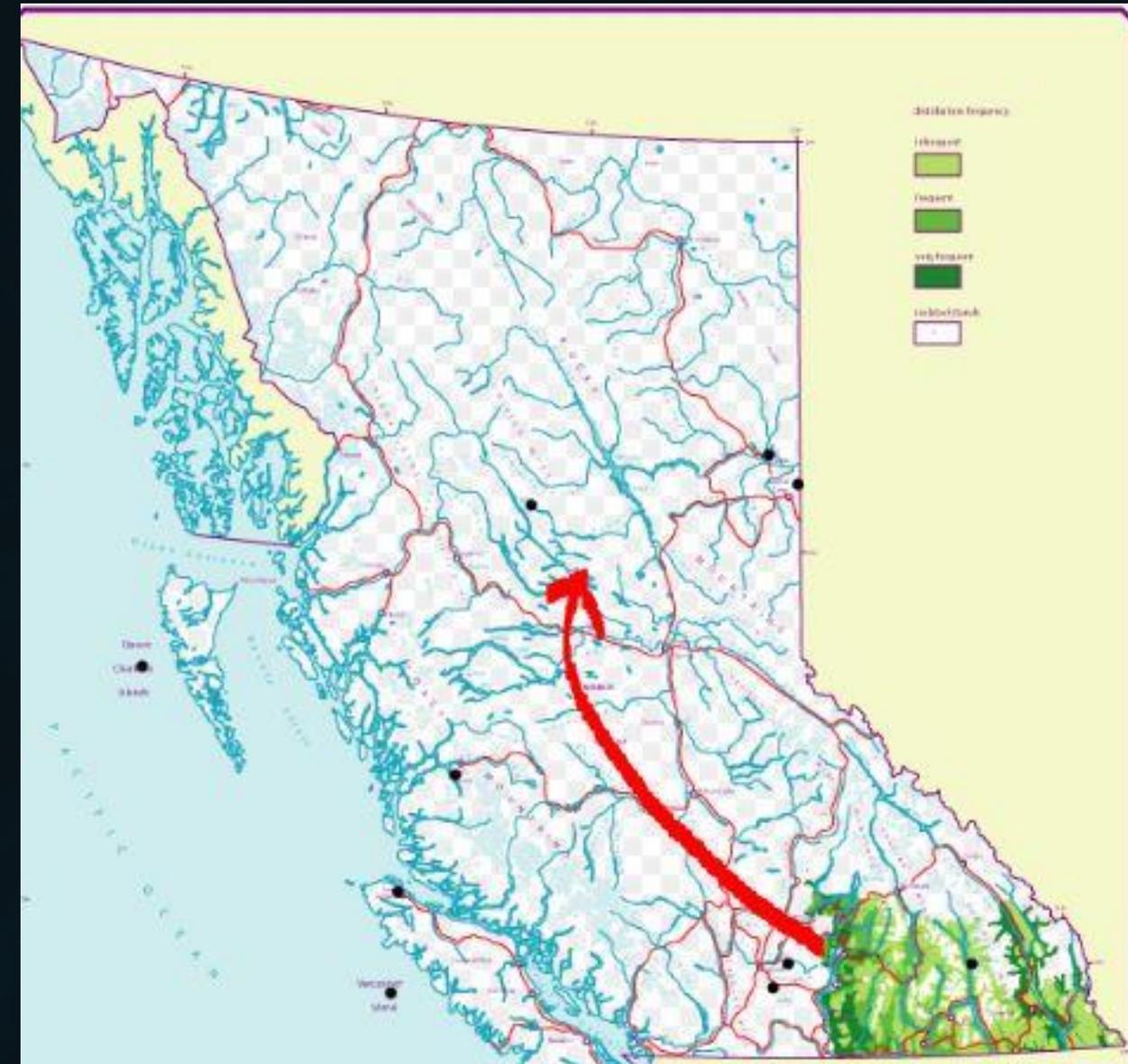
EXPEDIENT SOLUTIONS

The ecological problems with this approach are unknown, but could be substantial:

When pine monocultures faced criticism, the solution was not to invest in planting ecologically appropriate species like Douglas-fir. Instead, a rationale was created to 'facilitate' the migration of western larch — a species with exuberant juvenile growth that could quickly meet freegrowing requirements.

