# WILDFIRE PREVENTION, PREPAREDNESS & RESPONSE; A GUIDE FOR PENNSYLVANIA LOGGERS

Pennsylvania SFI Implementation Committee


Wildfires in Pennsylvania represent a threat to safety, forest resources, logging capital, and human infrastructure. Nearly all wildfires in Pennsylvania are caused by people. While logging operations are not frequently a major source of wildfires in our state, fires do occur on timber harvesting jobsites and have the potential to expand into larger fire incidences. Timber harvesters therefore have a responsibility to prioritize fire prevention and implement proactive measures that can help reduce the risk of wildfires and protect lives, property, and the environment.

Additionally, the link between wildfires and climate is well documented. The planet is warming with many regions in the United States experiencing increased incidence of wildfire and the undesirable impacts that result. These undesirable impacts threaten not only public safety, human health, and property, but also water quality and quantity, air quality, species habitat, and climate. As climate change exacerbates environmental conditions, the urgency of preventing wildfires becomes increasingly critical.

The Sustainable Forestry Initiative's Fire Resilience and Awareness standards elevate SFI's role in addressing wildfire and require that Certified Organizations limit susceptibility of the forests they own or manage to the undesirable impacts of wildfire, and to raise community awareness of wildfire risks and minimization efforts.

This publication is intended to help Pennsylvania's professional timber harvesters prepare against uncontrolled fire on their operations and enact appropriate responses in the event that a wildfire occurs.

# PREPAREDNESS

The greatest danger of wildfires in Pennsylvania occurs during the spring months of March, April, and May, and the autumn months of October and November. During the spring fire season, incoming sunlight is almost as intense as summer. However, forests are devoid of foliage, so more sunlight reaches the forest floor. Low pressure systems common to the season tend to produce extended periods of strong winds, and when coupled with low humidity make an optimum time for drying out forest litter and slash. With an ignition source, fires can quickly expand in size and intensity. A shorter period of fire danger is also common in the fall, shortly after our forests shed their leaves and before the arrival of winter.

Fire dependent and adapted forest communities in Pennsylvania can also have increased risk for more intense wildfires. During dry conditions, these forest communities can often ignite more readily and burn with more intensity than fires in other forest types. These fires also have a greater potential to become large and difficult to extinguish. As drying increases this risk is elevated.

- **Fire Dependent Forest Communities in Pennsylvania**
  - Dry Oak – Heath forest (Chestnut oak, mountain laurel, huckleberry, blueberry, etc.)
  - Pitch Pine – Mixed Oak forest
  - Scrub Oak or Scrub Oak – Pitch Pine Forests/Savannahs

- **Fire Adapted Forest Communities in Pennsylvania**
  - Dry Oak – Mixed Hardwoods (White, Red Oak on upland sites)
  - Virginia Pine, White Pine – Mixed Hardwoods (on upland sites)
  - Black Gum Ridgetop Forests, especially in Ridge & Valley Ecological Region

Under the right conditions, ignition sources such as sparks from chainsaws and machines, hot engines and exhaust surfaces, welding, grinding, and other maintenance processes, friction points on machines, electrical faults from equipment or utility lines, open fires, and even cigarette smoking on logging sites can all initiate a dangerous and damaging fire.

Logging supervisors are responsible for ensuring that employees receive appropriate fire safety training. Your company should have an emergency action plan that covers occurrences of fire, and all employees should be trained in their duties and responsibilities. Employees should also receive training in patient assessment and first aid that includes burns, as well as maintenance and use of any fire extinguishing equipment or systems on site. Consider having at least one person trained in the following:

- **Basic wildland fire behavior**
  - https://wildlandfirelearningportal.net/
- **Basic incident command**
  - https://training.fema.gov/is/courseoverview.aspx?code=is-100.c&lang=en
  - https://training.fema.gov/is/courseoverview.aspx?code=is-700.b&lang=en
- **Logging equipment fire safety**
  - https://www.youtube.com/watch?v=zKgi6S1HGGs

# CHECKLIST

- ☐ OSHA standards do not require logging operations to have a Fire Prevention Plan, but it might be wise to adopt a company fire prevention plan in line with OSHA standard 1910.39 anyhow. This plan would include:
    - ☐ A list of all major fire hazards, proper handling and storage procedures for hazardous materials, potential ignition sources and their control, and the type of fire protection equipment necessary to control each major hazard.
    - ☐ Procedures to control accumulations of flammable and combustible waste materials.
    - ☐ Procedures for regular maintenance of safeguards installed on heat-producing equipment to prevent the accidental ignition of combustible materials.
    - ☐ The name or job title of employees responsible for maintaining equipment to prevent or control sources of ignition or fires, and the name or job title of employees responsible for the control of fuel source hazards.

