



# Managing Wildlife Dangerous Trees

Presentation to CHAG  
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# Topics

- Introduction and Background
- Define “DANGEROUS TREE” for Forestry
- WDT Assessment and the Workplace
- Dangerous Trees and road user safety
- Benefits of a WDTA Process
- Summary and Questions

# Managing Dangerous Trees

## CHALLENGES CONTINUE

- Inconsistent application of Regulations
- Workplaces managed for OPTICS
- Failure to assess Suspect Trees
- Unclear direction for managing perimeters
- Phase-to-phase hand-off assumptions
- Tree retention management practices
- And the list goes on...

# Resource Trees & Safety



Resource trees (e.g., monumental trees, nest and den trees) and culturally significant trees (e.g. CMT's) often retained within a work site – legal requirements &/or policy.

**REMEMBER:** These trees have visible defects. An assessment **MUST** be made to ensure the safety of workers. OHS regulation 26.11

Why is it important to leave wildlife trees for habitat?

❖ In BC there are 32 species or subspecies of Wildlife Tree Users that are at risk.



What's wrong with removing a wildlife tree?

Under Sec. 34 of the BC Wildlife Act, trees containing the nest of an eagle, osprey or heron are protected year-round

All other nests are protected when they are occupied by birds or their eggs.

Species at Risk are protected by federal and provincial legislation mechanisms (SARA, FRPA, MBCA)

# A Dangerous Tree ...

Defined by the Occupational Health and Safety Regulations (section 26.1) to be **any tree, live or dead, that is hazardous to workers** because of:

- *Location,*
- *Lean,*
- *Physical damage,*
- *Overhead hazards,*
- *Deterioration of limbs or root system, or*
- *Any combination of the above.*

# When is a tree Dangerous?

- ✓ Fundamentally: if a worker is EXPOSED to a tree with a hazard.
- ✓ Hazard: defined by the LEVEL of DISTURBANCE.



# Hazard and Risk

- Hazard – a source of danger. A condition or practice with the potential for injury or loss
- Risk – the likelihood that a hazard may lead to injury or disease

- ***Workers Compensation Act 115***

An Employer must ensure that the employer's workers are made aware of all known or reasonably foreseeable health or safety hazards to which they are likely to be exposed by their work.

- ***Workers Compensation Act 117***

A supervisor must ensure the workers under his or her direct supervision are made aware of all known or reasonably foreseeable health or safety hazards in the area where they work.

## **OHS Regulation Part 26 – Forestry Operations and Similar Activities**

Responsibilities: identify & mitigate hazards, provide worksite orientation and training



# RISK ASSESSMENT & PLANNING

## **OHS Regulation 26.2** Planning and Conducting a Forestry Operation

- Activities must be **PLANNED** and **CONDUCTED** consistent with safe work practices
- Identify site hazards **BEFORE** work commences (ensures **CONTROLS** are in place)
- Documented as part of **PLANNING**

# Manage Exposure to Hazards

OHS Reg. 26.11(1) and (2)

If it is known or reasonably foreseeable that work will expose a worker ....

- Dangerous Trees are Removed, or
- Risk Assessment process by a person who has completed training acceptable to the Board, and
- Implement a Mitigation plan

... BEFORE work starts.

# Wildlife/Dangerous Tree Assessor's Course Workbook

Forest Harvesting and Silviculture Course Module



*An initiative of the:*  
Wildlife Dangerous Tree Committee of British Columbia  
*in cooperation with:*

**WORK SAFE BC**

WORKING TO MAKE A DIFFERENCE



Ministry of Forests, Lands, Natural Resource Operations &  
Rural Development

Ministry of Environment &  
Climate Change Strategy



Updated January 2019

The WDTAC – HarvSilv  
module is the Standard of  
Care for assessing trees.

Training Acceptable to the  
Board.

2 day course for Certification  
and 4 year certificate.

