WASHINGTON STATE LOGGER SAFETY INITIATIVE

Keeping Washington loggers safe.

Q3 Logging Safety Training: Cutting Training Danger Trees

June 24, 2015

Danger trees have been a recognized hazard to timber fallers for years and are still a safety concern today. Training for recognizing and addressing these hazards needs to be provided to foresters, contract administrators, timber fallers, and loggers so they will able to identify danger trees and know how to safely eliminate the hazard and or convey the hazard ~~it~~ to those who will be exposed. After a danger tree is discovered and the hazard conveyed, the next challenge is what to do with it. The options are limited under DOSH rules, either abate the hazard (i.e. cut the tree down, have someone take it down with explosives), or stay a safe distance away. If these practices are followed, danger tree related injuries can be prevented.

Layout foresters are the first individuals with the opportunity to identify danger trees. It is important for them to identify danger trees so they can be addressed during the layout phase and prior to any logging activities occurring. Danger trees could be encountered anywhere, such as a long haul routes, in RMZ's, outside of the unit, and within the harvest unit. Danger trees can create a hazard to all aspects of the logging operation, so it is important for the layout forester to pass on the information

Salvage logging whether root rot, forest fire, or other causes need even more safety planning mainly because of the potentially large number of danger trees in and around the harvest area.

If a wildlife snag is left make sure proper steps are taken so there is not going to be exposure to the logging operations.

After speaking with timber fallers, it was apparent that each land owner handles and interprets danger trees differently. Even within a timber company, employees view danger trees differently, which can make it difficult for timber fallers. Some foresters have not been trained or do not recognize the hazards associated with danger trees, and end up marking leave trees that are unsafe.

If it will be several years between the layout and logging phases, layout foresters must take this into consideration. For example, a dying tree might still be sound at the time of layout, but because of continual deterioration might be a hazard at the time of harvest.

Danger trees will be missed by foresters, so it is important to have and communicate a plan with contractors on how to handle these situations. Depending on the landowner the policy could be any of the following:

- Call the contract administrator prior to falling the tree
- Use your own judgment
- Fall the tree, and then communicate it to the landowner.

If you are a landowner and do not have a plan for this begin the discussion, or if you are a timber faller and don't know the policy of the landowner, ask.

One landowner shared their perspective on leaving snags for the purposes of wildlife and how they handle the issue:

- Safety is always the number one priority in all instances whether the danger tree is marked to be left or not.
- When a snag is left, we try to clump them in RMZ's, WMZ's, or standing timber to eliminate exposure.
- If an operator believes a tree to be a safety hazard and falls it, they will not be in trouble if it is within reason, but if possible contact the forester in charge first.
- If the snags are sound and left in a safe location, but are still being cut then there will be an issue.
- We just need to work together, be reasonable, and put safety as a priority.

Business Management Best Practices Directly from the Industry: Cutting a Danger Tree

Cutters are typically the first workers to be exposed to the danger tree hazards. The owner should walk the job before falling begins, identify danger trees, and then work with the land owner for ways to abate the hazards. The cutter also has to be looking for danger trees that may expose the rigging crew, landing, or trucks to hazardous situations.

There are definitely trees that are questionable as to whether they are a hazard or not, such as trees with cat faces, green trees with short dead tops, and short snags. These may take a group effort to decide if they need to go or not, and are good discussions for landowner's to have with all their contractors.

Identifying and falling danger trees are a responsibility for both hand and mechanized felling. In today's logging, machines cut all the timber that they can. If they leave a snag or danger tree, then hand fallers have to go in behind them and get these trees down. The machine operators should view danger trees just as hand fallers and take them down as soon as safe to do so.

Identifying and planning to remove danger trees applies to all parts of the harvest operation. When cutting on the break of hand/buncher ground, danger trees that the operator can reach need to be cut down.

After the tree is identified and a plan made, then comes the difficult and dangerous part of getting it on the ground. Old growth snags are a common danger tree that timber fallers encounter. It is difficult to determine at what height a snag poses a hazard and needs to be cut? This needs to be a discussion with the company you are working with and must adhere to DOSH rules.

