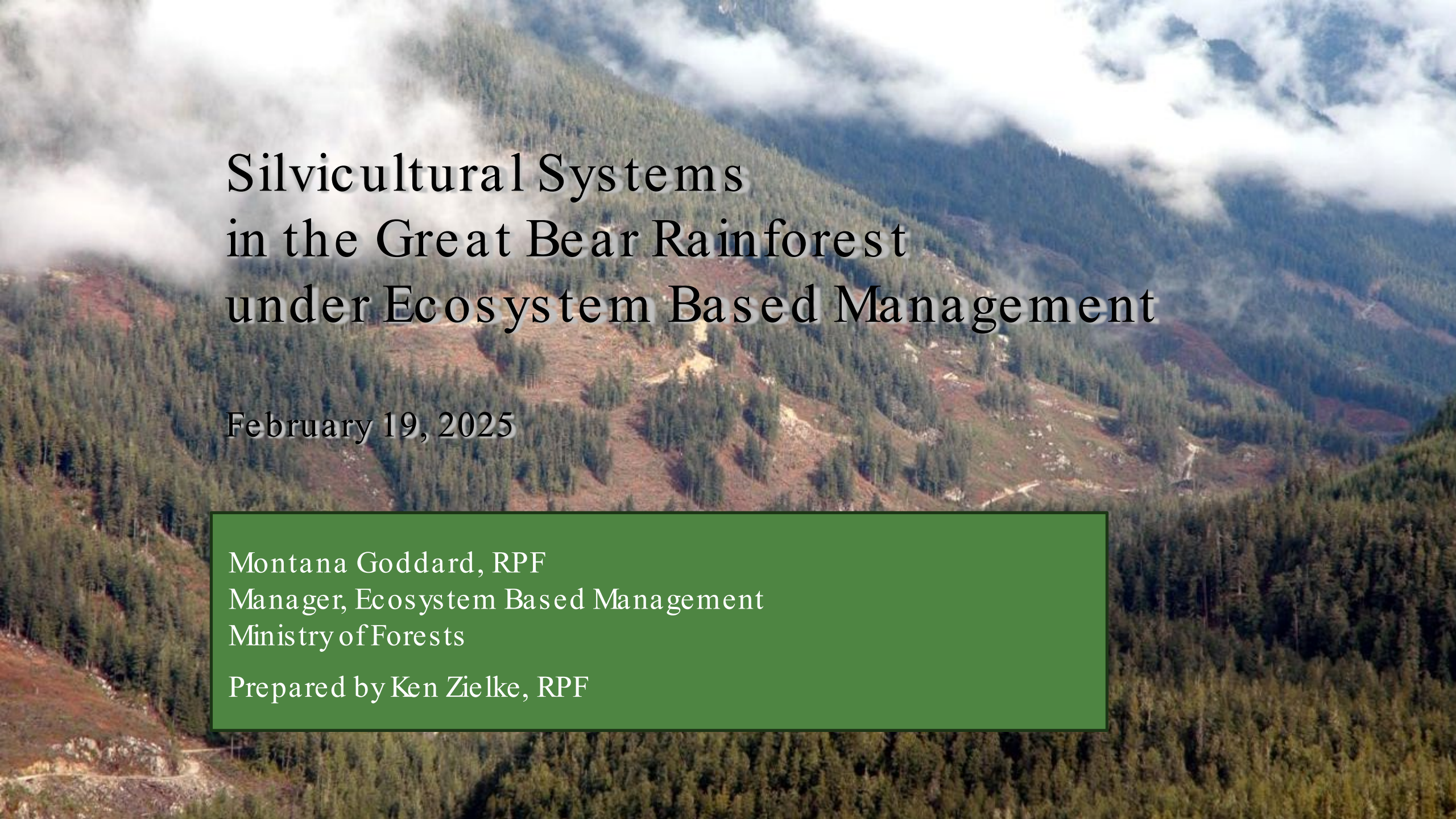

Silvicultural Systems in the Great Bear Rainforest under Ecosystem Based Management