- Western larch's natural BC habitat is in warmer soils with higher decomposition rates: C, N, and P requirements are unknown in our area.
- Winter thermal shelter benefits are far less than Douglas Fir or Spruce.
- It has far less opportunities for forage potential for wildlife
- Its impact in terms of nutrient depletion of soils and impacts on understory is also not well understood in Central/Northern BC.

Yet it was planted throughout most of central BC.

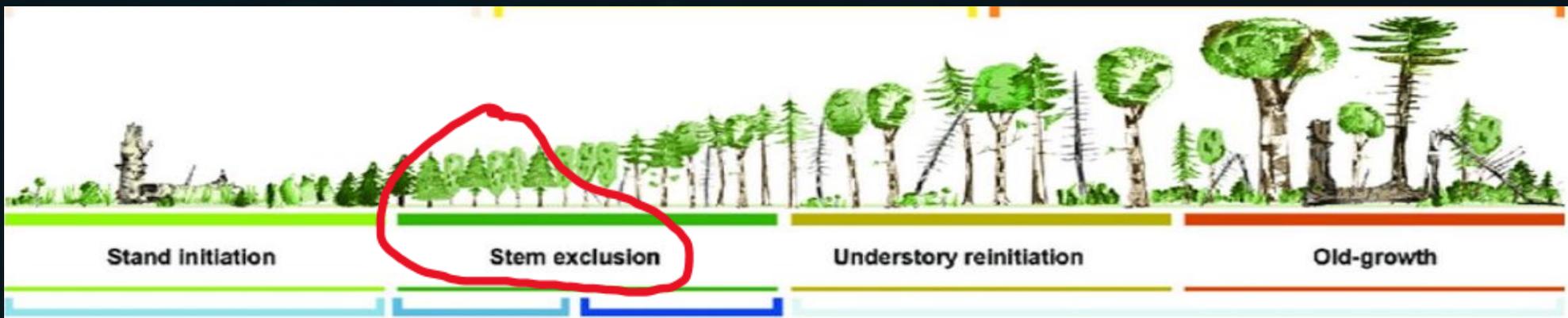


6. Broadleaf Reduction & Density Escalation



Broadleaves were systematically reduced to meet freegrowing obligations, despite their critical role in young stand dynamics.

Simultaneously, maximum density rules were relaxed or eliminated. Stands under 20 years old in central BC were allowed to exceed healthy density thresholds—often reaching 8,000+ stems per hectare when repression can occur in densities above 5,000 sph.



High density + reduced broadleaves = simplified, wildlife-poor stands.

7. Removing Density Obligations: Shifting Responsibility to Taxpayers

THE FINAL SHIFT

The Chief Forester's decision to release licensees from maximum density obligations represents the final step in this progression. Well-established forestry science demonstrates that healthy stand dynamics—for both timber value and wildlife habitat—require density management.

By removing this obligation, the burden of managing stand density—and the ecological consequences of high-density monocultures—shifts from industry to the public through funding mechanisms to address reduced wildlife habitat, degraded ecosystem services, and long-term forest health costs.



The Pattern: Each decision moved responsibility away from licensees and toward public resources, while maintaining the appearance of forest management innovation.



