



# MANAGING LOGGING SLASH PILES IN NORTHWEST OREGON

## MANAGEMENT PRACTICES TO AID IN THE SAFE DISPOSAL OF WOODY MATERIAL

Commercial logging generates woody debris, commonly known as “slash,” in the form of tree tops, limbs and broken pieces. Left in the forest, these provide nutrients for the soil as well as wildlife habitat. However, large quantities of slash can also be a physical barrier to tree planting, be unsightly and pose a fire hazard.

This publication has gathered the best management practices for burning the material that’s not left for nutrients, firewood or wildlife purposes. The goal

of this publication is to reduce fire hazards on the landscape and assist landowners with safely creating and burning slash piles.

These practices and methods focus on the Douglas-fir and hemlock forests that grow in the northwest corner of Oregon, where dry summers are followed by fall rainstorms and east-wind events. While the practices here may apply more broadly across the state, northwest Oregon pile-burning is an art and science of its own, and is the focus of this publication.



photo: ODF

# Pre-harvest considerations

Successful pile burning and slash management starts prior to harvest, with a conversation between the logger and the landowner. Shared expectations captured in the written contract ensure all parties understand who will manage slash during and after harvest, and how.

- sensitive resources such as streams, wetlands, trees left after logging and utilities
- animal populations, goals for wildlife and implications for reforestation

A notification of operations must be submitted to ODF (Oregon Department

of Forestry) at least 15 days before starting. ([oregon.gov/odf/working/pages/enotification.aspx](http://oregon.gov/odf/working/pages/enotification.aspx)) ODF stewardship foresters are available for technical assistance, and are helpful to communicate with in advance of harvest and pile-burning. ([oregon.gov/odf/working/Pages/findaforester.aspx](http://oregon.gov/odf/working/Pages/findaforester.aspx))

## Consider these options when managing slash, and address them in the harvesting contract with the operator:


- piled to prepare for burning (either to remove the fire hazard or to prepare for reforestation)
- piled for wildlife
- set aside for firewood
- leave remaining slash scattered in the unit for nutrient cycling and wildlife

## These factors will impact the amount and distribution of slash, whether it can be burned efficiently, and landowner objectives for actions:

- governing jurisdiction, and whether slash burning is permitted ([oregon.gov/odf/fire/pages/burn.aspx](http://oregon.gov/odf/fire/pages/burn.aspx))
- stand conditions and resulting slash
- logging method(s) and equipment available
- utilization standards, including treatment of pulp material
- proximity and sensitivity of neighbors

### USE SLASH TO HELP WILDLIFE

A few unburned slash piles are excellent wildlife habitat. Habitat piles, or “biodens,” can also be constructed with stumps and large pieces. Consider placing them in lower elevations of the unit, or near riparian areas. Avoid areas with public access, to prevent the piles being used as target-shooting backstops. These structures can play an important role for wildlife, similar to that played by large-diameter logs.

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# Building slash piles for burning

## DURING HARVEST

Work with the logger as the operation progresses to administer the contract, including:

- remove all material as required, including pulp
- minimize breakage during operation
- follow piling requirements

## GENERAL GUIDELINES FOR LOCATING SLASH PILES

- Locate piles on mineral soil or slash-covered mineral soil. Avoid old stumps or logs, as these may burn for a long time and create long-duration smoldering and smoke.
- Avoid draws, depressions and riparian areas where micro-site weather can be cool and damp.
- Avoid building piles on the edges of steep slopes. If a pile is built there, it must be burned or removed. Perched piles can be landslide hazards following harvest. If burned, be aware burning material can roll downslope as the pile is consumed.