  Having a written plan kept readily available and ensuring that employees know and understand it would be the best way to ensure it is implemented when needed.

- ☐ Consider expanding your fire prevention plan to also include protocols for initiating mitigating actions such as temporarily shutting down or suspending operations after noon, and/or having an employee remain on site for at least 30 minutes to ensure proper cooldown of equipment and monitor for fire ignition. The plan should also include emergency procedures and contact information. Ensure that all employees understand these protocols and know when mitigating actions are in place.

- ☐ Identify and troubleshoot any site limitations for emergency response vehicles and equipment with local emergency responders.

- ☐ Have an employee alarm system to alert when a fire emergency exists. The alarm can be any piece of equipment or device that produces an alert that is distinctive in sound from other signals and is not used for any other purpose.

- ☐ Identify wildfire risk across the project area. The **Burn Probability within the Northeast-Midwest Wildfire Risk Assessment Portal** can be used to determine and compare relative risk of wildfires within specific project areas.
    - https://wrap.northeastmidwestwildfirerisk.com/Map/Public/#risk

  Users should keep in mind that there may be limitations to this data on smaller parcels, and that "low" risk does not necessarily indicate "no" risk. Many forested areas in Pennsylvania can burn and are susceptible to wildfires under dry conditions.

- ☐ Have a site-specific plan for monitoring conditions such as weather, fire danger, and drought.
    - **Weather:** https://www.noaa.gov/
    - **Fire Danger:** https://www.dcnr.pa.gov/Communities/Wildfire/Pages/default.aspx
    - **Drought:** https://droughtmonitor.unl.edu/CurrentMap/StateDroughtMonitor.aspx?PA

- ☐ Review the Safety Data Sheets (SDS) for all flammable materials on site as part of your OSHA Hazard Communication program. Section 5 addresses fire-fighting measures and includes recommendations for suitable extinguishing equipment, advice on hazards that develop from combustion of the material, and special protective equipment or precautions for firefighters.

- ☐ Contact the local forest district office to discuss wildfire risk, reporting, contacts, etc.
  - https://www.dcnr.pa.gov/StateForests/FindAForest/Pages/default.aspx

- ☐ Locate and identify values such as homes, utilities, key infrastructure, or other assets that have economic or intrinsic worth like critical wildlife habitat and recreation areas that could be at risk in the event of a wildfire initiated at your jobsite. Use care when working in these areas, especially during dry weather, to minimize the potential for damage. Pass this information along to responders in the event of a wildfire.

- ☐ Consider installing an onboard fire suppression system of an appropriate size and type where equipment is most susceptible to fire or ensure that existing systems are in good working order. The main cause of fire suppression failure is due to poor or neglected required maintenance (See OSHA standard 1910.157). At a minimum, keep fully charged fire extinguishers of an appropriate size and type in visible and readily available locations. Ensure that all employees are trained in how to use fire extinguishing equipment.

| | | |
|---|---|---|
| **Class A Fires** |  | Fires in ordinary combustible materials, such as wood, cloth, paper, rubber, and many plastics. |
| **Class B Fires** |  | Fires in flammable liquids, combustible liquids, petroleum greases, tars, oils, oil-based paints, solvents, lacquers, alcohols, and flammable gases. |
| **Class C Fires** |  | Fires that involve energized electrical equipment (plugged-in). |
| **Class D Fires** |  | Fires in combustible metals, such as magnesium, titanium, zirconium, sodium, lithium, and potassium. |
| **Class K Fires** |  | Fires in cooking appliances that involve combustible cooking media (vegetable or animal oils and fats). |

- ☐ Have basic hand tools such as rakes, shovels, and hand pump water tanks on the jobsite for responding to small forest fires. Ensure employees know how to use this equipment to put out fires.

- ☐ Consider having at least one person on the jobsite trained in basic wildland fire behavior, basic incident command, and logging equipment fire safety.

# PREVENTION

Isolating and controlling combustibles and ignition sources is the most effective way to prevent the most common types of logging related fires. Timber harvesters should educate employees about fire prevention and safety practices, including identifying risks, proper equipment use, smoking policies, and reporting procedures for potential fire hazards. Regular inspections of equipment and machinery can help identify and address fire risks promptly.

