Introduction

Definition of a Danger Tree

- Where a cat or skidder has cut off 50% or more of the root system
- Where 50% or more of the root system has been burnt through
- Where 50% of the root system is gone by any combination of (1) or (2)
- Where the diameter of the tree has been significantly reduced from being burned through.

Training Requirements

First Aid / CPR	Recommended
Wildlife Danger Tree Assessor	Recommended
BC: BC Faller Certification	Required
AB: AWTA / ETC Chainsaw Training	Required

Critical Task Inventory

- Danger Tree Assessment
- Establishing Escape Routes
- Falling
- Falling and Bucking Burnt Timber

PPE Requirements

Image	Description	Standard
	Appropriate Boots	May Be Required
	Chaps	May Be Required
	Hi-Vis Hard Hat w/Screen, and Hearing Protection	May Be Required
	Safety Glasses or Goggles	May Be Required
	Form Fitting Gloves	May Be Required

Danger Tree Assessment

It is important to evaluate the site conditions and then prepare appropriately before starting to fell dangerous trees.

Hazard Assessment	F	S	P	R
Slip, Trip, Fall (S)	3	1	2	6
Struck by Overhead Hazard (S)	3	2	2	7

Evaluating Site Conditions

- A faller must exercise sound judgment to choose a falling sequence that will minimize the risk to the faller and other workers.
- The minimum working distance between adjacent workers on machinery will be two tree lengths.
- No tree will be felled within two tree lengths of a traveled road, as to create a hazard to vehicle or pedestrian traffic unless an effective means is used to stop approaching traffic.
- Only workers who have duties associated with falling will enter the falling area and will make their presence known to the faller before entering.
- Any worker leaving the felling radius must not re-enter the radius until either the tree is on the ground or the faller acknowledges the worker's re-entry.
- Those not involved in the felling process must maintain a distance of two tree lengths from all trees being felled, danger or not.
- Establish an hourly check-in system.
- Trees or snags too dangerous to fall must not be cut.
- Remember – nobody should keep quiet when unsafe methods are used.

Evaluating Site Conditions

- Even if a worker is out of sight in a disaster area, another worker should be listening for the faller's chainsaw.

Preparation for Danger Tree Falling

- Assess the size of the work area.
- Determine if there are limitations of any kind in the area.
- Examine the condition and position of other trees within the felling radius.
- Estimate the height and lean of the tree.
- Walk around to determine if a snag will strike or hang-up in other trees and remove those hazards.
- Examine tree/snag for splits or rot.
- Establish the best direction to fall the tree. Whenever possible snags should be felled in the direction of the lean.
- Check for the possible presence of nails, wires, or other foreign objects in the tree.
- Snags near a fire line should be cut such that the fallen timber does not cross the fire line.

Frequency of Exposure (F)	Severity of Loss (S)	Probability of Loss (P)	F + S + P = Risk Rating (R)
1 = Up to Weekly 2 = Up to Daily 3 = 1+ Times / Day	1=Class C – Minor, non-disabling, non-disruptive 2=Class B – Serious injury or disruptive loss 3=Class A – Major injury, permanent disability or loss	1=Limited chance adverse event will occur 2=Adverse event likely to occur 3=Adverse event likely to occur soon	**7 to 9 = High Risk** **5 to 6 = Medium Risk** **3 to 4 = Low Risk**

Type Of Hazard: H = Health (acute or chronic) S = Safety (people and equipment) Q = Quality P = Production E = Environment

Establishing Escape Routes

Having more than one escape route may save your life. If your exit is blocked on one direction it may be possible to go the other direction. Keep your options open.

Hazard Assessment	F	S	P	R
Slip, Trip, Fall (S)	3	1	2	6
Struck by Overhead Hazard (S)	3	1	2	6

Prepare 2 (two) escapes routes

- The work area must be cleared of all underbrush and debris that may inhibit a safe escape.
- These routes should be in a line at a 45 degree angle from either side of an imaginary line opposite the intended falling direction.
- Clear brush and debris from the base of the tree/snag.