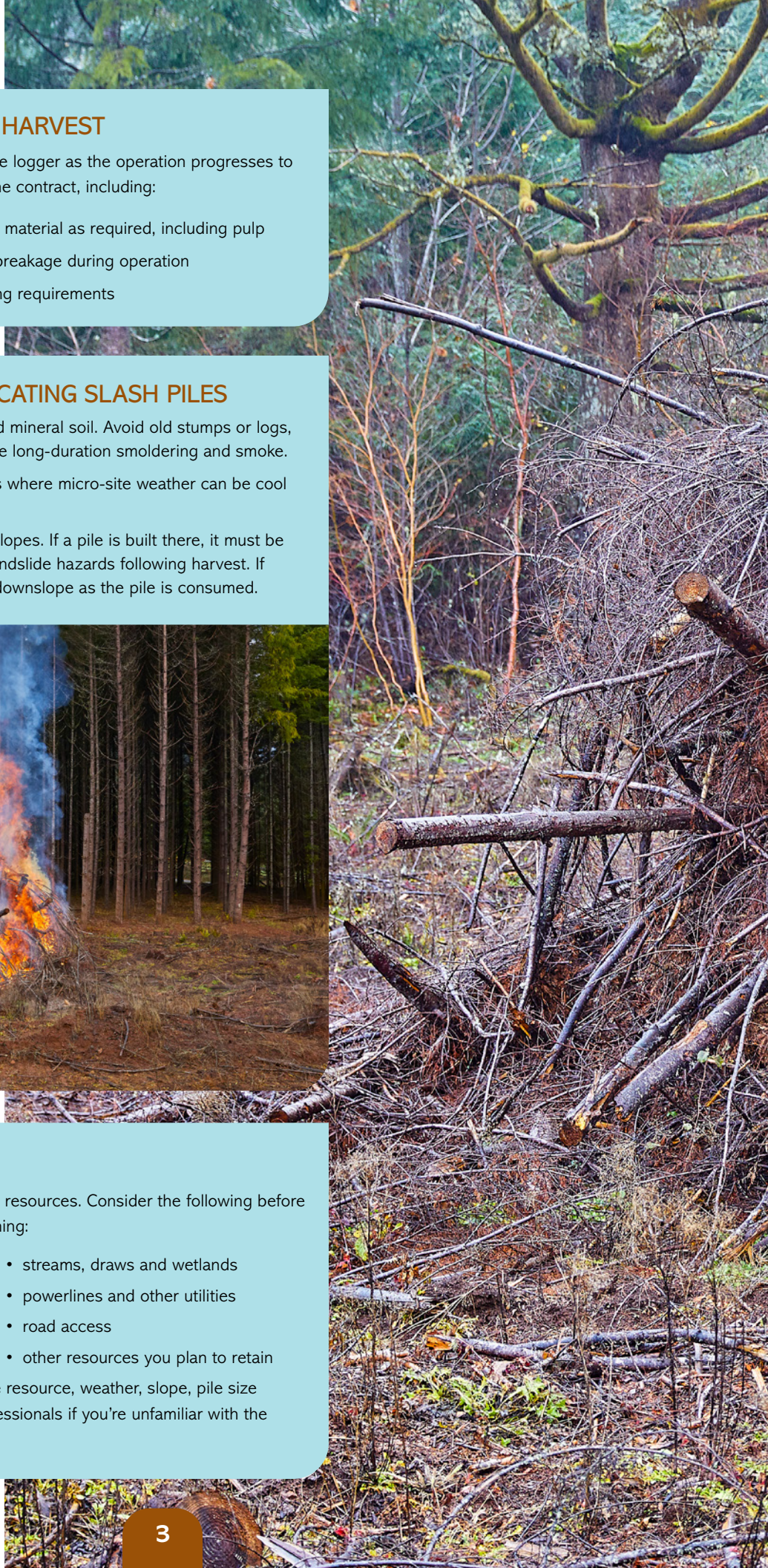


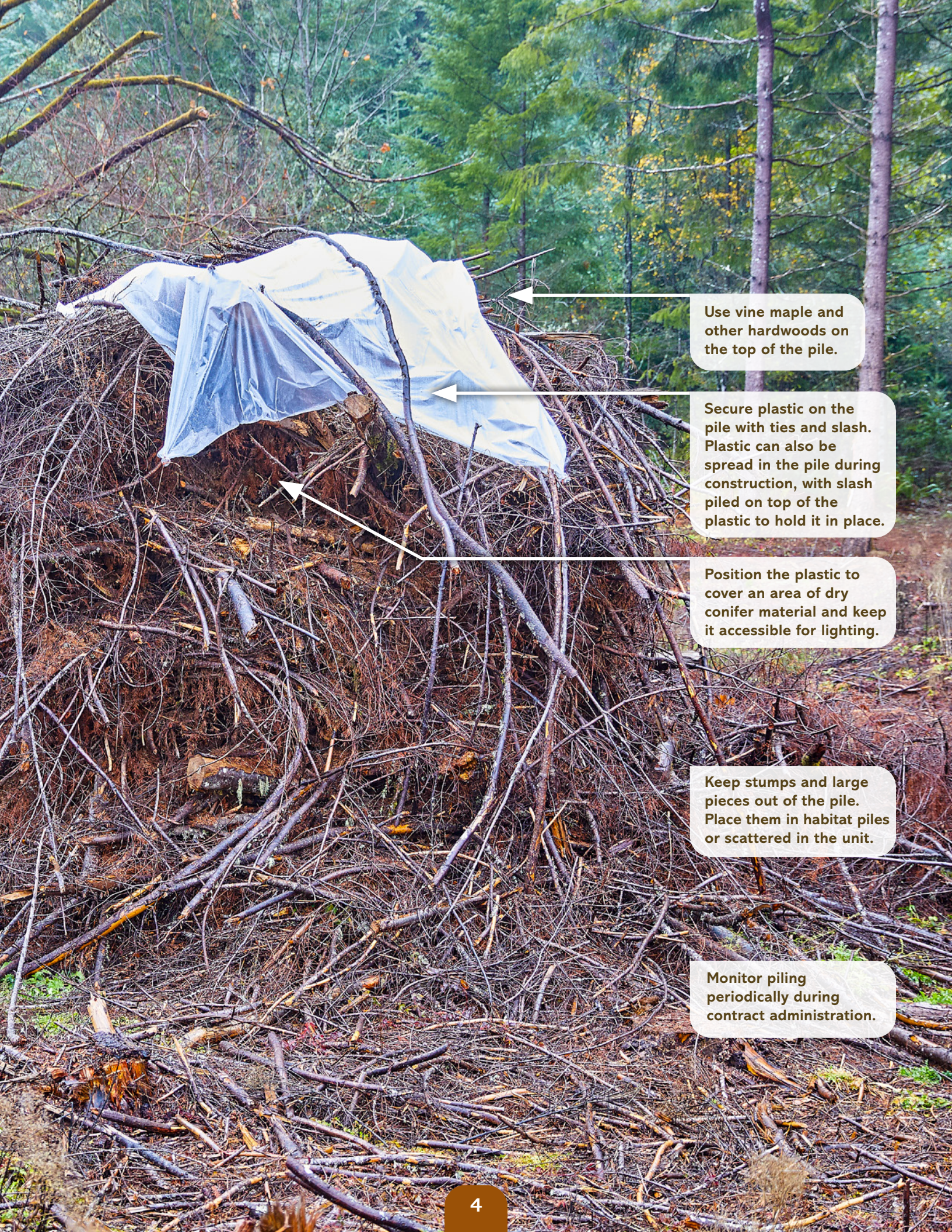
## RESOURCE PROTECTION

Ensure piles are a safe distance from sensitive resources. Consider the following before determining where to build slash piles for burning:

- neighbors
- structures
- adjacent trees (along property lines, or wildlife trees within the harvest unit)
- streams, draws and wetlands
- powerlines and other utilities
- road access
- other resources you plan to retain

Safe distance depends on the sensitivity of the resource, weather, slope, pile size and more. Get advice from local resource professionals if you're unfamiliar with the burning environment.





Use vine maple and other hardwoods on the top of the pile.