Area North of Great Beaver Lake: 1984 to 2023

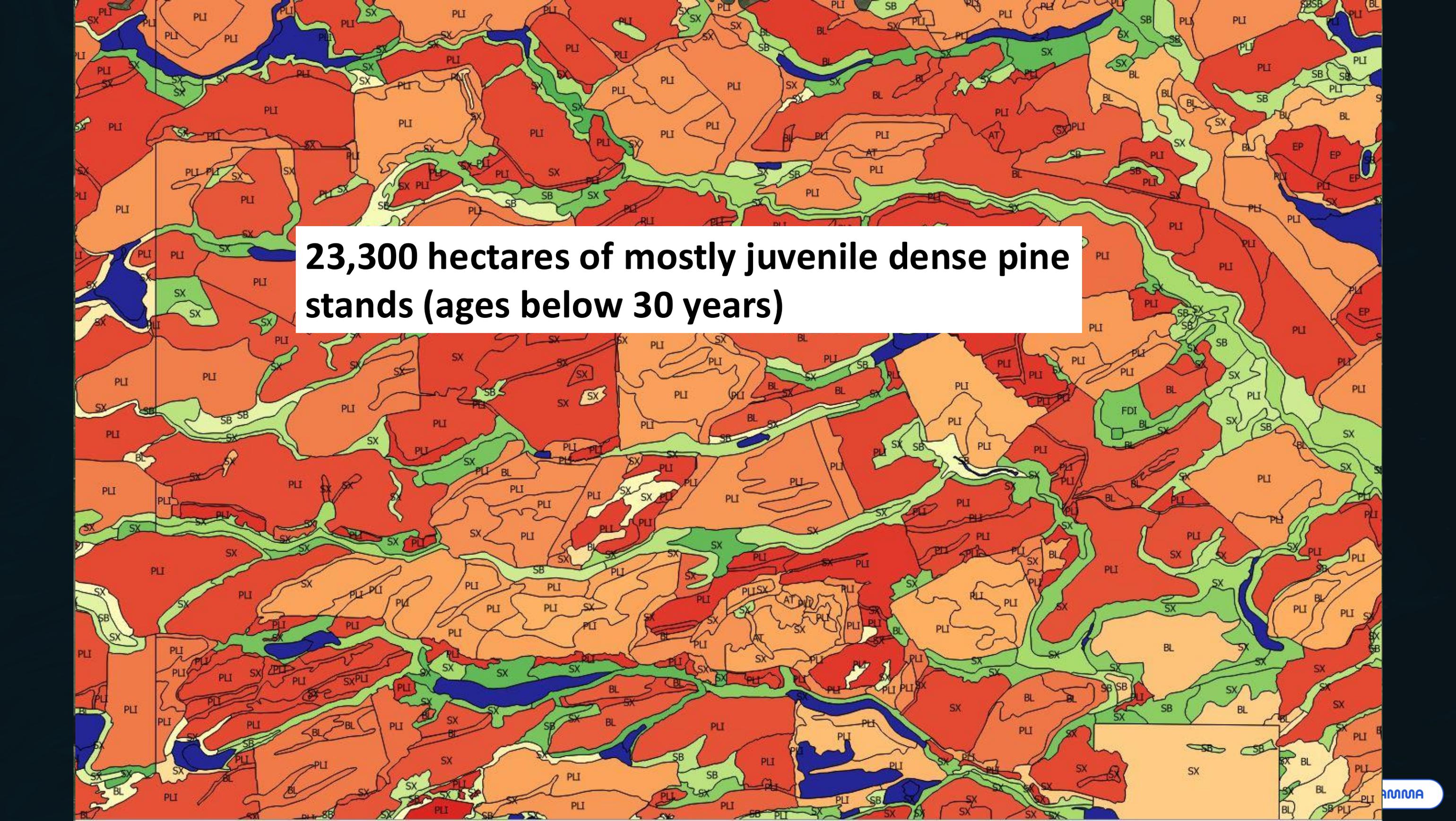


Great Beaver Lake

Bugle Lake

9.22 km

Image Landsat / Copernicus

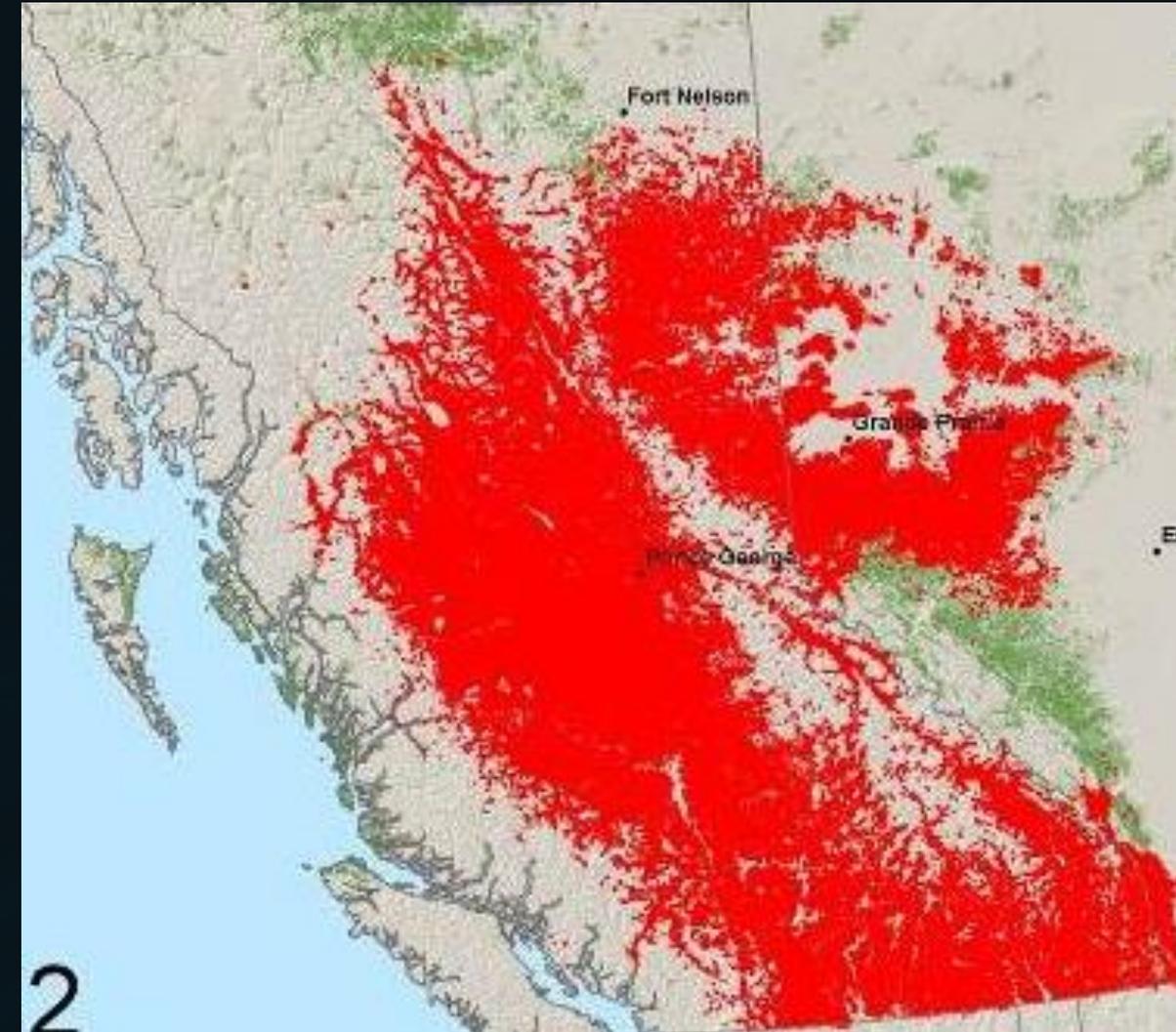


23,300 hectares of mostly juvenile dense pine stands (ages below 30 years)

The Current Reality: Central BC's Forest Crisis

This image shows the areas where MPB impacted stands. Most of these stands were mixed species, mature forests – a mosaic. However, Central BC is now a landscape of primarily young, high density lodgepole pine stands. Our forests lack diversity, structure, forage, broadleaves, and are more susceptible than ever to future pathogen, wildfire, and insect outbreaks. While the catastrophic impacts of bark beetles and wildfire required expediency, The legacy of over two decades of decisions that prioritized operational efficiency, timber supply, and fettered professional judgements over ecological health, long term landscape health, and wildlife habitat brought us to where we are now.

FRPA's basic structure, and the incorporation of policies and practices on the landbase which allowed for a minimalistic approach to meeting targeted objectives, resulted in multiple systemic issues. Stand restoration being one of many.