February 19, 2025

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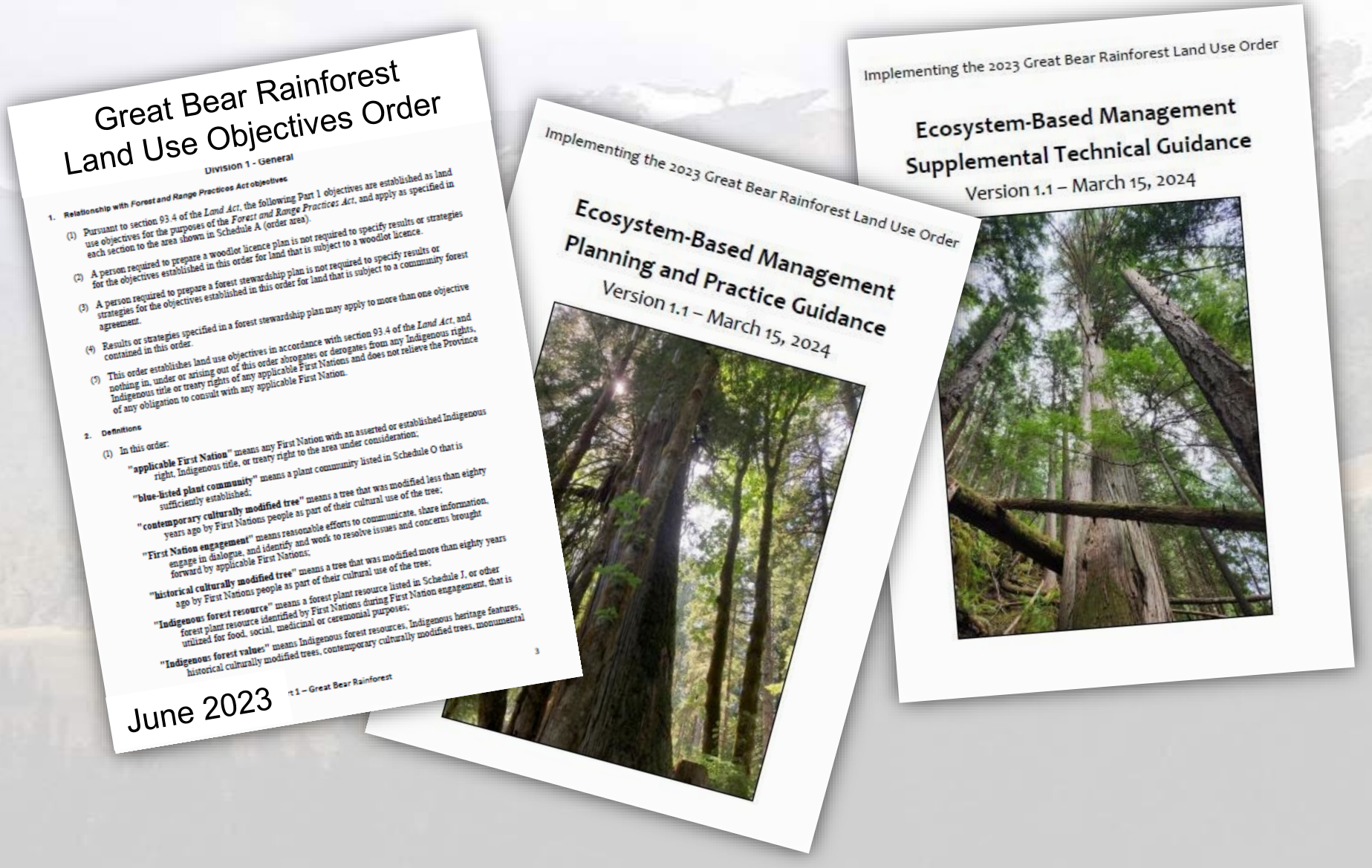
Outline – Where we will go today...