## Planners must consider SAFETY during layout

- Patch retention – consider site AND tree factors
- Recognize poor stem and root development = Hazard
- Avoid locating unstable patches beside roads
- Establish wind speed constraint to reduce risk



Dangerous Tree Assessment includes a consideration of SITE HAZARDS

**SUSPECT TREES** – a tree with a visual hazard (defect) **and** worker exposure

If you have BOTH the hazard AND Worker Exposure then OHS Reg. 26.11 applies

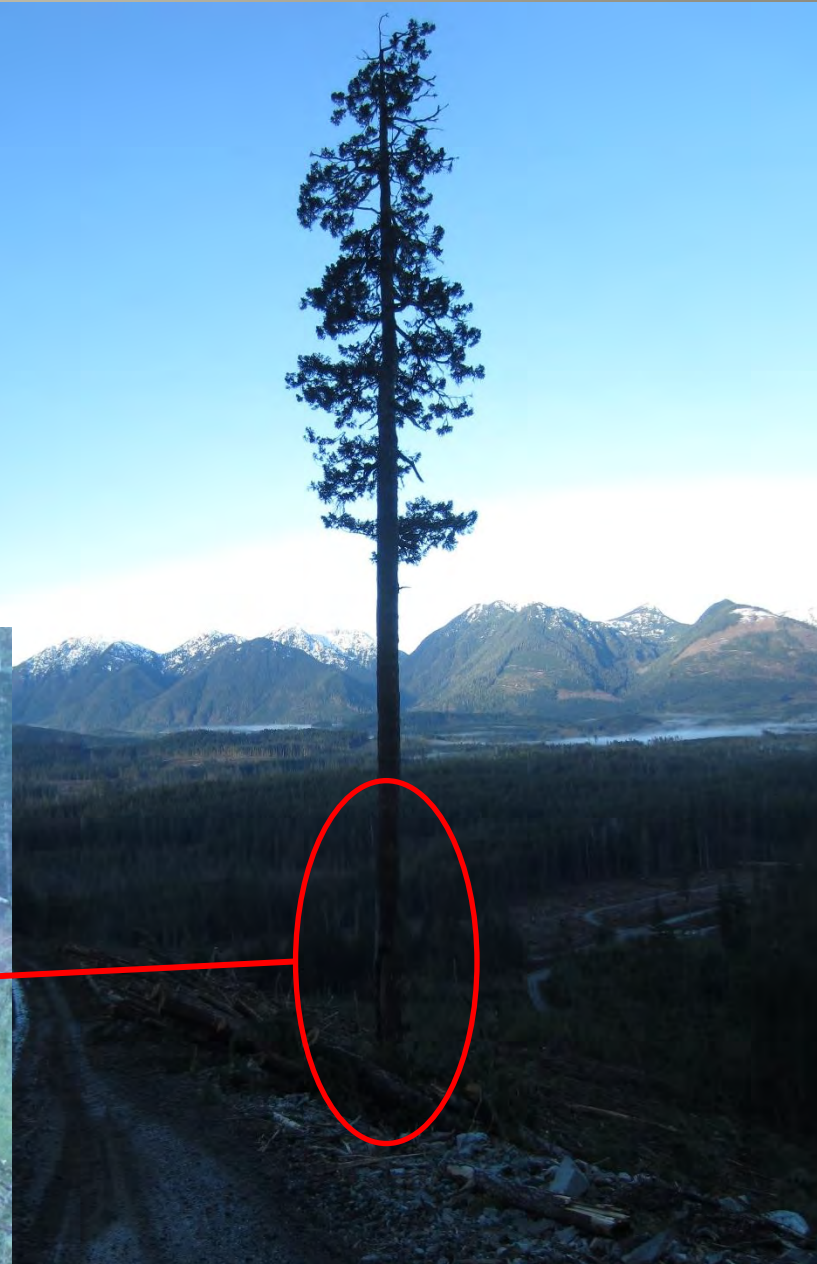
### Single tree retention plans

- Assess tree for hazards before marking for leave
- Ensure equipment operators avoid disturbing the tree's stem and roots
- Reassess if the tree is damaged during operations



**SUSPECT TREES** – a tree with a visual hazard (defect) **and** worker exposure

If you have BOTH the hazard AND Worker Exposure then OHS Reg. 26.11 applies



## Suspect Tree?

- Defective tree and worker exposure!
- OHS Reg. 26.11 kicks in...
- FALL Tree or Perform RISK Assessment