Secure plastic on the pile with ties and slash. Plastic can also be spread in the pile during construction, with slash piled on top of the plastic to hold it in place.

Position the plastic to cover an area of dry conifer material and keep it accessible for lighting.

Keep stumps and large pieces out of the pile. Place them in habitat piles or scattered in the unit.

Monitor piling periodically during contract administration.

## ITEMS TO LEAVE OUT

- Place stumps in wildlife piles or scattered across the unit. Stumps take a long time to burn, and can support fire spread should the weather turn dry and windy.
- Use pieces larger than 8 inches in diameter for wildlife habitat or firewood. Large pieces of wood take longer to burn than most slash material.
- Minimize dirt in piles to improve the combustion process. Slash mixed with non-combustible material increases emissions and long-term smoldering.

photo: B. Glendenning



## TIPS FOR BETTER BURNING

- During pile construction, be sure the pile has some good burnable material (e.g., conifer branches), and maintain access to that material for lighting.
- Place vine maple and hardwood slash on the top if possible.
- Create a ring of mineral soil around the pile, relatively free of woody material, to prevent fire spread from the pile to the surrounding area.
- Remember, seasoned piles burn cleaner and faster than freshly piled green wood.

## TIPS FOR USING PLASTIC TO FACILITATE BURNING

- Cover piles with plastic to prolong the burn window, facilitate burning in a wider range of weather conditions, and to reduce emissions.

- Start the pile with good burnable material such as conifer limbs and chunks, 6 to 8 feet high.
- Cover this section with at least a 10x10-foot piece of 3-4 millimeter polyethylene plastic in a manner that keeps the rain

off and shelters from the prevailing west and southwest winds. Standard practice is anything from 10x10 to nearly completely covered.

- Finish constructing the pile, maintaining access to the covered portion.



# Equipment selection

The following includes common equipment selected to construct slash piles during harvest operations:

EQUIPMENT	ADVANTAGES	DISADVANTAGES
<b>LOG LOADER</b>	<ul style="list-style-type: none"> <li>readily available and timely</li> <li>work can be done while logging</li> </ul>	<ul style="list-style-type: none"> <li>challenge to pick up smaller pieces like bark and debris compacted into landings or skid trails</li> </ul>
<b>EXCAVATOR</b> with brush rake attachments	<ul style="list-style-type: none"> <li>piles everything to make a clean area with minimum compaction</li> <li>mitigates other issues such as ripping a skid trail and landing areas, and removing hardwoods and undesirable vegetation</li> <li>can pull back slash and debris on the unit edges/property lines, sensitive areas and around piles prior to burning</li> </ul>	<ul style="list-style-type: none"> <li>more expensive to bring if just used for slash management</li> </ul>
<b>DOZER</b>	<ul style="list-style-type: none"> <li>fast and efficient</li> <li>dozers should be outfitted with a brush blade to minimize soil movement</li> </ul>	<ul style="list-style-type: none"> <li>piles are not as tall, so they may be more difficult to burn</li> <li>nearly always get too much soil in piles</li> <li>more likely to compact soil</li> </ul>



The following includes common equipment selected to light slash piles:

EQUIPMENT	ADVANTAGES	DISADVANTAGES
<b>FIREWOOD, NEWSPAPER, FIRE-STARTER LOG</b>	<ul style="list-style-type: none"> <li>readily available, inexpensive</li> </ul>	<ul style="list-style-type: none"> <li>slow and difficult to access dry portion of pile for lighting (leaf blower can accelerate pile ignition)</li> </ul>
<b>DRIP TORCH</b>	<ul style="list-style-type: none"> <li>designed for lighting forest slash</li> </ul>	<ul style="list-style-type: none"> <li>difficult when piles are wet</li> </ul>
<b>PROPANE TORCH</b> (weed burner)	<ul style="list-style-type: none"> <li>readily available, inexpensive</li> </ul>	<ul style="list-style-type: none"> <li>difficult to access dry portions of piles</li> </ul>
<b>PANAMA TORCH</b>	<ul style="list-style-type: none"> <li>designed for lighting slash, but more expensive</li> </ul>	<ul style="list-style-type: none"> <li>slow work when piles are wet</li> </ul>