1. Objectives for silvicultural systems in the GBR Land Use Order (LUO).
2. The importance of the retention system.
3. Landscape level context for the retention system.
4. Landscape level windthrow considerations.
5. Stand level windthrow considerations.
6. Summary – Take-home messages.

The key sources of direction in the GBR...



LUO objectives for silvicultural systems…

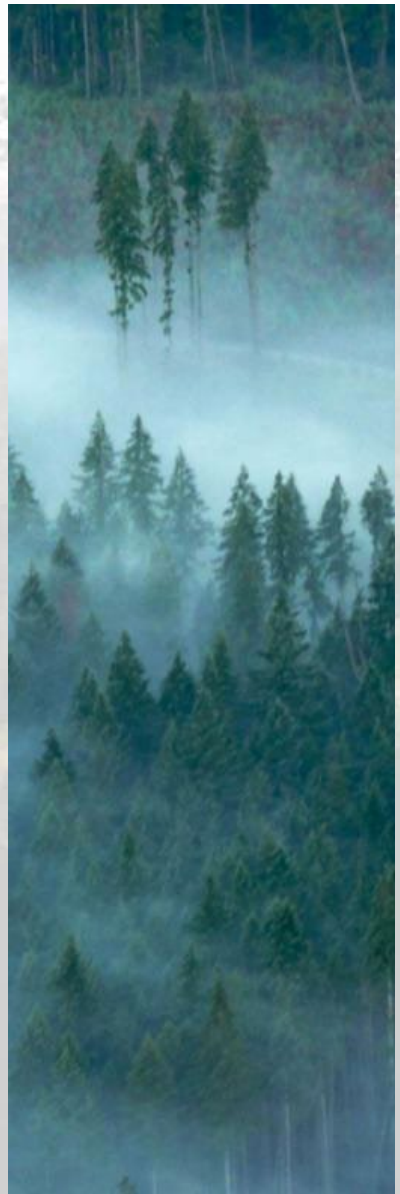
1. **Maintain forest structure and diversity at the stand level by:**

   a) maintaining a minimum of 15% of the Cutblock area as Stand Retention;

   b) **distributing** stand retention **throughout** the cutblock;

   c) maintaining **greater than 15%** retention **as necessary, considering** cutblock size, landscape unit context and immediate landscape context; and,

   d) managing windthrow.



LUO definition…

- **"stand retention"** means small patches of trees and understory vegetation that are located in a Cutblock or contiguous to a Cutblock.

Further LUO objectives…

2. **To the extent practicable, include the following within Stand Retention:**
   a) Indigenous features and values;
   b) habitat elements important for restoration of old forest; and
   c) habitat elements important for wildlife.

Why is Stand-level Retention Important?

- Sustains older stand structure, function for conservation of biodiversity at stand level.
- Helps stand provide attributes of older stands more quickly.
- Provides key habitats for some life stages of species and highly specialized habitats for others.
- Necessary complement to landscape level – e.g. connectivity across the managed forest.

Some Supplemental guidance definitions…

Variable retention –

- Is an overarching approach to silvicultural systems, not a silvicultural system itself.
- Follows a **natural disturbance-based** management paradigm.
- Recognizes the importance of **structural complexity**.
- Requires **long-term retention** of trees and associated habitat.