**WDTAC = Standard of Care for the risk assessment**



# Dangerous Tree Assessment in BC



- ✓ Protecting WORKERS
- ✓ Conserving Wildlife Habitat where possible



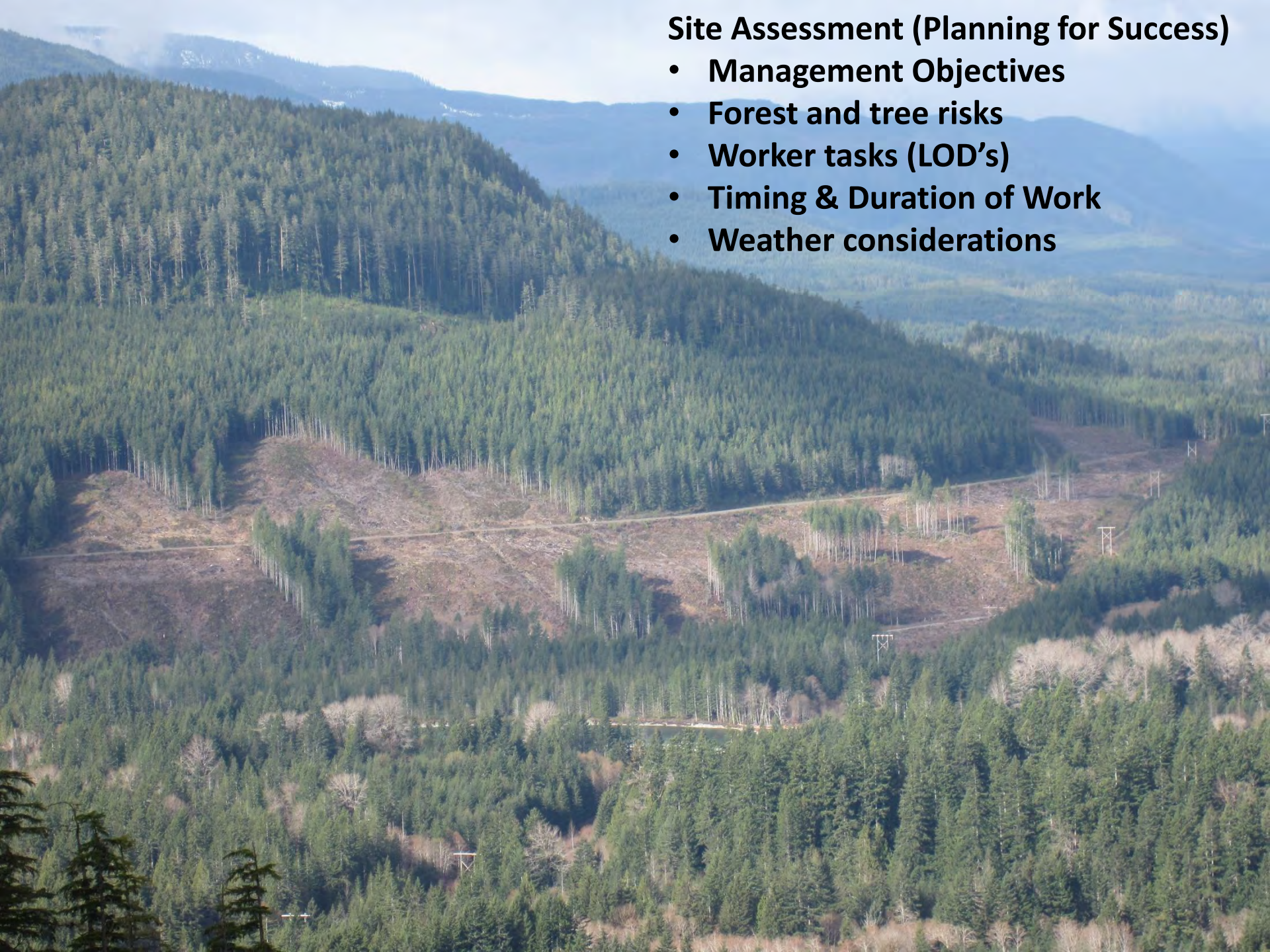
# Assessing Wildlife/Dangerous Trees

## Tree Assessment steps:

- ✓ Site Assessment and Confirm the Activity
- ✓ Identify and assess suspect trees
- ✓ Make a decision – Safe or Dangerous
- ✓ Communicate/document the safety plan