Timber harvesters must also comply with relevant laws and restrictions related to wildfire prevention, forest management, and environmental protection. Adhering to regulatory requirements ensures that timber harvesting activities are conducted responsibly and in accordance with established standards.

# CHECKLIST

- ☐ Conduct routine inspections on heavy equipment to ensure all components are functioning properly, including a close look for exhaust leaks, damaged or missing heat shields, and worn parts such as hoses and electrical systems and wiring components.

- ☐ Properly maintain and use all power tools. Read, understand, and follow the recommended practices for service and maintenance in the operator's manual.

- ☐ Ensure all chainsaws have a working spark arrestor. If plugged, remove and carefully clean with a propane torch and a wire brush.

- ☐ Conduct regular sweeping and clearing of combustible materials such as wood chips, sawdust, leaves, and limb accumulation from equipment at regular frequencies, especially near hot surfaces. Common spots for debris accumulation are belly pans, side shields, and access guards. Check for and remove buildups of grease, oil, and fuel from leaks or spills. Ensure that intake air coolant systems are free of debris. Increase the frequency of cleaning when the risk of forest fire is high. Documenting can help ensure that cleanings are being performed according to plan.

- ☐ Identify safe welding locations away from dry vegetation, grass, leaves, and other flammable materials. Use welding blankets or screens to prevent sparks from igniting fires.

- ☐ Safely store and dispense any flammable substances. Most of the requirements for the safe use of flammable and combustible liquids are listed in OSHA's general industry standards (29 CFR 1910.106). Shut down equipment before fueling and be sure you are at least 50 feet from an open flame, ignition source, or other equipment. Smoking should be prohibited around fueling operations. Immediately clean up any spilled fuel.

- ☐ When possible, prevent slash material from accumulating at the landing during dry conditions by scattering the material back across the logging site.

- ☐ Park machines in clear areas at least 50 feet from any other equipment or accumulations of flammable material at the end of the day.

# RESPONSE

Fire outbreaks occur across a broad spectrum of sizes, intensity, and personal risk. Response procedures will vary depending on the specific circumstances. Personal safety should always be the top priority when considering how to respond to a fire. Ensure that fire procedures are part of your company's OSHA Emergency Action Plan (29 CFR 1910.38), and that everyone on site knows and understands what to do. This can help you act quickly and decisively to mitigate the risk of a fire spreading and causing further damage.

The following procedures represent a framework for response but should be adapted to your logging company.

# PROCEDURES

- ☐ Activate the employee alarm/alert system.
- ☐ If the fire is within the limits of your training and ability to control, you can attempt to extinguish the fire. Make sure you always have a safe exit from the fire area and evacuate if the fire becomes uncontrollable.
- ☐ In the event of a machine fire, immediately stop the engine, lower blades, booms and grapples, and turn off disconnects, if possible, before evacuating from the machine. Do not attempt to escape from a running or moving machine.
- ☐ Attempt to isolate the fire from other flammable materials, if possible.
- ☐ If the fire cannot be controlled, evacuate yourself and other employees to a safe location and immediately call 911. You can still make a successful call to 911 even if your phone has no network signal or is not equipped with a wireless calling plan. Note that calls to 911 on phones without active service do not deliver the caller's location to the 911 call center, and the call center cannot call these phones back. Be prepared to give an accurate location of the emergency, how to get there, the nature of the emergency, and a description of injuries or symptoms being experienced by anyone having a medical emergency.
- ☐ Ensure all employees are accounted for.
- ☐ Secure machines and equipment, if possible.
- ☐ Assist responders with locating the incident and identifying hazards and values at risk.

# LIABILITY

In Pennsylvania, liability for causing a forest fire can vary depending on the circumstances and the individual's actions leading to the fire. Generally, individuals who negligently or recklessly start a forest fire may be held legally responsible for the damages caused.

Individuals who start a forest fire through negligent or reckless behavior may be subject to civil liability. This means they can be sued for damages by parties who suffer losses as a result of the fire. Damages could include property damage, personal injury or wrongful death, loss of income, or punitive damages.

In cases where a forest fire is started intentionally or through gross negligence, criminal charges may apply. Pennsylvania has laws that address arson and reckless burning, which can lead to criminal prosecution. Penalties for arson or reckless burning can range from fines to imprisonment, depending on the severity of the offense and the extent of the damages caused.