# Preparing for and executing a slash burn

## WEEKS BEFORE BURNING

1. Review the information on fees and process in the “Landowner’s Forestland Burning Guide.” ([oregon.gov/odf/fire/pages/burn.aspx](http://oregon.gov/odf/fire/pages/burn.aspx))
2. Estimate the tons of material to burn. The preferred method is the Piled Fuels Biomass and Emissions Calculator, located in the Fuel Load Estimating Tools section at the website above.
3. Fill out a smoke management registration form and a burn plan (located at the website above), and turn them in to your local Oregon Department of Forestry (ODF) office (if the land is inside a protection district), or contact your local fire department.
4. Start monitoring the weather.

## DAY BEFORE BURNING

Choose a day with the ideal weather. Call your local ODF office or fire department to see if your burn can fit within Oregon’s Smoke Management Plan and not impair air quality. Your local office will issue a burn permit, if necessary. Talk to your neighbors so they aren’t surprised and can be prepared.

Ideal weather is a point in the fall or winter when surrounding exposed fuels are damp enough to prevent fire spread while the pile remains dry enough for rapid consumption, combined with a weather forecast (10-day forecast) for wet or damp conditions.

When surrounding fuels are dry enough to carry fire, or when dry and windy conditions (any east winds) are forecast, delay burning until a better weather window arrives.

## LIGHTING

Following your burn plan and burn permit, light the piles.

## SAFETY

Use of fire and fire starters carries inherent risks. Follow the instructions on lighting products and wear your personal protective equipment.

## Monitoring and liability

### You are responsible for the fire you light!

Piles will burn for a week or more when properly constructed – weeks or months if the pile includes stumps, dirt and large woody material. Monitor regularly until it’s completely out.

East winds often cause piles to rekindle and spark to surrounding material. If these dry, windy conditions appear in the forecast, consider fully extinguishing the pile before the dry, windy weather arrives. This may take equipment to spread the hot material down to a thin blanket that you can extinguish with water and shovels.

Should dry, windy weather arrive while your piles are still hot, monitor them carefully for heat buildup and spark generation. If this happens, work to contain the sparks using water and soil, and call for help (911) if needed.

Landowners and/or operators assume liability for damage to the property of others, and may be liable for fire suppression expenses depending on the circumstances. See Oregon Law Chapter 477 for more on liability.



# Checklist for pile burning

## PRE-HARVEST

- Determine if burning is an option.
- Identify sensitive resources.
- Work with the operator to agree on post-harvest conditions.
- Finalize the contract language and sign the contract.
- File a Notification of Operation with ODF.

## DURING HARVEST

- Administer the contract terms.

## WEEKS BEFORE BURNING

- Estimate the tons of material to burn.  
([oregon.gov/odf/fire/pages/burn.aspx](http://oregon.gov/odf/fire/pages/burn.aspx))
- Fill out and submit a smoke management registration form and burn plan.  
(Forms section of: [oregon.gov/odf/fire/pages/burn.aspx](http://oregon.gov/odf/fire/pages/burn.aspx))
- Start monitoring the weather.

## DAYS BEFORE BURNING

- Consult with ODF or the local fire department on burning opportunities.
- Watch the weather forecast.
- Obtain a burn permit or burn permission.



## DAY OF THE BURN

- Follow the burn plan and burn permit instructions.
- Monitor burning.

## DAYS FOLLOWING THE BURN

- Monitor the burn regularly.
- Watch the long-term weather forecast for east winds.
- Extinguish if needed to prevent spread.
- Report burning accomplishments if required by your burn permit.

**Well-constructed piles that follow the guidelines in this publication will often burn for a week or more. Piles constructed with large material, stumps and dirt can burn for months. Piles that were lit in October have caused wildfires the following summer.**

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