## Site Assessment (Planning for Success)

- Management Objectives
- Forest and tree risks
- Worker tasks (LOD's)
- Timing & Duration of Work
- Weather considerations



# WHO CAN DO ASSESSMENTS?

- VLR activities do NOT require any formal assessments
- LOD 1 activities require assessment by a “Qualified Person”
- LOD 2-4 activities require assessment by a “Certified Assessor”

## Work Activities

### Determine Dangerous Tree Assessment Training

Disturbance Level	Work Activities	Training Level
4	 <p>Trees adjacent to corridors in partial-cut cable logging operations Harvesting operations in damaged stands Blasting Helicopter logging (lift &gt;2200kg) Medium/heavy helicopters; rotor wash</p>	Dangerous Tree Assessor
3	 <p>Tree falling Cable yarding Ground skidding Mechanical harvesting and forwarding Helicopter logging (lift &lt;2200kg)/rotor wash Heavy equipment mechanical site prep Heavy equipment maintenance/construction</p>	Dangerous Tree Assessor
2	 <p>Juvenile spacing or slashing Tree bucking Heavy vehicles on trails, road maintenance without heavy equipment Pruning large trees (e.g., climber for spiral pruning)</p>	Dangerous Tree Assessor
1	 <p>Tree planting Brushing Tree pruning (stems &lt;20cm dbh) Light-duty machinery Heavy vehicle travel on constructed road (e.g., FSR's) Fire control with hand tools &amp; water hoses</p>	Qualified Person Training
Very Low	 <p>Forest surveys Stand reconnaissance Tree marking Road and cutblock engineering &amp; layout Light vehicle travel (pickups, ATVs) Foot travel</p>	Awareness Training

**Additional Information:**

- ✓ Wildlife Dangerous Tree Committee Publications  
<https://www2.gov.bc.ca/gov/content/environment/plants-animals-ecosystems/wildlife/wildlife-habitats/wildlife-tree-committee/publications>
- ✓ Wildlife Dangerous Tree Assessor's Courses  
<https://www2.gov.bc.ca/gov/content/environment/plants-animals-ecosystems/wildlife/wildlife-habitats/wildlife-tree-committee/assessor-s-courses>



**BC Forest Safety**

# Levels of Disturbance

Level of Disturbance* (LOD)	Example Types of Work Activities (unprotected workers)	Wind Speed Equivalency (km/h)
VLR (no assessment required)	<ul style="list-style-type: none"> <li>• forest surveys, stand recce, tree marking, road &amp; cutblock layout, foot travel</li> <li>• general light vehicle travel (pickups, ATV's)</li> </ul>	N/A
LOD 1 (Table 3)	<ul style="list-style-type: none"> <li>• tree planting</li> <li>• brushing</li> <li>• tree pruning (stems &lt;20 cm dbh)</li> <li>• use of light-duty machinery (e.g., weed whips, brush saws)</li> <li>• road travel with heavy vehicles (&gt;5500 kg GVWR) on a constructed and maintained resource road</li> <li>• fire control with hand tools and/or water hoses</li> </ul>	<40
LOD 2 (Table 4)	<ul style="list-style-type: none"> <li>• road travel with heavy vehicles (&gt;5500 kg GVWR) on a trail or overgrown road</li> <li>• maintenance or construction activities without heavy equipment (e.g., small machines such as "bobcats")</li> <li>• tree pruning (stems &gt;20 cm dbh)</li> <li>• juvenile spacing or slashing (stems &lt;15 cm dbh)</li> <li>• tree bucking</li> </ul>	

