



Dangerous Tree Management

"Preparing for Silviculture Activities"

By

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Presentation Outline

- ❑ Introduction & Terms of Reference
- ❑ Points of Control for Worksite
- ❑ DT Assessment & Planning
- ❑ DT Mitigation Process
- ❑ Communication
- ❑ Closing



Mountain Pine Beetle & Fire Kill Sites



Preparing for Silviculture

- **Planning Must Consider ALL Tasks & Over Time**
- **Activities MUST be coordinated, supervised and controlled**
- **Safety for ALL workers must be integrated in each step**



Terms of Reference

Worker's Compensation Act – general duties

- ☐ Section 115 – Employers
- ☐ Section 116 – Workers
- ☐ Section 117 – Supervisors
- ☐ Section 119 – Owners
- ☐ Section 118 – Multiple Employer worksites



General Duties

Key Points:

- ❑ Employers, supervisors and workers ensure all known or reasonably foreseeable health or safety hazards are made known
- ❑ At a multiple-employer workplace the owner must ensure all workers are adequately supervised & activities are planned and coordinated to ensure safe work practices



High-Density Stem Count Areas - Challenges

Hazards

Coordination

Site Objectives

Wind Issues

Time-Since Death

Site Variability

Treatment Options

Access & Evacuation

Rooting

Worksite Safety Participants

Owner

Prime Contractor

Project Recipient

DT Assessor

Project Supervisor

Faller

Machine Operator

Tree Planters




Points of Control for Worksite Safety

POC Matrix – A Framework for a Safety Management System

- Establish Clear Objectives
- Coordinated Hazard Planning
- Links Participant Groups
- Established Controls & Feedback



Points of Control Tasks


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- **Management Objectives & Planning**
 - **Documentation**
 - **Capacity Assessed – qualified, certified, experienced, capable?**
 - **Management of Hazards**
 - **Consultation & Communication**

Management Objectives & Planning

- **Treatment Objectives Known?**
- **Safety Management System –
Coordination & Compliance?**
- **Treatment Alternatives?**
- **Training & Supervision**



Documentation

- 
- **Notice of Project Forestry**
 - **Certified and Qualified Worker Tiers**
 - **Treatment Plans and Progress**
 - **Safe Work Procedures**
 - **Safety Orientations, Training & Supervision**



Participant Capacity Assessed

- **Certified & Qualified**
- **Experienced & Supervised**
- **Capable and Adaptable?**
- **Hazard Recognition?**
- **Communication Systems**
- **Training and Mentoring**

Management of Hazards

➤ Recognize, Evaluate & Control

Training

Wildlife

Dangerous Trees

Weather

Access

Streams / Gullies

Worksite

Root Disease

Topography

Hunters



Consultation & Communication

- **Amongst Workforce Tiers**
- **Expert Assistance Sought?**

WorkSafe-BC

Wildlife Tree Committee

Resource Specialists


Others?





Dangerous Tree Assessment & Planning

5-Step Assessment Process

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- STEP 1. Determine the Level of Disturbance & Type of Work Activity**
 - STEP 2. Conduct Site Assessment Overview**
 - STEP 3. Conduct Tree Assessments**
 - STEP 4. Make the Appropriate Safety & Management Decisions**
 - STEP 5. Document & Communicate Safe Work Procedures**



Assessment Needs - Planting

LOD-1 Activities

A pre-work inspection by a **Qualified Person** is required.

Qualified Person:

- Experienced in the specified work activity & possible disturbance to trees
- Competent to recognize & evaluate tree hazards



High Density Stem Count Sites

How do you **MANAGE** Dangerous Trees amidst the “gazillions of dead or dying trees !?!?”

- **Planning & Flexibility**
- **Clear Understanding of Objectives**
- **Certified & Qualified Assessor**
- **Site Assessment Overview**



Dangerous Trees – Defined:

OHS Regulation Part 26.1

... includes any tree that is hazardous to workers because of:

- location or lean,
- physical damage
- overhead hazards
- deterioration of limbs, stem or root system, or
- a combination of these

OHS Regulations Part 26.11 (7)

DT's in High-Density Stem Count Areas

Key points:

- **Consult with WorkSafe-BC Safety Officer**
- **Conduct Thorough Site Assessment**
- **Implement DT Mitigation**
- **Wind-speed Restrictions (<20km/hr)**





Site Assessment Overview

Integrate Site Issues & Objectives

- Stand History & Condition
- Common Weather Patterns
- Windthrow Potential of Site
- Tree Symptoms Evaluated
- Tree Failure Patterns & Causes
- Management Objectives



Evaluate and Refine Objectives

Is Planting Needed?

