Best practices for open burning

Responsibility

Any person who starts a fire is responsible for all suppression costs and possible liability from damage caused by the fire. If you do decide to burn, choose to do so under conditions that minimize health and safety risks.

Fire Risk Management

Ministry of Environment's “Best Practices Guide for Open Burning” was designed to provide information to the public on open burning so that adequate precautions are taken to minimize health and safety risks.

Burning should only be carried out under ideal conditions and with the necessary precautions in place to safely and effectively control the fire and prevent its escape.

Fires that go out of control may damage forest resources, buildings, equipment, crops, shelterbelts, powerlines or other values. Smoke from fires near roads or highways may reduce visibility and cause traffic accidents, leading to death or injury and potential liability for the person who started the fire.

General Considerations

Once a fire has been ignited, the person shall ensure that the fire is attended at all times to prevent the fire's escape.

Wind Speed and Direction - are two of the most important factors to take into account when deciding whether to start a fire. Consideration should be given to not starting a fire when present or forecasted wind speeds are greater than 10 km per hour. Potential for wind gusts must also be taken into account as they can create significant problems for control. If gusts are forecasted, burning should not be considered. If you are burning, be sure the weather is constantly being monitored and if conditions change extinguish your burn and wait for better and safer conditions. Burns can at times carry on into the next day, so pay particular attention to the forecast on the day of the burn and also the forecast for the day following the burn.

Typically winds are lightest near dawn and strongest in the afternoon. Spring and autumn usually have the strongest winds, with generally lighter winds during summer and winter.

Temperature and Relative Humidity - will directly affect the drying rates on vegetative fuels, especially grasses. Burning should not be conducted when the relative humidity falls below 25 per cent or when temperatures rise into the high twenties or above.

Thunderstorms and Cold Fronts - Pay attention to frontal passages or thunder cells. Quite often strong, gusty winds with a different direction than the prevailing breeze precede thunderstorms, showers and weather fronts. These weather conditions can create high winds and dramatic wind shifts. This, in turn, can lead to extreme fire behaviour. If these conditions exist in the weather forecast, burning should not be initiated.

Fire Danger Rating – Prior to starting the fire, check the ministry website at www.saskatchewan.ca/fire for the current fire danger rating. The fire danger rating is a fire management system that evaluates and integrates the factors influencing fire danger and is usually identified in terms of low, moderate, high or extreme.

Time of Day – The best time for burning is usually in the early to mid morning or late afternoon. Burning during the midday poses risks such as erratic and variable winds. Midday may also see dust devils and extremely unstable atmospheric conditions that can be dangerous and unsafe for controlled burning operations. If burning in the late afternoon is considered, ensure that the operation is completed at least two hours before sunset.

Time of Year - The time of year must be considered to ensure the fire can be managed and safely controlled without posing hazards

How to Estimate Wind Speed

0-1 km/hour	Smoke rises vertically - no visible wind
1-5 km/hour	Smoke drifts - no visible wind
6-10 km/hour	Leaves rustle, weather vanes move, wind felt on face
11-19 km/hour	Light flags unfurl, leaves and twigs on trees move steadily
20-28 km/hour	Small branches move. Loose dust and paper fly about
29-38 km/hour	Leafy shrubs and trees sway

to health, life or property. Autumn and early spring pose the most danger for lighting fires. Vegetative fuel moisture content is normally at its lowest. This, in turn, makes the vegetative fuels much more volatile and unpredictable in their flammability properties and fire behaviour characteristics.

Days Since Last Rain - Avoid burning under extremely dry conditions where no precipitation has fallen for a long period of time. Soil moisture content is probably very low. Burning damage or destruction to microorganisms in the soil may occur, especially close to the surface. This, in turn, may cause future loss in crop production and negatively impact the landowner.

Fuel Load (the amount of vegetative fuel available to burn, e.g. heavy straw load) - The higher the fuel load, the higher the intensity of the fire. Burning of areas of high fuel loads should only be attempted if appropriate suppression equipment is in place to safely control and extinguish the fire. Otherwise select alternate methods to rid the area of the fuel, such as the baling and removal of straw.

Fuel Moisture Content - This relates directly to weather and environmental conditions. All vegetative fuel contains some moisture. When fuel moisture content gets below approximately 10 per cent, the fuel is readily and easily ignited. Extremely dry fuels (10 per cent moisture content or less) can create extreme fire behaviour and should not be ignited.

Fuel with a moisture content greater than 25 per cent will create more smoke. At higher moisture levels, the fuel will not ignite.

Per Cent Cure of Fine Fuels (grass-like fuels) – Vegetative fuels containing more than 50 per cent green live material will normally not sustain fire or promote its spread. As fuels dry, they become much more flammable and will support sustained open flame. Fuels cured to above 90 per cent will almost completely burn, creating higher intensity fires that are more difficult to control. Extreme caution should be exercised with fuels cured more than 90 per cent.

Fuel Types - Know what type of vegetative fuels you intend on burning. Fuels such as western snowberry and other short shrubs will burn extremely hot and fast in early spring and autumn. Fire whirls commonly form out of dense pockets of these fuel types and can carry a fire or burning embers across fuel breaks or control lines.

Smoke Management - Smoke can cause immediate public health risks and create a hazard by impairing visibility on public roadways, rail crossings or airports. Consider what values are downwind of the proposed burn area. If you are close to other residences, communities, farmyards, roads, highways or other properties take care to ensure that smoke from the fire does not interfere or present harm to those affected downwind.