# Levels of Disturbance (cont'd)

Level of Disturbance (LOD)	Example Types of Work Activities	Wind Speed Equivalency (km/h)
LOD 3** (Table 4a)	<ul style="list-style-type: none"> <li>• tree falling (any tree &gt;15 cm dbh)</li> <li>• cable yarding</li> <li>• ground skidding</li> <li>• mechanical harvesting and forwarding</li> <li>• helicopter logging with NO workers exposed to rotor wash</li> <li>• use of light and intermediate helicopters where workers are exposed to rotor wash (e.g., helipads)</li> <li>• mechanical site preparation with heavy machinery</li> <li>• maintenance or construction activities with heavy equipment</li> </ul>	40–65
LOD 4 (Table 5)	<ul style="list-style-type: none"> <li>• trees adjacent to corridors in partial-cut cable logging operations</li> <li>• harvesting operations in structurally damaged stands (e.g., wildfire burns)</li> <li>• blasting</li> <li>• helicopter logging with workers exposed to rotor wash</li> <li>• use of medium and heavy helicopters where workers are exposed to rotor wash</li> </ul>	+65

# Managing Perimeters during logging

## Historically...

- If it looks bad from the road, get rid of it!
- Sanitize the block edges of snags to be safe!
- Are we rigging into the timber? (if so, then how far?)
- How far do you assess into the standing timber? (1 tree length or 2?)
- What standard do you apply if assessing? (LOD3 or ?)

# Managing Perimeters

## Workplace Edge = risk of disturbance

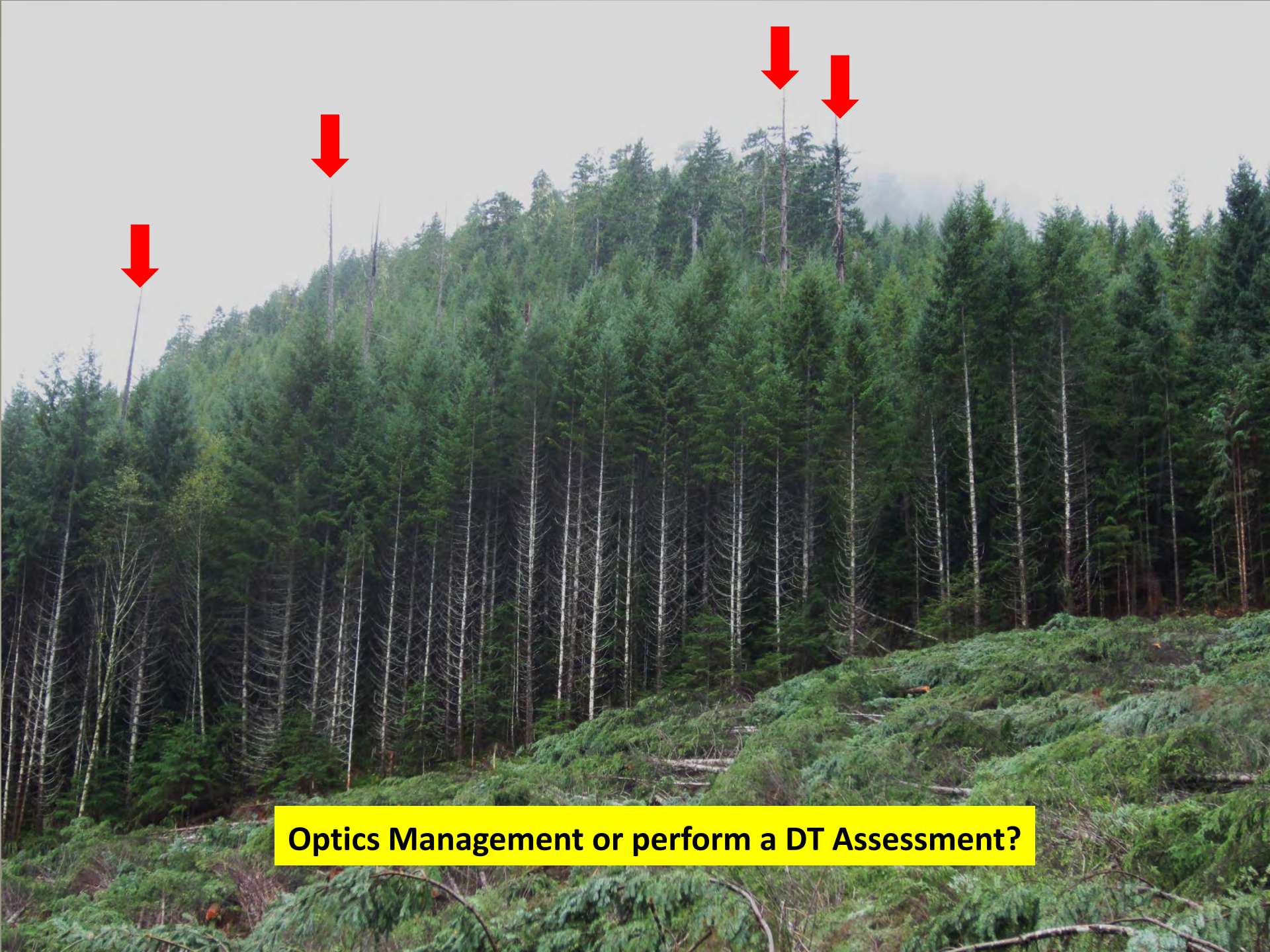
- Assess to the LOD of the activity along that edge