A cutter with over forty years of experience gave his advice and recommendations on falling snags:

1) Either have an experienced faller cut it or have the guidance of an experienced cutter
2) Use the buddy system/team up
3) Have both cutters evaluate for loose bark, rot, and lean
4) If lean cannot be identified use the lean of the current stand or look at the old stumps to determine which way they were felled (most will not have any perceptible lean)
5) Remove bark as needed. The bark is a hazard for slipping down and striking the faller on the head or continually slipping down and not allowing for a cut to be made
    - The best way to remove the bark is to keep cutting it off until it stops sloughing down, and make sure your buddy is with you while doing this. If the bark does not pose a hazard and will stay while a face and back cut are made, it can be left
    - Another method is to make cuts above where the face will be and cut some notches. Wedges can be put in the cuts to keep the bark from sliding down
6) Remember that there is not a top in the snag and all the pressure will be straight down on the stump
7) Make sure the face cut is half the diameter of the snag being felled
8) Before making the back cut find solid wood so you can wedge. You may have to cut lots of rot out before solid wood is found
9) After the face is made, cut up the low/offside first
    - If you are using your “buddy” to watch that side tell them how close it needs to be cut up first
10) Have at least four wedges with you
11) Make sure you don’t leave too much holding wood since there is not the weight of a top
12) As you place the wedges stack them and after cut up, begin beating it over
13) If it doesn’t go over, get more wedges
14) Do not try to use a push tree
    - Push trees often will not get them over and only brush up your work area. Most times the push tree will just slide off without moving the snag and create a bigger hazard then when you started

When you are starting to cut a new stand, look for patterns in the timber that is being cut. This pattern most times will be throughout the stand, and once you know the pattern a plan can be made to deal with the issue. One pattern is location of rot. Generally rot is located at the ground

level and if you bring your cut up you will be working with solid wood. If the rot is in the middle of the tree it is more difficult to work with, but typically it is in the top or bottom. Be very careful if completely rotten in middle and only a shell on the outside, because once you touch it with a saw it could blow up.

BMP's from industry when cutting a danger tree:

1) Always fall a danger tree as soon as you can
2) Use "buddy system"
3) Have both cutters evaluate tree and discuss plan prior to start of cutting
4) Clear escape paths
5) When you cut the tree, cut standing up and at waist height
    - This allows the cutter to see the top better and escape quicker since you are in an upright position
6) Make sure the face is clean and never get in a hurry cutting a danger tree
7) After the tree is fell, the stump can be cut off

BMP's from industry on pushing a danger tree: This pertains to danger trees leaning up into the standing timber you are going to cut.

1) Never drive a danger tree that can be wedged
2) If it is not solid and safe to cut, use the "buddy" system
1) If you're not confidant ask for an experienced cutters advice (remember it is easy to call someone on the radio)
2) Distance will save you when pushing a danger tree. If at all possible get a push tree that is tall enough to get you out of the strike zone of the tree being pushed
3) Keep a small undercut
4) Make sure your under cut is clean
5) Place cut at waist height
    - This allows the cutter to see the top better and escape quicker since you are in an upright position
6) When you are putting the back cut in the tree to be driven, put a wedge in as soon as possible
7) If you are worried about the top coming out don't hit wedge harder than you have to and leave plenty of holding wood
8) Make sure the escape path is cleared out
9) Fall your predetermined best push tree into danger tree and drive the danger tree over
10) Never turn you back on the danger tree

Standing danger trees that are at the edge, but outside of the unit, need to be cut if they can reach your work area or be contacted by trees or logs in the unit. The hazard is that if the danger tree is hit by a tree being cut or by a log sliding into it, a part or all of the danger tree could fall into the work area of a cutter or rigging crew.

Logger Safety Initiative Accident Prevention Program

Danger Tree Section

Where possible, danger trees must be felled:

- Progressively with the falling of other timber;
- Before falling live trees; and
- Into open areas.

Danger trees that will reach the work area should be fell as soon as an opening will permit it. Don't overlook danger trees along cutting lines or in leave areas. If it is unsafe to hand fall a danger tree, your supervisor must prearrange other methods such as the use of explosives or machinery, so you don't have to bypass a danger tree. Avoid wedging a danger tree as it may break off or material may fall. Fall danger trees in the direction of lean whenever possible.

Avoid "pushing" a danger tree, other than to overcome a falling difficulty. The top may break off or the danger tree may buckle in the middle and fall in your direction. The whole danger tree could sway and fall back onto the faller. Never push a danger tree with another danger tree.

A cutter must not fall a danger tree or snag alone when at least two persons are necessary to minimize hazards.