Additionally, individuals who start a forest fire may be required to reimburse firefighting agencies and other authorities for the costs incurred in extinguishing the fire. Title 32, Part I, Section 314 of Pennsylvania's Unconsolidated Statutes (32 P.S. § 314) states that "[E]very person causing a forest fire within this Commonwealth, directly or by the act of an agent or employe, shall be liable to the Commonwealth for all expenses incurred by the [Pennsylvania Department of Conservation and Natural Resources] on account of such fire." This can include expenses related to deploying personnel, equipment, and resources to contain and extinguish the fire. The Department is not required to prove that the person causing the fire was negligent.

It's essential to note that liability for causing a forest fire is determined based on the specific facts and circumstances of each case. Investigations may be conducted to ascertain the cause of the fire and determine any culpability. Ultimately, individuals found responsible for starting a forest fire may face significant legal and financial consequences.

# GET INVOLVED

Pennsylvania's professional timber harvesters may become nationally qualified wildland firefighters by completing a series of standardized training courses recognized by the National Wildfire Coordinating Group (NWCG) and the Federal Emergency Management Agency (FEMA). These courses cover fundamental wildland fire behavior, firefighter safety and operations, human factors, and the national incident management system used during wildfire response. Together, this training provides harvesters with the knowledge and credentials needed to safely and effectively support wildfire prevention and response efforts at the local, state, and national levels.

In support of fire prevention programs identified under the Fire Resilience and Awareness Objective of the SFI 2022 Forest Management Standard, the Pennsylvania SFI Implementation Committee has formally approved the national qualified wildland firefighter training pathway for continuing education (CE) credit under the Pennsylvania SFI Professional Timber Harvester Training Program. Completion of these courses allows professional timber harvesters to earn CE credit while strengthening Pennsylvania's capacity for wildfire preparedness, prevention, and response. Additional wildland firefighter training courses may also be considered for CE credit on a case-by-case basis, consistent with program policy and SFI standards.

For information on how to become a qualified wildland firefighter in Pennsylvania, please contact your local DCNR Bureau of Forestry District office: https://bit.ly/3KDYZOH

# FIRE PREVENTION PLAN TEMPLATE

COMPANY FIRE SUPERVISOR: _____PHONE: _____

ASSIGNMENT OF FIRE RELATED RESPONSIBILITIES: _____

_____

_____

_____

_____

JOBSITE GPS COORDINATES:_____

COUNTY & TOWNSHIP OF JOBSITE: _____

DIRECTIONS FROM CLOSEST PHYSICAL ADDRESS: _____

_____

_____

CLOSEST FIRE DEP.: _____PHONE: _____

LOCAL BUREAU OF FORESTRY PHONE#: _____

LOCATION OF SDS SHEETS AND COMPANY HAZCOM PROGRAM: _____

_____

FLAMMABLE MATERIALS INVENTORY: (See Appendix A)

VALUES AT RISK (Equipment, homes, utilities, etc): _____

_____

_____

_____

_____

DURING HIGH FIRE DANGER AND/OR DRAUGHT CONDITIONS THIS OPERATION WILL: _____

_____

_____

_____

_____

_____

_____

THE FOLLOWING EMPLOYEES HAVE REVIEWED THIS PLAN AND UNDERSTAND THEIR DUTIES:

| EMPLOYEE SIGNATURE | DATE |
|---|---|
| EMPLOYEE SIGNATURE | DATE |
| EMPLOYEE SIGNATURE | DATE |
| EMPLOYEE SIGNATURE | DATE |
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| EMPLOYEE SIGNATURE | DATE |

This resource is provided as a supplemental template and reference for your logging company's safety program. It should be modified as needed for your operation and business. Recommendations made are from best practices by forestry and logging industry professionals and are presented for general education and information purposes to increase overall safety awareness and preparedness. It should not be considered exhaustive or fully compliant with state and federal law. Users should seek the advice of appropriate professionals.

## APPENDIX A. FIRE RISK SURVEY

TYPE OF FIRE HAZARD:_____

LOCATION: _____

POTENTIAL IGNITION SOURCE(S) & PREVENTION:_____

_____

EMERGENCY ACTIONS: _____

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_____

REQUIRED PPE & FIRE PROTECTION EQUIPMENT: _____

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TYPE OF FIRE HAZARD:_____

LOCATION: _____

POTENTIAL IGNITION SOURCE(S) & PREVENTION:_____

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EMERGENCY ACTIONS: _____

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REQUIRED PPE & FIRE PROTECTION EQUIPMENT: _____

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TYPE OF FIRE HAZARD:_____

LOCATION: _____

POTENTIAL IGNITION SOURCE(S) & PREVENTION:_____

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EMERGENCY ACTIONS: _____

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REQUIRED PPE & FIRE PROTECTION EQUIPMENT: _____

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