Edge: the front row of trees and those growing within the critical root zone

## Timbered Perimeter

- Assess for trees at imminent risk of collapse with exposure

Exposure: trees which will reach the workplace



**Optics Management or perform a DT Assessment?**



# Stratify your worksite

## Stratifying the Work Site

- Polygons SU A and SU B are Treatment Zones
- Polygons "W" are tree retention patches
- Red is the 1.5 tree length Perimeter Zone



## DTAssessment Strategy

- 1) Assess suspect trees within the Treatment Zone for the LOD of the activity
- 2) Assess the Perimeter Zone for highly unstable trees which could reach the work site. Apply similar process to tree patches

# Worksite Assessment

## The Treatment Zone

- Both the active work site and the first 5 meters of the treatment area's boundary
- Suspect trees are assessed to the LOD of the work

**NOTE: If the work continues into standing timber, then the treatment zone is extended accordingly.**

## The Perimeter Zone

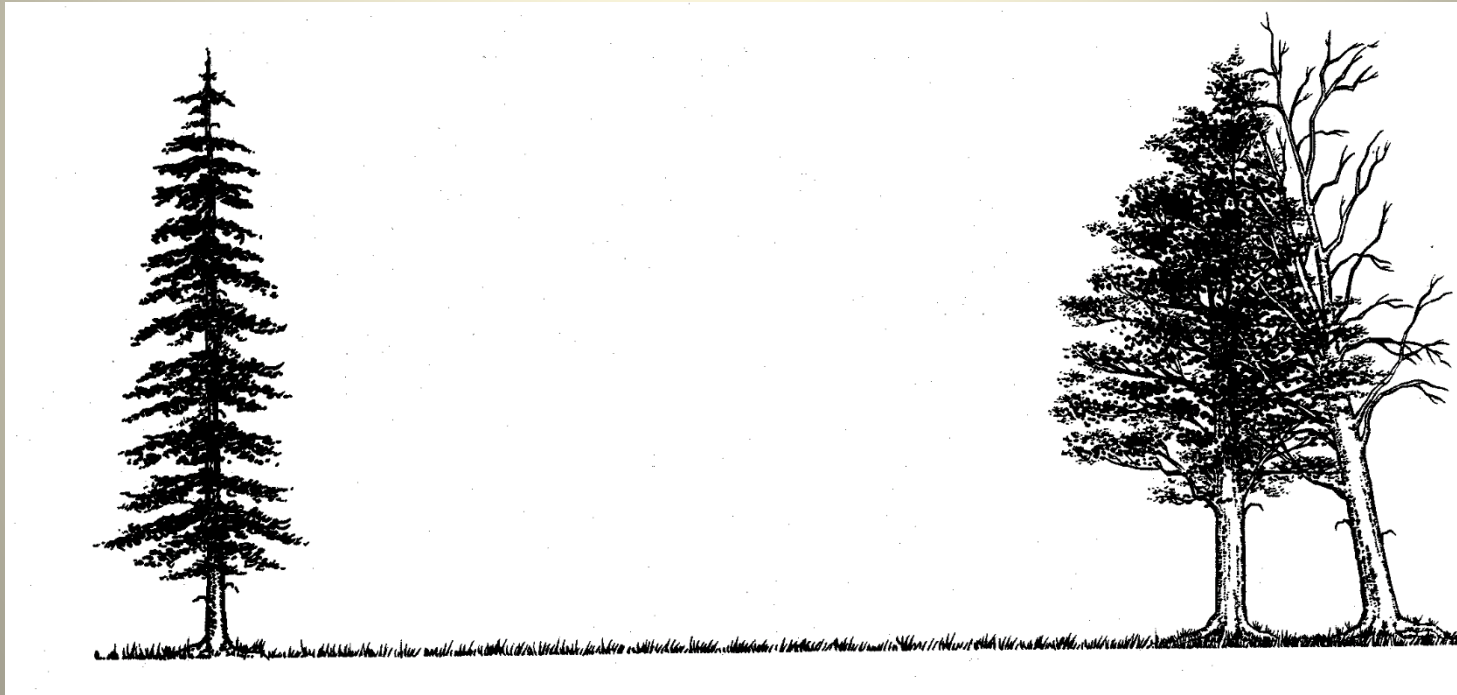
- The 1.5 tree lengths of area surrounding the active treatment zone
- Suspect trees are assessed as for LOD1 – at risk of imminent failure and likely to reach the worksite