As a cutter, it is imperative that you be able to identify danger trees in your surrounding work area that would create a hazard. Because timber fallers are usually the first workers to approach a danger tree or snag during the harvest activity, they are at greatest risk of having an accident.

Danger tree is defined as (WAC definition in the Safety Standards for Logging Operations): Any tree of any height, dead or alive, that poses a hazard to workers because of rot, root, stem or limb damage, lean, or any other observable condition created by natural process or man-made activity.

Some trees, although dead, may not be ~~a~~ danger trees if they have a sound top, trunk, and roots. Identifying these dead but safe trees requires careful observation. Mortality may have been caused by canker, diseases, insects, fire, adverse weather or lightning. Needle and small twig retention is evidence of recent death, which may be an indicator of stability. Fire-scorched trees may remain stable for many years if the trunk and root systems are not badly burned.

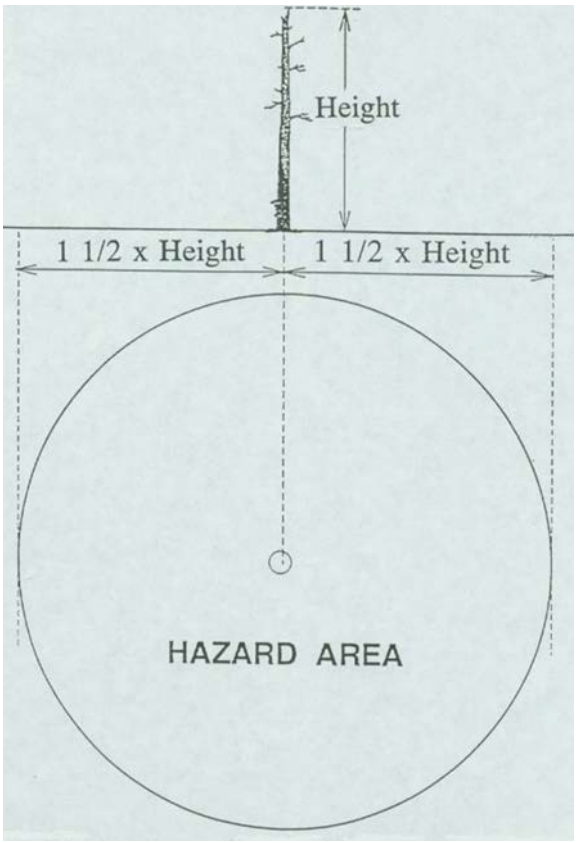
However, not all fire-scarred trees may be safe. Pre-existing defects may be charred and difficult to detect, rendering a tree that was dangerous before the fire even more dangerous afterward. If the fire burned the root system, it may be damaged and need to be classified as a danger tree. Similarly, trees infected with root rot have weakened root systems that automatically classify them as a danger tree. Root disease pockets can be identified by looking for trees with fading crowns that are adjacent to windthrown trees with root decay. The windthrown trees will usually have very small root balls.

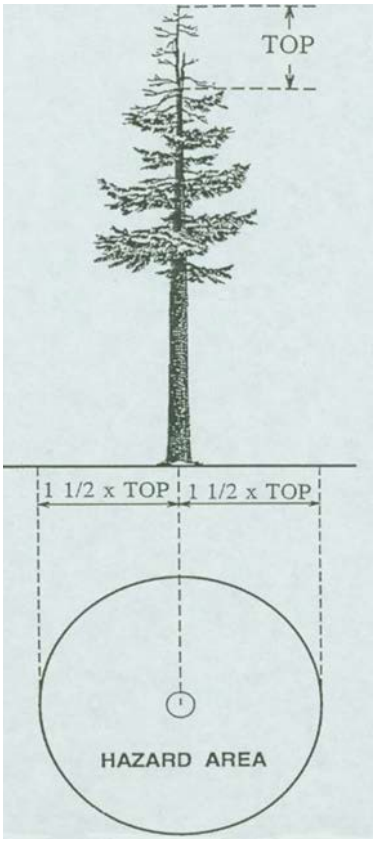
Danger trees could also be live or dead trees with unstable tops or upper portions. Although the roots and main portions of the trunk are sound, these reserve trees pose high hazard because of defect in live or dead wood higher up in the tree. Ground vibration from falling trees, wind, flying debris, heavy

equipment or other industrial activity can dislodge slabs, chunks, limbs, or the entire upper portion of the tree.