Beese et. al.
Ecological Process (2019) 8:33

Some EBM Supplemental Technical Guidance definitions…

The retention silvicultural system:

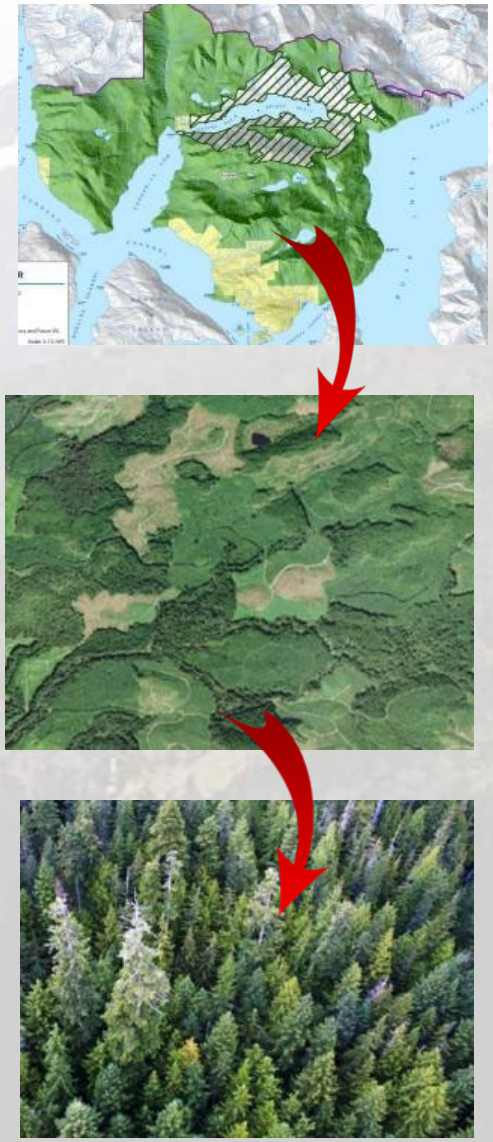
- A silvicultural system designed to meet the goals of variable retention.
- Retains individual trees or groups of trees for at least one rotation, maintaining **more than half the total harvested area** of the cutblock within a **'zone of forest influence' from other trees.**

Mitchell, S.J. and W.J. Beese. Forestry Chronicle Vol. 78, No. 397-403 (2002)

GBR direction for use of the retention silvicultural system:

Three scales to consider:

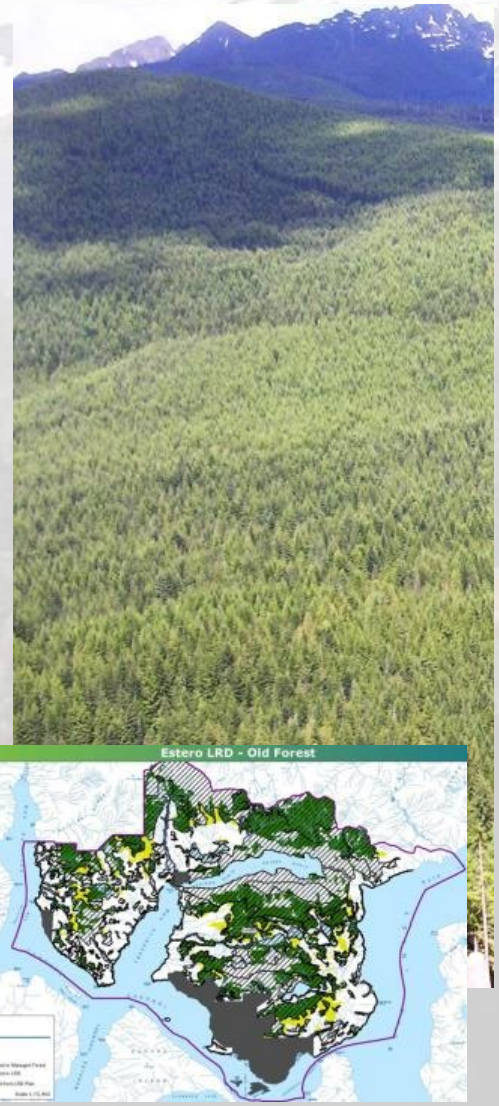
1. Landscape Unit context
2. Immediate landscape context of cutblock
3. The stand/cutblock itself



Scale 1 – Landscape Unit Context:

Consider **mature and old forest context** within your landscape unit :