2003-2012 Total MPB Killed Pli Stands

New Stocking Standards for Special Management Zones

Enhancing Biodiversity and Wildlife Habitat Through
Evidence-Based Silviculture



SERNbc



Society for Ecosystem Restoration in Northern BC

SERNbc began this journey in late 2023 when I was contracted to develop a Draft Stocking Standards for the Shovel and Island Lake ERP. This followed a Joint Peer Review working group with highly experienced and variously knowledgeable people who participated and sometimes led various elements of these discussions and considerations. The amended Final Draft of the Restoration Standards and Professional Practices for the SMZ is now almost completed. Our goals for 2026 are working on the Timber Restoration Zones and partial Cutting systems in 2026.



OVERVIEW

Six Key Changes to SMZ Standards

01

Keystone Species Requirement

02

Standard Unit Accountability

03

Flexible Stand Dynamics

04

Western Larch Elimination

05

Broadleaf Tolerances

06

Conifer Maximums Restored

CHANGE 1

Keystone Species Requirement



Key Benefits

- Direct link to wildlife habitat outcomes
- Measurable, auditable targets
- Improved ecosystem resilience

By anchoring prescriptions to keystone species, we create measurable targets that directly support biodiversity objectives.

The new standards introduce a **mandatory keystone species component** for all SMZ prescriptions. This requirement ensures that species critical to ecosystem function — are explicitly accounted for in Freegrowing Surveys. Shifting focus away from high density establishment – to ensuring Keystone species established.

Species Selection and Stand Composition Strategies

	B	C	D	E	F	G	H	I	J	K	L	M	N	O	
P.	BEC Zone/ Subzone	Site Series	Patch Size/ Type	2025 CDC Listing	Keystone SPP.	Preferred SPP	Acceptable	Acceptable Broadleaf SPP	MITD	Keystone Min SPH	TSSpa(M value)	MSSpa SPH	MSSp	Pli/Fdi Min. Hts by Yr 20 (m)	Br
	SBS dw3	01	Large/Mosaic		Fdi ^a	Pli, Sx, Fdi	Bl	Ep, At	1	200	1200(6)	600	500	Pli/2.0, Fdi/1.6	A
	SBS dw3	02 ^g	Large and small	Blue	Fdi	Pli, Fdi	Sx	Ep	1	100	1200(6)	400	200	Pli/1.4, Fdi/1.2	A
	SBS dw3	03			Pli	Pli, Sx		At, Ep	1	200	1200(6)	400	200	Pli/1.6, Fdi/1.4	A
	SBS dw3	04	Large and small		Fdi	Pli, Fdi	Sx	Ep	1	300	1200(6)	600	500	Pli/1.6, Fdi/1.4	A
	SBS dw3	05	Large	Blue	Sb	Sx, Pli, Sb		At	1	250	1200(6)	600	400	Pli/1.6, Fdi/1.4	A
	SBS dw3	06	Large and small	Blue	Sx	Pli, Fdi, Sx	Cw ^{dc}	At	1	300	1200(6)	600	500	Pli/1.6, Fdi/1.4	A
	SBS dw3	07			Sx	Pli, Fdi, Sx	Cw ^{dc}	At, Act	1	300	1200(6)	600	400	Pli/1.6, Fdi/1.4	A
	SBS dw3	08			Sx	Pli, Sx	Cw ^{dc}	Act	1	300	1200(6)	600	400	Pli/1.6, Fdi/1.4	A

Example of Keystone Species Mandatory minimums at Freegrowing. Shifting focus away from overstocking to critical species establishment

Greater Accountability on Standard Unit Adherence

We cannot model or measure where we are going, if we do not carefully document where we are now!
Professional Practices Matter.

STANDARD UNIT 1: CRITICAL SITE/SOIL FACTORS SHEET						
BEC Zone/ Subzone:	Site Series:	%				%
	SS1			SS2		
SS Type:				# Plot Card:		
Rationale for complex Site Series.						
Site Information				Low	High	
Net Area:				SMR Range		
Aspect:				SNR Range		
Meso-Slope Position:				Min. Slope		
B Layer Soil Text.				Max. Slope		
B Layer CF %				Soil Hazard Rating		
Critical Soil Factors Check all that apply/ Mitigation						
Cold Soils	<input type="checkbox"/>					
Shallow Soils	<input type="checkbox"/>					
Deep Organic Layers	<input type="checkbox"/>					
Skeletal Soil	<input type="checkbox"/>					
Seasonally Saturated Soils	<input type="checkbox"/>					
Gleysolic/ wet soils	<input type="checkbox"/>					
Fluctuating water table	<input type="checkbox"/>					

The revised framework establishes **stricter compliance thresholds** for Standard Unit boundaries and Restoration Standards Selection. Foresters follow a rationale document, outlining critical site and soils factors and report deviations from SS1,SS2 with supporting rationale, ensuring that habitat objectives remain the priority.