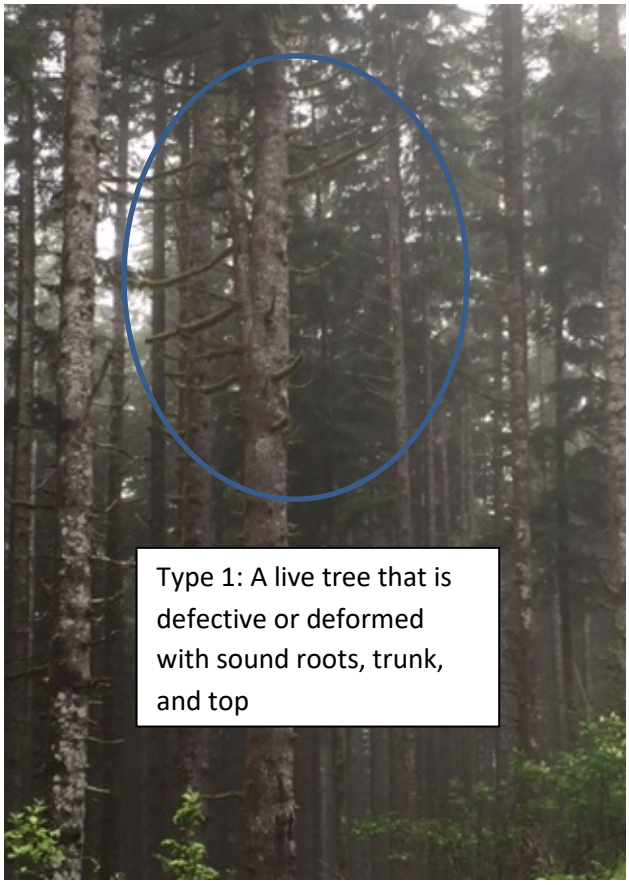
Danger trees could also be live or dead with unstable trunk or roots, with or without bark. This includes “soft” snags as well as live trees with unstable roots caused by root rot or fire. They are considered the most dangerous type. Unexpected collapse could occur from any portion of the roots or trunk.

If the intent is to leave a danger tree in a logging unit, then workers must remain a safe distance away. A safe distance would be outside the potential hazard area of the danger tree (see examples below).