- At **higher levels** (> 60% mature and old forest for the dominant SSGs) use any silvi system.
- At **moderate levels** (40 to 60% mature and old forest for the dominant SSGs) use retention system on ≥ 50% of area harvested.
- At **low levels** (<40% old and mature forest for dominant SSGs) use retention system on ≥ 70% of area harvested



Note: *The usage of the retention system will be based on a 5-year rolling average.*

Scale 2 – Immediate landscape context around the cutblock:

a) <u>Where < 70% old or mature within 2 km :</u>

- Use the retention system

b) <u>Where ≤ 50% old or mature within 2 km :</u>

- Also use higher levels of retention

c) <u>Where < 30% mature or old forest within 2 km:</u>

- Also prioritize trees with old attributes for retention

d) <u>Where >70% mature or old forest within 2 km:</u>

- Use the other criteria found in Sec 2.1

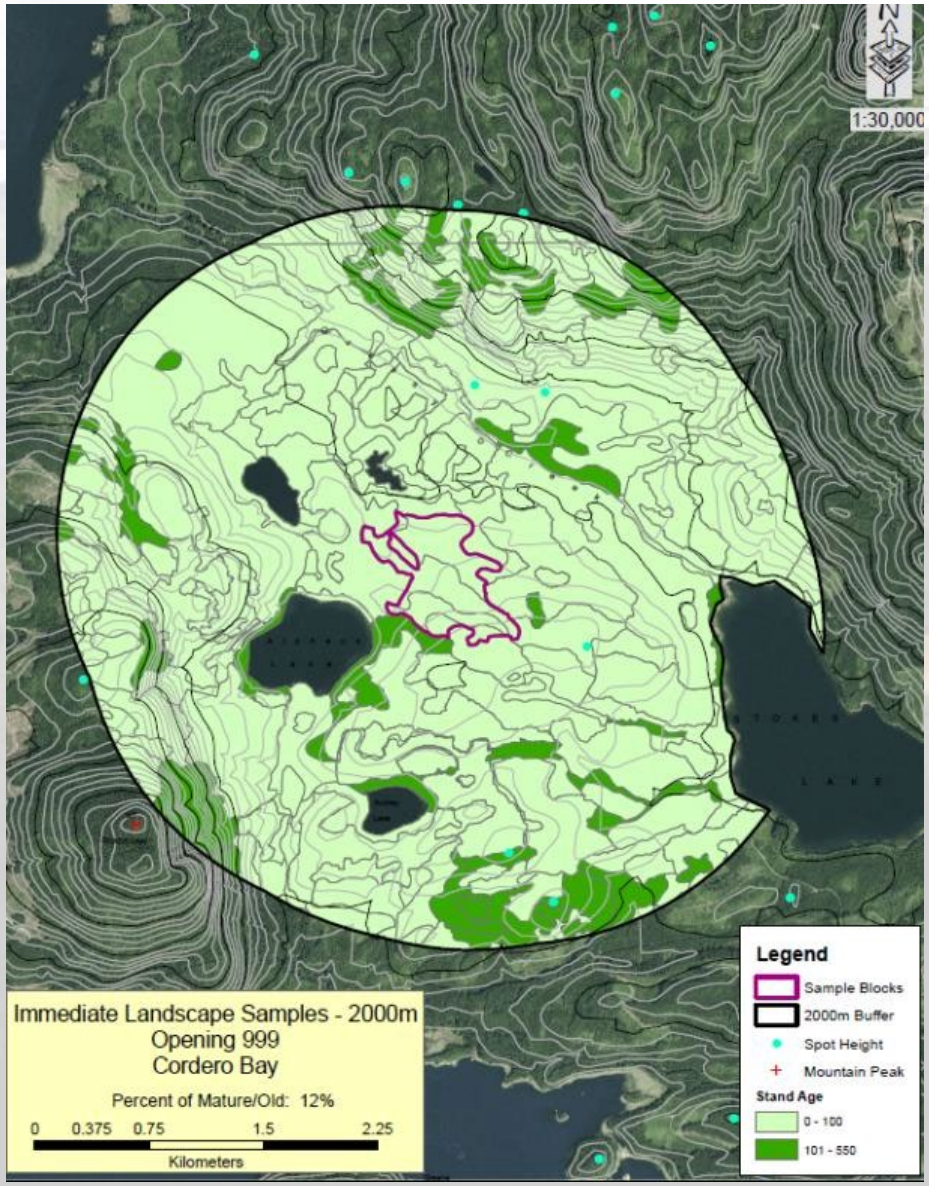
PRINCIPLE - retention is more important where immediate landscape has less old and mature.