- Refine Stocking Survey Standards
- Consider Cost/Benefit of Nat Regen
- Continuum of Treatments Known?
- Fuel Loading and Abatement Needs
- Other Resource Values Considered



Assess to the Proper LOD

Planting is LOD-1

- Experienced and Qualified Persons
- Define Assessor/Faller Tasks
- Qualified and Adequate Supervision
- Consult Experts and WorkSafe-BC



Tree Planting Tree Hazards

Dangerous Trees will be in a state of imminent risk of failure ...

- **Dislodged stem, top or limbs; or**
- **Decadent and unstable stem; or**
- **Heavy lean and damaged or lifting roots**

(or combinations)

Overhead hazards



Unstable tree



Unstable Rooting & Lean





Managing Dangerous Trees

- Hazard Area Understood,
- Mitigation Strategy & LOD

Cut or Leave?

Think about it – CAREFULLY!

OHS 26.11(1)

"If work in a forestry operation will expose a worker to a dangerous tree, the tree must be removed."

- **Remove the Tree**
- **Remove the Hazard**
- **Install a No-Work Zone**





Falling is LOD-3

The Assessment Criteria:

- More Complex than LOD-1
- Requires Qualified & Experienced Assessor



Tree Hazards Indicators

The most common visual tree defects include:

- Hazardous tops
- Large dead limbs
- Large witches' brooms
- Split trunks/cracks (with adjacent decay)
- Stem damage (scars, fire, butt rot)
- Thick sloughing bark slabs
- Butt and stem cankers (mainly on pine)
- Fungal fruiting bodies (heart rot conks)
- Tree lean
- Root condition

Dangerous Tree Falling

FACT:

Hand Falling is a Hazardous Occupation!

Need to reduce risks and shift mindset from...

