

PERRP Safety Alert

Hazards of tree felling and trimming operations

This PERRP Safety Alert (PSA) is not a standard or regulation, and it creates no new legal obligations. The PSA is advisory in nature, informational in content, and is intended to assist public employers in providing a safe and healthful workplace.



Purpose

This PERRP Safety Alert discusses ways to reduce or eliminate tree work related accidents. It discusses training and proper work practices and identifies controls necessary to reduce the risk of serious injury. Recent public employee fatalities during tree work operations have demonstrated a need to bring attention to these hazardous conditions to ensure each and every public employee is provided with a safe and healthy workplace.

Chain saws, brush chippers, work vehicles and material handling equipment all have a potential to cause injury as well as trees and limbs themselves. Trees and limbs can be very heavy and when they fall or roll can cause severe injuries or death. Even on the ground, rolling or twisting logs, springpoles (smaller trapped trees under a log or felled tree) or branches under tension can cause catastrophic injuries or death.

Equipment safeguards for chainsaws and chippers

Chain Saws

- Before using any chain saw, employees must receive adequate training on the maintenance and use of this extremely dangerous piece of equipment.
- Make sure the proper personal protective equipment is available and worn by employees before they begin any work with the equipment. Employers are required to perform a hazard assessment to determine necessary personal protective equipment. Consult the instruction or safety manual provided by the manufacturer of your chain saw for PPE recommendations.
- Never operate a chain saw that is damaged, improperly adjusted or is incompletely assembled. Follow the saw manufacturer's maintenance and repair instructions, including any guidance on chain/bar mounting, chain sharpening, chain brake and chain catcher.
- Never fuel a chain saw when it is running or hot. This could cause a fuel fire in the chain saw and that may flashback into the fuel container while you are holding the container.

Brush Chippers

- Never use a chipper unless you are properly trained to use this hazardous equipment.
- Perform maintenance on chippers prior to use. Ensure all safety devices and guarding are working properly and all access hatches are properly secured.
- Always feed the chipper from the side. Ejected materials may strike you and cause severe injuries if you are standing directly behind the chipper. Never place any part of your body inside the feed chute of the chipper while it is running.

Stats

In Ohio since 2001, nine public employees have been fatally injured during tree felling and trimming operations.¹

During 1992-2007, a total of 1,285 worker deaths were associated with tree care in the United States.²

From 2009-2013, 276 private sector employees lost their lives in the U.S. including 15 in Ohio.³

Types of injuries

Blunt force trauma injuries from struck by hazards. Amputations, lacerations and cuts from contact with sharp objects and tools.

¹Ohio Public Employment Risk Reduction Program (PERRP), integrated management information system inspection database.

²United States Department of Labor, Bureau of Labor Statistics, Census of Fatal Occupational Injuries, 1992-2007.

³United States Department of Labor, Occupational Safety and Health Administration (OSHA), Reports of Fatalities and Catastrophes (FAT/CAT), database.

Safeguards for tree felling and tree trimming operations

Tree Felling

- Before attempting to cut down even a small tree, attend a training course taught by a qualified instructor, such as a certified logger or arborist. Tree felling is a complex process that can cause property damage, severe injury or death if improperly performed and adequate documented training is necessary to safely perform this operation.
- Determine the felling direction and how to safely deal with forward lean, back lean, and/or side lean.
- Ensure you have established an escape/retreat path and have cleared the path so that it is accessible.
- Make sure co-workers, other people and equipment are not located within two tree lengths of the feller while they are felling any tree or removing limbs from an elevated position.
- Identify the location of all the power lines in the area. If there is a power line within two tree lengths of the tree in question, contact your power company before starting your felling or trimming operation.
- Check overhead before cutting. Dead tree limbs, leaning deadfall, grapevines and other materials may fall or pull down other material that can cause injury or death.
- Perform all tree felling operations by making a properly executed undercut and backcut that leave sufficient hinge wood to guide the tree in the intended direction during most of its fall. Improper cuts can result in kick-back, twisting, and other unpredictable tree movement.
- Even after a tree has been felled and is laying on the ground it will have a significant amount of stored energy. Springpoles, limbs supporting the tree on the ground and the slope of the ground can all create extremely hazardous and potentially life threatening conditions.

Tree Trimming

- Assume any overhead utility (electrical or communications) wire passing through or near limbs is energized. Contact the utility company to protect yourself and the utility lines before beginning your operation.
- Stay a minimum of ten feet from any overhead utility wires whenever you are working aloft in a tree or in an aerial lift and when working from the ground with a pole saw or other long object or a piece of equipment like a backhoe or crane with an extended reach.
- Wear the proper personal protective equipment when performing trimming and clean-up operations.
- Do not climb into trees unless you are properly trained and equipped to do so.
- Never allow anyone to work beneath a tree where limbs are being trimmed.