Scale 2 - Measurement Example:

Dark green – mature and old

% old and mature within 2 km is 12%

NOTE - Measures of mature and old are outside the Total Area Under Prescription in the cutblock (TAUP)



Scale 3 – Consider the Cutblock Itself:

- **Consider Windthrow biophysical hazard**

<u>If a retention system is intended:</u>

- Design of forest influence
  - Over 50% of block
  - For at least one rotation
- Biological anchors and design

Landscape Windthrow Consideration

Where *biophysical hazard for windthrow is:*

- HIGH OR VERY HIGH 'on most' of the proposed cutblock – **can use any silvicultural system.**
- NIL TO MODERATE - **Use all the other guidance** (landscape level) about when to use a retention silvicultural system.

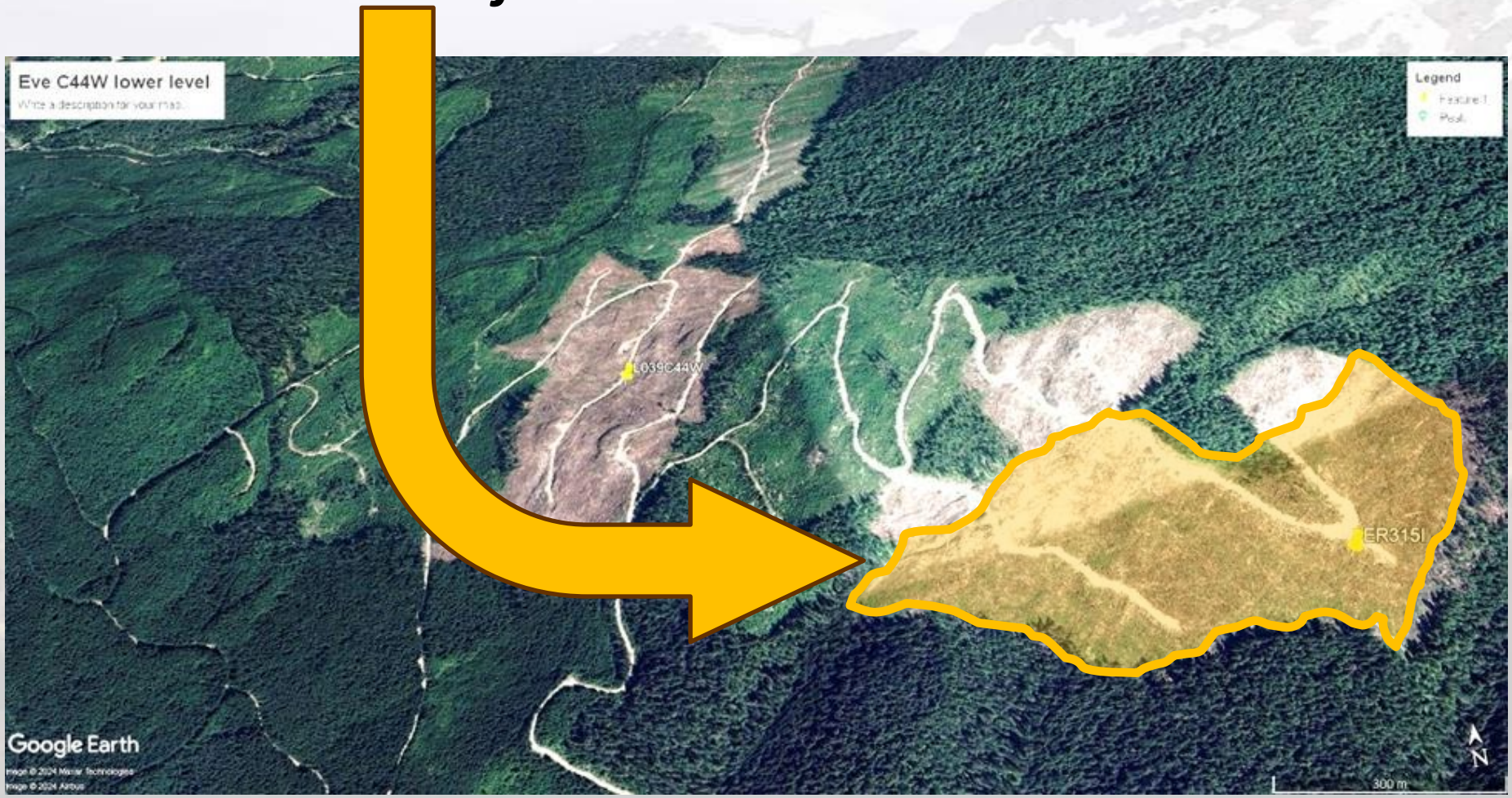
High or Very High Biophysical Hazard

- ***across most of the cutblock area***

GBR Supp Guide Biophysical hazard definition – Page 10

High or Very High Biophysical Hazard