CHANGE 3

Flexible Stand Dynamics



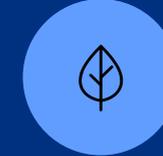
Reduced Minimums for Preferred/ Accept.

Lower densities create structural diversity



Reduced Inter-Tree Distance

Allows natural gap formation for shrubs



Maintaining High TSS

Encouraging M value of 6 +, further enhancing variability

By reducing minimum stocking requirements and inter-tree distances, we enable **natural stand dynamics** that promote shrub establishment and wildlife forage within managed stands. Accept that something always fills the void.

Elimination of Western Larch

Rationale

When Western larch is planted, it occupies space that a more ecologically suitable species could occupy. A good example is **Douglas-fir**.

SMZ standards have instead embraced inclusion of other species that are indigenous to central BC and have superior habitat value and climate resilience in these zones. Lw has been completely removed until more research into its impacts on soils and understory are better understood.

This change optimizes Douglas-fir representation where it provides the greatest ecological benefit.



CHANGE 5

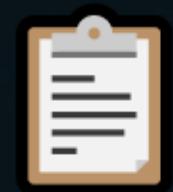
Increased Broadleaf Tolerances



Higher
Thresholds
Increased
tolerances in FG
Surveys



Habitat Value
Non-deleterious
in Defined
Riparian SUs



Flexibility
Included as
Acceptable in Most
Site Series/
Preferred in Fm02.

Restored Maximum Countable Conifers (Years 11–20)



Maintaining Healthy Stand Densities

The revised standards **reduce the maximum countable conifers** for stands between 11–20 years old. This critical adjustment ensures that wildlife habitat values established in early stand development **persist into the next growth phase**.

Lower conifer caps maintain structural diversity and prevent canopy closure that eliminates understory habitat. The goal is vertical and horizontal diversity in our future forests.

Expected Outcomes

Enhanced Browse

Increased shrub availability for ungulates

Nesting Habitat

Greater broadleaf retention supports avian species and that bear hiding in that Cottonwood Near Salmon River.