Falling

There are many hazards associated with falling trees, so it is important to ensure that adequate training is acquired before attempting this kind of work.

Hazard Assessment	F	S	P	R
Slip, Trip, Fall (S)	3	1	2	6
Struck by Overhead Hazard (S)	3	1	2	6
Eye Injury (S)	3	2	2	7
Cut by Chainsaw (S)	3	2	2	7
Fatigue (S)	3	1	2	6
Struck by Butt End of Tree (S)	3	2	2	7
Pinned by Falling Tree (S)	3	3	1	7
Exposure to Wood Dust (H)	3	2	1	6
Exposure to Various Petroleum Products (H)	3	2	1	6

General Precautions

- Remove, where practical, loose bark from a dangerous tree in preparation for falling.
- Use extreme caution when falling trees that have been killed by Hack and Squirt Methods. They are particularly rotten and dangerous to fall.
- Check saw cuttings for butt-rot, hollow-trunk, etc. and anticipate changes to the felling direction of a snag/tree.

Falling (continued)

Falling Live Trees

- Employees who regularly need to assess and fall dangerous trees are required to provide valid Faller Certification.
- When falling, the skidder operators must remain a distance of 45 metres from the faller or faller unit until it is safe to approach. It is up to the faller to signal when it is safe to come closer.
- Follow Safe Work Procedures found in the *Chainsaw Operator Module*.

Cutting Dangerous Snags

- Use a deep undercut as necessary to minimize the use of wedges and saw vibration.
- Chainsaw chains must be stopped before moving the saw from one cut to another.
- The stump height for snags will be the height, which in judgment of the feller will allow maximum visibility and freedom of action during the falling operation.
- Snags will not be wedged over except in cases of absolute necessity and only after careful assessment of the ability of the snag to withstand wedging.
- Pushing of a snag with a green tree will only be undertaken to overcome a falling difficulty.
- When a snag/tree starts to fall, the faller will quickly move away to a predetermined safe position.
- If a snag/tree is not completely felled, the faller will clearly mark the tree, discontinue work in the hazardous area and will notify the nearby workers and supervisor.
- Do not leave partially cut trees standing. 98% (ninety-eight percent) of fatalities investigated in hand falling operations can be attributed to partially cut trees left standing. In most cases all it takes is a light breeze to cause these trees to fall and they usually fall on the person who left them cut and standing.
- If a worker has a tree lean back on the stump, either a skidder must be used to push it down, or it must be felled in the direction of the lean. In any case the faller must get the tree on the ground before continuing to fall the other trees. Domino falling is not permitted.

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Falling (continued)

Ground Debris

Ground debris can present a serious hazard to fallers. The faller must assess the hazards and conditions and brush out debris accordingly. Ensure overhead hazards are assessed as well.

- Visually inspect the trees for loose hanging material such as widow makes.
- Do not brush standing timber with falling trees.
- Have an escape route and safety zone established in case of miscalculated falling direction and mis-measurements.

Windfall Roots

- Do not assume windfall roots are safe because it has been down for a period of time as it may flip over unexpectedly.
- Approach windfall roots from the root wad side.
- Avoid standing downhill or directly behind a root wad.

Leaning Trees Near Creeks and Swamps

If felling trees near wet low-lying areas, fall the leaning timber first. They may fall without warning from wind or vibration of the saw.

Falling & Bucking Burnt Timber

Working around burnt timber is very hazardous. Wind can cause the damaged trees to fall without warning.

Task Steps and Hazards	F	S	P	R
Burnt or Partially Burnt Timber (S)	3	3	2	**8**
Exposure to Soot (H)	3	3	2	**8**

Controls

Falling and bucking burnt timber requires extreme caution:

- Roots on trees may be burnt off and will have little or no stability.
- Bark may become loose once the tree has been burnt.
- Do not attempt to walk on burnt logs. Loose bark and weakened limbs present hazards.
- Burnt holes and exposed roots create additional tripping hazards.
- Eye protection must be worn as burnt wood is extremely dense and hardened chips become airborne when cutting.
- Burnt out tree centers should also be brought to everyone's attention.