Other Considerations

- When working near public roadways, use the Ohio Manual of Uniform Traffic Control Devices (OMUTCD) to lay out the work zone to protect workers from motor vehicle traffic.
- Know the location of co-workers at all times and exercise extreme caution when backing or operating motor vehicles and other equipment in the work area. Ensure all dump trucks, front-end loaders, backhoes and other equipment with limited (obstructed) visibility to the rear are equipped with back-up alarms or a spotter is used during reverse operation.
- Always be aware of the possibility of insects, animals and poison ivy in trees and take appropriate precautions to prevent injuries.
- Establish and verify communication with the local emergency medical service (radio or cellular) and have the necessary first aid equipment at the worksite and ensure each employee is provided with training to respond to emergencies and provide first-aid.
- Never work on trees when high winds or storms are forecast.

Manual tree felling is a hazardous operation!

Tree felling is a complex process that involves multiple site factors and safety considerations. More employees are killed while felling trees than during any other tree work activity.

It is extremely important employees engaged in felling operations thoroughly understand all of the factors outlined in this PSA before they attempt to fell a tree. Employees must be trained in the requirements of 29 CFR 1910.266. They must also be trained on performing their work assignments safely and on recognizing the safety and health hazards related to their work assignments.

Employees that perform manual tree felling must also understand the instructions and work procedures included with the equipment they will use in their work.

For more information on the various methods of tree felling and the hazardous conditions that can occur during these operations, review the information and guidance included in the OSHA Logging e-Tool advisor found here: <https://www.osha.gov/SLTC/etools/logging/index.html>



Final thoughts

Ohio frequently experiences storms with damaging high winds, straight line winds and tornadoes. During winter months, significant snow and ice accumulation may also cause significant damage to trees and power lines. After storm events, public employees will be called upon to remove damaged or fallen trees and limbs many of which may be near energized power lines and other utilities. Tree work operations can be dangerous and may result in severe injury or death when proper precautions and work practices are not developed and carried out in the workplace. Implementing the actions described in this PERRP Safety Alert will help protect public employees from serious or fatal injuries during tree work operations.

Resources

Adopted Ohio Employment Risk Reduction Standards

[29 CFR 1910.132, Personal Protective Equipment, General Requirements](#)
[29 CFR 1910.266 - Logging operations](#)
[29 CFR 1910.266 - Logging operations, Appendix A - First-aid Kits \(Mandatory\)](#)
[29 CFR 1910.266 - Logging operations, Appendix B - First-aid and CPR Training \(Mandatory\)](#)
[29 CFR 1910.269 - Electric Power Generation, Transmission, and Distribution](#)
[29 CFR 1910.268 - Telecommunications](#)
[29 CFR 1926.601 - Motor Vehicles, Mechanized Equipment, and Marine Operations](#)
[Ohio Manual of Uniform Traffic Control Devices \(Ohio Revised Code §4511.09\)](#)



National Consensus (Industry) Standards

ANSI Z133.1: American National Standard for Arboricultural Operations - Pruning, Repairing, Maintaining, and Removing Trees, and Cutting Brush - Safety Requirements
ANSI A300: Tree Care Operations - Tree, Shrub and Other Woody Plant Maintenance - Standard Practices
ANSI B175.1: Safety Requirements for Gasoline Powered Chain Saws
ANSI Z308.1: Minimum Requirements for Workplace First Aid Kits

United States Department of Labor, Occupational Safety and Health Administration (OSHA) Outreach Materials

[Hazards of Wood Chippers, Safety and Health Information Bulletin \(SHIB\) – SHIB 04-16-2008](#)
[Tree Care Industry Outreach Materials](#)
[OSHA Logging e-Tool Advisor](#)

BWC Division of Safety and Hygiene Library Videos

Order #	Title	Length (format)	Year
490225	Chainsaw safety basics: An expert's perspective	13 minutes (DVD)	2011
490226	Chainsaw safety: Real accidents, real stories	10 minutes (DVD)	2011
490016	Landscape power tool safety	22 minutes (DVD)	2009
490173	Video guide to chain saw safety	23 minutes (DVD)	2007

This PERRP Safety Alert (PSA) is not a standard or regulation, and it creates no new legal obligations. The PSA is advisory in nature, informational in content, and is intended to assist public employers in providing a safe and healthful workplace. Pursuant to the Ohio *Public Employment Risk Reduction Act*, public employers must comply with hazard-specific safety and health standards adopted by PERRP. In addition, Ohio Revised Code, Chapter 4167, Section 4(a)(1), the General Duty Clause of the Act, requires public employers to provide their employees with a workplace free from recognized hazards likely to cause death or serious physical harm. Employers can be cited for violating the General Duty Clause if there is a recognized hazard and they do not take reasonable steps to prevent or abate the hazard. However, failure to implement any recommendations in this PSA is not, in itself, a violation of the General Duty Clause. Citations can only be based on standards, regulations, and the General Duty Clause.

Under the Ohio Public Employment Risk Reduction Act of 1992 (HB308), public employers are responsible for providing safe and healthful workplaces for their employees. PERRP's role is to ensure these conditions for Ohio's public employees by adopting and enforcing standards, and providing training, education and assistance. To ask questions, obtain compliance assistance, file a complaint, or report workplace multiple hospitalization accidents, fatalities or situations posing imminent danger to public employees, call PERRP's toll-free hotline at 800-671-6858.

For more information, visit: www.bwc.ohio.gov