- **“CAN the DT be felled” to**
- **“SHOULD the DT be felled”**

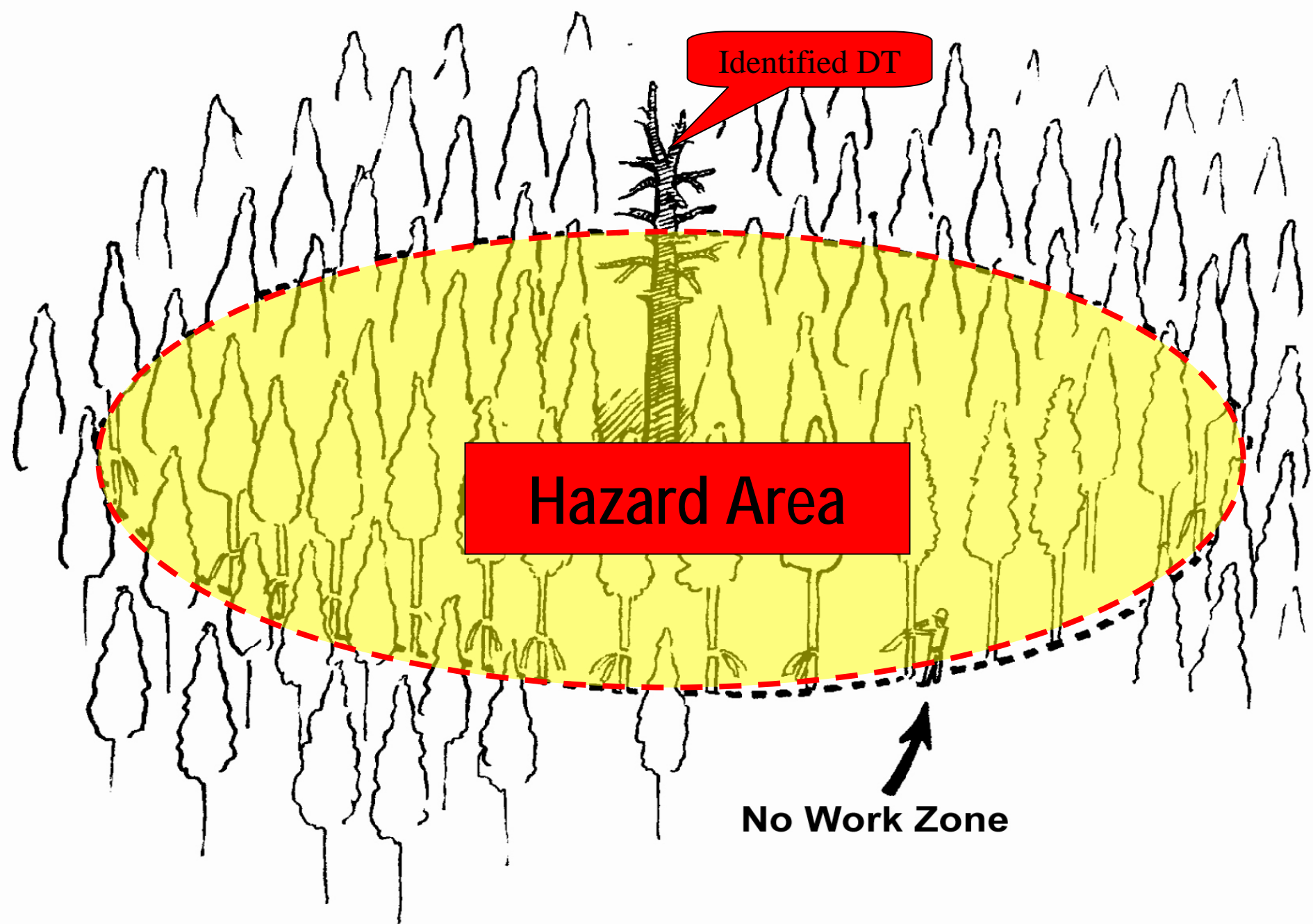




Dangerous Tree Assessment

Strategies to Reduce Hand Falling:

- Evaluate & Refine Objectives
- Assess to the Proper LOD
- Utilize No-Work Zones
- Seek Alternatives to Hand Falling



Danger Tree Fallers

- **Certification & Qualification Acceptable to the Board**
- **Experienced – to timber type, terrain, weather, DT falling**
- **Qualified Supervision**
- **Assess for Site Hazards**
- **Falling Plan for Each Tree**
- **Manages to Correct LOD**