# Key to managing perimeters:

- ✓ Retain trees if they are NOT Dangerous Trees
  - Tree has NO visual hazards, or hazards cannot REACH the site; or
  - Tree has visual hazards BUT safe according to the LOD

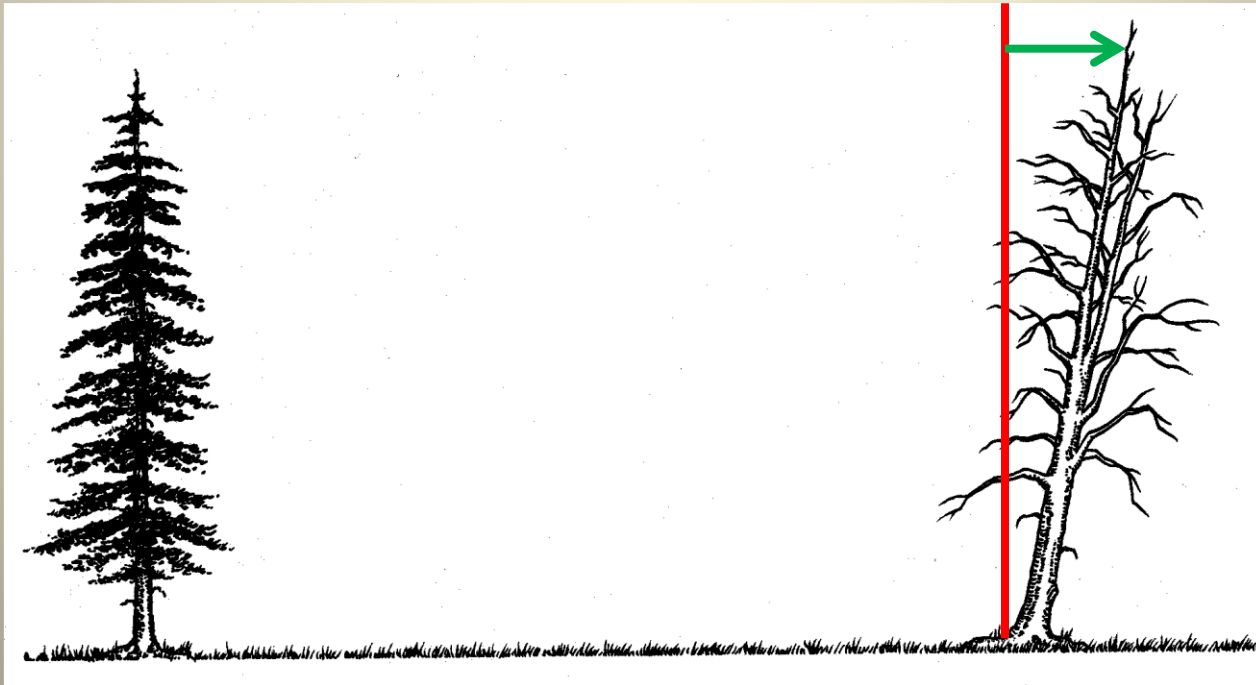
# Key to managing perimeters:

- ✓ Retain trees that CAN'T reach the workplace (limb-tied or buffered)



# Key to managing perimeters:

- ✓ Retain trees that LEAN AWAY from the workplace (tree leaning >10% away from workplace)



# Assess Perimeters

Trees within the Perimeter Zone need to be viewed from the perspectives of:

- 1) Is the tree (or its part) within reach of the work site, and
- 2) Is it likely the tree could collapse without any disturbance?

If the answer to BOTH of these two conditions is YES, then the tree is a dangerous tree and needs to be managed accordingly

# Assess Perimeters

Perimeter Zone –  
search for unstable  
trees



Extend  
Treatment  
Zone for  
rigging



# Dangerous Tree Assessment Process for PERIMETERS

## Look for Trees with Significant Hazard Indicators

**Dangerous** if tree has one or more of the following significant tree hazard indicators that are **at risk of imminent failure**:

- **Insecurely** lodged trees or insecure hang-ups
- **highly unstable tree**
- **recent lean** toward work area AND decayed root system or damaged and lifting anchoring soil layer

**All other trees = SAFE**



# WORK SITE SAFETY RECOMMENDATIONS:

- ✓ Apply WDTAC process to SUSPECT trees retained IN and ALONG the workplace. (Assess to LOD of work)
- ✓ Manage the PERIMETER by controlling EXPOSURE to trees at IMMENENT RISK of COLLAPSE.

# Keeping Wildlife/Dangerous Trees

## No Work Zone (NWZ) sizes:

- Generally 1.5 times the defect length.
- Length can be modified (larger or smaller).
- Depends upon site-specific conditions (slope or size of surrounding green timber).

**WDTAC Asserts: Assessing and establishing a NWZ is SAFER than sanitizing by hand falling**

# Documentation

- Site Hazard Risk Assessment
- Dangerous Tree Tracking
- Documented Pre-work Meeting

# COMMUNICATION

## INFORM the CREWS

How assessed trees or NWZ's have been marked and where they are located...

Documentation on file and available

- BEFORE workers are permitted in the area



# Dangerous Trees Along Roadsides



See handout – MEMO Feb. 24, 2016



Hemlock twin by landing – embedded bark and cavity with family of squirrels

# Dangerous Trees Along Roadsides

Specific “worksite” WDT Assessment during:

- Construction, repair and maintenance (culvert replacement/repair) – watch for root damage
- Vehicle repair and maintenance sites (incl. brake and bundle securing check points)
- Care to avoid creating hazards to others (OHS 26.80)
- Private Roads – fully under jurisdiction of WorkSafeBC and all OHS Regulations apply

# Road Travel and DT's

- Assessed according to the appropriate level of disturbance – either Level 1 or Level 2 for road travel
- **Other factors to consider are:**
  - amount of lean toward road
  - distance from road
  - slope toward road
  - rooting condition
  - any hazardous tree defects that can reach the road



# BENEFITS OF DANGEROUS TREE ASSESSMENTS

- Identify dangerous trees based on tree defects AND the type of work activity, prior to workers being in the area (OHS Reg. 26.2 planning)
- Assessments based on level of disturbance categories will reduce the number of trees that need to be felled in order to conduct work activities
- Danger tree assessments permit potential retention of some dead and defective trees in harvest blocks -- useful in retention-style harvesting systems

# BENEFITS OF DANGEROUS TREE ASSESSMENTS

- Increased safety to workers on the ground
- Recognized provincial “standard of care” for assessing dangerous trees in forestry operations (OHS Reg 26.11(1)(b))
- Maintenance and conservation of wildlife habitat

# Retention Trees... REMEMBER:

- All SUSPECT trees MUST be assessed before working around these trees.
- Planners should not mark retention trees if they do not meet SAFE criteria at time of layout.



# Questions?