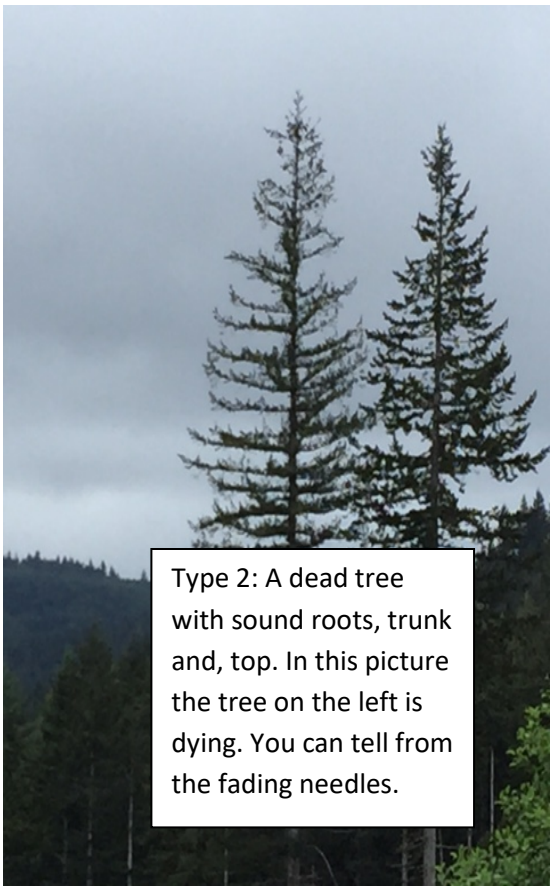




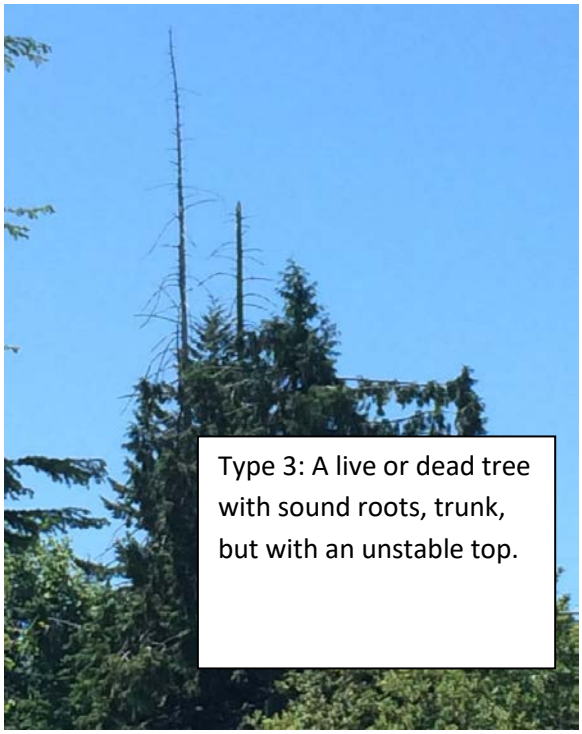
*Reference for reserve trees is from Guidelines for Selecting Reserve Trees.



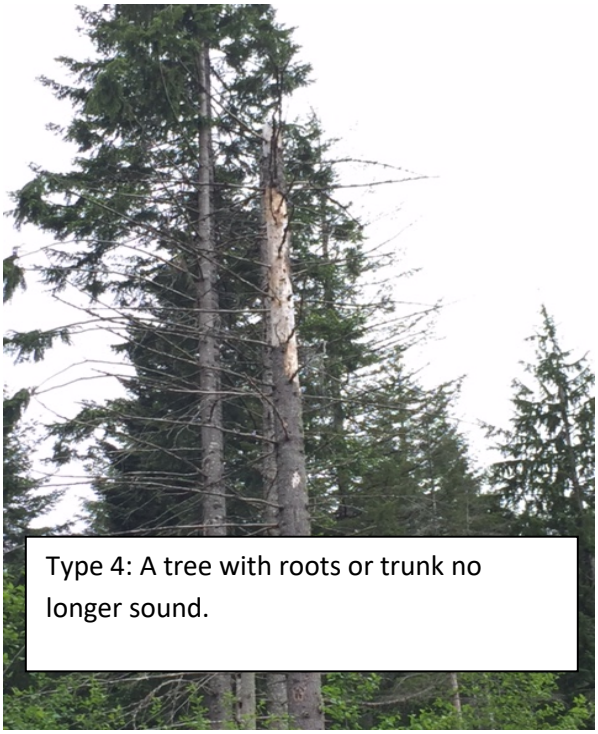
Type 1: A live tree that is defective or deformed with sound roots, trunk, and top



Type 2: A dead tree with sound roots, trunk and, top. In this picture the tree on the left is dying. You can tell from the fading needles.



Type 3: A live or dead tree with sound roots, trunk, but with an unstable top.



Type 4: A tree with roots or trunk no longer sound.

LSI Training Requirements

LSI participants are required to annually attend one of the LSI Employer Logger Safety training sessions. If the employer delegates supervision and or training responsibilities, those individuals must also attend the formal training sessions. This document outlines what the training requirements are and how LSI participants can meet them.

Formal Training Sessions

A minimum of 4-hours of formal training, specific to safety, is required in each calendar year. For LSI purposes, formal training is a course, program, seminar, conference, or convention. Credit will be provided for safety related content only, for example, when you attend an 8-hour class and 2-hours are related to safety, you'll receive two safety credit hours.

Employers are required to submit documentation to the LSI Program Office to show they've fulfilled their training requirement. For each training attended, the employer must submit the following information: a description of the training, the training provider, and date attended.

Examples of approved formal training may include:

- WCLA Safety Conference
- L&I Governor's Safety and Health Conference
- Master Logger's Safety Training
- L&I Safety Training Workshop
- LSI Landowner Safety Day or Trainings
- Oregon Governor's Conference
- Western Pulp, Paper, & Forest Products Safety and Health Conference
- Intermountain Logging Conference
- Pacific Logging Congress
- Associated Oregon Loggers Annual Statewide Safety Conference
- Or other training as approved by the LSI Taskforce

Questions

If you have any questions regarding the training requirement, please contact the LSI Program Office by calling (360) 902-5008 or via email at LoggerSafety@lni.wa.gov.