Days that have winds of 6 to 11 km/hour will produce relatively effective smoke dispersion.

Where smoke is a concern fires should not be lit at night or early evening. Nighttime inversions may occur with warmer air aloft settling over cooler air at the surface. In these conditions smoke will pool in low-lying areas and generally be trapped close to the surface.

Other Considerations

- Always pay careful attention to the fire, as fires can change in size and intensity very quickly.
- Be careful not to burn too much fuel or area at one time and use extreme caution and due diligence when burning.
- If you start fires late in the fall or winter, check them in the spring, they may have “gone to ground” and hot dry winds in spring could flare them up.
- Ensure the fire does not exceed your fire fighting capacity.
- Lighting the fire should start on the downwind side of the proposed burn area up against the fuel break or control line.

Other Measures That Can Be Taken

Fuel Breaks – A fuel break should be constructed around the area you intend to burn. Fuel breaks should be a minimum of 10 meters in width for larger burns.

In fields where commercial grains are grown, a fuel break can be constructed by tilling and turning over soil to a 10-meter width around the entire proposed burn area. On grasslands, a 10-meter fuel break should be constructed by first mowing the fuel break as short as possible and then either using water (spray booms) to wet the fuel break down or by applying fire fighting foam over the fuel break.

Other considerations for fuel breaks include keeping these breaks well away from steep slopes, ravines and coulees. Keep the fuel break as straight as possible and avoid sharp corners or right angle turns. Placement of fuel breaks in this manner will allow good access around the entire perimeter of the fire for control purposes, as well as avoid any heavy fuel pockets which could cause spot fires or a high intensity section of the fire from breaching the fuel break.

Outdoor Fireplace or Fire Pit - Should be constructed on mineral soil or contained in a non-combustible receptacle, located a minimum of one metre from any combustible materials, at least three metres from any overhanging vegetation and should not be used to burn rubbish, manure or domestic waste.

Burn Barrel or Other Incinerator - The following criteria are recommended:

(a) consists of a fully enclosed device in good condition constructed of non-combustible material and covered with a heavy gauge metal screen of a mesh size of 7-16 mm to prevent the escape of sparks;

(b) located over bare rock, gravel, sand, mineral soil or concrete to a distance of at least one metre from its base;

(c) located at least 15 metres from any standing timber, buildings, slash or other combustible material; and

(d) a sufficient supply of water (100 litres) or a charged water hose be on hand.

Campfires, Smudges, Grass Burning - A campfire, smudge or small fire intended for household burning of grass and leaves or other woody debris should be located on an area cleared to mineral soil extending one meter from the outer edge of the pile to be burned and at least three metres from any overhanging vegetation.

Brush Piles / Windrows - Brush piles and windrows should be tightly packed, dry, preferably seasoned and clean of dirt. If possible, place at right angles to the prevailing winds for more efficient burning and decreased smoke emissions.

Windrows should not be more than 60 metres in length, with eight metres between the ends of each windrow and 15 metres between parallel windrows.

A 15 metre fuel break is recommended on each side of the area to be burned, 23 metres wide if it is adjacent to standing timber.

It is generally best to start the fire deep in the middle of each windrow first then light the ends.

Do not light any more fires than you can sufficiently control.

Mop Up and Patrol - Mop up involves extinguishing all burning material starting along the fires edge and working into the burn. Ensure all surface fire and any ground fires are extinguished.

On larger burns, mop up should take place at least 30 meters in from the perimeter of the fire. This is to ensure no burning debris can be carried over the control line (fire's edge) and start a new fire that can quickly get out of control. On smaller fires, the entire burnt area should be mopped up and the burn area completely extinguished prior to leaving the site.

Patrol of the fire area should take place after the burn to ensure the fire is safely contained

and to determine the fire is actually out. Areas where deep organic layers occur will take extensive mop up and patrol. These areas may require weeks or months of patrol to ensure the fire cannot escape and to determine if it is actually out or not.

Contact Information

BUFFALO NARROWS FIRE CENTRE AREA

Big River FPA 469-2500
Buffalo Narrows FPA 235-1800
Dorintosh FPA 236-7696
Ile a la Crosse FPA 833-3230

LA RONGE FIRE CENTRE AREA

Denare Beach FPA 362-5676
La Ronge FPA 425-4446
Stony Rapids FPA. 439-2087

PRINCE ALBERT PROTECTION AREAS

Cypress Hills FPA 662-5400
Hudson Bay FPA 865-4500
Lower Fishing Lakes FPA. 426-2600
Prince Albert FPA. 953-3422
Weyakwin FPA 663-5620

Be Aware of the Danger

Over 50 per cent of Saskatchewan's fires are caused by people. Many of these fires occur when residents attempt to use fire for constructive purposes but underestimate the burning conditions.

Weather Information

Fie weather information can be obtained on the ministry website. Environment Canada broadcasts weather 24 hours a day on the following FM frequencies - 162.400, 162.475 and 162.550. If you do not have an FM radio you can visit Environment Canada's website for current weather information.

The information contained in this brochure is not legal advice. For more information or clarification on burning requirements contact your nearest Forest Protection Area or go to saskatchewan.ca/fire

To report a wildfire, call 911.

When planning an open burn, contact your local Rural Municipality office to ensure that there are no by-laws in place concerning open fires.

After you obtain your Burn Notification Number, we recommend calling Emergency Management and Fire Safety's Control Burn number 1-866-404-4911 to let them know of your burn plan. This will help avoid unnecessary dispatch of volunteer fire departments or unnecessary costs via 911.