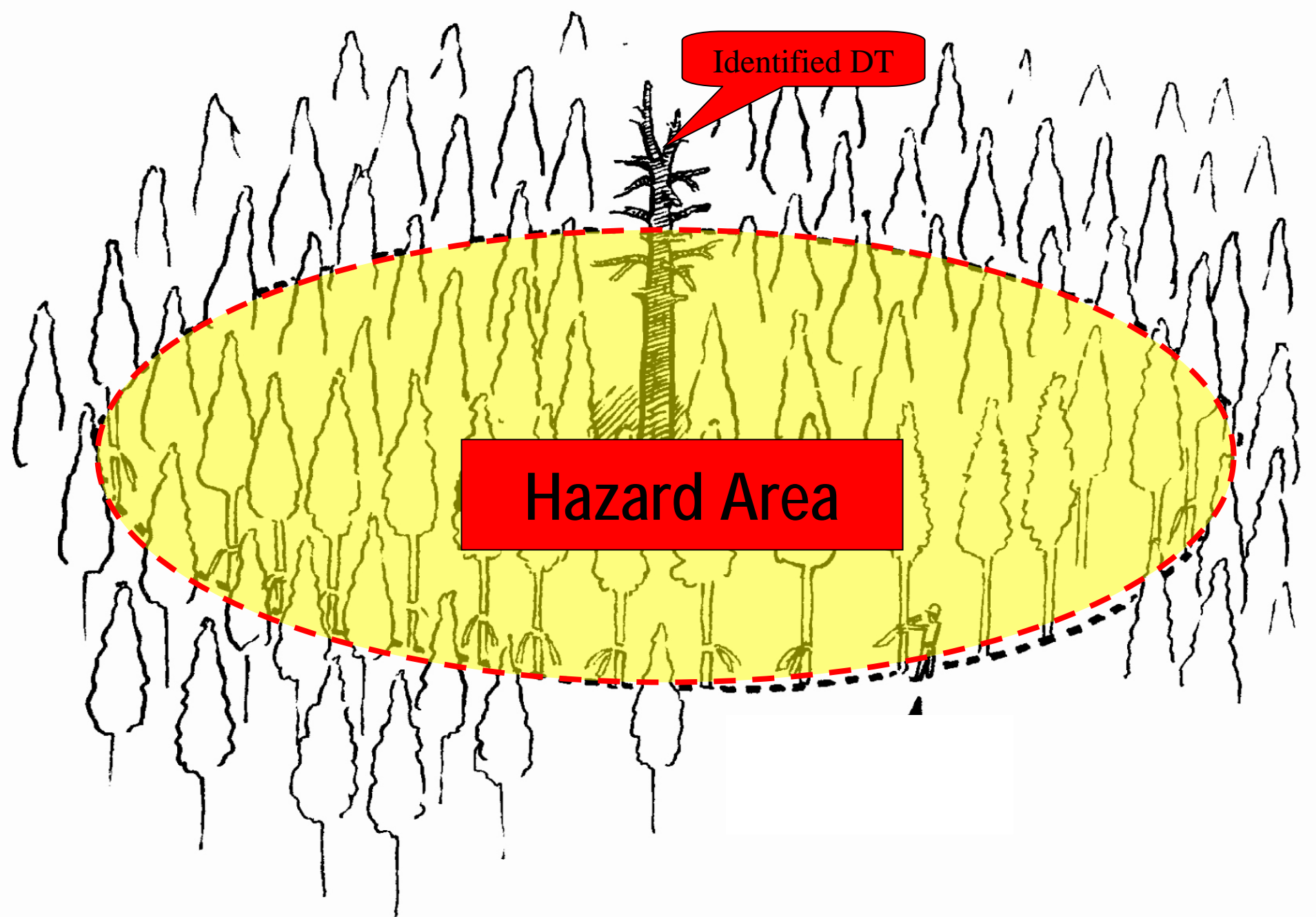




Falling Plan for Identified DT

Hazard Area is Clearly Understood

- 1 – 1 ½ tree length sphere
- Adequate Opening?
- Is Plan Flexible to Overcome Falling Difficulties?



Communication & Documentation



Communication


- **Work Plans Followed, Updated, Improved**
- **Mitigation Confirmed & Track Changes**
- **Hand-off amongst Workforce Tiers**
- **Refinement of Objectives**



Program Initiatives

- **Notes-to-Field (Research Updates)**
- **Qualified Person Training for Silviculture (late 2007) – 1 DAY**
- **Awareness Training for Workers (2-3 hrs Pre-Work Format)**





Closing & Discussion

Guidance Pamphlet Available from the WTC website:

www.for.gov.bc.ca/hfp/values/WLT/

Wildlife Tree Committee of BC

Dangerous Tree Management in Preparation for Silviculture Activities

Background

The standard of care for the management of dangerous trees (DT) in forestry operations of British Columbia is outlined in the Wildlife/Danger Tree Assessors Course (WDTAC). The WDTAC is endorsed by WorkSafeBC (the Workers' Compensation Board of BC) and was developed to promote the conservation of wildlife trees and associated stand-level biodiversity in a safe and operationally efficient manner. The harvesting and silviculture module of the WDTAC details the specific assessment criteria and damage thresholds necessary to determine whether tree defects are safe or dangerous for given work activities, and recommends the appropriate safe work procedures.

The effects of wildfire and insect damage have recently impacted numerous sites throughout British Columbia. As resource managers prepare for the reforestation of these impacted sites it is of critical importance that planners and contractors carefully consider how potentially DT are going to be managed prior to the commencement of silviculture activities.

The Wildlife Tree Committee of BC (WTC) was asked by various stakeholders to clarify how DT should be managed, especially in situations where there are high densities of standing dead and dying trees. Members of the WTC participated in a field review of a number of sites in the Kamloops and Princeton areas. The following information outlines appropriate points of control that are needed to promote a safe and effective reforestation strategy.

Points of Control for Worksite Safety

Foundational to effective and safe implementation of forestry projects are a clear understanding of the treatment objectives, the coordination of hazard planning, and the establishment of a safety management system. A framework for the process can be presented in a "points of control" matrix for worker safety. It is a linkage of all participant groups, from landowner to forestry worker, who are responsible for the activities at the worksite. Specific to reforestation of high stem density sites, a "points of control" matrix is outlined in table 1. This matrix links all the various groups to a set of control tasks that must be integrated and coordinated. The control tasks include the setting of management objectives, submitting a notice of project forestry to WorkSafeBC, assessing the capacity of workforce tiers (contractors, assessors, fallers, planters, equipment operators), assessment of worksite hazards, and opportunities for seeking consultation.

The process for mitigating the hazards associated with DT can seem overwhelming amidst a landscape of dead and dying trees. However, with a commitment to develop and follow a "points of control" process, managers can safely manage DT and implement successful silviculture projects.



WORKING TO MAKE A DIFFERENCE