Structural Diversity

Variable density mimics natural stand dynamics

Site Productivity

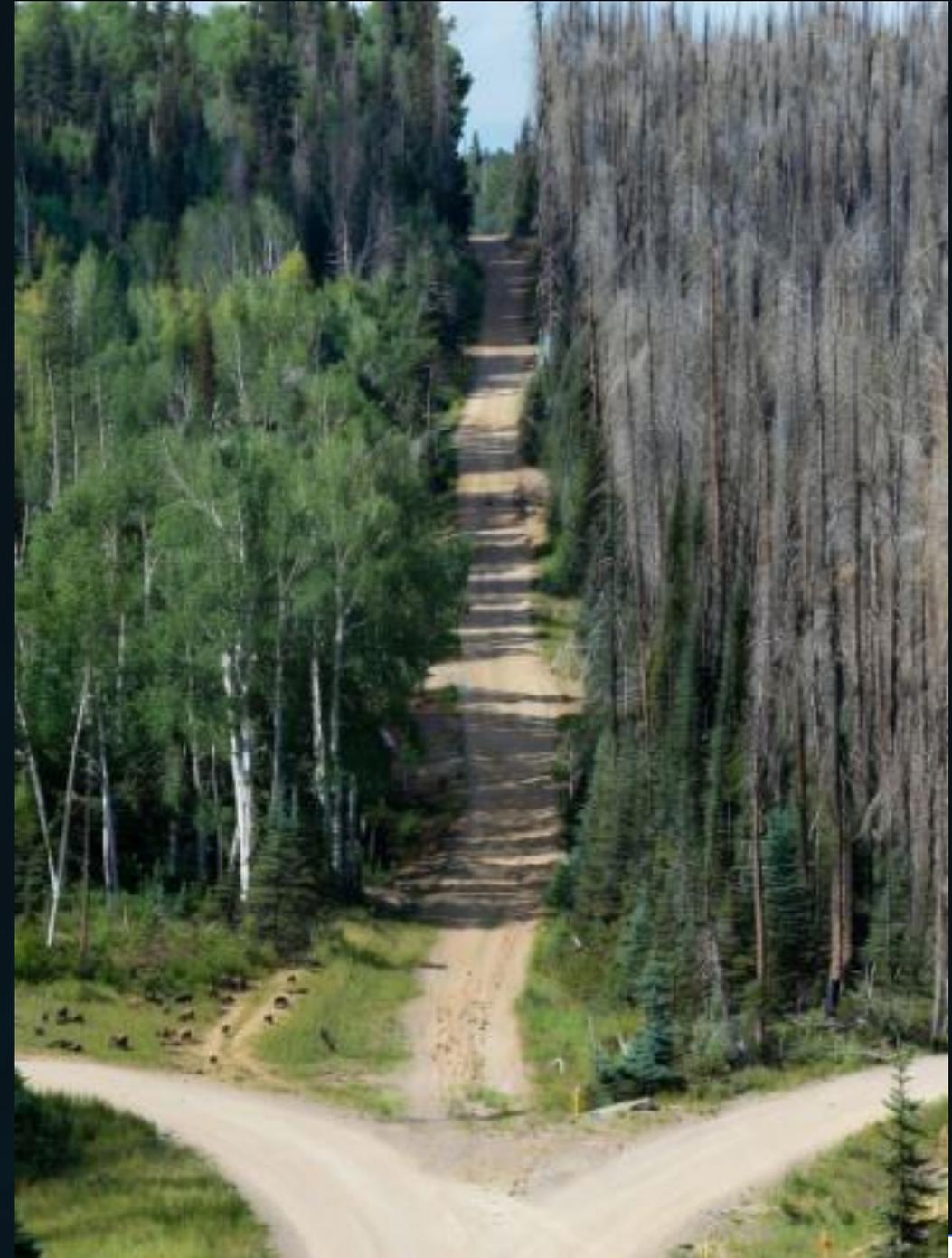
Improved soil nutrient regimes and carbon sequestration.



Can This New Direction be implemented across an LRP area with Wildlife Zonation?

OUR DUTY AS FOREST PROFESSIONALS

- Stewardship means we need to make an effort to ensure we identify unique ecosystems and mitigate damage to them.
- We need to ensure we have qualified people collecting ecosystem data, and survey data
- We need to ensure we identify and mitigate critical site and soil factors and we have transparent documentation of them.
- We must break out of our tendency to do the same thing everywhere (professional and operational inertia).
- Issues such as SUs and maximum density policies need to be somehow regulated –or inertia will creep in.



SUMMARY

Implementation Path Forward



Standard Adoption

Integrate into SMZ prescriptions and practices on ERPs



Methods Training

Surveyor and Accountability Documents learning sessions



Monitor & Adapt

Track biodiversity outcomes and Stand Density – Review Accountability Documents

📄 These standards represent a significant shift toward **outcome-based silviculture** that prioritizes measurable wildlife habitat improvements within Special Management Zones.



2026 We launch into the Timber Restoration Zones and partial cutting systems

While we are wanting to shift the focus onto timber priorities -- I would like to share a video of a partial cutting method in Caribou Habitat.

With respect to partial harvesting systems:

- 1) How do we feel about the forest practices here?
- 2) Are they addressing the needs of fibre and the Caribou?
- 3) What partial cutting systems provide the best outcomes for various zones and wildlife and habitat needs? Is there a way we can analyze that?



clideo.com

Thank you for your time.

Feel free to ask me any questions about our standards and processes.

Diana Gerdenits, RPF/ GA
Project Specific Coordinator with SERNbc
gerdenits@live.ca

Or for SERNbc specific information:
Brandon.geldart@sernbc.ca