- ***across most of the cutblock area***



GBR Supp Guide Biophysical hazard definition – Page 10

Stand Level Windthrow Best Mgmt Practices

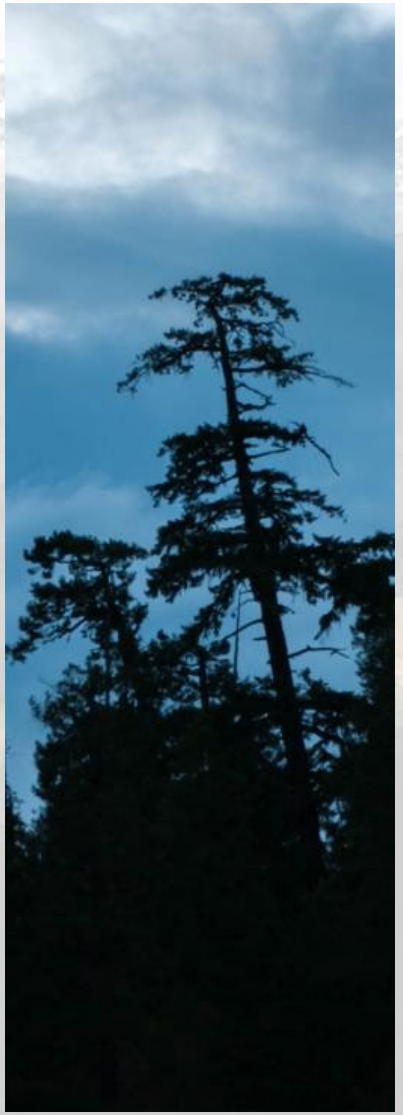
Unless other values are present, try to design cutblock and silvicultural system for:

- no more than 15 m penetration into edges, OR
- less than 30% windthrow throughout patches and strips.

(Whichever constitutes greater wind damage)

Summary – Take-home Messages

1. **The retention silvicultural system will play a more prominent role in the GBR.**
   a) Distribution of retention in a cutblock is seen as important for managing biodiversity.
2. **Important to consider the landscape context.**
   a) We believe two spatial scales are important – the landscape unit scale and the immediate landscape scale (within 2 kms).
3. **Important to control windthrow within reasonable limits.**
   a) Set some goals, which will be monitored.




Thank you!